



9.3 TOWNSHIP OF EWING

This section presents the jurisdictional annex for the Township of Ewing 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 community participated in the planning process, an assessment of the Township of Ewing’s risk and vulnerability, the different capabilities, and an action plan that will be implemented to achieve a more resilient community.

9.3.1 Hazard Mitigation Planning Team

The Township of Ewing 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 municipal 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 following table summarizes municipal officials that participated in the development of the annex and in what capacity, including the Township of Ewing 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 9.3-1. Hazard Mitigation Planning Team

Primary Point of Contact	Alternate Point of Contact
Name/Title: James P. McManimon, Business Administrator Address: 2 Jake Garzio Drive Ewing, NJ 08628 Phone Number: 609-883-2900 Ext. 7605 Email: jpmcmanimon@ewingnj.org	Name/Title: Mike Meenan, Director of Public Works Address: 2 Jake Garzio Drive Ewing, NJ 08628 Phone Number: 609-882-3382 Ext. 6408 Email: mmeen@ewingnj.org
NFIP Floodplain Administrator	
Name/Title: Michael Narducci, Deputy Office of Emergency Management Coordinator Address: 2 Jake Garzio Drive Ewing, NJ 08628 Phone Number: 609-883-2900 Ext. 7604 Email: mnarducci@ewingnj.org	
Additional Contributors	
Name/Title: Michael Narducci, Deputy Office of Emergency Management Coordinator Method of Participation: Provided information on capabilities, contributed to mitigation strategy	
Name/Title: Charles Latini, PP, AICP. Township Planner Method of Participation: Provided status updates on previous actions, contributed to mitigation strategy	
Name/Title: James Megna, Construction Official Method of Participation: Provided permit information	
Name/Title: DeLorfette Clark, Director of Emergency Medical Services Method of Participation: Contributed to mitigation strategy	
Name/Title: Albert Rhodes, Chief of Police Method of Participation: Contributed to mitigation strategy	
Name/Title: Bert H. Steinmann, Mayor Method of Participation: Contributed to mitigation strategy	
Name/Title: Marc Strauss, Fire Director Method of Participation: Contributed to mitigation strategy	



9.3.2 Municipal Profile

Ewing Township is located western Mercer County and encompasses an area of 15.6 square miles. It was incorporated on February 22, 1834. The Township is bordered to the north by Hopewell Township, to the east by Lawrence Township, to the south by the City of Trenton, and the west by Delaware River. Other rivers, streams, lakes and ponds in the Township include: Ewing Creek, West Branch Shabakunk Creek, Shabakunk Creek, Gold Run, Delaware and Raritan Canal, Sylva Lake, Katzenbach School Lake, and Ceva Lake.

According to the U.S. Census, the 2010 population for the Township of Ewing was 35,790. The estimated 2019 population was 36,037, a 0.7 percent increase from the 2010 Census. Data from the 2019 U.S. Census American Community Survey indicate that 5.3 percent of the population is 5 years of age or younger and 16.7 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.

9.3.3 Jurisdictional Capability Assessment and Integration

The Township of Ewing 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 9.3.3). The updated mitigation strategy includes opportunities the Township of Ewing identified for integration of mitigation concepts to be incorporated into municipal procedures.

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 Ewing, what is present in the jurisdiction, and code citation and date.



Table 9.3-2. 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
Codes, Ordinances, & Regulations					
Building Code	Yes	Yes	State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.), Chapter 114 – Building Construction	State and Local	Construction
How does this reduce risk? <ul style="list-style-type: none"> Establishes the State Uniform Construction Code, Building Code, and Property Maintenance Code. 					
Zoning/Land Use Code	Yes	Yes, if the jurisdiction has a planning board	Chapter 215 – Land Development	Local	Planning and Zoning
How does this reduce risk? <ul style="list-style-type: none"> Adopted in order to protect the public health, safety, morals and general welfare. The Ordinance includes the following objectives relating to hazard mitigation: <ul style="list-style-type: none"> To guide and regulate the orderly growth, development and redevelopment of the Township in accordance with a comprehensive plan and with long-term objectives, principles and standards deemed beneficial to the interests and welfare of the people; To provide protection to life and property against fires, flood, explosion, panic, noxious fumes and other dangers in the interest of the public health, safety, comfort and the general welfare; To promote, in the public interest, the utilization of land for the purposes for which it is most appropriate; To encourage the appropriate and efficient expenditures of public funds by the coordination of public development with land use policies; To promote the conservation of open space and protect valuable natural resources for the welfare of the community and to comply with all ecological and environmental protection requirements of federal, state and local jurisdiction. 					
Subdivision Ordinance	Yes	Yes, if the jurisdiction has a planning board	Chapter 215, Article XI	Local	Planning and Zoning
How does this reduce risk? <ul style="list-style-type: none"> The Land Use ordinance establishes procedures for subdivisions, including review and approval by the Planning Board. 					
Stormwater Management Ordinance	Yes	Yes	Chapter 215, Article XIV – Stormwater Control; Chapter 300 – Sewers	Local	Construction, Planning and Zoning
How does this reduce risk? <ul style="list-style-type: none"> It is the purpose of this article to establish minimum stormwater management requirements and controls for "major development." 					
Post-Disaster Recovery/ Reconstruction Ordinance	Yes	Yes	Chapter 215 - Land Use	Local	Construction, Planning and Zoning
How does this reduce risk? <ul style="list-style-type: none"> Post-disaster recovery and reconstruction would be guided by Chapter 215 – Land Use. 					
Real Estate Disclosure	Yes	Yes	N.J.A.C. 13:45A-29.1	State	State, Division of Consumer Affairs
How does this reduce risk? <ul style="list-style-type: none"> Before signing a contract of sale, all purchasers must receive a New Jersey Public Offering Statement (POS) approved by the New Jersey Real Estate Commission. The POS provides information such as estimated completion dates for improvements, fees for services and amenities, the type of title and ownership interest being offered, its proximity to hospitals, schools, fire and police, as well as any hazards, risks or nuisances in or around the subdivision. 					
Growth Management	Yes	Yes, if the jurisdiction has a planning board	As set forth in Comprehensive Plan	Local	Planning Board
How does this reduce risk?					
Site Plan Ordinance	Yes	Yes, if the jurisdiction has a planning board	§215-81 – Review Procedures	Local and County	Construction and Zoning
How does this reduce risk? <ul style="list-style-type: none"> All subdivisions are subject to review procedures. 					
Environmental Protection Ordinance	No	Yes, depends on type of environmental areas	-	-	-
How does this reduce risk?					



	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
Flood Damage Prevention Ordinance	Yes	Yes	Chapter 195 – Flood Damage Prevention	Federal, State, County and Local	Water Management Director
How does this reduce risk?					
<ul style="list-style-type: none"> • It is the purpose of this chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to: <ul style="list-style-type: none"> ○ A. Protect human life and health; ○ B. Minimize expenditure of public money for costly flood control projects; ○ C. Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public; ○ D. Minimize prolonged business interruptions; ○ 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; ○ F. Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas; ○ G. Ensure that potential buyers are notified that property is in an area of special flood hazard; and ○ H. Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions. 					
Wellhead Protection	No	No	-	-	-
How does this reduce risk?					
Emergency Management Ordinance	No	No	-	-	-
How does this reduce risk?					
Climate Change Ordinance	No	No	-	-	-
How does this reduce risk?					
Disaster Recovery Ordinance	No	No	-	-	-
How does this reduce risk?					
Disaster Reconstruction Ordinance	No	No	-	-	-
How does this reduce risk?					
Other	No	-	-	-	-
Codes, Ordinances, & Regulations Connection to Mitigation and Safe Growth					
How are codes, ordinances and regulations contributing to risk reduction in your community?					
<ul style="list-style-type: none"> • <u>Building Code:</u> <ul style="list-style-type: none"> ○ The State of New Jersey has adopted the 2018 International Building Code (IBC). Flood design provisions are found in the Building Subcode (Section 1612), Residential Subcode, Rehabilitation Subcode, and Plumbing, Mechanical, and Fuel Gas subcodes. The flood provisions are deemed by FEMA to meet or exceed NFIP requirements for buildings and structures. ○ The IBC includes design requirements for structural wind resistance. Design wind speeds in New Jersey vary based on structure type and location, with higher wind design speeds required in coastal areas. • <u>Flood Damage Prevention Ordinance:</u> <ul style="list-style-type: none"> ○ A local flood damage prevention ordinance sets design standards for reducing flood losses and is required for participation in the National Flood Insurance Program. ○ The local flood damage prevention ordinance requires permits for floodplain development, adopts and enforces flood maps, requires new and substantially improved structures be elevated above the base flood elevation, among other standards. ○ In the State of New Jersey, all new and substantially improved structures are required to be elevated at least one foot above the base flood elevation. 					



	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"> Stormwater Ordinance <ul style="list-style-type: none"> New Jersey municipalities enact stormwater management ordinances to regulate runoff quantity and quality, groundwater recharge, and erosion control. Municipalities are required to update their municipal stormwater control ordinance to reflect amendments to the Stormwater Management rules at N.J.A.C. 7:8, adopted March 2, 2020 and should use NJ DEP's Model Stormwater Control Ordinance for Municipalities. Stormwater ordinances for major development require mitigating runoff by requiring that peak runoff rates for the 2, 10, and 100-year storms be below pre-construction conditions and not increase flood damage downstream of the site. <p>Prior to zoning changes or development approvals, does the jurisdiction review the hazard mitigation plan and other hazard analyses to ensure consistent and compatible land use? Yes, all long-range planning includes such review in addition to all improvement made to property within the Township.</p> <p>Does the zoning ordinance discourage development or redevelopment within natural areas including wetlands, floodways, and floodplains? Yes, it also includes mitigation and special design considerations through tree protection and landscape ordinances as well.</p> <p>Does the ordinance require developers to take additional actions to mitigate natural hazard risk? Yes, we work closely with all development proposals and work toward same.</p> <p>Do rezoning procedures recognize natural hazard areas as limits on zoning changes that allow greater intensity or density of use? Yes, while encouraging clustering so as to expand and protect adjacent natural resources.</p> <p>Do the subdivision regulations restrict the subdivision of land within or adjacent to natural hazard areas? Yes</p> <p>Do the regulations provide for conservation subdivisions or cluster subdivisions in order to conserve environmental resources? Yes, as state above</p> <p>Do the regulations allow density development transfers where hazard areas exist? No</p>					
Planning Documents					
Master Plan	Yes	Yes	Reexamination of the Master Plan, 2012	Local	Administration
How does this reduce risk?					
Capital Improvement Plan	Yes	Allowed	Capital Improvement Plan	Local	Administration
How does this reduce risk?					
Disaster Debris Management Plan	No	No	-	-	-
How does this reduce risk?					
<ul style="list-style-type: none"> The Township plans to develop a Disaster Debris Management Plan. 					
Floodplain Management or Watershed Plan	Yes, 2008	No	A Multi-Jurisdictional Flood Mitigation Plan for Municipalities in the Non-tidal, New Jersey Section of the Delaware River Basin	Local, Regional	Delaware River Basin Commission
How does this reduce risk?					
Stormwater Management Plan	Yes	Yes	Chapter 215, Article XIV Adopted 10-29-2020	Yes	Yes
How does this reduce risk?					
Stormwater Pollution Prevention Plan	Yes	No	Stormwater Pollution Plan, 2005	Local	Community Affairs
How does this reduce risk?					
Urban Water Management Plan	No	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>					
Habitat Conservation Plan	No	No	-	-	-
<i>How does this reduce risk?</i>					
Economic Development Plan	Yes	No	Adopted 11-24-1998 by Ord. No. 98-13 as Ch. 9, Art. IV, of the 1998 Code, Redevelopment Plan for Olden Avenue (2011, 2014), Redevelopment Plan for Parkway Avenue (2021)	Local	Administration, Planning, Redevelopment Agency
<i>How does this reduce risk?</i>					
Shoreline Management Plan	No	No	-	-	-
<i>How does this reduce risk?</i>					
Community Wildfire Protection Plan	No	No	-	-	-
<i>How does this reduce risk?</i>					
Community Forest Management Plan	Yes, 2012-2016	No	Community Forestry Management Plan	Local	Shade Tree Commission
<i>How does this reduce risk?</i> The purpose of the Community Forestry Management Plan is to engage citizens and citizen volunteers on Township committees, with the Township on projects to benefit the overall health, welfare and future of Ewing's tree canopy. The plan discussed the impact of the Emerald Ash Borer invasive species threat.					
Transportation Plan	Yes	No	County	County	County
<i>How does this reduce risk?</i>					
Agriculture Plan	No	No	-	-	-
<i>How does this reduce risk?</i>					
Climate Action/ Resiliency Plan	In Progress	No	-	-	-
<i>How does this reduce risk?</i>					
Tourism Plan	No	No	-	-	-
<i>How does this reduce risk?</i>					
Redevelopment Plan	Yes	No	Chapter 215 - Land Development	Local	Township
<i>How does this reduce risk?</i>					
Other	No	-	-	-	-
Planning Connection to Mitigation and Safe Growth					
<p>How are your plans contributing to risk reduction in your community? We have pulled new development away from valued natural resources through redeveloping contaminated sites and good civic design measures. We have also ensured properties located in hazard areas are not only aware of such, but measures to ensure design integration is employed to extent practical and feasible. Every single permit that goes through construction gets screened for it location and property owners are advised accordingly.</p> <p>Does the future land use map clearly identify natural hazard areas? Yes</p> <p>Do the land use policies discourage development or redevelopment within natural hazard areas? Yes</p> <p>Does the land use plan provide adequate space for expected future growth in areas located outside natural hazard areas? Yes</p> <p>Is transportation policy used to guide growth to safe locations? Yes</p>					



	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
Are transportation systems designed to function under disaster conditions (e.g. evacuation)? Yes and in progress					
Are environmental systems that protect development from hazards identified and mapped (i.e., dunes, rip rap, defensible space, wetlands/natural shoreline)? N/A					
Do environmental policies maintain and restore protective ecosystems? In progress					
Response/Recovery Planning					
Emergency Operations Plan	Yes	Yes	Emergency Operations Plan 2019	Local	OEM
<i>How does this reduce risk?</i>					
<ul style="list-style-type: none"> Identifies responsibilities and actions to address emergency and hazard events. 					
Strategic Recovery Planning Report	No	No	-	-	-
<i>How does this reduce risk?</i>					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	No	-	-	-
<i>How does this reduce risk?</i>					
Post-Disaster Recovery Plan	No	No	-	-	-
<i>How does this reduce risk?</i>					
Continuity of Operations Plan	No	No	-	-	-
<i>How does this reduce risk?</i>					
<ul style="list-style-type: none"> The Township intends to develop a Continuity of Operations Plan. 					
Public Health Plan	Yes	No	Public Health Plan	Local	Health Department
<i>How does this reduce risk?</i>					
<ul style="list-style-type: none"> The Public Health Plan includes information relating to Disease Outbreak events. 					
Other	No	-	-	-	-
Response/Recovery Planning Connection to Mitigation and Safe Growth					
How do your response/recovery plans contribute to risk reduction in your community?					
<ul style="list-style-type: none"> Emergency Operations Plan (EOP): <ul style="list-style-type: none"> NJ Rev Stat § App.A:9-43.2 (2013) requires a written Emergency Operations Plan (EOP) for each county and municipality in the State that coordinates with neighboring jurisdictions. EOPs must address the needs of animals and individuals with animals; evacuation procedures for hospitals and health care facilities; and addressing evacuation of families and dependents of emergency responders. EOPs must include a basic plan as well as Emergency Support Functions (ESF) annexes that address public information, hazardous materials, emergency warnings, and related subjects. Emergency operations plans must be certified for approval by the New Jersey Office for Emergency Management. 					
Does your EOP cover short-term response and long-term recovery to address communications, evacuation, and housing necessary for identified hazards? Yes					

Development and Permitting Capability

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

Table 9.3-3. Development and Permitting Capability

Indicate if your jurisdiction implements the following	Yes/No	Comment
Do you issue development permits?	Yes	Construction permits are issued through Planning & Zoning
- If yes, what department is responsible?		
- If no, what is your process for development?		



Indicate if your jurisdiction implements the following	Yes/No	Comment
Are permits tracked by hazard area? (For example, floodplain development permits.)	Yes	Every single permit that goes through construction gets screened for its location and property owners are advised accordingly.
Do you have a buildable land inventory? - If yes, describe. - If no, quantitatively describe the level of buildout in the jurisdiction.	Yes	The Township understands potential buildout and actively seeks to protect vulnerable lands.

Administrative and Technical Capability

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

Table 9.3-4. Administrative and Technical Capabilities

Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Administrative Capability		
Planning Board	Yes	Administration and consulting. The Planning Board is responsible for preparing the Township’s Master Plan, subdivisions, site plan review and residential variances in compliance with requirements of the New Jersey Municipal Land Use Law. They also make recommendations to Council regarding changes to the zoning ordinances, official map and capital improvement projects planned within the Township.
Zoning Board of Adjustments	Yes	Administration and consulting. The purpose of the Zoning Board of Adjustment is to rule on deviations from Ewing’s zoning laws. They hear appeals, rule on cases of requests for variance(s) to and interpret “use” applications.
Planning Department	Yes	Consulting
Mitigation Planning Committee	No	-
Environmental Board/Commission	Yes	Administration, Sustainable Ewing Green Team, Environmental Commission. The Ewing Environmental Commission (EEC) was established in 1974 by Township ordinance and meets monthly. A special planning meeting at year end identifies the next year's tasks and priorities. The commission consists of nine Ewing residents (three-year staggered terms) dedicated to identifying, preserving and protecting natural resources within the Township. One is also a Planning Board member. Four EEC members are also on The Green Team. These two environmental organizations work closely together on many projects.
Open Space Board/Committee	No	-
Economic Development Commission/Committee	Yes	Administration, Redevelopment Agency
Public Works/Highway Department	Yes	The Department of Public Works provides a variety of services to the Township and its residents through the Divisions listed below:



Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
		<p>Building and Grounds Division: Responsible for general upkeep and maintenance of all the Township-owned buildings and grounds.</p> <p>Fleet Maintenance Division: Responsible for maintenance and repair of all township vehicles including cars, trucks, light and heavy equipment, including the Senior bus.</p> <p>Recreation and Park Maintenance Division: Responsible for general upkeep and maintenance of the 14 Township-owned parks.</p> <p>Roads Division: Responsible for general road and pothole repairs, street sweeping, traffic sign maintenance and roadway striping, storm drain maintenance, leaf and brush pickup, roadside weed and grass control, and tree work.</p> <p>All Divisions assist in community events, special projects and snow removal operations.</p>
Construction/Building/Code Enforcement Department	Yes	<p>The Construction Office administers and enforces New Jersey's official codes to protect the health and safety of Ewing Township residents. Staff</p> <p>Reviews all applications and plans submitted for new construction and/or alterations in accordance with the Uniform Construction Code and its adoption of various codes related to building, electrical, elevator, fire, HVAC and plumbing.</p> <p>Inspects all residential, commercial and industrial buildings during the various phases of construction. No work shall begin until a permit – if needed – has been issued.</p> <p>Investigates all buildings and structures which have been damaged to ensure they can be safely occupied.</p>
Emergency Management/Public Safety Department	Yes	Administration
Warning Systems / Services (mass notification system, outdoor warning signals)	Yes	Swift911
Maintenance programs to reduce risk (stormwater maintenance, tree trimming, etc.)	Yes	Administration. DPW Cutup and Removal of trees and cleaning out dead trees on township property
Mutual aid agreements	No	-
Human Resources Manual - Do any job descriptions specifically include identifying or implementing mitigation projects or other efforts to reduce natural hazard risk?	Yes	Administration
Other	Yes	The Site Plan Review Advisory Board is an advisory committee that assists the Planning and Zoning Boards and other governmental agencies in reviewing applications for development. Through its review, the SPRB attempts to resolve site plan issues before proposals go to public hearings.
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Planning and Engineering



Resources	Available? (Yes/No)	Comments (available staff, responsibilities, support of hazard mitigation)
Engineers or professionals trained in building or infrastructure construction practices	Yes	Engineering
Planners or engineers with an understanding of natural hazards	Yes	Planning, Engineering
Staff with expertise or training in benefit/cost analysis	Yes	Finance, Planning and Engineering
Professionals trained in conducting damage assessments	Yes	Code Enforcement, Engineering
Personnel skilled or trained in GIS and/or Hazards United States (HAZUS) – Multi-Hazards (MH) applications	Yes	Planning, Engineering
Scientist familiar with natural hazards	No	-
Surveyor(s)	Yes	Engineering
Emergency Manager	Yes	OEM
Grant writer(s)	Yes	Administration; Planning. Are data and maps from the HMP used to support documentation in grant applications? In progress
Resilience Officer	No	-
Other (this could include stormwater engineer, environmental specialist, etc.)	No	-
How do your administrative/technical capabilities contribute to risk reduction in your community? Through the expertise of staff and consultants.		

Fiscal Capability

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

Table 9.3-5. 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)	Yes
Capital improvements project funding	Yes
Authority to levy taxes for specific purposes	Yes
User fees for water, sewer, gas or electric service	Yes
Impact fees for homebuyers or developers of new development/homes	Yes
Stormwater utility fee	Yes
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	Yes
Other federal or state funding programs	Yes
Open Space Acquisition funding programs	No
Other (for example, Clean Water Act 319 Grants [Nonpoint Source Pollution])	No
Fiscal Connection to Mitigation and Safe Growth	



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?
How do your fiscal capabilities contribute to risk reduction in your community? Yes	
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.	
Annually, the jurisdiction will review mitigation actions when allocating funding. Yes, Reviewed by Administration with OEM assistance	
Do budgets limit expenditures on projects that would encourage development in areas vulnerable to natural hazards? Yes	
Do infrastructure policies limit extension of existing facilities and services that would encourage development in areas vulnerable to natural hazards? Yes	
Do budgets provide funding for hazard mitigation projects identified in the County HMP? Yes	

Education and Outreach Capability

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

Table 9.3-6. Education and Outreach Capabilities

Outreach Resources	Available? (Yes/No)	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.
Public information officer or communications office	Yes	Yes, Website, Facebook, Twitter, Instagram
Personnel skilled or trained in website development	Yes	Yes, Township, Police Websites
Hazard mitigation information available on your website	No	Looking into posting on the website
Social media for hazard mitigation education and outreach	Yes	Website, Facebook for police and fire department
Citizen boards or commissions that address issues related to hazard mitigation	No	-
Other programs already in place that could be used to communicate hazard-related information	Yes	Message Boards, Website, Facebook
Warning systems for hazard events	Yes	Swift911
Natural disaster/safety programs in place for schools	Yes	The Township works with the school BOE to use their alerting system.
Other	No	-

Community Classifications

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

Table 9.3-7. Community Classifications

Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-





Program	Participating? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Public Protection (ISO Fire Protection Classes 1 to 10)	Yes	03/3Y	10/1/2018
Sustainable Jersey	Yes	Silver	December 11, 2019
StormReady Certification	No	-	-
Firewise Communities classification	No	-	-

Note:

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

The Township of Ewing is a silver certified community in the Sustainable Jersey program. The following actions relating to hazard mitigation contributed to the Township’s certification:

- *Community Education and Outreach:* The Township’s Green Team completes regular outreach, mainly focused on sustainability, including hosting a Green Fair.
- *Emergency Communications Planning:* The Township’s Emergency Operations Plan covers various hazards and includes an Emergency Communications Plan. The backbone of Ewing’s Emergency Communications Plan is the Swift911 service, which is used to send both emergency alerts or updates on non-emergencies that are of interest to the community.
- *Vulnerable Populations Identification for Emergencies:* Ewing Township assigns as its top priority, the safety and wellbeing of its population. Staff within the Health Department, in concert with the Emergency Operations personnel and through its shared services agreement with Mercer County, have worked to identify the vulnerable populations in Ewing that may need special assistance in the event of an emergency.
- *Raingardens:* The Green Team has completed workshops and outreach on rain barrels and raingardens. The Township has installed demonstration rain gardens at a residential site disconnecting rooftop runoff and managing parking lot runoff.
- *Environmental Commission:* The Ewing Environmental Commission (EEC) was established in 1974 by Township ordinance and meets monthly. A special planning meeting at year end identifies the next year's tasks and priorities. The commission consists of nine Ewing residents (three-year staggered terms) dedicated to identifying, preserving and protecting natural resources within the Township. One is also a Planning Board member. Four EEC members are also on The Green Team. These two environmental organizations work closely together on many projects.
- *Water Conservation Education Program:* Outreach consists of programs and flyers (both online and in the Ewing Observer) as well as a webpage devoted to the topic - Stormwater Pollution Prevention.
- *Community Forestry Management Plan:* The purpose of the Community Forestry Management Plan is to engage citizens and citizen volunteers on Township committees, with the Township on projects to benefit the overall health, welfare and future of Ewing's tree canopy. The plan discussed the impact of the Emerald Ash Borer invasive species threat.
- *Tree Hazard Inventory:* Rutgers completed a report for the Township on the state of the tree canopy and discusses hazardous trees and Emerald Ash Borer infestation.

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 9.3-8. Adaptive Capacity

Hazard	Adaptive Capacity - Strong/Moderate/Weak*
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Flood	Moderate
Geological Hazards	Moderate
Hazmat	Moderate
Hurricane	Moderate
Infestation and Invasive Species	Moderate
Nor’Easter	Moderate
Severe Weather	Moderate
Severe Winter Weather	Strong
Wildfire	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.

9.3.4 National Flood Insurance Program (NFIP) Compliance

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

Table 9.3-9. NFIP Summary

NFIP Topic	Comments
Flood Vulnerability Summary	
<ul style="list-style-type: none"> # NFIP Policies: 324 # RL properties: 52 # SRL properties: 8 # RL/SRL mitigated: 1 	<ul style="list-style-type: none"> # claims filed: 338 Total loss payments: \$3,175,942
Describe areas prone to flooding in your jurisdiction.	Low lying area along Olden Avenue from Sutherland to Prospect Street and along River Road and the Delaware River.
Do you maintain a list of properties that have been damaged by flooding?	No
Do you maintain a list of property owners interested in flood mitigation, and if so, how many are interested in (elevation or acquisition)?	No
How do you make Substantial Damage determinations? <ul style="list-style-type: none"> How many were declared for recent flood events in your jurisdiction? 	No recent flooding
Detail any RiskMAP projects currently underway in your jurisdiction.	None currently
Do your flood hazard maps adequately address the flood risk within your jurisdiction? <ul style="list-style-type: none"> If not, state why. 	Yes
NFIP Administration	
What local department is responsible for floodplain management?	Department of Public Works & Engineer



NFIP Topic	Comments
Are any staff certified floodplain managers (CFMs) or is a consultant retained?	Consultant retained
Provide an explanation of who in your municipality provides NFIP administration services (permit review, GIS, education/outreach, inspections, engineering capability).	Construction Office & Township Engineer
What specific training or support does your floodplain management staff need to support its floodplain management program?	None at this time,
How do you determine if proposed development on an existing structure would qualify as a substantial improvement?	Township Construction Official & Engineer review
Do you have access to resources to determine possible future flooding conditions from climate change?	No
NFIP Compliance	
List any outstanding NFIP compliance violations.	None
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	July 20, 2006
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?	16-11, June 15, 2016
Does your floodplain management program meet or exceed minimum requirements? • If exceeds, in what ways?	Meets DEP requirements but the Flood Damage Prevention Ordinance will require update.
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?	Yes, Code Enforcement, Township Planner and Township Engineer review
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?	Yes

Source: FEMA Region 2 2019

Notes:

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

9.3.5 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 9.3-10. 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	6	1	11	0	5	0	15	0	10	2	11	0
Multi-Family	7	0	1	0	1	0	1	0	12	0	4	1
Other (commercial, mixed-use, etc.)	7	0	10	0	5	0	1	0	6	4	1	0
Total Permits Issued	20	1	12	0	11	0	17	0	28	6	16	1
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.

9.3.6 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 4.2 (Methodology and Tools), Section 4.3 (Hazards of Concern), and Section 4.4 (Hazard Ranking) provide a detailed summary for the Township of Ewing’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 Ewing has significant exposure. The maps also show the location of potential new development, where available.



Figure 9.3-1. Township of Ewing Hazard Area Extent and Location Map 1

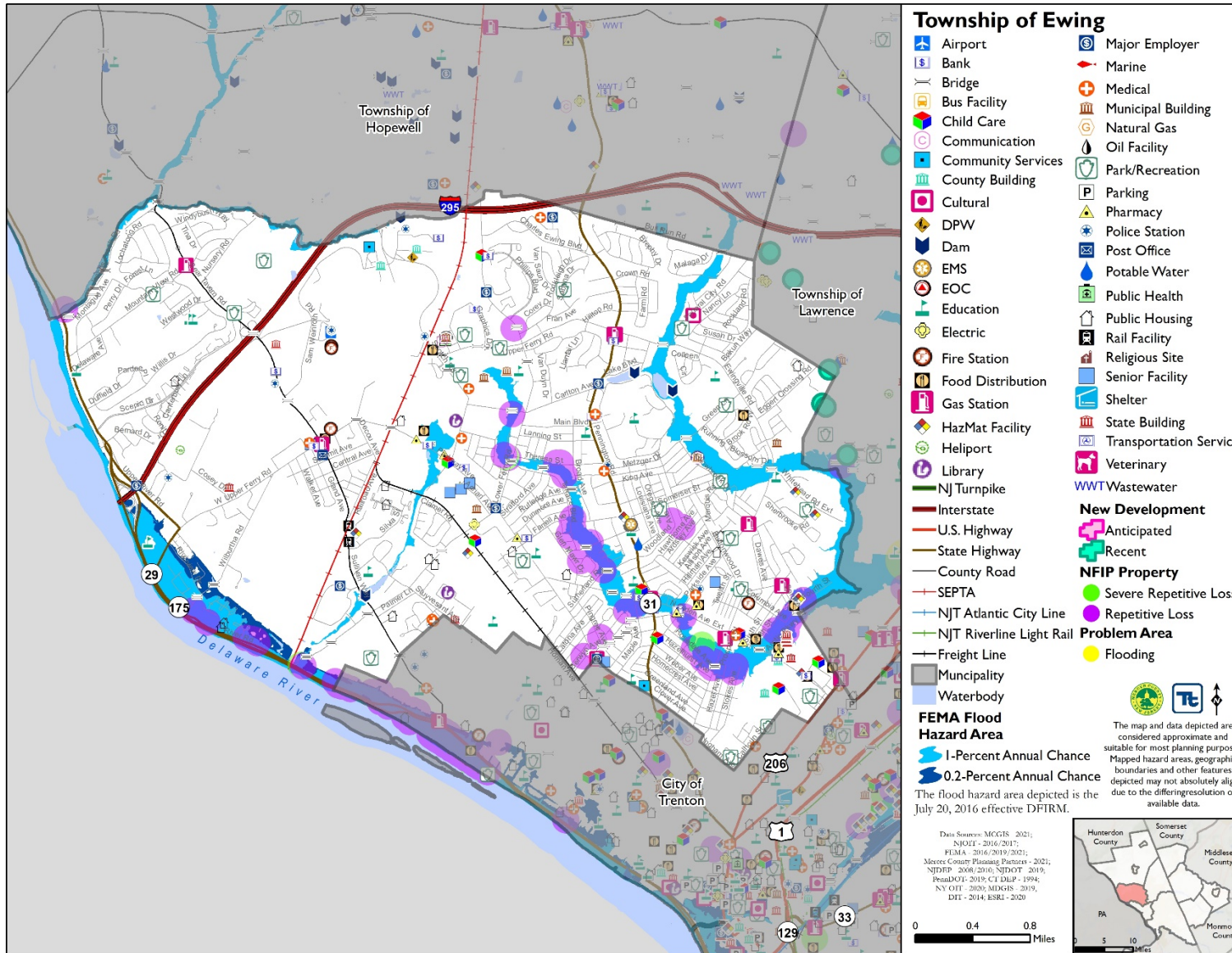




Figure 9.3-2. Township of Ewing Hazard Area Extent and Location Map 2

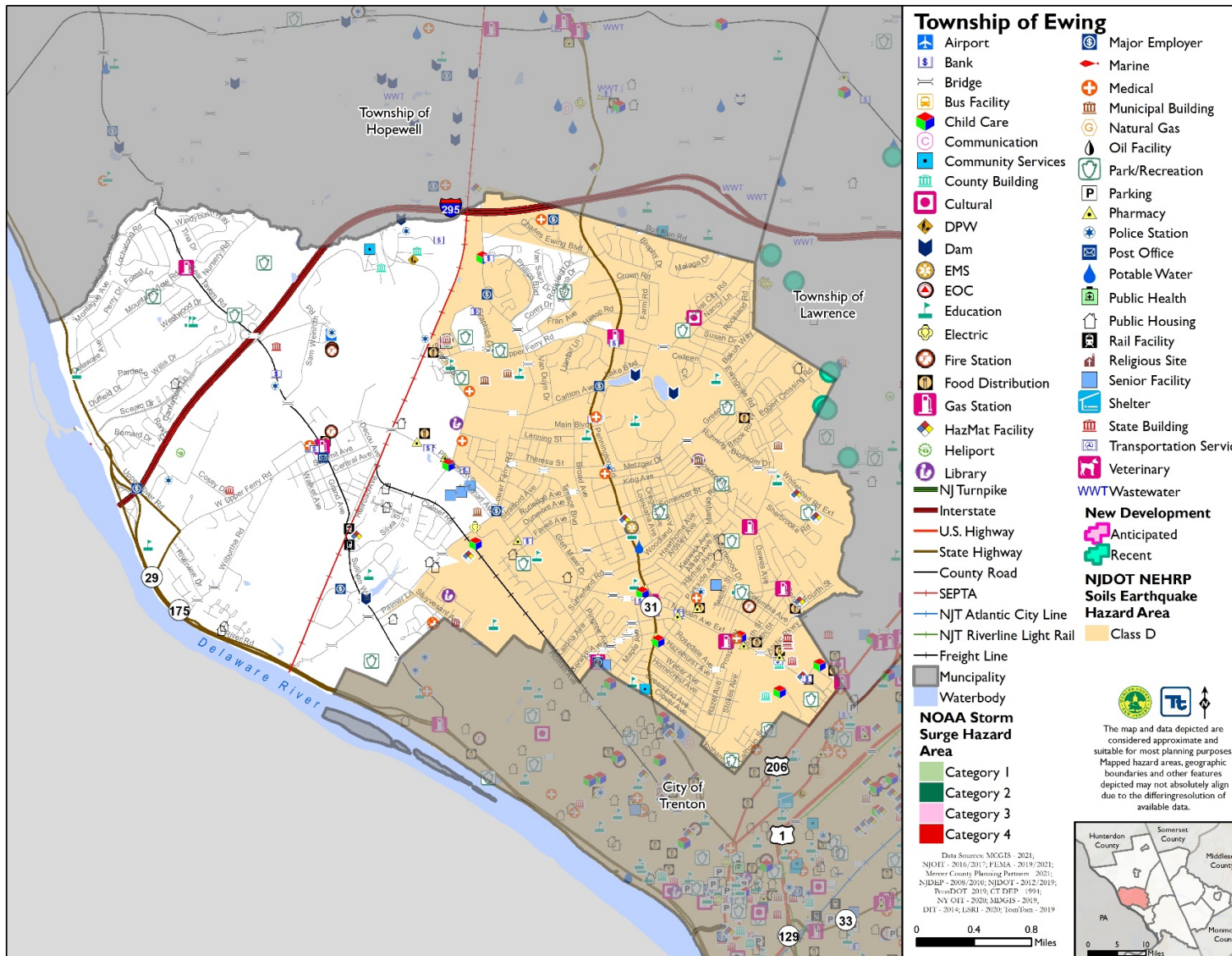




Figure 9.3-3. Township of Ewing Hazard Area Extent and Location Map 3

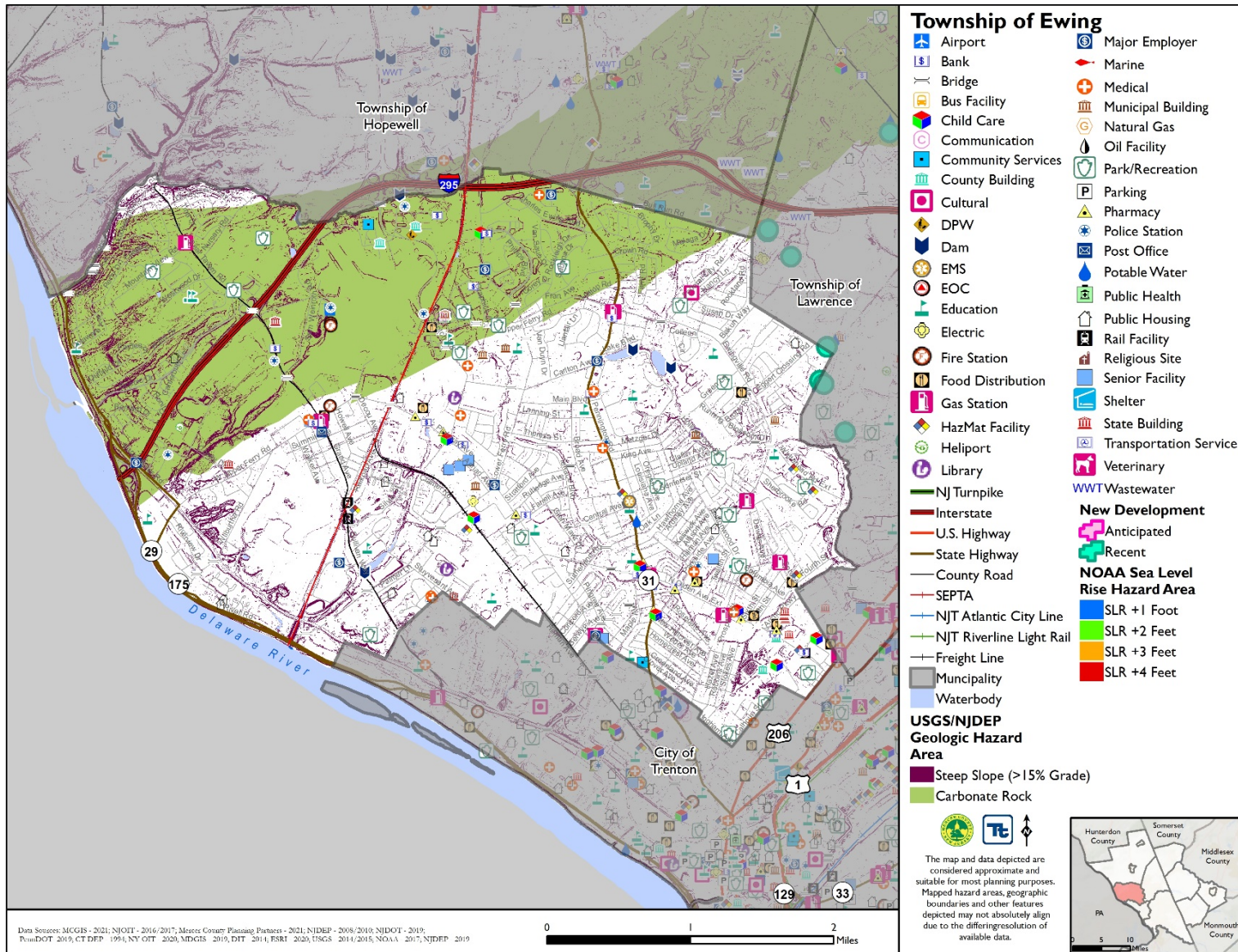
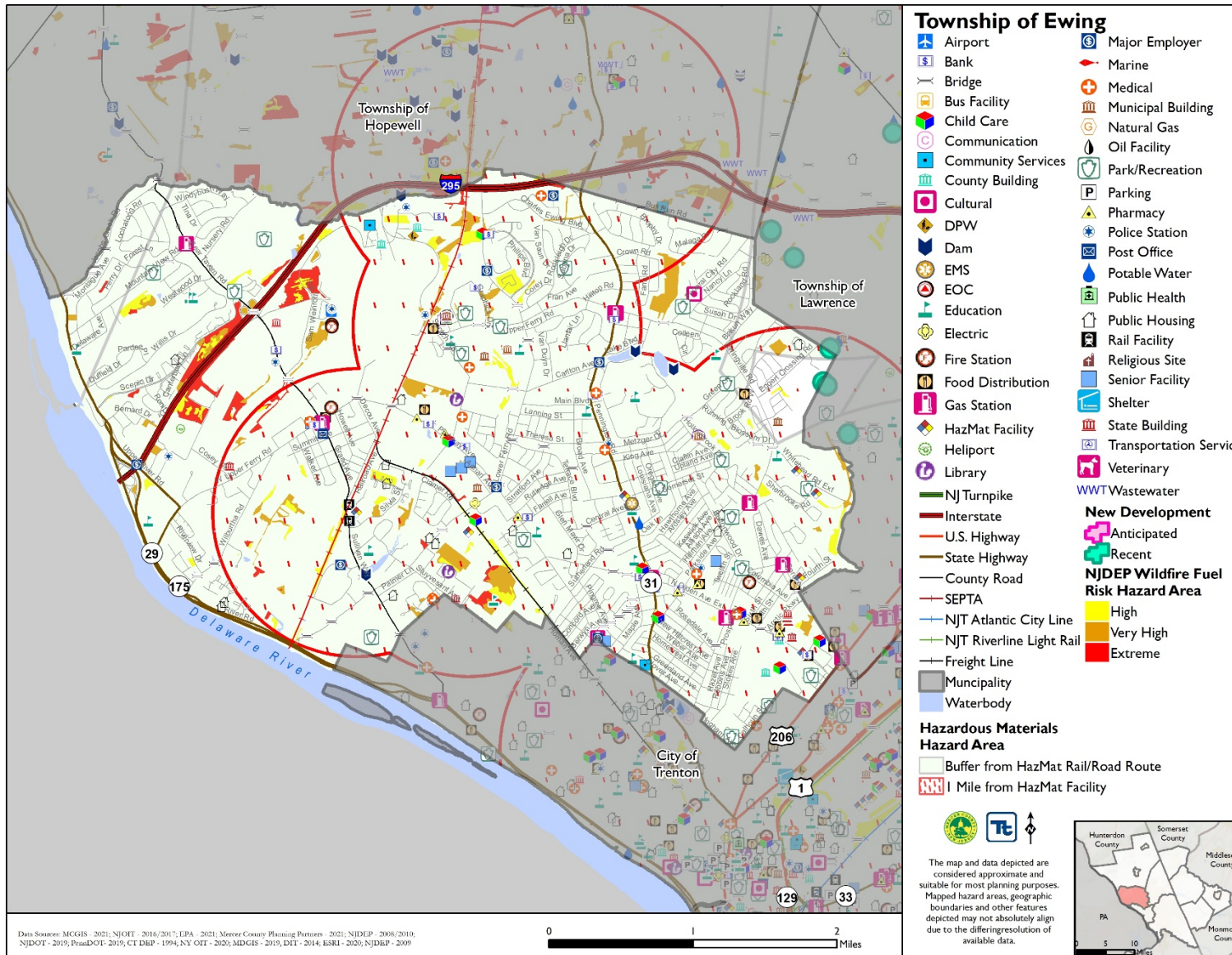




Figure 9.3-4. Township of Ewing Hazard Area Extent and Location Map 4





Hazard Event History

Mercer 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 Ewing’s history of federal declarations (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Mercer County. The table below provides details regarding municipal-specific loss and damages the County 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 9.3-11. Hazard Event History

Dates of Event	Event Type (Disaster Declaration if applicable)	County Designated?	Summary of Event	Municipal Summary of Damages and Losses
February 13-14, 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.	Many local governments across the area set up Code Blue shelters for the vulnerable population
January 22 – 24, 2016	Blizzard (DR-4264-NJ)	Yes	A low-pressure system moved up along the Carolina Coast intensifying into a major nor’easter, producing record snowfall in New Jersey on January 23. Wind gusts reached upwards of 60 mph and visibility was one-quarter mile or less throughout the region. Damages across the state were estimated at \$82.6 million.	Up to 24 inches of snow was reported in Mercer County.
March 7, 2018	Winter Storm	No	A low pressure system moved northeast across Delaware and New Jersey bringing a wintery snow/rain mix overnight on March 6. Across the state, snowfall totals ranged from 6 to 24 inches. Heavy, wet snow downed trees and limbs leaving 350,000 customers state-wide without power.	Up to 11.5 inches of snowfall was reported in Mercer County.
July, 2019	Straight Line Winds	No	Per NOAA, the Township experienced straight line winds which causes extensive damage to trees for approximately ½ mile with winds reaching approx. 60-80 mph per the NOAA representative whom responded	Loss of trees and power thru the center of Ewing Township focusing between Parkway Ave to Pennington Road to Buttonwood Drive.
August 4, 2020	Tropical Storm	N/A	Tropical Storm Isaias brought high winds, heavy rain, several tornadoes, and coastal flooding to the mid-Atlantic region, becoming the most impactful tropical cyclone to impact most of the region since Sandy in 2012.	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	Beginning on January 20, 2020, the pandemic resulting from the Coronavirus Disease (COVID-19) created conditions of sufficient severity and magnitude to warrant a disaster declaration in the State of New Jersey.	The coronavirus pandemic resulted in closures and masking and social distancing requirements.



Hazard Ranking and Vulnerabilities

The hazard profiles in Section 4.3 (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 Ewing’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 Mercer County as a whole. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Township of Ewing. The Township of Ewing reviewed the community’s 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 of Ewing indicated the following:

- The Township agreed with the calculated hazard rankings.

Table 9.3-12. Hazard Ranking Input

Dam Failure	Disease Outbreak	Drought	Earthquake	Flood	Geological Hazards	Hazardous Materials
Medium	High	Medium	Low	High	Low	High

Hurricane/ Tropical Storm	Infestation and Invasive Species	Nor’Easter	Severe Weather	Severe Winter Weather	Wildfire
High	High	Medium	High	High	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.

Table 9.3-13. Potential Flood Losses to Critical Facilities

Name	Type	Exposure	
		1% Event	0.2% Event
415.2 - LOWER FERRY RD CR 643 OVER GOLD RUN	Bridge	X	X
415.6 - PARKWAY AVE CR 634 OVER GOLD RUN	Bridge	X	X
441.4 - LOWER FERRY RD CR 643 OVER SHABAKUNK CRK W BR	Bridge	X	X
441.20 - CENTRAL AVE OVER SHABAKUNK CRK W BR	Bridge	X	X





Name	Type	Exposure	
		1% Event	0.2% Event
441.22 - N OLDEN AVE CR 622 OVER SHABAKUNK CRK W BR	Bridge	X	X
441.24 - PARKSIDE AVE CR 636 OVER SHABAKUNK CRK W BR	Bridge	X	X
441.32 - BRADWAY AVE OVER SHABAKUNK CRK W BR TRIB	Bridge	X	X
441.33 - STRATFORD AVE OVER SHABAKUNK CRK W BR	Bridge	X	X
441.2 - PROSPECT ST CR 627 OVER SHABAKUNK CRK W BR	Bridge	X	X
442.2 - GREEN LN OVER SHABAKUNK CRK	Bridge	X	X
442.4 - EWINGVILLE RD OVER SHABAKUNK CRK	Bridge	X	X
4-215.1 - BEAR TAVERN RD RT 579 OVER EWING CRK	Bridge	X	X
5-441.1 - SPRUCE ST CR 613 OVER SHABAKUNK CRK W BR	Bridge	X	X
442.1 - EWINGVILLE RD CR 636 OVER SHABAKUNK CRK	Bridge	X	X
441.19 - TRAIL (THURSTON AVE TO SUTHERLAND RD) OVER SHABAKUNK CRK W BR	Bridge	X	X
4-215.2 - NURSERY RD CR 647 OVER EWING CRK	Bridge	X	X
414.1 - WILBURTHA RD OVER DELAWARE RIV TRIB	Bridge	X	X
414.3 - WILBURTHA RD OVER DELAWARE RIV TRIB	Bridge	-	X
441.23 - N OLDEN AVE CR 622 OVER SHABAKUNK CRK W BR TRIB	Bridge	X	X
ALDI	Food Distribution	X	X
ONE STOP MINI MART	Food Distribution	X	X
BP	Gas Station	X	X
RIVERSIDE MEMORIAL CHAPEL	Religious	X	X
NJ DEP 35 ARCTIC	State Building	X	X
NJ DEP 45 ARCTIC	State Building	X	X
RHEIN CHEMIE CORP	Hazardous Material Facility	X	X
PARKWAY GARDENS APARTMENTS	Public Housing	X	X
RIVER EDGE APARTMENTS	Public Housing	X	X
HOLLOWBROOK COMMUNITY CENTER LIBRARY/EWING COMMUNITY CENTER	Library	X	X
HOLLOWBROOK COMMUNITY CENTER LIBRARY/EWING COMMUNITY CENTER	Municipal Building	X	X
CHASE BANK	Bank	X	X
FIRST BANK	Bank	X	X
PNC BANK	Bank	X	X



Name	Type	Exposure	
		1% Event	0.2% Event
WELLS FARGO BANK	Bank	X	X
SYLVA LAKE DAM	Dam	X	X
441.6 - CARLTON AVE OVER SHABAKUNK CRK W BR	Bridge	X	X
441.18 - TRAIL (RUTLEDGE AVE TO CHARLES ST) OVER SHABAKUNK CRK W BR	Bridge	X	X
441.21 - N OLDEN AVE CR 622 OVER SHABAKUNK CRK W BR	Bridge	X	X
4-215.4 - SCOTCH RD CR 611 OVER EWING CRK	Bridge	X	X
Walgreens Pharmacy	Pharmacy	X	X

Source: Mercer County 2021, FEMA 2016

Identified Issues

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

- Scotch Road at Railroad Bridge and Railroad Avenue at Sullivan Way have undersized stormwater components that contribute to flooding. Scotch Road connects to the hospital and Railroad Avenue connects to one of the fire companies. The flooding at these locations can result in road closures lasting 3-5 hours, limiting access and emergency response.
- Olden Avenue between Parkside and Prospect, Rosedale Street, Albamarle Street, Prospect Street, and Terrace Boulevard have been impacted by flooding in the past. Three existing detention basins in the area require upgrades.
- 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 52 repetitive loss properties and 8 severe repetitive loss properties.
- Five repetitive loss properties located on River Road are impacted by backflow of the stormwater system, resulting in flooding and continued risk of flood damages. The Township does not have jurisdiction over the stormwater system in this area as it is owned by the State.
- The water supply system requires update to prevent I & I and additional protection from damages.
- Additional public outreach is needed regarding flooding and flood preparedness actions that residents can take.
- Backup power sources are necessary to maintain critical services for critical facilities. The Ewing Fire Company at 1666 Pennington Road lacks a backup power source.
- The Township lacks a Continuity of Operations (COOP) Plan.
- The current flood damage prevention ordinance does not meet the state’s recommendation for a code-coordinated flood damage prevention ordinance.
- The Township lacks an adopted Disaster Debris Management Plan.
- The Township is developing a Climate Action/Resiliency Plan to address long term risks from climate change.
- Shabakunk Creek has degraded streambanks which require stabilization to prevent collapse. Collapse could result in blockages of the creek which would cause flooding. The Township previously stabilized sections of the creek 20 years ago. These areas remain stable. The work that is necessary today is in areas that were not previously stabilized.



- Areas of the water distribution system are aged and vulnerable to failure during extreme temperature events. In addition, many pipes are still lead lined and require replacement.
- Backup power sources are necessary to maintain critical services for critical facilities. The Community Center lacks a backup power source. The facility is used as a cooling and warming center and is a backup emergency shelter.

9.3.7 Mitigation Strategy and Prioritization

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

Past Mitigation Initiative Status

The following table indicates progress on the Township of Ewing'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 9.3-14. Status of Previous Mitigation Actions

2017 Action Number and Action Description		Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP?	
				Check if Yes	Enter 2021 HMP Action #
Ewing Twp-1 (new)	Utilize the Hazard Mitigation Plan (HMP) when updating the Comprehensive Master Plan; consider including hazard identification, hazard zones risk assessment information, and hazard mitigation goals as identified in the HMP. Further, the findings and recommendation of the HMP will be considered during any future site plan review processes.	Planning	Ongoing Capability	-	-
Ewing Twp-2 (new)	Develop a Continuity of Operations (COOP) Plan and integrate mitigation into the Plan.	OEM, DPW, County, Construction Office, Planning, Administration	No Progress	X	2021-Township of Ewing-006
Ewing Twp-3 (new)	Support the mitigation of vulnerable structures via retrofit (e.g. elevation, flood-proofing) or acquisition/relocation to protect structures from future damage, with repetitive loss and severe repetitive loss properties as a priority when applicable. Phase 1: Identify appropriate candidates and determine most cost-effective mitigation option. Phase 2: Work with the property owners to implement selected action based on available funding and local match availability.	Construction Department, Engineering via NFIP FPA with NJOEM, FEMA support	In Progress	X	2021-Township of Ewing-001
Ewing Twp-4 (old Ewing Township 1)	Installation of backflow preventers to protect 5 Repetitive Loss properties on River Road.	OEM, DPW, DEP, ELSA, Township Administration	No Progress	X	2021-Township of Ewing-002
Ewing Twp-5 (old Ewing Township 4)	Upgrade and protect water supply system. Including stormwater infiltration from Princeton Avenue to Pennington Road on Olden Avenue.	TWW, ELSA, DPW, Engineering	No Progress	X	2021-Township of Ewing-003
Ewing Twp-6	Implement web based education program about flooding preparedness.	OEM, IT	No Progress	X	2021-Township of Ewing-004





2017 Action Number and Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP?	
			Check if Yes	Enter 2021 HMP Action #
(old Ewing Township 5)				
Ewing Twp-7 (old Ewing Township 6)	Utilities upgrade to allow power grid separation ability to isolate individual facilities during flooding at River Road from Lower Ferry Road to West Upper Ferry. Township and PSE&G	Complete. PSEG has completed this action.	-	-

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Completed Mitigation Initiatives Not Identified in the Previous Mitigation Strategy

The Township of Ewing has identified the following mitigation projects/activities that have also been completed but were not identified in the previous mitigation strategy in the 2017 HMP:

- The Township relocated the Department of Public Works building from 4th Street to Scotch Road to reduce flood exposure.
- The Township installed backup power at Town Hall.

Proposed Hazard Mitigation Initiatives for the HMP Update

The Township of Ewing participated in a mitigation action workshop in May 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 9.3-15. Analysis of Mitigation Actions by Hazard and Category

Hazard	FEMA				CRS					
	LPR	SIP	NSP	EAP	PR	PP	PI	NR	SP	ES
Dam Failure	X			X	X		X			X
Disease Outbreak	X			X	X		X			X
Drought	X	X		X	X	X	X		X	X
Earthquake	X			X	X		X			X
Flood	X	X	X	X	X	X	X	X	X	X
Geological Hazards	X		X	X	X		X	X		X
Hazmat	X			X	X	X	X			X
Hurricane	X	X		X	X		X			X
Infestation and Invasive Species	X			X	X		X			X
Nor’Easter	X	X		X	X		X			X
Severe Weather	X	X		X	X	X	X		X	X
Severe Winter Weather	X	X		X	X	X	X			X
Wildfire	X			X	X		X			X

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

The table below summarizes the comprehensive range of specific mitigation initiatives the Township of Ewing 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 9.1-17 provides a summary of the prioritization of all proposed mitigation initiatives for the HMP update.



Table 9.3-16. 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
2021-Township of Ewing-001	Culvert Upgrades	<p>Problem: Scotch Road at Railroad Bridge and Railroad Avenue at Sullivan Way have undersized stormwater components that contribute to flooding. Scotch Road connects to the hospital and Railroad Avenue connects to one of the fire companies. The flooding at these locations can result in road closures lasting 3-5 hours, limiting access and emergency response.</p> <p>Solution: The Township Public Works Department will determine the proper size needed to adequately service Scotch Road at Railroad Bridge and Railroad Avenue at Sullivan and will then replace and upsize the components.</p>	Existing	Flood, Severe Weather	1, 2	Public Works	HMGP, BRIC, municipal budget	Reduction in flood risk	High	Within 5 years	High	SIP	SP
2021-Township of Ewing-002	Stormwater Upgrades	<p>Problem: Olden Avenue between Parkside and Prospect, Rosedale Street, Albamarle Street, Prospect Street, and Terrace Boulevard have been impacted by flooding in the past. Three existing detention basins in the area require upgrades.</p> <p>Solution: The Township will explore options to increase the capacity and stormwater services provided by three existing detention basins located at:</p> <ul style="list-style-type: none"> • Headwaters of Shabakunk Creek • Olden Avenue • Old Ewing Golf Course at Prospect Street 	Existing	Flood	1, 2	Engineer, DPW	HMGP, BRIC, FMA, Township funds	Increased stormwater storage capacity, increased use of natural systems	High	Within 5 years	High	SIP, NSP	SP, NR





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
		Improvements include deepening and widening detention basins to increase volume and introducing green infrastructure such as wetlands to aid in retention and absorption of stormwater.											
2021-Township of Ewing-003	Repetitive Loss Mitigation	<p>Problem: 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 52 repetitive loss properties and 8 severe repetitive loss properties. Low lying area along Olden Avenue from Sutherland to Prospect Street and along River Road and the Delaware River are flood-prone.</p> <p>Solution: Conduct outreach to 60 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	Flood, Severe Weather	1, 2	Planning, FPA	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.	\$6 Million	3 years	High	SIP	PP
2021-Township of Ewing-004	Backflow Preventers	<p>Problem: Five repetitive loss properties located on River Road are impacted by backflow of the stormwater system, resulting in flooding and continued risk of flood damages. The Township does not have jurisdiction over the stormwater</p>	Existing	Flood, Severe Weather	1, 2	State, Administration / Engineering	State	Reduction in flooding	Medium	Within 5 years	High	SIP	SP





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
		<p>system in this area as it is owned by the State.</p> <p>Solution: The Township will coordinate with the State to install backflow preventers on Route 29 to protect five Repetitive Loss properties on River Road.</p>											
2021-Township of Ewing-005	Upgrade and Protect Water Supply System	<p>Problem: The water supply system requires update to prevent I & I and additional protection from damages.</p> <p>Solution: Ewing Lawrence Sewer Authority (ELSA) will upgrade the water supply system including addressing stormwater infiltration from Princeton Avenue to Pennington Road on Olden Avenue.</p>	Existing	Drought, Severe Weather, Flood	2, 6	ELSA	ELSA, BRIC,	Reduction in flood risk	High	Within 5 years	High	SIP	SP, PP
2021-Township of Ewing-006	Web Based Education for Flood Preparedness	<p>Problem: Additional public outreach is needed regarding flooding and flood preparedness actions that residents can take.</p> <p>Solution: OEM will implement web-based education program about flooding preparedness.</p>	N/A	Flood	3	OEM	Township budget	Increased preparedness for flooding	Staff time	1 year	High	EAP	PI
2021-Township of Ewing-007	Backup Power for Fire Company	<p>Problem: Backup power sources are necessary to maintain critical services for critical facilities. The Ewing Fire Company at 1666 Pennington Road lacks a backup power source.</p> <p>Solution: The Engineer will research what size generator is needed to power the facility. The Township will then purchase and install the selected generators and necessary electrical components to supply backup power to the facility.</p>	Existing	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter	1, 2, 6	Engineer, Public Works, Fire Department	Municipal bond	Ensures continuity of operations of Public Works Maintenance Building	High	Within 1 year	High	SIP	ES





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
2021-Township of Ewing-008	Continuity of Operations Plan	Problem: The Township lacks a Continuity of Operations (COOP) Plan. Solution: Develop a Continuity of Operations Plan and integrate mitigation into the Plan. The Plan will include Covid and other disease outbreak response.	N/A	All Hazards	6	OEM, County, Township	Township budget	Increased emergency response capabilities, continuity of operations	Staff time	1 year	High	LPR	ES
2021-Township of Ewing-009	Flood Damage Prevention Ordinance Update	Problem: The current flood damage prevention ordinance does not meet the state's recommendation for a code-coordinated flood damage prevention ordinance. Solution: 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.	New	Flood	2	Floodplain Administrator, Administration	Township budget	Meet state and FEMA standards for flood damage prevention, reduce flood risk on new development	Staff time	6 months	Medium	LPR	PR
2021-Township of Ewing-010	Disaster Debris Management Plan	Problem: The Township lacks an adopted Disaster Debris Management Plan. Solution: The Township will complete and adopt the in-progress Disaster Debris Management Plan.	Existing	All Hazards	5, 6	Public Works, OEM	Township budget	Increased planning for post-disaster response and cleanup.	Staff time	6 months	High	LPR	ES





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
2021-Township of Ewing-011	Climate Action/Resiliency Plan	<p>Problem: The Township is developing a Climate Action/Resiliency Plan to address long term risks from climate change.</p> <p>Solution: The Township will complete and adopt the Climate Action/Resiliency Plan.</p>	New & Existing	All Hazards	1, 2	Administration	Township budget	Long term plan in place to reduce risk.	Staff time	1 year	High	LPR	PR
2021-Township of Ewing-012	Streambank Stabilization	<p>Problem: Shabakunk Creek has degraded streambanks which require stabilization to prevent collapse. Collapse could result in blockages of the creek which would cause flooding. The Township previously stabilized sections of the creek 20 years ago. These areas remain stable. The work that is necessary today is in areas that were not previously stabilized.</p> <p>Solution: The Township will survey the streambanks of Shabakunk Creek to determine areas in need of stabilization. The Township will then conduct an engineering study to determine the best methods of stabilization to prevent streambank collapse and improve streamflow.</p>	N/A	Flood, Geologic Hazards	1, 2	DPW, Engineer	HMGP, BRIC, Township budget	Streambank failure and flood risk reduced	High	Within 5 years	High	NSP	NR
2021-Township of Ewing-013	Water System Hardening and Upgrade	<p>Problem: Areas of the water distribution system are aged and vulnerable to failure during extreme temperature events. In addition, many pipes are still lead lined and require replacement.</p> <p>Solution: The Township will replace outdated water lines to prevent failure and contamination of the water supply.</p>	Existing	Severe Weather, Severe Winter Weather, Hazardous Materials	1, 2	DPW	Township budget	Water service maintained	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
2021-Township of Ewing-014	Backup Power for Community Center	<p>Problem: Backup power sources are necessary to maintain critical services for critical facilities. The Community Center lacks a backup power source. The facility is used as a cooling and warming center and is a backup emergency shelter.</p> <p>Solution: The Engineer will research what size generator is needed to power the Community Center. The Township will then purchase and install the selected generator and necessary electrical components to supply backup power to the Community Center.</p>	Existing	Severe Storm, Severe Winter Storm, Hurricane, Nor'Easter	1, 2, 6	Engineer, Public Works	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget	Ensures continuity of operations of Community Center	High	Within 5 years	High	SIP	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.

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Table 9.3-17. 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
2021- Township of Ewing-001	Culvert Upgrades	1	1	0	1	1	1	0	1	1	0	1	0	1	1	10	High
2021-Township of Ewing-002	Stormwater Upgrades	1	1	0	1	1	1	0	1	1	0	1	0	1	1	10	High
2021-Township of Ewing-003	Repetitive Loss Mitigation	1	1	1	1	1	1	0	1	0	0	1	0	1	1	10	High
2021-Township of Ewing-004	Backflow Preventers	0	1	1	1	1	0	0	1	1	1	0	0	1	1	9	High
2021-Township of Ewing-005	Upgrade and Protect Water Supply System	0	1	1	1	1	0	1	1	1	1	1	0	1	1	11	High
2021-Township of Ewing-006	Web Based Education for Flood Preparedness	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2021-Township of Ewing-007	Backup Power for Fire Company	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2021-Township of Ewing-008	Continuity of Operations Plan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2021- Township of Ewing-009	Flood Damage Prevention Ordinance Update	0	1	1	1	1	1	1	1	1	1	0	1	1	1	12	High
2021- Township of Ewing-010	Disaster Debris Management Plan	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High
2021- Township of Ewing-011	Climate Action/Resiliency Plan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2021- Township of Ewing-012	Streambank Stabilization	0	1	1	1	1	0	0	1	1	1	1	0	1	1	10	High
2021- Township of Ewing-013	Water System Hardening and Upgrade	1	1	1	1	1	1	1	1	1	1	1	0	1	1	13	High
2021- Township of Ewing-014	Backup Power for Community Center	1	1	1	1	1	0	1	1	1	1	1	0	1	1	12	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.*

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9.3.8 Action Worksheets

The following action worksheets have been developed by the Township of Ewing 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			
Project Name:	Stormwater Upgrades		
Project Number:	2021- Township of Ewing-001		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	Scotch Road at Railroad Bridge and Railroad Avenue at Sullivan Way have undersized stormwater components that contribute to flooding. Scotch Road connects to the hospital and Railroad Avenue connects to one of the fire companies. The flooding at these locations can result in road closures lasting 3-5 hours, limiting access and emergency response.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township Public Works Department will determine the proper size needed to adequately service Scotch Road at Railroad Bridge and Railroad Avenue at Sullivan and will then replace and upsize the components.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	TBD by size selected	Estimated Benefits (losses avoided):	Reduction in flood risk
Useful Life:	30 years	Goals Met:	1, 2
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Projects
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	6 months	Potential Funding Sources:	HMGP, BRIC, municipal budget
Responsible Organization:	Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation planning
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate roadways	\$500,000	Costly and may not solve problem
	Relocate roadways	N/A	Not possible
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Stormwater Upgrades	
Project Number:	2021- Township of Ewing-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects life from flooding and maintains emergency access
Property Protection	1	Protects culvert from flood damage
Cost-Effectiveness	0	
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	Project would reduce flooding impacts
Administrative	0	
Multi-Hazard	1	Flood, Severe Weather
Timeline	0	Within 5 years
Agency Champion	1	DPW
Other Community Objectives	1	
Total	9	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Stormwater Upgrades		
Project Number:	2021-Township of Ewing-002		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Summer Weather		
Description of the Problem:	Olden Avenue between Parkside and Prospect, Rosedale Street, Albamarle Street, Prospect Street, and Terrace Boulevard have been impacted by flooding in the past. Three existing detention basins in the area require upgrades.		
Action or Project Intended for Implementation			
Description of the Solution:	<p>The Township will explore options to increase the capacity and stormwater services provided by three existing detention basins located at:</p> <ul style="list-style-type: none"> • Headwaters of Shabakunk Creek • Olden Avenue • Old Ewing Golf Course at Prospect Street <p>Improvements include deepening and widening detention basins to increase volume and introducing green infrastructure such as wetlands to aid in retention and absorption of stormwater.</p>		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	TBD by developed actions	Estimated Benefits (losses avoided):	Increased stormwater storage capacity, increased use of natural systems
Useful Life:	30 years	Goals Met:	1, 2
Estimated Cost:	TBD by developed actions. Anticipated High.	Mitigation Action Type:	Structure and Infrastructure Projects, Natural Systems Protection
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	6 months	Potential Funding Sources:	HMGP, BRIC, FMA, Township funds
Responsible Organization:	Engineering, DPW	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation planning, Stormwater management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate homes in the area	Very High	Costly and would not solve roadway flooding
	Buyout homes in the area	Very High	Costly and would not solve roadway flooding
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Stormwater Upgrades	
Project Number:	2021-Township of Ewing-002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects life from flooding and maintains emergency access.
Property Protection	1	Protects buildings from flood damage
Cost-Effectiveness	0	
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	Project would reduce flooding impacts
Administrative	0	
Multi-Hazard	1	Flood, Severe Summer Weather
Timeline	0	Within 5 years
Agency Champion	1	Engineering, DPW
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Repetitive Loss Mitigation		
Project Number:	2021-Township of Ewing-003		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	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 52 repetitive loss properties and 8 severe repetitive loss properties. Low lying area along Olden Avenue from Sutherland to Prospect Street and along River Road and the Delaware River are flood-prone.		
Action or Project Intended for Implementation			
Description of the Solution:	Conduct outreach to 60 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).		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	1% annual chance flood event + freeboard (<i>in accordance with flood ordinance</i>)	Estimated Benefits (losses avoided):	Eliminates flood damage to homes and residents, creates open space for the municipality increasing flood storage.
Useful Life:	Acquisition: Lifetime Elevation: 30 years (residential)	Goals Met:	1, 2
Estimated Cost:	\$6 Million	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	6-12 months
Estimated Time Required for Project Implementation:	Three years	Potential Funding Sources:	FEMA HMGP and FMA, local cost share by residents
Responsible Organization:	NFIP Floodplain Administrator, supported by homeowners	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	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)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Repetitive Loss Mitigation	
Project Number:	2021-Township of Ewing-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	Flood, Severe Weather
Timeline	0	
Agency Champion	1	NFIP Floodplain Administrator, supported by homeowners
Other Community Objectives	1	
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Streambank Stabilization		
Project Number:	2021- Township of Ewing-012		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Geologic Hazards		
Description of the Problem:	Shabakunk Creek has degraded streambanks which require stabilization to prevent collapse. Collapse could result in blockages of the creek which would cause flooding. The Township previously stabilized sections of the creek 20 years ago. These areas remain stable. The work that is necessary today is in areas that were not previously stabilized.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township will survey the streambanks of Shabakunk Creek to determine areas in need of stabilization. The Township will then conduct an engineering study to determine the best methods of stabilization to prevent streambank collapse and improve streamflow.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Streambank failure and flood risk reduced
Useful Life:	20 years	Goals Met:	1, 2
Estimated Cost:	High	Mitigation Action Type:	Natural Systems Protection
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	HMGP, BRIC, Township budget
Responsible Organization:	DPW, Engineer	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Retreat from areas near stream	High	Costly, unpopular
	Levees along stream	High	Not feasible/environmentally damaging, costly
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Streambank Stabilization	
Project Number:	2021- Township of Ewing-012	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	
Property Protection	1	Project will protect properties from potential flood damage
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	0	Permitting likely required
Fiscal	0	Project requires funding support
Environmental	1	Maintains Shabakunk Creek
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Geologic Hazards
Timeline	0	
Agency Champion	1	Administration
Other Community Objectives	1	Restore natural floodplain function
Total	10	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Backup Power for Community Center		
Project Number:	2021- Township of Ewing-014		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Storm, Severe Winter Storm, Hurricane, Nor'Easter		
Description of the Problem:	Backup power sources are necessary to maintain critical services for critical facilities. The Community Center lacks a backup power source. The facility is used as a cooling and warming center and is a backup emergency shelter.		
Action or Project Intended for Implementation			
Description of the Solution:	The Engineer will research what size generator is needed to power the Community Center. The Township will then purchase and install the selected generator and necessary electrical components to supply backup power to the Community Center.		
Is this project related to a Critical Facility?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Level of Protection:	N/A	Estimated Benefits (losses avoided):	Ensures continuity of operations of Community Center
Useful Life:	20 years	Goals Met:	1, 2, 6
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Projects (SIP)
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget
Responsible Organization:	Engineer, Public Works	Local Planning Mechanisms to be Used in Implementation if any:	Hazard Mitigation, Emergency Management
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Problem continues.
	Install solar panels	\$100,000	Weather dependent; need large amount of space for installation; expensive if repairs needed
	Install wind turbine	\$100,000	Weather dependent; poses a threat to wildlife; expensive repairs if needed
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Backup Power for Community Center	
Project Number:	2021- Township of Ewing-014	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect critical services of the Community Center
Property Protection	1	Project will protect building from power loss.
Cost-Effectiveness	1	
Technical	1	
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	Severe Storm, Severe Winter Storm, Hurricane, Nor'Easter
Timeline	0	Within 5 years
Agency Champion	1	Engineer, Public Works
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	