



9.9 TOWNSHIP OF GREEN

This section presents the jurisdictional annex for the Township of Green. The annex includes a general overview of the Township of Green; an assessment of the Township of Green’s risk, vulnerability, and mitigation capabilities; and a prioritized action plan to implement prior to a disaster to reduce future losses and achieve greater resilience to natural hazards.

9.9.1 Hazard Mitigation Planning Team

The Township of Green followed the planning process described in Section 2 (Planning Process). This annex was developed over the course of several months with input from many jurisdiction representatives. 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 who participated and in what capacity. 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 9.9-1. Hazard Mitigation Planning Team

Primary Point of Contact		Alternate Point of Contact
Name / Title: Mark Zschack, Municipal Clerk/Administrator Address: 150 Kennedy Road, P.O. Box 65, Tranquility, NJ 07879 Phone Number: (908) 852-9333 x18 Email: clerkadmin@greentwp.com		Name / Title: Margaret “Peg” Phillips, Mayor Address: 150 Kennedy Road, P.O. Box 65, Tranquility, NJ 07879 Phone Number: (908) 852-9333 Email: pphillips@greentwp.com
NFIP Floodplain Administrator		
Name / Title: Cory Stoner, Township Engineer Address: 17 Plains Road, Augusta, NJ 07822 Phone Number: 973-948-6463 Email: cstoner@hpellow.com		
Name	Title	Method of Participation
Mark Zschack	Municipal Clerk/Administrator	Primary point of contact, provided data and information, contributed to mitigation strategy; attended the annex training and risk assessment meeting
Margaret “Peg” Phillips	Mayor	Alternate point of contact
Cory Stoner	Township Engineer	NFIP floodplain administrator

9.9.2 Jurisdiction Profile

Green Township is located in southwestern Sussex County and is bordered to the north by Fredon and Andover Townships, to the south and west by Warren County and to the east by Byram Township. The following unincorporated communities are located within the Township: Huntsburg, Greendell, Tranquility, and Huntsville. The Pequest River, Bear Brook, and Trout Brook are named streams that flow through the Township. Lake Tranquility, Buckmire Pond, and Turtle Pond are the larger named lakes located in the Township.



According to the U.S. Census, the 2010 population for the Township of Green was 3,601. The estimated 2018 population was 3,495, a 2.9 percent decrease from the 2010 Census. Data from the 2018 U.S. Census American Community Survey indicate that 2.4 percent of the population is 5 years of age or younger and 15.2 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.

9.9.3 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. Table 9.8-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. The figures at the end of this annex illustrate the geographically-delineated hazard areas and the location of potential new development.

Table 9.9-2. Recent and Expected Future Development

Type of Development	2015		2016		2017		2018		2019	
Number of Building Permits for New Construction Issued Since the Previous HMP										
	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA	Total	Within SFHA
Single and Two-Family Units	6	2	2	0	4	0	2	2	0	0
Multi-Family	0	0	0	0	0	0	0	0	0	0
Other (commercial, mixed-use, etc.)	0	0	0	0	2	0	1	0	2	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										
Crossed Keys	Commercial		1		289 Pequest Road/Block 22 Lots 2 & 2.02		Nuclear Incident Hazard Area, Carbonate Soil, Hazardous Material Incident Hazard Area		Construction in Progress	
Forest Flats	Industrial		1		Airport Road/ Block 31 Lot 1.05		Nuclear Incident Hazard Area, Carbonate Soil, Wildfire, Hazardous Material Incident Hazard Area		Construction in Progress	
Ridge Rock	Industrial		1		Airport Road/ Block 31 Lot 1.09		Nuclear Incident Hazard Area, Railway Incident Hazard Area, Hazardous Material Hazard Area, Carbonate Soil		Construction in Progress	



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
Airside	Industrial	1	246 Brighton Road/ Block 26 Lot 4	Nuclear Incident Hazard Area, Carbonate Soil, Wildfire, Railway Incident Hazard Area	Construction in Progress
Tranquility Farms	Commercial	2	47 Decker Pond Road/ Block 113 Lot 3	Nuclear Incident Hazard Area, Carbonate Soil	Completed
Indoor Riding Ring	Commercial	1	81 Henry Road/ Block 9 Lot 4.01	Railway Incident Hazard Area	Completed
Gas Main	Infrastructure	N/A	Whitehall Road	Nuclear Incident Hazard Area, Railway Incident Hazard Area	Construction in Progress
Emerald Glen	Industrial	1	Airport Road/ Block 31 Lot 1.07	Nuclear Incident Hazard Area, Carbonate Soil, Wildfire, Hazardous Material Incident Hazard Area	
Known or Anticipated Major Development and Infrastructure in the Next Five (5) Years					
Cedar Peak	Industrial	N/A	Airport Road/ Block 31 Lot 1.06	Nuclear Incident Hazard Area, Carbonate Soil, Wildfire, Hazardous Material Incident Hazard Area	Anticipated
Pine Summit	Industrial	N/A	Airport Road/ Block 31 Lot 1.04	Nuclear Incident Hazard Area, Railway Incident Hazard Area, Hazardous Material Hazard Area, Carbonate Soil	Anticipated
Overland Traverse	Industrial	N/A	Airport Road/ Block 31 Lot 1.03	Nuclear Incident Hazard Area, Railway Incident Hazard Area, Hazardous Material Hazard Area, Carbonate Soil	Anticipated
Ground Solar Array	Infrastructure	N/A	93 Airport Road/ Block 19 Lot 15	Nuclear Incident Hazard Area, Railway Incident Hazard Area, Hazardous Material Hazard Area, Carbonate Soil	Anticipated

* Only location-specific hazard zones or vulnerabilities identified.
SFHA = Special Flood Hazard Area



9.9.4 Capability Assessment

Section 5 (Capability Assessment) describes the components included in the capability assessment and their significance for hazard mitigation planning. The Township of Green performed an inventory and analysis of existing capabilities, plans, programs, and policies that enhance its ability to implement mitigation strategies. This section summarizes the following findings of the assessment for this jurisdiction:

- An assessment of legal and regulatory capabilities
- Development and permitting capabilities
- An assessment of fiscal capabilities
- An assessment of education and outreach capabilities
- Information on NFIP compliance
- Classification under various community mitigation programs
- The community’s adaptive capacity for the impacts of climate change

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, planning/policy documents were reviewed, and each jurisdiction was surveyed to obtain a better understanding of their progress in plan integration. Areas with current mitigation integration are summarized below. The Township of Green identified specific integration activities that will be incorporated into municipal procedures; these actions are included in the updated mitigation strategy.

PLANNING, LEGAL AND REGULATORY CAPABILITY

The table below summarizes the legal and regulatory tools that are available to the Township of Green and where hazard mitigation has been integrated.

Table 9.9-3. Planning, Legal and Regulatory Capability

	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of the HMP been integrated into your codes/ordinances/plans?	
				If yes- how? Describe in comments.	If no - add Mitigation Action #, if applicable.
Codes, Ordinances, & Requirements					
Building Code	Yes	State & Local	Yes	Yes	-
<i>Comment:</i>					
<ul style="list-style-type: none"> • State mandated on local level under NJAC 5:23-3.14. International Building Code – New Jersey Edition, 2018, NJAC 5:24-3.14 Adopted 9/3/2019 • The Zoning Official is responsible for this code in compliance with State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.). 					
Zoning Code	Yes	Local	Yes – if municipality has a Planning Board	Yes	-
<i>Comment:</i>					
<ul style="list-style-type: none"> • State permissive on local level. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976, 40-55D-62: 49. Power to zone, requires all jurisdictions to have current zoning and other land development ordinances after the planning board has adopted the land use element and master plan. • The Zoning Official is responsible for this code in compliance with Chapter 30, Article XII. 					
Subdivisions	Yes	Local	Yes – if municipality has a	Yes	-



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of the HMP been integrated into your codes/ordinances/plans?	
				If yes- how? Describe in comments.	If no - add Mitigation Action #, if applicable.
			Planning Board		
Comment:					
<ul style="list-style-type: none"> P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval a. The governing body may by ordinance require approval of subdivision plats by resolution of the planning board as a condition for the filing of such plats with the county recording officer and approval of site plans by resolution of the planning board as a condition for the issuance of a permit for any development, except that subdivision or individual lot applications for detached one or two dwelling-unit buildings shall be exempt from such site plan review and approval; provided that the resolution of the board of adjustment shall substitute for that of the planning board whenever the board of adjustment has jurisdiction over a subdivision or site plan pursuant to subsection 63b. of this act . Dictated by the Municipal Land Use Law. NJ Statute 40:27-6.2 - the board of commissioners of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. The Zoning Official is responsible for this ordinance in compliance with Chapter 30, Article IX. 					
Stormwater Management	Yes	County & Local	Yes	Yes	-
Comment:					
<ul style="list-style-type: none"> See Title 7 of the NJ Administrative Code, N.J.A.C. 7:8 The Township Committee is responsible for this ordinance in compliance with N.J.A.C. 5:21 – Section 30-17.1A. 					
Post-Disaster Recovery	No	-	No	-	-
Comment:					
Real Estate Disclosure	No	State, Division of Consumer Affairs	Yes	No	-
Comment: N.J.A.C. 13:45A-29.1 - 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	No	-	Yes – if municipality has a Planning Board	No	-
Comment:					
<ul style="list-style-type: none"> State Mandated on a municipal level. See Zoning Ordinance; Also - Plan Endorsement Process via the State Development & Redevelopment Plan provides for the delineation of Growth Areas and Environs; Use of the endorsed plans in the implementation of state environmental regulations makes the Plan Endorsement process a growth management strategy. 					
Site Plan Review	Yes	Local	Yes – if municipality has a Planning Board	Yes	-
Comment:					
<ul style="list-style-type: none"> Dictated by the Municipal Land Use Law which sets forth minimum requirements for plans, etc., timeframes for development review. NJ Statute 40:27-6.2: The board of commissioners of any county having a county planning board shall provide for the review of all subdivisions of land within the county by said county planning board and for the approval of those subdivisions affecting county road or drainage facilities as set forth and limited hereinafter in this section. 40:27-6.10 In order that county planning boards shall have a complete file of the planning and zoning ordinances of all municipalities in the county, each municipal clerk shall file with the county planning board a copy of the planning and zoning ordinances of the municipality in effect on the effective date of this act and shall notify the county planning board of the introduction of any revision or amendment of such an ordinance which affects lands adjoining county roads or other county lands, or lands lying within 200 feet of a municipal boundary, or proposed facilities or public lands shown on the county master plan or official county map. Such notice shall be given to the county planning board at least 10 days prior to the public hearing thereon by personal delivery or by certified mail of a copy of the official notice of the public hearing together with a copy of the proposed ordinance. The Planning Board is responsible for these requirements in compliance with Chapter 30, Article IX. 					
Environmental Protection	No	-	No	-	-
Comment:					
Flood Damage Prevention	Yes	Federal, State & Local	Yes	Yes	2021-Green-011



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of the HMP been integrated into your codes/ordinances/plans?	
				If yes- how? Describe in comments.	If no - add Mitigation Action #, if applicable.
<p>Comment:</p> <ul style="list-style-type: none"> The NJ State Law Flood Area Control Act (N.J.S.A. 58:16A-52) and the National Flood Control Act of 1968 (NFIP) are state and federal acts to support minimization of flood losses. They do not require local adoption but as enforced by the NJDEP, the floodplain ordinances of each municipality must be reviewed for compliance with these regulations. In addition, participation in the NFIP requires a floodplain ordinance. Regulations for the Flood Control Hazards Act were adopted in 2007 and amended effective June 20, 2016. The Zoning Official is responsible for this ordinance in compliance with Chapter 25. 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, bridges located in areas of special flood hazard; 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; 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. The ordinance requires update to include the state mandated freeboard requirement. 					
Wellhead Protection	No	-	No	-	-
<p>Comment:</p>					
Emergency Management	No	-	No	-	-
<p>Comment:</p>					
Climate Change	No	-	No	-	-
<p>Comment:</p>					
Disaster Recovery Ordinance	No	-	No	-	-
<p>Comment:</p>					
Disaster Reconstruction Ordinance	No	-	No	-	-
<p>Comment:</p>					
Other [Special Purpose Ordinances (i.e., sensitive areas, steep slope)]	Yes	County & Local	No	Yes	-
<p>Comment: The Township Committee and Engineering Department is responsible for these ordinances in compliance with Soil and Soil Removal Chapter 26 – purpose to control soil erosion and sediment damages and related environmental damage by requiring adequate provisions for surface water retention and drainage and for the protection of exposed soil surfaces in order to promote the safety, public health, convenience and general welfare of the community.</p>					
<p>Planning Documents</p>					
Comprehensive / Master Plan	Yes	Local	Yes	Yes	-
<p>Comment:</p> <ul style="list-style-type: none"> 2018 Revised NJ Statute 40:27-2; the county planning board shall make and adopt a master plan for the physical development of the county. The master plan of a county, with the accompanying maps, plats, charts, and descriptive and explanatory matter, shall show the county planning board's recommendations for the development of the territory covered by the plan, and may include, among other things, the general location, character, and extent of streets or roads, viaducts, bridges, waterway and waterfront developments, parkways, playgrounds, forests, reservations, parks, airports, and other public ways, grounds, places and spaces; the general location and extent of forests, agricultural areas, and open-development areas for purposes of conservation, food and water supply, sanitary and drainage facilities, or the protection of urban development, and such other features as may be important to the development of the county. The county planning board shall encourage the co-operation of the local municipalities within the county in any matters whatsoever which may concern the integrity of the county master plan and to advise the board of chosen commissioners with respect to the formulation of development programs and budgets for capital expenditures. Per State of NJ Municipal Land Use Law (MLUL) L. 1975, s. 2, eff Aug 1, 1976 40:55D-28 provides the required components of a municipal Master Plan and requires that each municipality prepare a master plan and update it every 6 years. Further, all zoning ordinances must be consistent with the Master Plan or will not be benefitted from a presumption of validity. 					



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of the HMP been integrated into your codes/ordinances/plans?	
				If yes- how? Describe in comments.	If no - add Mitigation Action #, if applicable.
<ul style="list-style-type: none"> The Planning Board is responsible for this plan in compliance with Master Plan Reexamination Report, Green Township, September 2008. 					
Capital Improvement Plan	No	-	No	-	-
<i>Comment:</i>					
Disaster Debris Management Plan	No	-	No	-	2021-Green-007
<i>Comment:</i>					
Floodplain or Watershed Plan	No	-	No	-	-
<i>Comment:</i>					
Stormwater Management Plan	Yes	Local	Yes	Yes	-
<i>Comment:</i> <ul style="list-style-type: none"> The Stormwater Management rules (N.J.A.C. 7:8) rules were published in the February 2, 2004 NJ Register. These rules set forth the required components of regional and municipal stormwater management plans and establish the stormwater management design and performance standards for new (proposed) development. The design and performance standards for new development include groundwater recharge, runoff quantity controls, and runoff quality controls. The rules emphasize, as a primary consideration, the use of nonstructural stormwater management techniques including minimizing disturbance, minimizing impervious surfaces, minimizing the use of stormwater pipes, preserving natural drainage features, etc. The rules also set forth requirements for groundwater recharge, stormwater runoff quantity control, stormwater runoff quality control, and the prohibition of major development to be located within or to discharge runoff from the major development into a 300-foot riparian zone without prior authorization from the Department under the Flood Hazard Area Control Act Rules, N.J.A.C. 7:13. The Planning Board is responsible for this plan. 					
Stormwater Pollution Prevention Plan	No	-	No	-	-
<i>Comment:</i> <ul style="list-style-type: none"> The Phase II New Jersey Pollutant Discharge Elimination System Stormwater Regulation Program (NJPDES) rules (N.J.A.C. 7:14A) were published in the February 2, 2004, NJ Register. These NJPDES rules are intended to address and reduce pollutants associated with existing stormwater runoff. The NJPDES rules establish a regulatory program for existing stormwater discharges as required under the Federal Clean Water Act. These NJPDES rules govern the issuance of permits to entities that own or operate small municipal separate storm sewer systems, known as MS4s. Under this program, permits must be secured by municipalities, certain public complexes such as universities and hospitals, and State, interstate and federal agencies that operate or maintain highways. The permit program establishes the Statewide Basic Requirements that must be implemented to reduce nonpoint source pollutant loads from these sources. The Statewide Basic Requirements include measures such as: the adoption of ordinances (litter control, pet waste, wildlife feeding, proper waste disposal, etc.); the development of a municipal stormwater management plan and implementing ordinance(s); requiring certain maintenance activities (such as street sweeping and catch basin cleaning); implementing solids and floatables control; locating discharge points and stenciling catch basins; and a public education component. 					
Urban Water Management Plan	No	-	No	-	-
<i>Comment:</i>					
Habitat Conservation Plan	No	-	No	-	-
<i>Comment:</i>					
Economic Development Plan	No	-	No	-	-
<i>Comment:</i>					
Shoreline Management Plan	No	-	Yes – if located in a coastal zone	-	-
<i>Comment:</i> <ul style="list-style-type: none"> NJ Coastal Area Facility Review Act (N.J.S.A. 13:19) or CAFRA regulates almost all development along the coast for activities including construction, relocation, and enlargement of buildings or structures, and excavation, grading, shore protection structures, and site preparation. This law is implemented through NJ's Coastal Zone management Rules N.J.A.C. 7:7E-1 et seq. 					
Community Wildfire Protection Plan	No	-	No	-	-
<i>Comment:</i>					
Community Forest Management Plan	No	-	No	-	-



	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	Is this State Mandated?	Have aspects of the HMP been integrated into your codes/ordinances/plans?	
				If yes- how? Describe in comments.	If no - add Mitigation Action #, if applicable.
<i>Comment:</i>					
Transportation Plan	No	-	No	-	-
<i>Comment:</i>					
Agriculture Plan	No	-	No	-	-
<i>Comment:</i>					
Climate Action Plan	No	-	No	-	-
<i>Comment:</i>					
Tourism Plan	No	-	No	-	-
<i>Comment:</i>					
Business Development Plan	No	-	No	-	-
<i>Comment:</i>					
Other Plans	Yes	Local	No	No	No
<i>Comment:</i>					
<ul style="list-style-type: none"> The Planning Board is responsible for these plans in compliance with Green Township Land Use Plan, December 2005 and Housing Element and Fair Share Plan, December 2005. 					
Response/Recovery Planning					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	Yes	-
<i>Comment:</i>					
<ul style="list-style-type: none"> Each county and municipality in the State shall prepare a written Emergency Operations Plan with all appropriate annexes necessary to implement the plan. Each Emergency Operations Plan shall be adopted no later than one year after the State Emergency Planning Guidelines have been adopted by the State Office of Emergency Management and shall be evaluated at such subsequent scheduled review of the State Emergency Operations Plan. L.1989, c.222, s.19. The Office of Emergency Management is responsible for this plan in compliance with EOP. 					
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	No	-	-
<i>Comment:</i>					
Post-Disaster Recovery Plan	No	-	No	-	-
<i>Comment:</i>					
Continuity of Operations Plan	No	-	No	-	-
<i>Comment:</i>					
Public Health Plan	No	-	No	-	-
<i>Comment:</i>					
Other	No	-	No	-	-
<i>Comment:</i>					

Table 9.9-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits? - If no, who does? If yes, which department?	Yes, Building Department
Does your jurisdiction have the ability to track permits by hazard area?	Yes



Criterion	Response
Does your jurisdiction have a buildable lands inventory? -If yes, please describe briefly. -If no, please quantitatively describe the level of buildout in the jurisdiction.	No

ADMINISTRATIVE AND TECHNICAL CAPABILITY

The table below summarizes potential staff and personnel resources available to the Township of Green.

Table 9.9-5. Administrative and Technical Capabilities

Staff/Personnel Resource	Available?	Department/Agency/Position
Administrative Capability		
Planning Board	Yes	Green Township Planning Board
Mitigation Planning Committee	No	-
Environmental Board / Commission	Yes	Green Township Environmental Advisory Committee
Open Space Board / Committee	Yes	Open Space Advisory Committee
Economic Development Commission / Committee	No	-
Warning Systems / Services (reverse 911, outdoor warning signals)	Yes	Smart911
Maintenance program to reduce risk	Yes	The Township works to identify and remove trees on municipal property that could affect electric power
Mutual aid agreements	Yes	Fire, First Aid
Technical/Staffing Capability		
Planners or engineers with knowledge of land development and land management practices	Yes	Township Engineer/Township Planner
Engineers or professionals trained in building or infrastructure construction practices	Yes	Township Engineer
Planners or engineers with an understanding of natural hazards	Yes	Township Engineer/Township Planner
Staff with training in benefit/cost analysis	Yes	Township Engineer
Staff with training in green infrastructure	No	-
Staff with education/knowledge/training in low impact development	No	-
Surveyor	Yes	Township Engineer
Stormwater engineer	Yes	Township Engineer
Personnel skilled or trained in GIS applications	Yes	Township Engineer
Local or state water quality professional	No	-
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	OEM
Watershed planner	No	-
Environmental specialist	No	-
Grant writers	Yes	Peter Sklannik
Resilience Officer	No	-
Other: NFIP Floodplain Administrator	Yes	Craig Bollmann, Zoning Officer

FISCAL CAPABILITY

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



Table 9.9-6. Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
Community Development Block Grants (CDBG, CDBG-DR)	N/A
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for Specific Purposes	Yes
User Fees for Water, Sewer, Gas or Electric Service	No
Incur Debt through General Obligation Bonds	Yes
Incur Debt through Special Tax Bonds	Yes
Incur Debt through Private Activity Bonds	Yes
Withhold Public Expenditures in Hazard-Prone Areas	Yes
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	Yes
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other: Open Space Acquisition Funding Programs	Yes

EDUCATION AND OUTREACH CAPABILITY

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

Table 9.9-7. Education and Outreach Capabilities

Criterion	Response
Do you have a public information officer or communications office?	Yes
Do you have personnel skilled or trained in website development?	No
Do you have hazard mitigation information available on your website? -If yes, briefly describe.	No
Do you use social media for hazard mitigation education and outreach? -If yes, briefly describe.	No
Do you have any citizen boards or commissions that address issues related to hazard mitigation? -If yes, briefly describe.	No
Do you have any other programs already in place that could be used to communicate hazard-related information? If yes, briefly describe.	No

COMMUNITY CLASSIFICATIONS

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

Table 9.9-8. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	No	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	No	-	-
Public Protection (Fire ISO Protection Class)	Yes	05/5Y	July 2014
Storm Ready Certification	No	-	-
Firewise Community Classification	No	-	-
Sustainable Jersey	Yes	None	Registered 12/16/2016

N/A = Not applicable. NP = Not participating





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 ability to adjust to, protect from, or withstand a hazard event. This term is often discussed in reference to climate change; however, adaptive capacity also includes an understanding of local capacity for adapting to current and future risks and changing conditions. The table below summarizes the adaptive capacity for each hazard and the jurisdiction’s rating.

Table 9.9-9. Adaptive Capacity

Hazard	Adaptive Capacity (Capabilities) - Strong/Moderate/Weak
Dam Failure	Moderate
Disease Outbreak	Moderate
Drought	Moderate
Earthquake	Moderate
Flood	Moderate
Geologic	Moderate
Hazardous Materials	Moderate
Hurricane and Tropical Storm	Moderate
Invasive Species	Moderate
Nor’Easter	Moderate
Severe Weather	Moderate
Severe Winter Weather	Strong
Wildfire	Moderate

Notes:
 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; Unsure = Not enough information is known to assign a rating.

The Township does not have access to resources to determine the possible impacts of climate change upon the municipality. At this time, the administration is not supportive of integrating climate change in policies or actions.

NATIONAL FLOOD INSURANCE PROGRAM

This section provides specific information on the management and regulation of the regulatory floodplain.

Table 9.9-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Municipal Engineer
Who is your floodplain administrator? (name, department/position)	Cory Stoner
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	June 2016
Does your floodplain management program meet or exceed minimum requirements? -If exceeds, in what ways?	The program meets minimum requirements.



Criterion	Response
When was the most recent Community Assistance Visit or Community Assistance Contact?	February 16, 1994
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? -If so, state what they are.	No
Are any RiskMAP projects currently underway in your jurisdiction? If so, state what they are.	No
Do your flood hazard maps adequately address the flood risk within your jurisdiction? -If no, state why.	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program? - If so, what type of assistance/training is needed?	He would consider attending continuing education and certification training on floodplain management.
Does your jurisdiction participate in the Community Rating System (CRS)? -If yes, is your jurisdiction interested in improving its CRS Classification? -If no, is your jurisdiction interested in joining the CRS program?	No
How many flood insurance policies are in force in your jurisdiction?*	9 policies
-What is the insurance in force?	\$2,630,000 insurance in force
-What is the premium in force?	\$6,920 premium in force
How many total loss claims have been filed in your jurisdiction?*	2 claims
-How many claims are still open or were closed without payment?	\$11,652 in payments
-What were the total payments for losses?	
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?	No

*According to FEMA statistics as of October 13, 2020 (Policy/Claims Data)
Reference: FEMA 2020

ADDITIONAL AREAS OF EXISTING INTEGRATION

- **Green Township Environmental Committee:** The Environmental Advisory Committee provides advice and recommendations to the Planning Board on environmental impacts of land use in the municipality in an effort to ensure that planning reflects consideration of natural resources and quality of life. Groundwater preservation is the current focus of activity.
- **Land Use Board:** The Green Township Land Use Board has the following responsibilities:
 - Adoption of a Master Plan every ten years;
 - Subdivision control and site plan review for permitted uses;
 - Recommendations as to the official map of the Township;
 - Conditional use applications;
 - Recommendations as to the zoning ordinance or amendments;
 - Review of Capital Improvement Projects;
 - Variances under certain circumstances in connection with site plans and subdivisions.
 - Hear and decide Appeals of decisions of the administrative officer enforcing the zoning ordinance;
 - Hear and decide for Interpretations of the zoning map or ordinance;
 - Hear and decide Bulk or "C" Variances; A "c" variance is if it is separate from a site plan, subdivision or conditional use (i.e.. residential permit that doesn't require a subdivision or site plan)
 - Hear and decide Use or "D" Variances: example of a "d" variance; Use of principle structure; Expansion of non-conforming use; deviation from a specification of standard of a conditional use;



Increase in permitted floor area ration; Increase in permitted density; Height greater than 10 feet or 10% of the maximum height permitted.

- May direct the Issuance of a Permit for a building or structure in the bed of a mapped street or public drainage way, flood control basin or public area. A building structure not related to a street.
- **Township Website:** Green Township hosts a municipal website (<http://www.greentwp.com/index.cfm>) which includes community information, news, and announcements.

OPPORTUNITIES FOR FUTURE INTEGRATION

- **Disaster Debris Management Plan:** The Township intends to develop a Disaster Debris Management Plan (2021-Green-007).
- **Flood Damage Prevention Ordinance:** The Township’s flood damage prevention ordinance lacks the state mandated freeboard requirement. The Township will update the ordinance to include freeboard (2021-Green-011).

9.9.5 Hazard Event History Specific to the Jurisdiction

Sussex County has a history of 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 in Section 4.3 (Hazards of Concern) and includes a chronology of events that affected Sussex County and its jurisdictions. The Township of Green’s history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Sussex County. Table 9.8-11 provides details regarding municipal-specific loss and damages the jurisdiction experienced during hazard events. Information provided in the table below is based on reference material or local sources.

Table 9.9-11. Hazard Event History

Date(s) of Event	Event Type (disaster declaration if applicable)	Sussex County Designated?	Summary of Event	Summary of Local Damages and Losses
January 22, 2016 - January 24, 2016	DR-4264: Severe Winter Storm and Snowstorm	Yes	A major nor'easter, produced record snowfall and blizzard conditions in parts of New Jersey on January 23 rd and 24 th .	Although the County was impacted, the Township did not receive damages.
January 20, 2020 and continuing	EM-3451, DR-4488: COVID-19 Pandemic	Yes	The coronavirus pandemic resulted in the need for shutdowns and social distancing and mask requirements.	Additional cost for equipment and overtime

Source: FEMA 2020, NOAA NCEI 200

9.9.6 Jurisdiction-Specific Vulnerabilities and Hazard Ranking

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

HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Green that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan and are adequate for planning purposes. Maps have been generated only for those hazards that can





be clearly identified using mapping techniques and technologies and for which the Township of Green has significant exposure.

REPETITIVE FLOOD LOSSES

The following summarizes the repetitive and severe repetitive flood losses in the Township of Green.

- Number of repetitive loss (RL) properties: 0
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: 0

Source: FEMA 2019

CRITICAL FACILITIES AND LIFELINES

The table below identifies critical facilities and lifelines in the community located in the 1-percent and 0.2-percent floodplain.

Table 9.9-12. Critical Facilities and Lifelines Flood Exposure

Name	Type	Exposure	
		1% Event	0.2% Event
21-15 Tranquility Mill Dam	Dam	X	X
21-52 Lake Tranquility Dam	Dam	X	X
21-91 Tranquility Church Dam	Dam	X	X

Source: Sussex County Planning Partnership, 2020

Note:

*Identified lifeline

IDENTIFIED ISSUES AND PROBLEM AREAS

The jurisdiction has identified the following vulnerabilities within their community:

- Road flooding on Whitehall Road near Washers Pond (40-58’29.58” N / 74-45’32.63” W) Roadway will be raised in 2021 as part of a road improvement project.
- Lake Tranquility properties are inundated with ground water. A drainage study of the entire lake community is warranted.
- The Township has a lack of stand pipes at draft stations for emergency equipment.
- Basements of homes in the Township flood during periods of heavy rain and the residents do not have pumps to remove the water.
- Pequest River experiences streambank erosion.
- The Township lacks outreach to address hazards, emergency preparedness, and hazard mitigation.
- The Township lacks a Disaster Debris Management Plan.
- Hunts School Road has an undersized drainage pipe that contributes to flooding.
- Backup power sources are necessary to maintain critical services for critical facilities. The Tranquility Post Office and the Greendell Post Office lack backup power. The Township owns both properties.
- No mapping exists of the drainage system in Green Township to help identify and solve problem areas.

HAZARD RANKING

This section summarizes the jurisdiction’s primary hazards of concern based on identified problems, impacts and the results of the risk assessment as presented in Section 4 (Risk Assessment). The ranking process involves





an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; community capability and changing future climate conditions. This input supports the development of mitigation actions, targeting those hazards with the highest level of concern.

As discussed in Section 4.4 (Hazard Ranking), each plan participant may have differing degrees of risk exposure and vulnerability compared to Sussex County as a whole. Therefore, the Township of Green ranked each hazard’s degree of risk as it pertains to their community factoring in their capabilities to withstand impacts and rebound after the event. The table below summarizes the hazard rankings of potential hazards for the Township of Green. The Township of Green has reviewed the Sussex County hazard ranking table and has provided input to its individual results to reflect the relative risk of the hazards of concern to the community. During the review of the hazard ranking, the Township of Green agreed with the calculated hazard rankings.

Table 9.9-13. Township of Green Hazard Ranking

Dam Failure	Disease Outbreak	Drought	Earthquake	Flood	Geologic	
Medium	Medium	Medium	Low	Medium	Low	
Hazardous Materials	Hurricane and Tropical Storm	Invasive Species	Nor’Easter	Severe Weather	Severe Winter Weather	Wildfire
Medium	High	Medium	High	High	High	Low

9.9.7 Mitigation Strategy and Prioritization

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

PAST MITIGATION INITIATIVE STATUS

The following table summarizes the jurisdiction’s progress on their mitigation strategy identified in the 2016 HMP. Actions that are carried forward as part of this plan update are included in Table 9.8-15 and Table 9.8-16 with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and can also be found under ‘Capability Assessment’ presented previously in this annex.

Table 9.9-14. Status of Previous HMP Mitigation Actions

2016 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
Green Twp-1	Ensure continuity of operations at critical facilities and municipal buildings. Identified at this time: Add or replace permanent generators at critical facilities (municipal building, Road Dept., Fire Station, Squad Building)	OEM Coordinator Fire Department	Complete		
Green Twp-2	Purchase and install repeaters on two existing towers in the Township. This will increase the level of emergency communities both inter and intra-agency.	OEM Coordinator Fire Department	No progress		



2016 Action Number Action Description		Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
Green Twp-3	Ensure continuity of operations: Purchase portable generators (12) to ensure those in need have the life support needed during and after an event.	First Aid Captain, Fire Chief, Administrator (Engineer)	Complete		
Green Twp-4	Add stand pipes at draft sites – 2 or more throughout Township	Administrator OEM Coordinator	No progress	X	2021-Green-003
Green Twp-5	Purchase/replace portable water pumps (12) to ensure those who experience flooding in conjunction with loss of power are adequately protected from loss of structure and/or mold issues.	Fire Chief, Administrator	No progress	X	2021-Green-004
Green Twp-6 (old #3)	Work with private land owners to stabilize stream bank(s) and augment Pequest River	Township Engineer	No Progress	X	2021-Green-005
Green Twp-7 (old #4)	Retrofit impact resistant windows and shutters on municipal building located on Kennedy Road as funding permits	DPW	No Progress		
Green Twp-8 (old #5)	Retrofit an external frame to mitigate straight line winds to PO building located on Municipal Rd as funding permits	Township Administrator	No Progress		
Green Twp-9 (old #6)	Retrofit roof on remaining building to meet current high wind standards located at Trinca Airport on Airport Road	Township Administrator	No Progress		
Green Twp-10 (old #7)	Implement a storm water runoff management system for 350 homes in Lake Tranquility area as funding and private cooperation permit	DPW	No Progress	X	2021-Green-002
Green Twp-11 (old #8)	Conduct all-hazards public education and outreach program for hazard mitigation and preparedness.	OEM Coordinator, in coordination with SCDEM	No Progress	X	2021-Green-006
Green Twp-12 (new)	Review the current hazard mitigation plan and other hazard analysis prior to land use, zoning changes and development permitting.	Township Engineer and Planner	Ongoing Capability		
Green Twp-	Provide protection to buildings/infrastructure in high hazard areas in the Township	Township Engineer and Planner	No Progress		



2016 Action Number	Action Description	Responsible Party	Status (In Progress, No Progress, Ongoing Capability, or Completed)	Include in the 2021 HMP Update?	
				Check if Yes	Enter 2021 HMP Action #
13 (new)					
Green Twp – 14 (old #1)	Work with school to retrofit roof to meet current high wind standards on Green Hills School located on Mackerley Road as funding permits.	Township Administrator, School Board	Complete		
Green Twp – 15 (old #2)	Implement Fire Wise	OEM Coordinator	No Progress		

In addition to the above progress, the Township of Green identified the following mitigation projects/activities that were completed but not identified in the 2016 HMP mitigation strategy:

- None identified.

PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE

The Township of Green participated in a risk assessment workshop in October 2020 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The Township of Green participated in a mitigation action workshop in November 2020 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Sussex County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; mitigation funding sources, and 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). Section 6 (Mitigation Strategy) and Appendix F (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.8-15 summarizes the comprehensive-range of specific mitigation initiatives the Township of Green would like to pursue in the future to reduce the effects of hazards. Initiatives are dependent upon available funding (grants and local match availability) and can 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 actions as *High, Medium, or Low*. The table below summarizes the evaluation of each mitigation initiative, listed by action number.

Table 9.8-16 provides a summary of the prioritization of all proposed mitigation initiatives for this HMP update.



Table 9.9-15. Proposed Hazard Mitigation Initiatives

Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-Green-001	Whitehall Road Roadway Elevation	<p>Problem: Road flooding on Whitehall Road near Washers Pond restricts normal travel and greatly effects emergency access. During Hurricane Irene the road surface was covered for months by six feet of water. In high rain years the roadway is partially flooded also creating a driving hazard.</p> <p>Solution: A four hundred- and fifty-foot (450') section of the road will need to be reconstructed. The area of flooding will need to be raised approximately eighteen inches (18") to mitigate the semi-annual flooding. The slope along Washers Pond will require grading and a guide rail needs to be replaced.</p>	Existing	Flood, Severe Weather	2	Engineer, DPW	HMGP, BRIC, Township budget	Reduction in roadway flooding	High	1 year	High	SIP	PP
2021-Green-002	Lake Tranquility Drainage Study	<p>Problem: Lake Tranquility properties are inundated with water runoff and ground water.</p> <p>Solution: The Township will conduct drainage study of the entire lake community and determine if actions can be taken to address groundwater flooding in Lake Tranquility. Once actions are identified, the Township will carry out the cost-effective options. A potential action would be to implement a storm water runoff management system for 350 homes in Lake Tranquility area as funding and private cooperation permit. Drainage easements need to be created allowing the Township the authorization to access and maintain.</p>	Existing	Flood	2, 4, 5	Engineer	HMGP, BRIC, FMA, Township budget	Better understanding of flooding and addressing of flood risk	High	Within 5 years	High	LPR, SIP	PP, SP
2021-Green-003	Stand Pipes at Draft Sites	<p>Problem: Water systems are limited in Green Township therefore the need for a water source to combat fires is paramount. The Township has a lack of stand pipes at draft stations for emergency equipment.</p> <p>Solution: Additional areas for the installation of a stand pipe or draft stations will be researched and</p>	N/A	Hazardous Materials, Wildfire	3, 6	Administrator, OEM Coordinator	HMGP, Township budget	Increased emergency response capability.	Medium	Within 5 years	High	SIP	ES



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		determined. Once the locations are established funding and or easements will need to be secured.											
2021-Green-004	Portable Water Pumps	<p>Problem: Basements of homes in the Township flood during periods of heavy rain and the residents do not have pumps to remove the water.</p> <p>Solution: Purchase/replace portable water pumps (12) to ensure those who experience flooding in conjunction with loss of power are adequately protected from loss of structure and/or mold issues.</p>	N/A	Flood	2, 5	Fire Chief, Administrator	Township budget	Increased emergency response capability.	Medium	Within 5 years	Medium	SIP	ES
2021-Green-005	Pequest River	<p>Problem: The Pequest River experiences streambank erosion.</p> <p>Solution: Identify areas of the Pequest River where erosion and undermining of the river bank are occurring. Work with the Township Engineer and private land owners in developing plans to stabilize these locations.</p>	Existing	Flood, Severe Weather	1, 2	Township Engineer	HMGP, BRIC, Township budget	Erosion and flood issues reduced	Medium	Within 5 years	High	NSP	NR
2021-Green-006	All Hazards Outreach	<p>Problem: The Township lacks outreach to address hazards, emergency preparedness, and hazard mitigation.</p> <p>Solution: Develop and conduct all-hazards public education and outreach program for hazard mitigation and preparedness. Utilize Township social media outlets to communicate with township residents.</p>	New & Existing	All Hazards	3	OEM Coordinator, in coordination with SCDEM	Township budget	Educated public	Low	1 year	High	EAP	PI
2021-Green-007	Disaster Debris Management Plan	<p>Problem: The Township lacks a Disaster Debris Management Plan.</p> <p>Solution: The Township will develop and adopt a Disaster Debris Management Plan.</p>	Existing	All Hazards	2, 5	OEM, Public Works	Township budget	Increased disaster response capabilities	Staff time	1 year	High	LPR	ES
2021-Green-008	Hunts School Road	<p>Problem: Hunts School Road has an undersized drainage pipe that contributes to flooding.</p> <p>Solution: The Township will replace and upsize the drainage pipe.</p>	Existing	Flood, Severe Weather	2	Public Works	HMGP, BRIC, Township budget	Reduction in flood risk	\$75,000	Within 5 years	High	SIP	SP



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2021-Green-009	Post Office Backup Power	<p>Problem: Backup power sources are necessary to maintain critical services for critical facilities. The Tranquility Post Office and the Greendell Post Office lack backup power. The Township owns both properties.</p> <p>Solution: The Township will consider the installation of backup generators at each site. The Engineer will research what size generator is needed to power the facilities. The Township will then purchase and install the selected generator and necessary electrical components to supply backup power to the facilities.</p>	Existing	Severe Weather, Severe Winter Weather, Hurricane, Nor’Easter	2, 6	OEM, Engineer, Administration	FEMA HMGP and BRIC, USDA Community Facilities Grant Program, Emergency Management Performance Grants (EMPG) Program, Municipal Budget	Ensure s continuity of operations of Post Office	\$50,000 per generator	Within 5 years	High	SIP	ES
2021-Green-010	Drainage System Mapping	<p>Problem: No mapping exists of the drainage system in Green Township to help identify and solve problem areas.</p> <p>Solution: The Township will contract with an engineering firm to create detailed mapping of all drainage infrastructure.</p>	Existing	Flood, Severe Weather	4, 5	Public Works	Township budget	Increased capability to identify issues and needs for improvement	High	Within 5 years	Medium	LPR	SP
2021-Green-011	Flood Damage Prevention Ordinance Update	<p>Problem: The Township’s Flood Damage Prevention Ordinance lacks the state mandated freeboard requirement.</p>	New	Flood	2	FPA, Administration	Township budget	Meet state standards, reduce future flood risk	Staff time	6 months	High	LPR	PR



Initiative Number	Mitigation Initiative Name	Description of the Problem and Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	Lead and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		Solution: The Township will update the Flood Damage Prevention Ordinance to include the freeboard requirement.											

Notes:

Acronyms and Abbreviations:

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

Potential FEMA HMA Funding Sources:

- FMA Flood Mitigation Assistance Grant Program
- HMGP Hazard Mitigation Grant Program
- 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 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 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. 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 preserve or restore the functions of natural systems. 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. 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 9.9-16. Summary of Evaluation and Action Priorities

Initiative Number	Mitigation Initiative Name	Life Safety	Property Protection	Cost Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community	Total	High / Medium / Low
2021-Green-001	Whitehall Road Roadway Elevation	1	1	1	1	1	1	0	1	1	1	1	1	1	1	13	High ▲
2021-Green-002	Lake Tranquility Drainage Study	0	1	0	1	1	1	0	1	1	0	1	0	1	1	9	High
2021-Green-003	Stand Pipes at Draft Sites	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2021-Green-004	Portable Water Pumps	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2021-Green-005	Pequest River	0	1	1	1	1	0	0	1	1	1	1	0	1	1	10	High
2021-Green-006	All Hazards Outreach	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	High
2021-Green-007	Disaster Debris Management Plan	0	1	1	1	1	1	1	1	1	1	1	1	1	1	13	High
2021-Green-008	Hunts School Road	1	1	0	1	1	1	0	1	0	0	1	0	1	1	9	High
2021-Green-009	Post Office Backup Power	1	1	1	1	1	1	0	1	1	1	1	0	1	1	12	High
2021-Green-010	Drainage System Mapping	0	1	1	1	1	1	1	1	1	1	1	0	1	1	12	High

Notes: Section 6 (Mitigation Strategy) 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.



Table 9.9-17. Analysis of Mitigation Actions by Hazard and Category

Hazard	Prevention	Property Protection	Public Education and Awareness	Natural Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Community Capacity Building
Dam Failure			X		X			X
Disease Outbreak			X		X			X
Drought			X		X			X
Earthquake			X		X			X
Flood		X	X	X	X	X		X
Geologic			X		X			X
Hazardous Materials			X		X			X
Hurricane and Tropical Storm			X		X			X
Invasive Species			X		X			X
Nor’Easter			X		X			X
Severe Weather		X	X	X	X	X		X
Severe Winter Weather			X		X			X
Wildfire			X		X			X

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

high ranked hazard

ORANGE medium ranked hazard

YELLOW low ranked hazard

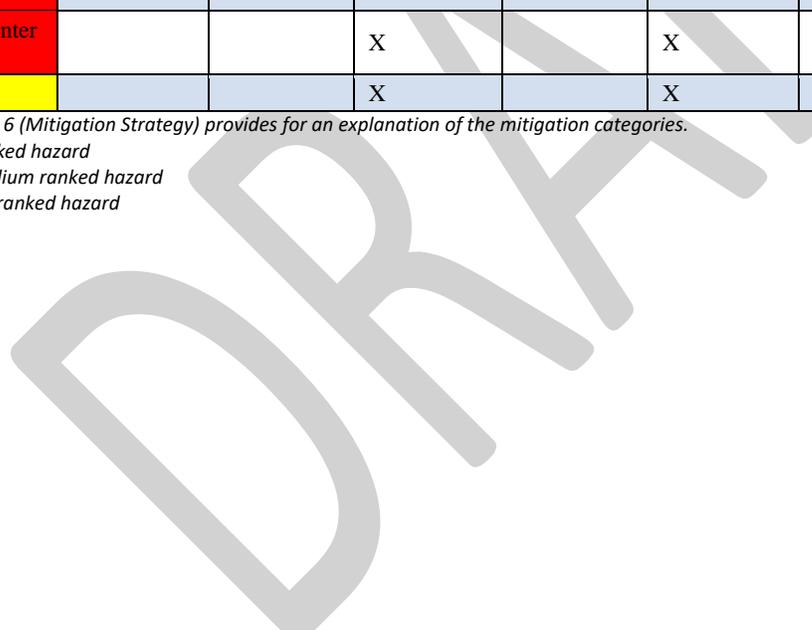




Figure 9.9-1. Township of Green Hazard Area Extent and Location Map 1

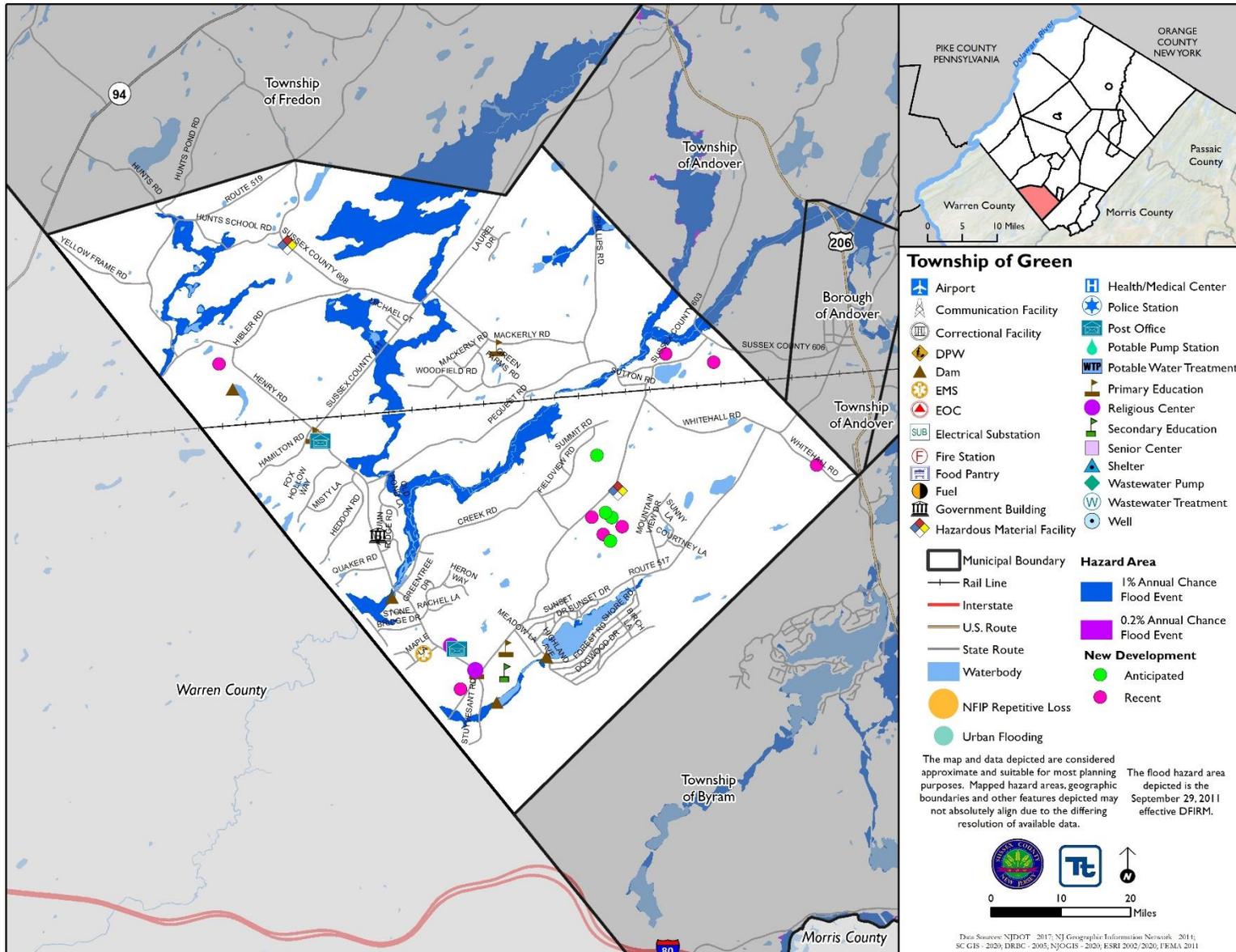




Figure 9.9-2. Township of Green Hazard Area Extent and Location Map 2

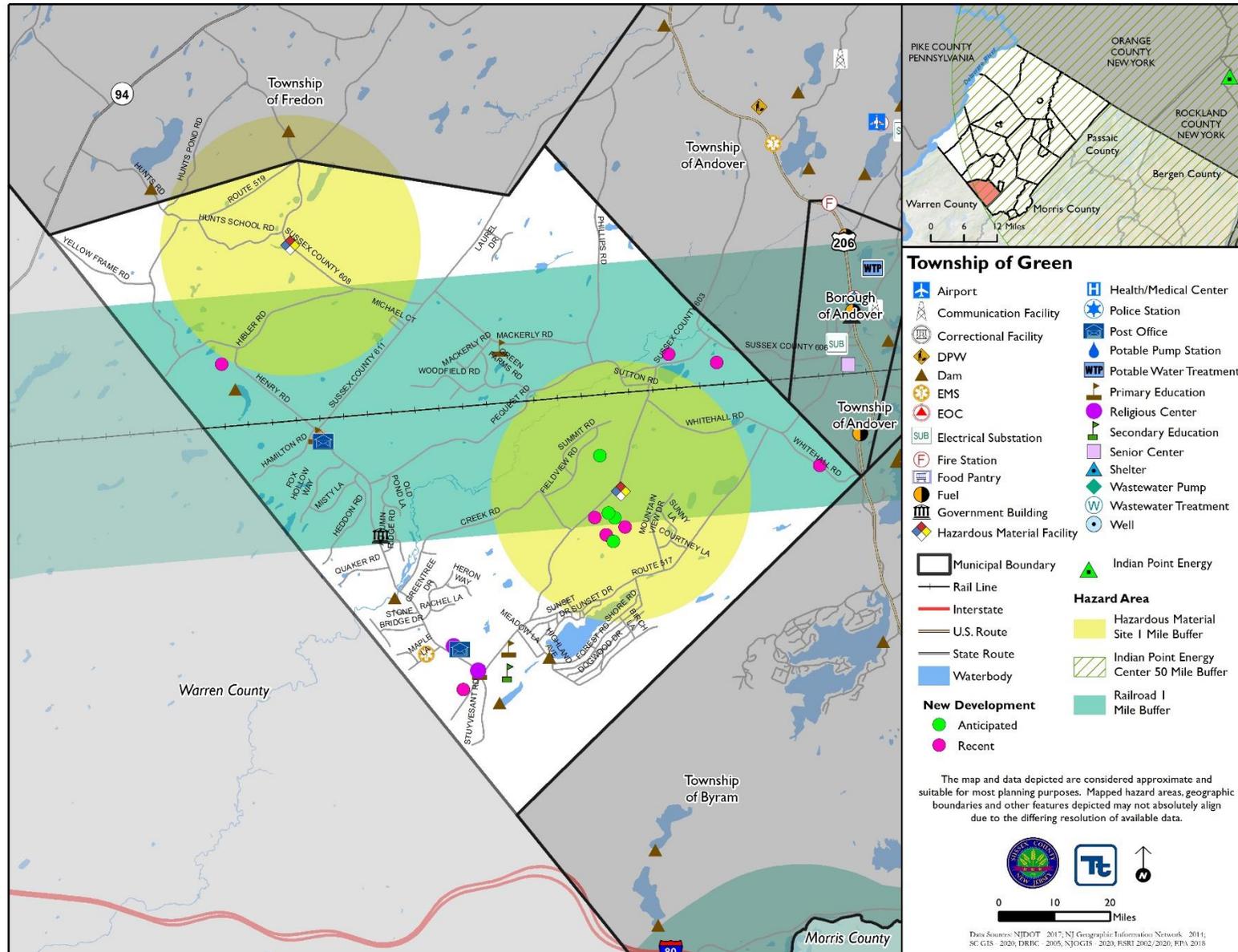
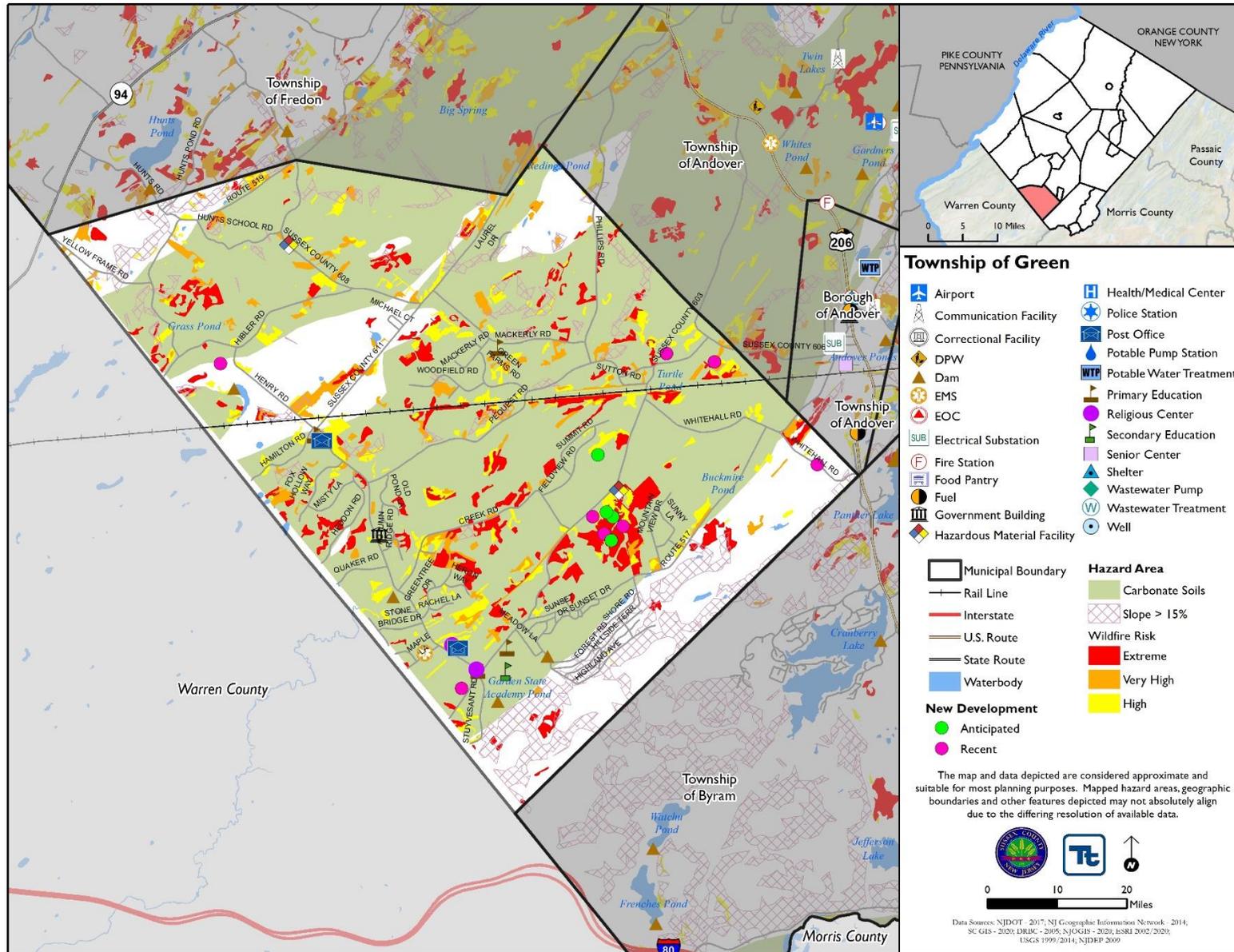




Figure 9.9-3 Township of Green Hazard Area Extent and Location Map 3





Action Worksheet			
Project Name:	Whitehall Road Roadway Elevation		
Project Number:	2021-Green-001		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	Road flooding on Whitehall Road near Washers Pond restricts normal travel and greatly effects emergency access. During Hurricane Irene the road surface was covered for months by six feet of water. In high rain years the roadway is partially flooded also creating a driving hazard.		
Action or Project Intended for Implementation			
Description of the Solution:	A four hundred- and fifty-foot (450') section of the road will need to reconstructed. The area of flooding will need to be raised approximately eighteen inches (18") to mitigate the semi-annual flooding. The slope along Washers Pond will require grading and a guide rail needs to be replaced.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	18" elevation	Estimated Benefits (losses avoided):	Reduction in roadway flooding
Useful Life:	50 years	Goals Met:	3
Estimated Cost:	High	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 2 years
Estimated Time Required for Project Implementation:	1 year	Potential Funding Sources:	HMGP, BRIC, Municipal budget
Responsible Organization:	Engineer, Roads Department	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	Problem continues.
	Remove flood prone roadway	N/A	Loss of access to neighborhoods, increased emergency risk
	Buyout properties that exist along flood prone roadways	\$Tens of Millions	Costly, loss of large portion of community
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Evaluation and Prioritization		
Project Name:	Whitehall Road Roadway Elevation	
Project Number:	2021-Green-001	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect emergency access
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, Severe Weather
Timeline	1	1 year
Agency Champion	1	Engineer, Roads Department
Other Community Objectives	1	
Total	13	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Lake Tranquility Drainage Study		
Project Number:	2021-Green-002		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	Lake Tranquility properties are inundated with water runoff and ground water.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township will conduct drainage study of the entire lake community and determine if actions can be taken to address groundwater flooding in Lake Tranquility. Once actions are identified, the Township will carry out the cost-effective options. A potential action would be to implement a storm water runoff management system for 350 homes in Lake Tranquility area as funding and private cooperation permit. Drainage easements need to be created allowing the Township the authorization to access and maintain.		
Is this project related to a Critical Facility or Lifeline?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	TBD	Estimated Benefits (losses avoided):	Reduction in flood risk in selected areas
Useful Life:	TBD by drainage study	Goals Met:	2, 4, 5
Estimated Cost:	TBD by study	Mitigation Action Type:	Local Plans and Regulations, Structure and Infrastructure Projects
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	5 years	Potential Funding Sources:	HMGP, BRIC, FMA, municipal budget
Responsible Organization:	Engineer	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation planning, stormwater planning
Three Alternatives Considered (including No Action)			
Alternatives:	Action	Estimated Cost	Evaluation
	No Action	\$0	Current problem continues
	Elevate homes	\$200,000 per home	Costly and may not solve problems with access
	Buyout homes	N/A	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:	Lake Tranquility Drainage Study	
Project Number:	2021-Green-002	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	0	.
Property Protection	1	Reduction in flooding risk
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	
Agency Champion	1	Engineering
Other Community Objectives	1	
Total	8	
Priority (High/Med/Low)	Medium	



Action Worksheet			
Project Name:	Stand Pipes at Draft Sites		
Project Number:	2021-Green-003		
Risk / Vulnerability			
Hazard(s) of Concern:	Hazmat, Wildfire		
Description of the Problem:	Water systems are limited in Green Township therefore the need for a water source to combat fires is paramount. The Township has a lack of stand pipes at draft stations for emergency equipment.		
Action or Project Intended for Implementation			
Description of the Solution:	Additional areas for the installation of a stand pipe or draft stations will be researched and determined. Once the locations are established funding and or easements will need to be secured.		
Is this project related to a Critical Facility?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Level of Protection:	To be determined	Estimated Benefits (losses avoided):	Fire hydrants and water lines maintained for emergency response
Useful Life:	20 years	Goals Met:	2
Estimated Cost:	Medium	Mitigation Action Type:	Structure and Infrastructure Project
Plan for Implementation			
Prioritization:	High	Desired Timeframe for Implementation:	Within 5 years
Estimated Time Required for Project Implementation:	Within 5 years	Potential Funding Sources:	HMGP, Township budget
Responsible Organization:	Administrator, OEM Coordinator	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.
	Purchase tanker truck for water	\$190,000	Slow emergency service response times.
	Develop contract with neighboring towns for fire response	N/A	Too slow of response times, towns may be unable
Progress Report (for plan maintenance)			
Date of Status Report:			
Report of Progress:			
Update Evaluation of the Problem and/or Solution:			



Action Worksheet		
Project Name:	Stand Pipes at Draft Sites	
Project Number:	2021-Green-003	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Emergency response preserved to protect life
Property Protection	1	Emergency response preserved to protect property
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	Project requires funding support
Environmental	1	
Social	1	
Administrative	1	
Multi-Hazard	1	Hazmat, Wildfire
Timeline	0	Within 5 years
Agency Champion	1	Administrator, OEM Coordinator
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	



Action Worksheet			
Project Name:	Pequest River		
Project Number:	2021-Green-005		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	The Pequest River experiences streambank erosion.		
Action or Project Intended for Implementation			
Description of the Solution:	Identify areas of the Pequest River where erosion and undermining of the river bank are occurring. Work with the Township Engineer and private land owners in developing plans to stabilize these locations.		
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):	Erosion and flood issues reduced
Useful Life:	1 year	Goals Met:	1, 2
Estimated Cost:	Medium	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:	Township 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 Creek	High	Costly, unpopular
	Levees along Creek	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:	Pequest River	
Project Number:	2021-Green-005	
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	
Social	1	
Administrative	1	
Multi-Hazard	1	Flood, Severe Weather
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:	Hunts School Road		
Project Number:	2021-Green-008		
Risk / Vulnerability			
Hazard(s) of Concern:	Flood, Severe Weather		
Description of the Problem:	Hunts School Road has an undersized drainage pipe that contributes to flooding.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township Public Works Department will determine the proper size needed to adequately service Hunts School Road and will then replace and upsize the drainage pipe.		
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:	2
Estimated Cost:	\$75,000	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:	Engineering	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 roadway	\$500,000	Costly and may not solve problem
	Relocate roadway	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:	Hunts School Road	
Project Number:	2021-Green-008	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Protects life from flooding.
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	0	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:	Post Office Backup Power		
Project Number:	2021-Green-009		
Risk / Vulnerability			
Hazard(s) of Concern:	Severe Weather, Severe Winter Weather, Hurricane, Nor'Easter		
Description of the Problem:	Backup power sources are necessary to maintain critical services for critical facilities. The Tranquility Post Office and the Greendell Post Office lack backup power. The Township owns both properties.		
Action or Project Intended for Implementation			
Description of the Solution:	The Township will consider the installation of backup generators at each site. The Engineer will research what size generator is needed to power the facilities. The Township will then purchase and install the selected generator and necessary electrical components to supply backup power to the facilities.		
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 Post Office
Useful Life:	20 years	Goals Met:	2, 6
Estimated Cost:	\$50,000 per generator	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:	OEM, Engineer, Administration	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:	Post Office Backup Power	
Project Number:	2021-Green-009	
Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Project will protect critical services of Post Offices
Property Protection	1	Project will protect buildings 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 Weather, Severe Winter Weather, Hurricane, Nor'Easter
Timeline	0	Within 5 years
Agency Champion	1	OEM, Engineer, Administration
Other Community Objectives	1	
Total	12	
Priority (High/Med/Low)	High	