# 9.5 TOWNSHIP OF CEDAR GROVE

This section presents the jurisdictional annex for the Township of Cedar Grove. The annex includes a general overview of the Township of Cedar Grove; an assessment of the Township'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.

## 9.5.1 Hazard Mitigation Planning Team

The following individuals are the Township of Cedar Grove's identified HMP update primary and alternate points of contact and NFIP Floodplain Administrator.

Primary Point of Contact	Alternate Point of Contact		
Name / Title: Jeffrey McElroy, OEM Coordinator	Name / Title: John D'Ascensio, Deputy OEM Coordinator		
525 Pompton Avenue, Cedar Grove NJ 07009	525 Pompton Avenue, Cedar Grove, NJ 07009		
Phone Number: 973-264-5074	Phone Number: 973-239-1410		
Email: jmcelroy@cedargrovepd.org	Email:		
NFIP Floodplain Administrator			
Name / Title: Alex Palumbo, Township Engineer			
340 Little Falls Rd, Cedar Grove NJ 07009			
Phone Number: 973-239-1410			
Email: engineer@cedargrovenj.org			

#### Table 9.5-1. Hazard Mitigation Planning Team

## 9.5.2 Jurisdiction Profile

Cedar Grove became a Township in 1908. Cedar Grove started out as a small farming community. In 1985 the historic Morgan Farm was acquired by Cedar Grove (The Township of Cedar Grove, 2014). Cedar Grove operates under the Council-Manager form of municipal government. There is a five-member town council who are elected at-large every four years (The Township of Cedar Grove, 2014). According to the U.S. Census Bureau, the Township has a total land area of 4.378 square miles, of which 4.252 square miles is land and 0.126 square miles is water.

According to the U.S. Census, the 2010 population for the Township of Cedar Grove was 12,411. The estimated 2017 population was 12,638, a 1.8 percent increase from the 2010 Census. Data from the 2017 U.S. Census American Community Survey indicate that 3.9 percent of the population is 5 years of age or younger and 26 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.

## 9.5.3 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 9.5-2 summarizes recent and expected future development trends, including major residential/commercial development and major infrastructure development. Figure 9.5.1 at the end of this annex illustrates the geographically-delineated hazard areas and the location of potential new development, where available.





Type of Development	2014	2015	2016	2017	2018
Number o	f Building Permit	s for New Const	ruction Issued Si	nce the Previous	SHMP
Single Family	7	3	2	4	80
Multi-Family	-	-	-	-	-
Other (commercial, mixed- use, etc.)	-	-	-	-	-
Property or Development Name	Type of Development	# of Units / Structures	<b>Location</b> (address and/or block and lot)	Known Hazard Zone(s)*	Description / Status of Development and Mitigation if located in Hazard Zone
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					

Гable 9.5-2.	<b>Recent and</b>	Expected	Future	Development
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\* Only location-specific hazard zones or vulnerabilities identified.

## 9.5.4 Capability Assessment

The Township of Cedar Grove 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 legal and regulatory capabilities.
- Development and permitting capabilities.
- An assessment of fiscal capabilities.
- An assessment of education and outreach capabilities.
- Information on National Flood Insurance Program (NFIP) compliance.
- Classification under various community mitigation programs.
- The community's adaptive capacity for the impacts of climate change.

Areas that mitigation is currently integrated are summarized in in this subsection. The Township of Cedar Grove identified specific integration activities that will be incorporated into municipal procedures 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 Cedar Grove.





		<del>0</del> , - <del>0</del> , -		J of Production		
				Has the HMP been integrated in the		
	Do you have this? (Yes/No)	Authority that enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	Iast 5 years? If yes- how? Describe in comments	If yes- now? If no - can it be a mitigation action? If yes, add Mitigation Action #.	
Codes, Ordinances, & Require	ments	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
Building Code	Yes	Local and State	Yes	Yes/No	Yes/No	
<i>Comment:</i> State mandated on loca 5:24-3.14. Township of Cedar Gro	l level under NJ ve Construction	I IAC 5:23-3.14. Interi Code. Chapter 119	national Buildir as amended. Ad	1 1g Code – New Jersey Ea 10nted 12-20-1976.	lition, 2018, NJAC	
Zoning Code	Yes	Local and State	Yes	Yes/No	Yes/No	
Comment: Per State of NJ Municip all jurisdictions to have current zou element and master plan. Townshi Section 11 States that no permit sh lines except in accordance with "So	oal Land Use La ning and other l p of Cedar Gro all be issued in chedule of Steep	w (MLUL) L. 1975, s and development ord ve Zoning Code, Cha the development of a 5 Slope."	s. 2, eff Aug 1, 1 linances after th pter 268, as am property detern	976, 40-55D-62: 49. Po e planning board has ad ended. Adopted 06-25-20 nined to contain steep slo	wer to zone, requires opted the land use 001. Chapter 268 ope areas and/or crest	
Subdivisions	Yes	Local and State	Yes	Yes/No	Yes/No	
<b>Comment:</b> State mandated - P.L.1975, c.291 (C.40:55D-47): 40:55D-37. Grant of power; referral of proposed ordinance; county planning board approval. Dictated by the Municipal Land Use Law, NJ Statute 40:27-6.2 The board of freeholders 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. Chapter 234 Subdivision of Land, adopted 3-4-1963, administered by the Cedar Grove Planning Board and Zoning Board of Adjustment						
Stormwater Management	Yes	Local	Yes	Yes/No	Yes/No	
<b>Comment:</b> Title 7 of the NJ Admin ordinance establishes minimum sto	istrative Code (. ormwater manag	N.J.A.C. 7:8). Chapte gement requirements	er 228 Stormwa and controls for	ter Management, adopte r development.	d 5-15-2006. The	
Post-Disaster Recovery	No	-	-	-	-	
Comment:						
Real Estate Disclosure	Yes	State – Division of Consumer Affairs	Yes	Yes/No	Yes/No	
<b>Comment:</b> N.J.A.C. 13:45A-29.1; A Statement (POS) approved by the 1 schools, fire and police, as well as	Before signing a New Jersey Real any hazards, ris	a contract of sale, all Estate Commission. sks or nuisances in or	purchasers mus The POS provies around the sub	st receive a New Jersey H des information such as bdivision.	Public Offering proximity to hospitals,	
Growth Management	No		Yes	-	-	
Comment: State mandated at local	l level.			•		
Shoreline Development	No	-	Yes – if coastal community	-	-	
Comment: NJ Coastal Area Facili	ty Review Act (1	N.J.S.A. 13:19) or CA	FRA regulates	almost all development a	long the coast for	
structures, and site preparation. T	elocation, and e his law is imple	nlargement of buildir mented through NJ's	igs or structure. Coastal Zone N	s, and excavation, gradit Ianagement Rules N.J.A.	c. 7:7E-1 et seq.	
Site Plan Review	Yes	Local	Yes	Yes/No	Yes/No	
Comment: Chapter 268 Zoning A	rt X: Site Plan	Approval.		I		
Environmental Protection	No	-	Yes	-	-	
<i>Comment:</i> The rules that are utiliz Administrative Code.	ed by the NJDE	P and other environm	nental agencies	are codified at Title 7 of	the NJ Municipal	
Flood Damage Prevention	Yes	Local	No	Yes	2020-Cedar Grove- 007	
<i>Comment</i> : Chapter 140 Flood Dan by Ord. No. 88-324[1]; amended in Administrator.	nage Prevention n its entirety 5-2	n. Adopted by the Tov 21-2007 by Ord. No. (	vnship Council 07-672. Establis	of the Township of Ceda shes Township Engineer	r Grove 10-17-1988 as Floodplain	
Wellhead Protection	Yes	Local	No	-	-	
Comment: Chapter 265: Wells, Ci	sterns and Hole	es.				

#### Table 9.5-3. Planning, Legal and Regulatory Capability





		Authority that		Has the HMP been integrated in th last 5 years? If yes- how?			
	Do you have this? (Yes/No)	enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.		
<b>Emergency Management</b>	Yes	-	-	-	-		
Comment: Chapter 23: Fire Depa	rtment, Chapter	r 55 Police Departme	ent	•	·		
Climate Change	No	-	-	-	-		
Comment:					·		
Disaster Recovery Ordinance	No	-	-	-	-		
Comment:							
Disaster Reconstruction Ordinance	No	-	-	-	-		
Comment:							
Other	No	-	-	-	-		
Comment:							
Planning Documents							
Comprehensive / Master Plan	Yes	Local	Yes	Yes/No	Yes/No		
<i>Comment:</i> Master Plan includes E Plan.	nvironmental R	esource Inventory, O	pen Space Elem	nent, Housing Plan Eleme	ent, and Fair Share		
Capital Improvement Plan	No	Local	Allowed	Yes/No	Yes/No		
Comment: Per NJSA 40:55D-29 th	ne governing bo	dy is authorized to di	rect the plannin	ng board to prepare a CII	P with at least a six		
Disaster Debris Management Plan	No	-	No	Yes/No	Yes/No		
Comment:							
Floodplain or Watershed Plan	No	-	No	Yes/No	Yes/No		
Comment:							
Stormwater Management Plan	Yes/No	Local and State	Yes	Yes/No	Yes/No		
<b>Comment:</b> Per NJDEP Storm Water Management Rule (N.J.A.C. 7:8, et seq.). The Municipal Stormwater Regulation Program was developed in response to the U. S. Environmental Protection Agency's (USEPA) Phase II rules published in December 1999. The Department issued final stormwater rules on February 2, 2004 and four (4) NJPDES general permits authorizing stormwater discharges from Tier A and Tier B municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s). The Municipal Stormwater Management Plan (MSWMP) documents the strategy for the Township of Cedar Grove ("the Township") to address stormwater-related impacts. The creation of this plan is required by N.J.A.C 7:14A-25 – municipal Stormwater Regulations. This plan contains all of the required elements described in N.J.A.C 7:8 Storm water Management Rules. The plan addresses groundwater recharge, stormwater quantity, and stormwater quality impacts by incorporating stormwater design and performance standards for new major development, defined as projects that disturb one or more acre of land or result in 1/4 acre of new impervious surface. These standards are intended to minimize the adverse impact of stormwater runoff on water quality and water quantity and the loss of groundwater recharge that provides baseflow in receiving							
Stormwater Pollution Prevention Plan	Yes	Local and State	Yes	Yes/No	Yes/No		
Comment: Stormwater Pollution F	Prevention Plan						
Urban Water Management Plan	No	-	No	-	-		
Comment:							
Habitat Conservation Plan	No	-	No	-	-		
Comment:							
Economic Development Plan	No	-	No	-	-		





		Authority that		Has the HMP been last 5 vears?	integrated in the If ves- how?
	Do you have this? (Yes/No)	enforces (Federal, State, Regional, County, Local)	State Mandated / Allowed	If yes- how? Describe in comments	If no - can it be a mitigation action? If yes, add Mitigation Action #.
Comment:			-		
Shoreline Management Plan	No	-	No	-	-
Comment:					
Community Wildfire Protection Plan	No	-	No	-	-
Comment:					1
Community Forest Management Plan	Yes	Local	No	-	-
Comment: Community Forest Man	nagement Plan				1
Transportation Plan	No	-	No	-	-
Comment:			_		
Agriculture Plan	No	-	No	-	-
Comment:					
Climate Action Plan	No	-	No	-	-
Comment:				·	
Tourism Plan	No	-	No	-	-
Comment:					
Business Development Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					
<b>Response/Recovery Planning</b>					
Comprehensive Emergency Management Plan (CEMP) / Emergency Operations Plan (EOP)	Yes	Local	Yes	Yes/No	Yes/No
<i>Comment:</i> Per the NJ Civilian Dep Emergency Operations Plans to be	fense and Disas	ter Control Act (App 2 years	A:9_43.2) Cour	nties and municipalities m	ust have written
Threat & Hazard Identification & Risk Assessment (THIRA)	No	-	-	-	-
Comment:					
Post-Disaster Recovery Plan	No	Local	No	-	-
Comment:					
<b>Continuity of Operations Plan</b>	No	Local	No	-	-
Comment:		•			
Public Health Plan	No	-	No	-	-
Comment:					
Other	No	-	No	-	-
Comment:					





#### Table 9.5-4. Development and Permitting Capability

Criterion	Response
Does your jurisdiction issue development permits?	Yes, Planning/Zoning
- If no, who does? If yes, which department?	
Does your jurisdiction have the ability to track permits by hazard area?	Yes
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.	Yes, Master Plan or Tax Assessor

#### ADMINISTRATIVE AND TECHNICAL CAPABILITY

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

#### **Staff/Personnel Resource Department/Agency/Position** Available? Administrative Capability Planning/Zoning Department, Planning Board Yes Planning Board, and Zoning Board of Adjustment Mitigation Planning Committee No \_ Environmental Board / Commission Yes Environmental Commission (Found in Chapter 47 of Cedar Grove Code) Open Space Board / Committee No \_ Economic Development Commission / No -Committee Warning Systems / Services Nixle Yes (reverse 911, outdoor warning signals) Maintenance program to reduce risk Yes Stream Cleaning, Culvert Cleaning, Catch-basin clearing, Vegetation Management. The Parks Department routinely circulates throughout the Township, neighborhood by neighborhood, pruning and/or removing dead Township trees. Mutual aid agreements Yes Surrounding Communities, County, State **Technical/Staffing Capability** Planners or engineers with knowledge of Yes Cedar Grove DPW land development and land management practices Engineers or professionals trained in Cedar Grove DPW Yes building or infrastructure construction practices Planners or engineers with an understanding Yes Cedar Grove DPW of natural hazards Staff with training in benefit/cost analysis Yes Engineering No Staff with training in green infrastructure \_ Staff with education/knowledge/training in No \_ low impact development Surveyors Yes Engineering (Consultant)

#### Table 9.5-5. Administrative and Technical Capabilities





Staff/Personnel Resource	Available?	Department/Agency/Position
Stormwater engineer	Yes	Engineering
Personnel skilled or trained in GIS applications	Yes	Cedar Grove DPW (Some Capability)
Scientist familiar with natural hazards in local area	No	-
Emergency manager	Yes	Township of Cedar Grove Office of Emergency Management
Grant writers	Yes	Employees write grants on behalf of their own department.
Resilience Officer	No	-
Watershed planner	No	-
Environmental specialist	No	-
Other		

#### FISCAL CAPABILITY

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

#### Table 9.5-6. Fiscal Capabilities

Financial Resource	Accessible or Eligible to Use?
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 (Water and Sewer)
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	No
State-Sponsored Grant Programs	Yes
Development Impact Fees for Homebuyers or Developers	No
Clean Water Act 319 Grants (Nonpoint Source Pollution)	No
Other	No

#### EDUCATION AND OUTREACH CAPABILITY

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

#### Table 9.5-7. 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
<ul><li>Do you have hazard mitigation information available on your website?</li><li>If yes, briefly describe.</li></ul>	No
<ul> <li>Do you use social media for hazard mitigation education and outreach?</li> <li>If yes, briefly describe.</li> </ul>	Yes, Nixle, Facebook, Municipal Website





Response
Yes, Environmental Committee
Yes, Nixle, Facebook, Municipal Website
Yes, Nixle, Facebook, Municipal Website

### **COMMUNITY CLASSIFICATIONS**

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

### Table 9.5-8. Community Classifications

Program	Participating?	Classification	Date Classified
Community Rating System	NP	-	-
Building Code Effectiveness Grading Schedule (BCEGS)	Unknown	-	-
Public Protection (Fire ISO Protection Class)	Yes	Possibly 3 or 4	
Storm Ready Certification	NP	-	-
Firewise Community Classification	NP	-	-

#### 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 climate change and the jurisdiction's rating.

#### Table 9.5-9. Adaptive Capacity of Climate Change

Hazard	Adaptive Capacity (Capabilities) - High/Medium/Low			
Coastal Erosion and Sea Level Rise	Medium			
Coastal Storms (hurricanes/tropical storms, nor'easters, coastal erosion, and storm surge)	Medium			
Drought	Medium			
Earthquake	Medium			
Extreme Temperature	Medium			
Flood (riverine / flash flood, SLR)	Medium			
Geological Hazards (landslides and subsidence/sinkholes)	Medium			
Severe Weather (high wind, tornado, TSTM, and hail)	Medium			
Severe Winter Weather (heavy snow, blizzards, and ice storms)	Medium			
Wildfire	Medium			
Civil Disorder	Medium			
Cyber Attack	Medium			
Disease Outbreak	Medium			





Hazard	Adaptive Capacity (Capabilities) - High/Medium/Low
Economic Collapse	Medium
Hazardous Substances	Medium
Power Outages	Medium
Terrorism	Medium
Transportation Failure	Medium

Notes:

High = Capacity exists and is in use; Medium = Capacity may exist, but is not used or could use some improvement;

Low = Capacity does not exist or could use substantial improvement; Unsure = Not enough information is known to assign a rating.

#### NATIONAL FLOOD INSURANCE PROGRAM

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

#### Table 9.5-10. National Flood Insurance Program Compliance

Criterion	Response
What local department is responsible for floodplain management?	Township Engineer
Who is your floodplain administrator? (name, department/position)	Township Engineer
Are any certified floodplain managers on staff in your jurisdiction?	No
What is the date that your flood damage prevention ordinance was last amended?	05-21-2007
Does your floodplain management program meet or exceed minimum requirements?	Meets
When was the most recent Community Assistance Visit or Community Assistance Contact?	•
Does your jurisdiction have any outstanding NFIP compliance violations that need to be addressed? • If so, state what they are.	No
<ul><li>Are any RiskMAP projects currently underway in your jurisdiction?</li><li>If so, state what they are.</li></ul>	No
<ul> <li>Do your flood hazard maps adequately address the flood risk within your jurisdiction?</li> <li>If no, state why.</li> </ul>	Yes
Does your floodplain management staff need any assistance or training to support its floodplain management program?	No
□ If so, what type of assistance/training is needed?	
<ul> <li>Does your jurisdiction participate in the Community Rating System (CRS)?</li> <li>If yes, is your jurisdiction interested in improving its CRS Classification?</li> <li>If no, is your jurisdiction interested in joining the CRS program?</li> </ul>	No, not interested in joining
<ul> <li>How many flood insurance policies are in force in your jurisdiction?*</li> <li>What is the insurance in force?</li> <li>What is the premium in force?</li> </ul>	Policies in force: 37 Insurance in force: \$8,744,000 Premium in force: \$51.44
<ul> <li>How many total loss claims have been filed in your jurisdiction?*</li> <li>How many claims are still open or were closed without payment?</li> <li>What were the total payments for losses?</li> </ul>	Total loss claims: 21 3 Claims Open; 8 CWOP Total payments for losses: \$211,068.05
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 03/31/2019

#### **ADDITIONAL AREAS OF EXISTING INTEGRATION**





**Sewer Department:** The Township's Sewer Department operates and maintains the sanitary sewer collection system, pumping stations and waste water treatment plant.

**Water Department:** The Township's Water Department operates and maintains the water distribution system which includes water mains, pumping stations and storage tanks.

**Road Department:** The Road Department spreads salt and snowplows the Township's public roadways during winter storms.

**Environmental Commission:** The Environmental Commission provides information and expertise to municipal boards, the Town Council, and general public on various environmental issues.

**Health Department:** The Cedar Grove Health Department is committed to protecting the health of all residents through organized community services.

## 9.5.5 Hazard Event History Specific to the Jurisdiction

Essex 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 (Hazard Profiles) and includes a chronology of events that affected Essex County and its jurisdictions. The Township of Cedar Grove's history of federally-declared (as presented by FEMA) and significant hazard events (as presented in NOAA-NCEI) is consistent with that of Essex County; refer to Appendix E (Risk Assessment Supplement). Table 9.5-11 provides details regarding municipal-specific loss and damages the Township experienced during hazard events from 2014 to 2019. Information provided in the table below is based on reference material or local sources.

Date(s) of	Event Type (disaster declaration if	Essex County		Summary of Local
Event	applicable)	Designated?	Summary of Event	Damages and Losses
January 22-	Winter Storm,	Yes	Low pressure moving across the	Although the county was
23, 2016	Blizzard (DR-		deep South on Thursday January	impacted, the township did not
	4264)		21st and Friday January 22nd	report damages.
			intensified and moved off the Mid	
			Atlantic coast on Saturday January	
			23rd, bringing heavy snow and	
			strong winds to northeast New	
			Jersey, and blizzard conditions to	
			the urban corridor and some	
			nearby areas. At Newark Airport,	
			the storm total snowfall was 24.5	
			inches, where winds gusted to 39	
			mph. Newark Airport ASOS	
			observations showed blizzard	
			conditions, with visibility less than	
			one quarter mile in heavy snow	
			and frequent wind gusts over 35	
			mph through the day and into the	

#### Table 9.5-11. Hazard Event History





Date(s) of Event	Event Type (disaster declaration if applicable)	Essex County Designated?	Summary of Event	Summary of Local Damages and Losses
			early evening on Saturday January 23rd.	
July 1, 2016	Thunderstorm Wind	N/A	A passing cold front triggered a few severe thunderstorms over northeast New Jersey.	A large tree was uprooted onto 3 cars and a home in Cedar Grove. \$45K in property damages were reported.

## 9.5.6 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. Table 9.5-12 summarizes the Township of Cedar Grove risk assessment results and data used to determine the hazard ranking.

A gradient of certainty was developed to summarize the confidence level regarding the input used to populate the hazard ranking. A certainty factor of high, medium or low was selected and assigned to each hazard to provide a level of transparency and create increased understanding of the data used to support the resulting ranking. The following scale was used to assign a certainty factor to each hazard:

- High—Defined scenario/event to evaluate; probability calculated; evidenced-based/quantitative assessment to estimate potential impacts through hazard modeling.
- Moderate—Defined scenario/event or only a hazard area to evaluate; estimated probability; combination of quantitative (exposure analysis, no hazard modeling) and qualitative data to estimate potential impacts.
- Low—Scenario or hazard area is undefined; there is a degree of uncertainty regarding event probability; majority of potential impacts are qualitative.





Hazard of Concern	Hazard/ Scenario(s) Evaluated	Populat	tion	Buildings		Buildings Economy (Loss)		
	Coastal Erosion	CEHA:	0	CEHA:	0	CEHA:	\$0	
Coastal Eussian and	(CEHA):	SLR +1ft:	0	SLR +1ft:	0	SLR +1 ft:	\$0	
Sea Level Rise	Sea Level Rise: NOAA +1ft and +3ft rise	SLR +3ft:	0	SLR +3ft:	0	SLR +3ft:	\$0	High
		Category 1:	92	Category 1:	19	100-year		
	100- and 500- MRP Hurricane Wind	Category 2:	951	Category 2:	197	Wind Loss:	\$3,381,110	
Coastal Storm Cate Cate	Category 1 through Category 4 SLOSH	Category 3:	2,229	Category 3:	462	500-year Wind Loss:	High \$16,934,187	
		Category 4:	2,595	Category 4:	533			
Drought	Drought event	Majority of the County is serviced by water suppliers with surface water sources.		Droughts are not expected to cause direct damage to buildings.		Losses would be limited, due to lack of major agricultural industry.		Low
	100, 500-, 2,500- Year Mean Return Period Event	NEHRP D&E:	2,368	NEHRP D&E:	504	100-year Loss:	\$0	
Earthquake		Liquefaction 170	Liquefaction Class	27	500-year Loss:	\$4,616,521	High	
		Class 4:	179	4:	4: 57		\$71,094,612	
Extreme	Extreme	Over 65 Population:	4,600	Physical impacts	s due to extreme	Loss of busi	ness function is	
Temperature	temperature event (heat or cold)	Population Below Poverty Level:	3,515	temperatures would be limited.		repairs (i.e. or Utilit	pipes bursting) ty Failures.	Low
	100- and 500-Year	100-year	716	100-year	152	100-year	\$2.00 1.40 402	TT' 1
F 100 <b>d</b>	Mean Return Period Event	500-year	1,606	500-year	545	Loss:	\$269,142,437	High

Table 9.5-12. Summary of Risk Assessment Results





Hazard of Concern	Hazard/ Scenario(s) Evaluated	Populat	Population Buildings		Population Buildings Economy (Loss)		ny (Loss)	Certainty Factor	
	High Landslide	Class A:	0	Class A:		0	Class A:	0	
Geological	Susceptibility Areas	Class B:	5	Class B:		1	Class B:	\$359,884	Moderate
Severe Weather	Severe Weather Event	Entire population exposed; The degree of impact to the population depends on the scale of the incident.		Entire building stock is exposed; The degree of impact depends on the scale of the incident.		Economic losses could be similar to those of the coastal storm (wind and surge) and flooding hazards.		Low	
Severe Winter Weather	Severe Winter Weather Event	Entire population exposed; The degree of impact to the population depends on the scale of the incident.		posed; The n the scale of	The cost of snow and ice removal and repair of roads can impact local operating budgets.		Low		
Wildfire	Wildfire Fuel Hazard areas (High, Very High, Extreme)	Wildfire: 0 W		Wildfire:		0	Wildfire:	\$0	Moderate
Civil Disorder	Civil disorder event	Population in the immediate vicinity will be impacted.		Buildings in the immediate vicinity will be most impacted.		ricinity will be	Economic assets in the immediate vicinity will be most impacted.		Low
Cyber Attack	Cyber-attack event	The degree of impact to the population depends on the scale of the incident.		Damages due to a cyber attack may be limited.		tack may be	The degre depends on incider utilities/co would hav econom	e of damages the scale of the nt. Loss of mmunication re widespread ic impacts.	Low
Disease Outbreak	An outbreak of one of the diseases evaluated	Entire population degree of imp population depend of the inc	exposed; The act to the s on the scale ident	Disease outbreak wo impact on	uld not buildin	have a direct gs.	Impacts to f water sup activities a implement outbreaks sp	ood supply and ply; Costs of and programs ted to address and prevent read.	Low





Hazard of Concern	Hazard/ Scenario(s) Evaluated	Population	ulation Buildings		Certainty Factor
Economic Collapse	Recessions, Depressions, Interruption of normal economic conditions	The degree of impact to the population depends on the scale of the incident.	Damages due to economic collapse may be limited; property owners that cannot afford to maintain the structure may become abandoned/rundown.	The degree of damages depends on the scale of the incident. Massive impacts due to loss of jobs, businesses, and tax revenue are possible.	Low
Hazardous Substances	Release of a hazardous substance whether fixed site or in-transit	Population impacted will depend on the type of material and scale of the incident. May include population within small radii of site.	The degree of damages to a building depends on the scale of the incident.	The degree of damages depends on the scale of the incident.	Low
Utility Interruption	Disruption of power caused by accident, sabotage, natural hazards, or equipment failure.	The degree of impact to the population depends on the scale of the incident.	The degree of damages to buildings depends on the scale of the incident; Physical impacts to structures may occur if utilities are keeping critical functions online (i.e. sump pumps).	The degree of damages depends on the scale of the incident.	Low
Terrorism	Terrorist Attack in the County	The degree of impact to the population depends on the scale of the incident; Population in the immediate vicinity will be impacted.	The degree of damages to buildings depends on the scale of the incident; Buildings in the immediate vicinity will be most impacted.	The degree of damages depends on the scale of the incident.	Low





Hazard of Concern	Hazard/ Scenario(s) Evaluated	Population	Buildings	Economy (Loss)	Certainty Factor
Transportation Failure	One accident on any of the following: Roadway/vehicular, Aviation, Rail	The degree of impact to the population depends on the scale of the incident; Population in the immediate vicinity will be impacted.	The degree of damages to asset depends on the scale of the incident; Assets in the immediate vicinity will be most impacted.	The degree of damages depends on the scale of the incident; Assets in the immediate vicinity will be most impacted.	Low





#### **REPETITIVE FLOOD LOSSES**

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

- Number of repetitive loss (RL) properties: 2
- Number of severe repetitive loss (SRL) properties: 0
- Number of RL/SRL properties that have been mitigated: *Unknown*

#### Note: The number of SRL properties excludes RL properties.

Policies and Claims from https://bsa.nfipstat.fema.gov/reports/1011.htm and https://bsa.nfipstat.fema.gov/reports/1040.htm as of 09/30/2018

RL and SRL as of 03/31/2019; SRL includes SRL properties that have been verified only (SRL\_Indicator = V).

#### **CRITICAL FACILITIES AND LIFELINES**

No identified critical facilities or lifelines in the community are located in the 1-percent and 0.2-percent.

#### Table 9.5-13. Potential Flood Losses to Critical Facilities and Lifelines

		Exposure				
			0.2%			
Name	Туре	1% Event	Event	Status of Mitigation		
None						

#### ADDITIONAL IDENTIFIED VULNERABILITIES

The jurisdiction has identified the following vulnerabilities within their community:

- Education is needed for residents during storm events.
- Park Ridge (near CVS) floods from rain and runoff.
- West Lindsley Road experiences considerable runoff from heavy rain, but there is also a lot of runoff from winter thaws. The road is county owned.
- There are two repetitive loss properties located in the township. These properties have been repeatedly damaged by flooding.
- The area between Bowdown and Grove Avenue on Route 23 floods from heavy rainfall, runoff, and the river. This area is in the center of Cedar Grove and includes commercial structures.
- Taylor's Brook, behind Town Hall, overtops during extreme storms.
- Previous instances of interruption of water supply have put a strain on municipal resources.

## HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps were generated for the Township of Cedar Grove 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 Cedar Grove has significant exposure. Figures 9.5-1 and 9.5-2 illustrate the hazard area extent and locations in the Township. These maps also display the location of the regulatory floodplain, as well as identified critical facilities, lifelines, and RL/SRL properties within the municipality.





#### HAZARD RANKING

This section includes 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 5 of the plan. The ranking process involves an assessment of the likelihood of occurrence for each hazard; its potential impacts on people, property, and the economy; and 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 plan participant may have differing degrees of risk exposure and vulnerability compared to Essex County as a whole. Therefore, each jurisdiction ranked the degree of risk to each hazard as it pertains to their community. The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Township of Cedar Grove. During the review of the calculated hazard ranking, the Township adjusted the calculated rankings to incorporate the perceived adaptive capacity of the community with respect to the relevant hazard and any other changes needed. The Township of Cedar Grove has reviewed the Essex County hazard ranking table, as well as its individual results, to reflect and adjust the relative risk of the hazards of concern to the community.

During the review of the hazard ranking, the Township indicated the following:

- The Township changed the calculated hazard ranking for flood from low to high.
- The Township changed the calculated hazard ranking for wildfire from low to medium.
- The Township changed the calculated hazard ranking for terrorism from low to medium.

Coastal Erosion and Sea Level Rise Low	Coastal Storm Low	Drought Medium	Earthquake High	Extreme Temperature Medium	Flood High
Geological Hazards	Severe Storm High	Winter Storm	Wildfire	Civil Disorder Low	Cyber Attack Medium

Table 9.5-14.	Township	of Cedar	Grove Ha	zard Ranking
14010 710 111	10 month	or ocuar	di oro ila	Bui u muning

Disease	Economic	Hazardous	Utility	Terrorism	Transportation
Outbreak	Collapse	Substances	Interruption		Failure
Low	Medium	Low	High	Medium	Low

## 9.5.7 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 2015 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 can also be found under 'Capability Assessment' presented previously in this annex.

		Status (In Progress, No Progress,	Include in th Upd	ne 2020 HMP ate?
2015 Action Number Action		Ongoing Capability, or		Enter 2020
Description	<b>Responsible Party</b>	Completed)	Check if Yes	HMP Action #
Cedar Grove-1: Obtain generators at Cedar Grove critical facilities to maintain continuity of operations and service the residents in times of hazard events. The following have been identified as locations to date: Upgrade Town Hall and new generator for Fire House Company 3 and Municipal Library	Township of Cedar Grove	Town Hall Completed March 2019, Company 3 under construction, Library designs are completed by waiting on funding.	Х	
Cedar Grove-2: Develop and implement an enhanced all-hazards, public outreach / education / mitigation information program on natural hazard risks and what they can do in the way of mitigation and preparedness, including flood insurance. This program will include: •Providing general natural hazard risk, preparedness and mitigation in regular newsletter and mailings and website. •Including natural hazard risk and risk reduction information through social media channels and email blast systems. •Developing/maintaining a natural hazard risk management webpage on the municipal website where information and mapping can be posted.	Supervisor's Office	Ongoing - Basic Emergency Preparedness Information		

#### Table 9.5-15. Status of Previous HMP Mitigation Actions

The Township did not identify any other activities that were completed in addition to those in the 2015 HMP mitigation strategy.

#### **PROPOSED HAZARD MITIGATION INITIATIVES FOR THE PLAN UPDATE**

The Township of Cedar Grove participated in a risk assessment workshop in September 2019 in which detailed information was provided about assets exposed and vulnerable to the identified hazards of concern. The Township of Cedar Grove participated in a mitigation action workshop in October 2019 and was provided a Mitigation Toolbox that included a mitigation catalog developed specifically for Essex County and its hazards of concerns; challenges and opportunities identified during the capability and risk assessments; 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 H (Mitigation Strategy Supplement) provide a more complete description of the Mitigation Toolbox and its resources.

Table 9.5-16 summarizes the comprehensive-range of specific mitigation initiatives the Township of Cedar Grove would like to pursue in the future to reduce the effects of hazards. Some of these initiatives might be previous actions carried forward for this HMP update. 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 4 FEMA mitigation action categories and the 6 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*. Table 9.5-17 provides a summary of the prioritization of all proposed mitigation initiatives for this HMP update and Table 9.5-18 summarizes the actions by type across hazards of concern.





Initiative Number	Mitigation Initiative Name	Description of the Problem	Description of the Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	<u>Lead</u> and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2020- Cedar Grove- 001	Obtain backup power for Fire House Company 3 and the Municipal Library	Cedar Grove critical facilities need to maintain continuity of operations in order to service the residents in times of hazard events.	The following have been identified as locations to date: Generator for Fire House Company 3 and Municipal Library	Existing	Utility interruption	2, 6	Township of Cedar Grove	FEMA Hazard Mitigation Grant Program, Township budget	Preserves continuity of operations	\$50,000	Within 3 years	High	SIP	PP, ES
2020- Cedar Grove- 002	Flood study for Park Ridge	Park Ridge (near CVS) floods from rain and runoff.	Complete Flood Study to assess options for flood reduction.	Existing	Flood	2	E <u>ngineering</u>	HMGP, BRIC, municipal budget	Reduction in flooding	TBD by flood study	5 years	Medium	LPR, SIP	SP
2020- Cedar Grove- 003	Mitigate flood- prone properties, including RL/SRL properties	There are 2 repetitive loss properties located in the Little Falls Road area of the Township. These properties have been repeatedly damaged by flooding.	The Township will conduct public outreach to the RL and SRL properties to identify if there is interest in mitigation (elevation or acquisition). If there is no interest in mitigation, the Township will provide a list of options homeowners can do to protect their home from	Existing	Flood	1, 2, 3	<u>Floodplain</u> <u>Administrator</u>	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.	\$3 Million	3 years	High	SIP	рр





Initiative Number	Mitigation Initiative Name	Description of the Problem	Description of the Solution future flood	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	<u>Lead</u> and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
2020- Cedar Grove- 004	Cooperate with Essex County to develop strategy to reduce W	W Lindsley Road there is considerable runoff from heavy rain, but there is also a lot of runoff from	damage Cedar Grove engineering will work with Essex County to determine a solution to reduce runoff or WL indelar	Existing	Flood	2	Engineering, Essex County	County	Reduction in flooding	TBD by flood study	Within 5 years	Medium	LPR, SIP	SP
004	Lindsley Road flooding	runoff from winter thaws. The road is county owned. Between	on W Lindsley Road and ultimately reduce flood impacts.											
2020- Cedar Grove- 005	Flood study for Bowdown and Grove Avenue on Route 23	Bowdown and Grove Ave on Rt 23. (Center of Cedar Grove. Floods from heavy rainfall, runoff, and the river. Commercial structures. Behind Town Hall is Taylor's Brook overtops during extreme storms	Develop application for Flood Study and implement best alternative. USACE has previously dredged the Peckman near Little Falls Road.	Existing	Flood	2	Engineering	HMGP, BRIC, municipal budget	Reduction in flooding	TBD by flood study	5 years	Medium	LPR, SIP	SP
2020- Cedar Grove- 006	Feasibility study for shared water services	Previous instances of interruption of water supply have put a strain on municipal	Cedar Grove will pursue a feasibility study to determine if a connection with	Existing	Utility interruption	2, 6	<u>Cedar Grove</u> <u>Engineering,</u> Water Department, Township Administration	Municipal budget	Shared services agreement established. Utility interruptions reduced.	TBD by agreemen t	Within 2 years	High	LPR	PR





Initiative Number	Mitigation Initiative Name	Description of the Problem	Description of the Solution	New or Existing Assets?	Hazard(s) to be Mitigated	Goals Met	<u>Lead</u> and Support Agencies	Potential Funding Sources	Estimated Benefits	Estimated Cost	Timeline	Priority	Mitigation Category	CRS Category
		resources by having to	surrounding municipalities can be made for shared water service during periods of outage.											
2020- Cedar Grove- 007	Update Flood Damage Prevention Ordinance to include freeboard	The current ordinance lacks the state required	Update ordinance to include 1 foot of freeboard.	New and Existing	Flood	5	<u>FPA</u>	Municipal budget	Meeting state standards	\$100	Within 6 months	High	LPR	PR

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

#### 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 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, 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.



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- Potential FEMA HMA Funding Sources:
- FMAFlood Mitigation Assistance Grant ProgramHMGPHazard Mitigation Grant ProgramPDMPre-Disaster Mitigation Grant Program
- Timeline:

The time required for completion of the project upon implementation

#### Cost:

The estimated cost for implementation.

<u>Benefits:</u>

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



- 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 9.5-17. Summary of Prioritization of Actions

Initiative Number 2020-Cedar Grove- 001	Mitigation Initiative Name Obtain backup power for Fire House Company 3 and the Municipal Library	Life Safety	Property Protection	0 Cost Bffectiveness	Technical	Political	Legal	0 Fiscal	Environmental	L Social	<mark>-</mark> Administrative	0 Multi-Hazard	0 Timeline	Agency Champion	T Other Community Objectives	Total	High / Medium / Low High
2020-Cedar Grove- 002	Flood study for Park Ridge	0	1	0	1	1	1	0	1	0	0	1	0	1	1	8	Medium
2020-Cedar Grove- 003	Mitigate flood-prone properties, including RL/SRL properties	1	1	1	1	1	1	0	1	0	0	1	0	1	1	10	High
2020-Cedar Grove- 004	Cooperate with Essex County to develop strategy to reduce W Lindsley Road flooding	0	1	0	1	1	0	0	1	0	0	1	0	1	1	7	Medium
2020-Cedar Grove- 005	Flood study for Bowdown and Grove Avenue on Route 23	0	1	0	1	1	1	0	1	0	0	1	0	1	1	7	Medium
2020-Cedar Grove- 006	Feasibility study for shared water services	1	0	0	1	1	1	1	1	1	1	0	1	1	1	11	High
2020-Cedar Grove- 007	Update Flood Damage Prevention Ordinance to include freeboard	0	1	1	1	1	1	1	0	1	1	0	1	1	1	11	High

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





		_	Public Education	Natural	_			Community
Hazard	Prevention	Property Protection	and Awareness	Resource Protection	Emergency Services	Structural Projects	Climate Resilient	Capacity Building
Coastal		Trotection	nivul chess	Trotection		Trojecto	Resilient	Dunung
Erosion and								
Sea Level								
Rise								
Coastal								
(hurricanes/								
tropical								
storms,								
nor'easters,								
coastal								
erosion, and								
storm surge)								
Drought								
Earthquake								
Extreme								
Flood	2020 Cedar	2020 Cedar				2020 Cedar		
(riverine /	Grove-007	Grove-003				Grove-002.		
flash flood.						2020-Cedar		
SLR)						Grove-004,		
						2020-Cedar		
						Grove-005		
Geological								
Hazards								
(landslides								
anu subsidence/si								
nkholes)								
Severe								
Weather (high								
wind,								
tornado,								
TSTM, and								
hail)								
Severe Winter								
Weather (heavy snow								
blizzards and								
ice storms)								
Wildfire								
Civil Disorder								
Cyber Attack								
Disease								
Outbreak								
Economic								
Collapse								
Hazardous								
Litility	2020 Codar	2020 Codar			2020 Codar			
Interruption	Grove-006	Grove-001			Grove-001			
Terrorism	01010-000	01010-001			01010-001			
Transportatio								
n Failure								

Table 9.5-18.	Analysis of Mitigation	n Actions by Hazard	d and Category
Table 7.5-10.	Analysis of Miligation	a Actions by mazar	a and category

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





## 9.5.8 Staff and Local Stakeholder Involvement in Annex Development

The Township of Cedar Grove 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 following table summarizes who participated and in what capacity. In addition, several municipal representatives were asked to review and contribute to the draft annex as documented on the annex sign-off sheets in Appendix B (Participation Documentation). Additional documentation on the municipality's planning process through Planning Partnership meetings is included in Section 2 (Planning Process) and Appendix C (Meeting Documentation).

Entity	Title	Method of Participation
Jeffrey McElroy	OEM Coordinator, Cedar Grove Police Department	Primary POC, attended plan participant meetings, provided impact data, contributed to the mitigation strategy
John D-Ascensio	Deputy OEM Coordinator Address:	Alternate POC

## Table 9.5-19. Contributors to the Annex













Figure 9.5-2. Township of Cedar Grove Hazard Area Extent and Location Map 2







## Name of Jurisdiction:

Cedar Grove

Name and Title Completing Worksheet:

	Action W	/orksheet						
Project Name:	Flood study for Park Ridge	ood study for Park Ridge						
Project Number:	2020-Cedar Grove-002	020-Cedar Grove-002						
	Risk / Vul	nerability						
Hazard(s) of Concern:	Flood, Severe Storm							
Description of the Problem:	Park Ridge (near CVS) floods	Park Ridge (near CVS) floods from heavy rainfall and runoff.						
	Action or Project Intend	ded for Implementation						
Description of the Solution:	Conduct a flood study to dete drainage solutions, including excess stormwater away from	ermine the source of the flooding drainage basins and increased in these locations.	ng problem. Implement I sewer capacity to carry					
Is this project related to a C Lifeline?	Critical Facility or Yes	No 🖾						
Level of Protection:	TBD	Estimated Benefits (losses avoided):	Reduction in flood risk in selected areas					
Useful Life:	TBD by flood study	Goals Met:	2					
Estimated Cost:	TBD by study	Mitigation Action Type:	Local Plans and Regulations, Structure and Infrastructure Projects					
	Plan for Imp	lementation						
Prioritization:	Medium	Desired Timeframe for Implementation:	Within 5 years					
Estimated Time Required for Project Implementation:	5 years	Potential Funding Sources:	HMGP, BRIC, municipal budget					
Responsible Organization:	Engineering	Local Planning Mechanisms to be Used in Implementation if any:	Hazard mitigation planning, stormwater planning					
	Three Alternatives Consid	ered (including No Action)						
	Action	Estimated Cost	Evaluation					
Alternatives	No Action	\$0	Current problem continues					
Alternatives:	Elevate roadways	\$500,000	problem					
	Relocate roadways	N/A	Not possible					
	Progress Report (10	- plan maintenance)						
Date of Status Report:								
Report of Progress:								
Update Evaluation of the Problem and/or Solution:								





### Cedar Grove

## Name of Jurisdiction: Name and Title Completing Worksheet:

Action Worksheet								
Project Name:	Flood study for Park R	Flood study for Park Ridge						
Project Number:	2020-Cedar Grove-002	2020-Cedar Grove-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	0	Project would reduce flooding impacts						
Administrative	0							
Multi-Hazard	1	Flood, Severe Storm						
Timeline	0							
Agency Champion	1	Engineering						
Other Community Objectives	1							
Total	8							
Priority (High/Med/Low)	Medium							





## Name of Jurisdiction:

Cedar Grove

Name and Title Completing Worksheet:

Action Worksheet					
Project Name:	Flood study for Bowdown and Grove Avenue on Route 23				
Project Number:	2020-Cedar Grove-005				
	Ris	sk / Vul	nerabilit	у	
Hazard(s) of Concern:	Flood, Severe Storm				
Description of the Problem:	Between Bowdown and Grove Ave on Rt 23. (Center of Cedar Grove. Floods from heavy rainfall, runoff, and the river. Commercial structures. Behind Town Hall is Taylor's Brook overtops during extreme storms				
	Action or Projec	t Intend	ded for Iı	nplementation	
Description of the Solution:	Develop application for Flood Study and implement best alternative to reduce flooding. USACE has previously dredged the Peckman near Little Falls Road.				
Is this project related to a ( Lifeline?	a Critical Facility or Yes No				
Level of Protection:	TBD		Estimated Benefits (losses avoided):		Reduction in flood risk in selected areas
Useful Life:	TBD by flood study		Goals M	let:	2
Estimated Cost:	TBD by study		Mitigation Action Type:		Local Plans and Regulations, Structure and Infrastructure Projects
	Plan for Implementation				
Prioritization:	Medium		Desireo Implen	l Timeframe for entation:	Within 5 years
Estimated Time Required for Project Implementation:	5 years		Potenti Source	al Funding S:	HMGP, BRIC, municipal budget
Responsible Organization:	Engineering		Local P Mechar in Impl	lanning nisms to be Used ementation if any:	Hazard mitigation planning, stormwater planning
Three Alternatives Considered (including No Action)					
	Action		Estimated Cost		Evaluation
Alternatives:	No Action		\$0		Current problem continues
	Elevate roadways		\$500,000		problem
	Relocate roadways buyout commerc properties	and ial		N/A	Not possible
Progress Report (for plan maintenance)					
Date of Status Report:					
Report of Progress:					
Update Evaluation of the Problem and/or Solution:					





Cedar Grove

## Name of Jurisdiction: Name and Title Completing Worksheet:

Action Worksheet			
Project Name:	Flood study for Bowdown and Grove Avenue on Route 23		
Project Number:	2020-Cedar Grove-005		
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	0	Project would reduce flooding impacts	
Administrative	0		
Multi-Hazard	1	Flood, Severe Storm	
Timeline	0		
Agency Champion	1	Engineering	
Other Community Objectives	1		
Total	8		
Priority (High/Med/Low)	Medium		





#### Name of Jurisdiction:

Cedar Grove

Name and Title Completing Worksheet:

Action Worksheet						
Project Name:	Mitigate flood-prone properties, including RL/SRL properties					
Project Number:	2020-Cedar Grove-003					
	Ris	sk / Vul	nerabilit	y		
Hazard(s) of Concern:	Flood, Severe Storm					
Description of the Problem:	Frequent flooding events have resulted in damages in the Little Falls Road_area. This area is residential, and these properties have been repetitively flooded as documented by paid NFIP claims.					
	Action or Projec	t Inten	ded for Ir	npleme	ntation	
Description of the Solution:	Conduct outreach to 2 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 Little Falls Road_area that experience frequent flooding (high risk areas).					
Is this project related to a ( Lifeline?	Critical Facility or	Yes		No [	$\bowtie$	
Level of Protection:	1% annual chance flood event + freeboard (in accordance with flood ordinance)		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, 3
Estimated Cost:	\$3Million		Mitigat	ion Acti	on Type:	Structure and Infrastructure Project
	Plan	for Imp	lementa	tion		
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)						
	Action No Action		Estimated Cost		1 Cost	Evaluation
Alternatives:	Elevate homes		\$500,000		00	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 Rep	oort (fo	r plan ma	lintenai	ice)	
Date of Status Report:						





Report of Progress:	
Update Evaluation of the Problem and/or Solution:	





Cedar Grove

Name of Jurisdiction: Name and Title Completing Worksheet:

Action Worksheet			
Project Name:	Mitigate flood-prone properties, including RL/SRL properties		
Project Number:			
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 Little Falls Road area of Town.	
Administrative	0		
Multi-Hazard	1	Flood, Severe Storm	
Timeline	0		
Agency Champion	1	NFIP Floodplain Administrator, supported by homeowners	
Other Community Objectives	1		
Total	10		
Priority (High/Med/Low)	High		

