



Mitigation Plan for Four New Jersey Counties
Gloucester County Appendices

Appendix GC.17
South Harrison Township, New Jersey

April 8, 2016

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Part 1: Overview

Part 1.1: Mitigation Plan for Four New Jersey Counties

The Mitigation Plan for Four New Jersey Counties (NJ4 HMP) incorporates input from approximately ninety (90) participating municipalities in Camden, Cumberland, Gloucester, and Salem Counties. The NJ4 HMP is an update and expansion of the South Delaware Valley Region Multi-jurisdictional Hazard Mitigation Plans that were adopted by all four counties and approved by the Federal Emergency Management Agency in 2010 and 2011.

The NJ4 HMP has two main parts:

- Regional Hazard Mitigation Plan
- County and Municipal Appendices

The Regional Hazard Mitigation Plan includes descriptions and information that is common to all participating NJ4 HMP jurisdictions organized according to the following three main focus areas:

- Planning Process
- Hazard Identification and Risk Assessment
- Mitigation Measures

The Regional Hazard Mitigation Plan also includes Annexes that contain detailed background information for these three focus areas and additional reference materials for the implementation of the NJ4 HMP.

The County and Municipal Appendices include specific information for these same three main focus areas for each of the participating municipalities. Detailed tabulations are included in these Appendices for critical facilities, status of past mitigation activities, and proposed mitigation measures for each municipality.

Part 1.2: South Harrison Township (Gloucester County) Municipal Appendix

This Municipal Appendix is focused on South Harrison Township in Gloucester County, New Jersey.

The South Harrison Township Municipal Working Group recommended the South Harrison Township (Gloucester County) Municipal Appendix for adoption to the South Harrison Township Committee.

The South Harrison Township Committee adopted the Municipal Appendix by resolution (see Attachment B: Adoption Resolution).

Region II of the Federal Emergency Management Agency subsequently approved the Municipal Appendix (see Attachment C: Approval Letter).

Part 2: Participation

Part 2.1: Municipal Working Group Participation

Part 2.1 includes:

- *Municipal Working Group members including positions in the community, meetings and work sessions attended, and specific contributions to the Municipal Appendix*
- *Municipal positions and organizations that were invited but were not able to participate in the plan update process*
- *Municipal positions and organizations that have been recommended by the Federal Emergency Management Agency (FEMA) as candidates for participation on Municipal Working Groups but do not exist in the municipality*

Table GC.17-1 identifies the Municipal Working Group members. As explained in *Section 2: Planning Process* of the Mitigation Plan for Four New Jersey Counties (NJ4 HMP) Regional Hazard Mitigation Plan, the Municipal Working Groups are comprised of community representatives who worked to make sure mitigation measures included in the Municipal Appendix addressed the risks faced by residents, businesses, and property owners and reflected the priorities of the community. The Working Group will also continue to stay involved during the implementation and maintenance of the NJ4 HMP.

Table GC.17-1: South Harrison Township (Gloucester County) Working Group

First Name	Last Name	Department	Position	Round 1 Work Session ¹	Round 2 Work Session ²	Work Session ³	Contribution ⁴
Thomas	Luchay	South Harrison Township OEM	Emergency Management Coordinator	☑	☑	☑	Organized Working Group and Work Sessions.
James	McCall	South Harrison Township Committee	Mayor			☑	
Robert	Diaz	South Harrison Township Committee	Deputy Mayor	☑	☑	☑	Organized Working Group and Work Sessions.
Robert	Schenk	South Harrison Township Committee	Committeeman		☑	☑	
John	Horner	South Harrison Township Committee	Committeeman			☑	
Mary	Howard	South Harrison Township Committee	Committeewoman		☑	☑	
Charles S.	Bach, Jr.	South Harrison Township Engineer	Township Engineer / Floodplain Administrator			☑	
Nancy	Kearns	South Harrison Township Administration	Municipal Clerk			☑	
Brian	Lozuke	South Harrison Township Solicitor	Solicitor			☑	

¹ Round 1 Work Session was held on July 16, 2014.

² Round 2 Work Session was held on October 21, 2014.

³ South Harrison Township Committee Meeting & Working Group Meeting was held on December 9, 2014.

⁴ Municipal Working Group members reviewed briefing materials in advance of Work Sessions, contributed during Work Sessions, and reviewed the preliminary Mitigation Plan for Four New Jersey Counties. Additional or unusual contributions are noted in the far right hand column of Table GC.17-1.

Part 2: Participation

First Name	Last Name	Department	Position	Round 1 Work Session ¹	Round 2 Work Session ²	Work Session ³	Contribution ⁴
Jon	Sukeforth	South Harrison Township Public Works	Public Works Supervisor	<input checked="" type="checkbox"/>			
Nicholas	Priore	South Harrison Police Department	Chief of Police	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Chris	Rosser	Gloucester County EMS	Lieutenant		<input checked="" type="checkbox"/>		

The following lists candidate positions and organizations within the community that were extended invitations but could not participate during the development of the Municipal Appendix. These positions and organizations will continue to be extended invitations to participate during subsequent plan implementation and maintenance activities.⁵

- Land Use / Economic Development Planner
- Building Code Official
- Engineering
- Major Employers and Businesses
- School Board

The following lists positions and organizations that are generally recommended for consideration as members of the Municipal Working Groups by FEMA but do not currently exist within the community. An invitation to participate will be extended if positions are created or filled and as organizations are formed.

- GIS / IT Specialist
- Transportation Department Directors / Supervisors
- Business Associations
- Community / Faith-Based Organizations
- Environmental Organizations
- Non-Governmental Organizations
- Critical Infrastructure and Key Resources
- Healthcare Institutions

⁵ See *Section 4: Mitigation Measures* of the NJ4 HMP Regional Hazard Mitigation Plan.

Part 2: Participation

Part 2.2: Public Participation

Part 2.2 includes opportunities provided to the public and interested parties in the municipality to participate during the plan update process.

Table GC.17-2 identifies the date, type, and location (where applicable) for opportunities provided to the public and interested parties to participate in the development of the plan update.

Table GC.17-2: Public Participation

Date	Type of Involvement	Location
August 7, 2014	Link to Project Website (http://nj4hmp.com) established	Welcome to South Harrison Township! ⁶
September 10, 2014	Public meeting with presentation and open discussion	South Harrison Township Municipal Building
September 15, 2014	Flyers posted	South Harrison Township Municipal Building
November 26, 2014	Preliminary Municipal Appendix posted to website for public comment	Welcome to South Harrison Township! Upcoming Events and Important Announcements ⁷
December 10, 2014	Public hearing included on South Harrison Township Committee agenda providing for open discussion, and public comment regarding the Preliminary Municipal Appendix	South Harrison Township Municipal Building

Public comments and input received for the Preliminary Municipal Appendix were considered by the Municipal Working Group and incorporated into the Draft Municipal Appendix where appropriate. Public comments received during the review of the Preliminary Municipal Appendix were included in Attachment A to the Municipal Appendix along with a brief explanation of how the comments were addressed in the Draft Municipal Appendix.

In addition, the Municipal Appendix was adopted as part of a regularly scheduled public meeting (see Attachment B: Adoption Resolution).

Public education and outreach is an on-going mitigation measure included in the Municipal Appendix.⁸ In addition, public participation will continue to be encouraged during subsequent plan implementation and maintenance activities.⁹

⁶ <http://www.southharrison-nj.org/links.shtml>

⁷ http://www.southharrison-nj.org/important_announcements.shtml#comm-meetings

⁸ See Mitigation Measure M-1 in Part 4 of the Municipal Appendix.

⁹ See Section 4: Mitigation Measures of the NJ4 HMP Regional Hazard Mitigation Plan.

Part 3: Hazard Identification and Risk Assessment

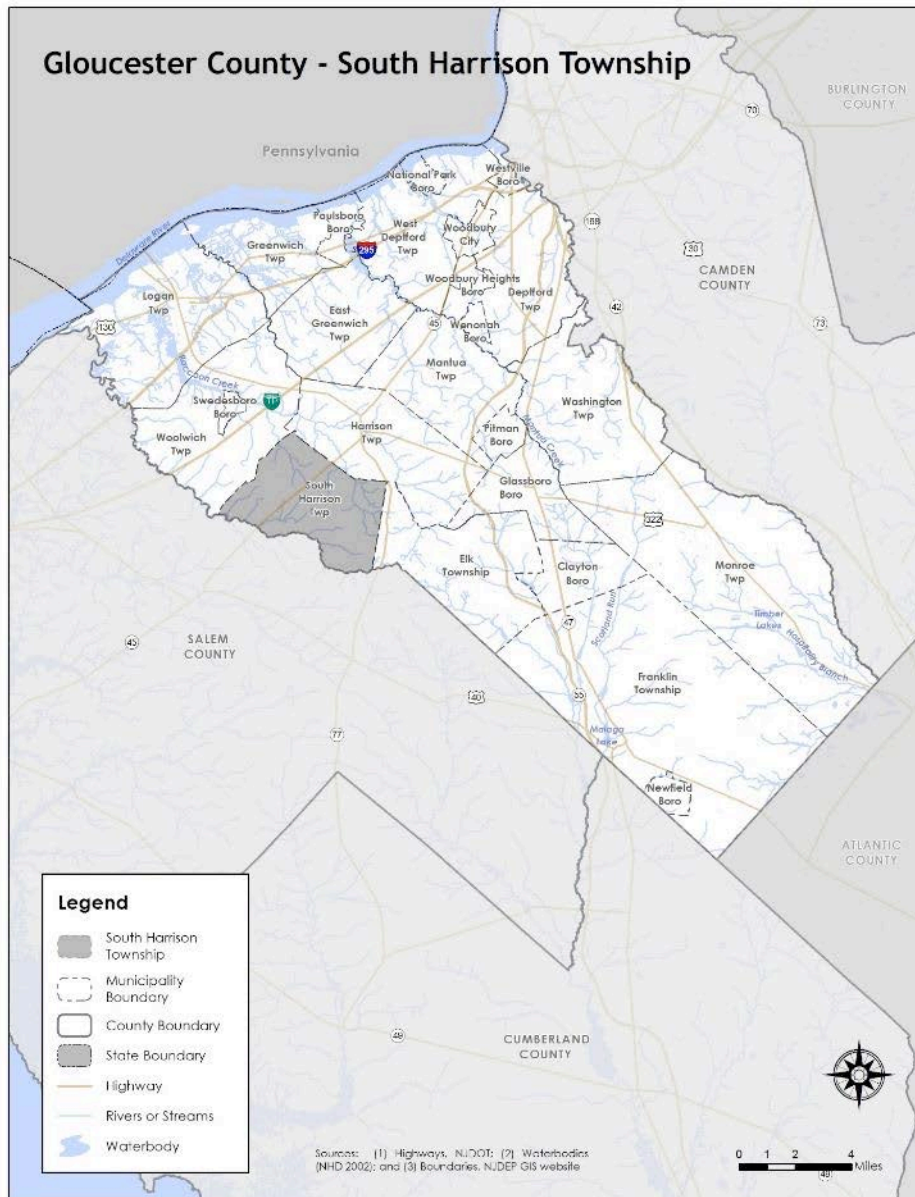
Part 3.1: Municipal Profile

Part 3.1 includes:

- Selected data and information about the municipality that is generally relevant for emergency management planning and specifically for hazard mitigation
- A brief character sketch for the municipality that is only intended to portray a few of the most basic elements

South Harrison Township is located in the western part of Gloucester County (See Figure GC.17-1).

Figure GC.17-1: South Harrison Township (Gloucester County) Location Map

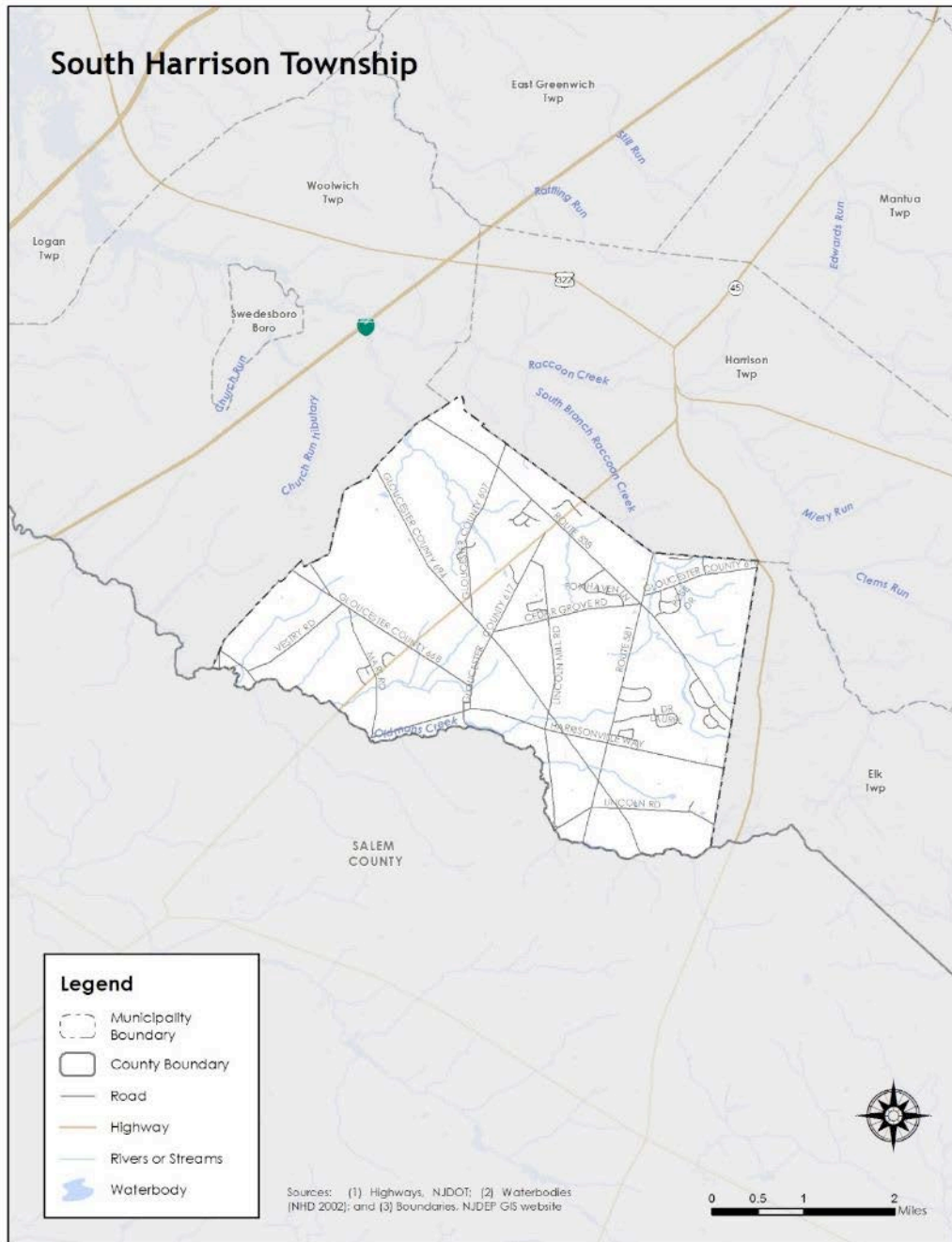


Part 3: Hazard Identification and Risk Assessment

South Harrison Township is a rural “bedroom” community. Along with its agricultural characteristics, South Harrison Township continues to develop its residential and retail areas. An unincorporated community in the municipality is Harrisonville.

Per Figure GC.17-2, the major water courses include South Branch Raccoon Creek and Oldmans Creek. Major transportation routes State Highway 45 and Gloucester County Routes 694, 538, and 581. The land is predominantly flat.

Figure GC.17-2: South Harrison Township Base Map



Part 3: Hazard Identification and Risk Assessment

In addition, Table GC.17-3 is a compilation of demographic information for the municipality and comparison with the county, the four county region, and State of New Jersey.

Table GC.17-3: South Harrison Township Demographics
(Source: Census DP-1, 2010 ACS 5 Year Estimates, DP 3, 4)

	South Harrison Township	Gloucester County	Region	New Jersey
2000 Population	2,417	254,673	974,328	8,414,350
2010 Population	3,162	288,288	1,024,926	8,791,894
Percent Change	30.82%	13.2%	5.19%	4.49%
Population Density	201.7 / sq. mile	895.3 / sq. mile	754.25 / sq. mile	1,195.5 / sq. mile
Land Area	15.68 sq. miles	322.00 sq. miles	1,358.86 sq. miles	7,354.22 sq. miles
% of Population 18 and younger	28.7	24.4	24.1	23.5
% of Population 18 - 64	60.9	63.2	62.7	63
% of Population 65 and over	10.4	12.4	13.2	13.5

Table GC.17-4 illustrates how South Harrison Township ranks in the county, the four county region, and New Jersey.

Table GC.17-4: South Harrison Township Demographic Rankings

	Gloucester County (total of 24)	Region (total of 90]	New Jersey (total of 565)
Population Rank	19	64	445
Land Area Rank	10	36	164
Population Density Rank	24	71	504
Population Change Rank	4	4	-

Table GC.17-5 includes information related to economic and housing statistics for South Harrison Township, Gloucester County, the four county region, and New Jersey.

Table GC.17-5: South Harrison Township Economics and Housing
(Source: USDA ERS, Census DP-1, 2010 ACS 5 Year Estimates, DP 3, 4; NJ LWD 2010)

	South Harrison Township	Gloucester County	Region	New Jersey
Date Incorporated	March 2, 1883	1686	-	-
Rural / Urban Status	Urban	Urban	Urban	Urban
Median Household Income	\$106,667	\$72,664	\$60,933	\$69,811
Total Number of Housing Units	1,056	109,796	397,990	3,529,033
Occupied Housing Units	1,020	104,271	372,472	3,176,069
Vacant Housing Units	36	5,525	25,518	352,964
Owner Occupied Housing Units	969	83,525	266,593	2,126,279

Part 3: Hazard Identification and Risk Assessment

	South Harrison Township	Gloucester County	Region	New Jersey
Renter Occupied Housing Units	51	20,746	105,879	1,049,790
Building Permits	12	716	1,554	13,535
Largest Industry	Agriculture, Forestry, Fishing and Hunting; Educational Services; and Transportation and Warehousing	Educational Services, and health care and social assistance	Educational services, and health care and social assistance	Educational services, and health care and social assistance

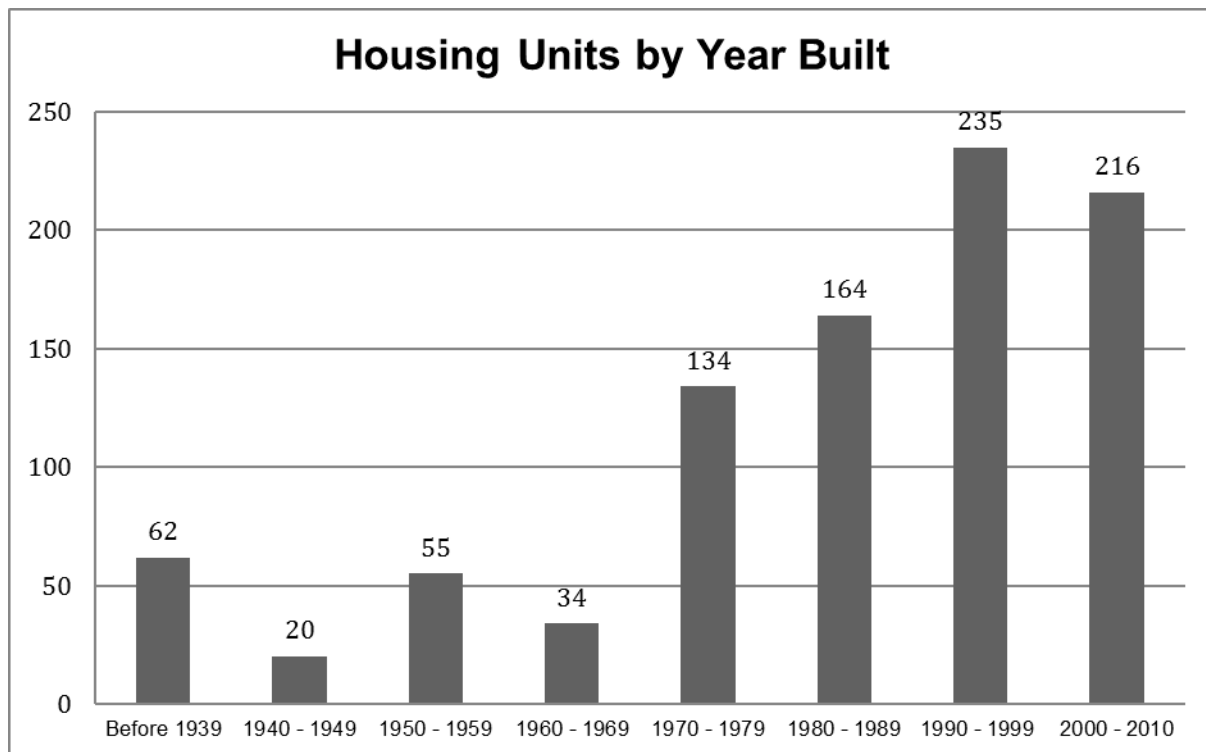
Table GC.17-6 illustrates how South Harrison Township ranks in the county and the four county region.

Table GC.17-6: South Harrison Township Ranking (Economics and Housing)

	Gloucester County (total of 24)	Region (total of 90)
Median Household Income Rank	2	4
Vacant Housing Rank	23	83
Renter Occupied Housing Rank	24	87
Building Permits	11	28

Figure GC.17-3 illustrates development patterns in South Harrison Township by examining housing units by year built. About 22% of homes in South Harrison Township were built during the 1990s.

Figure GC.17-3: South Harrison Township Housing Units by Year Built
(Source: 2010 ACS 5 Year Estimates, DP 4)



Part 3: Hazard Identification and Risk Assessment

Part 3.2: Hazard Priorities

Part 3.2 includes hazard priority determinations per the Municipal Working Group.

As a key step in the Hazard Identification and Risk Assessment (HIRA) process, the twelve (12) natural hazards identified in the NJ4 HMP¹ were discussed during the Municipal Working Group Work Sessions and the relative priority of these hazards was identified. The Municipal Working Group rated the hazards as follows:

High Priority

- Drought
- High Wind
- Severe Weather – Summer
- Severe Weather – Winter

Moderate Priority

- Extreme Temperature: Cold & Hot
- Flood

Low Priority

- Dam Failure
- Earthquake
- Wildfire

Three additional hazards were discussed but were not considered applicable to the municipality:

- Coastal Erosion & Sea Level Rise
- Geologic Hazards
- Levee Failure

¹ See Section 3: Hazard Identification and Risk Assessment.

Part 3: Hazard Identification and Risk Assessment

Part 3.3: Hazard Mapping

Part 3.3 includes cross references to hazard inventory and risk assessment mapping included in the NJ4 HMP Regional Hazard Mitigation Plan.

Table GC.17-7 provides information regarding hazard inventory mapping included in *Annex D: Hazard Profiles and Risk Assessments* of the NJ4 HMP that support the Hazard Identification and Risk Assessment (HIRA) for the Municipal Appendix. The indicated maps and exhibits correspond to the hazards identified by the Municipal Working Group in Part 3.2. The information represented by these maps will be used in the Critical Facilities Hazard Exposure Assessment described in Part 3.4.

Table GC.17-7: Supporting Mapping and Exhibits

Figure #	Hazard	Map	HIRA Contribution
Figure RP.D-11	Dam Failure	Dam Locations and Hazard Classification	Identify areas in proximity to rated dams
Figure RP.D-46	Flood	FEMA Flood Hazard Zones Preliminary FIRM (PFIRM)	Identify areas subject to periodic flooding (work-in-progress for revisions to effective FIRM)
Figure RP.D-99	Wildfire	Wildland Fuel Hazard Risk	Identify areas subject to wildfire
Figure RP.D-106	Wildfire	Wildland Urban Interface (WUI)	Identify areas subject to wildfire

The following hazards are not referenced as these hazards occur uniformly across the municipality and have the same potential impact on all properties and assets:

- Drought
- Earthquake
- Extreme Temperatures – Cold and Hot
- High Wind
- Severe Weather – Summer
- Severe Weather – Winter

Part 3: Hazard Identification and Risk Assessment

Part 3.4: Critical Facilities Inventory and Hazard Exposure Assessment

Part 3.4 includes:

- *Inventory information for municipal critical facilities*
- *Hazard exposure analysis results for municipal critical facilities*

Consistent with the process described in Section 3 of the NJ4 HMP Regional Hazard Mitigation Plan, Table GC.17-8 contains updated inventory information for municipal critical facilities including cross-references to related mitigation measures identified in Part 4 of the Municipal Appendix.

Note: Shaded cells (if any) will be completed as part of follow-up efforts to be conducted as part of Mitigation Measure M-2 (see Part 4 of the Municipal Appendix).

Table GC.17-9 provides the means to record results of overlaying critical facility locations with hazard mapping identified in Part 3.3. The results will indicate critical facilities that are potentially exposed to specific hazards.

Note: This information will be used in critical site and facility assessments to be conducted as part of Mitigation Measure M-2 (see Part 4 of the Municipal Appendix).

Hazards that apply to all critical facilities in the NJ4 region and will automatically be included in the proposed critical site and facility assessment process include:

- Earthquake
- High Wind
- Severe Weather – Summer
- Severe Weather – Winter

Hazards that do not relate to the proposed critical site and facility assessment process include:

- Drought
- Extreme Temperatures – Cold and Hot

As a result, these six (6) hazards are not included in the critical facility exposure assessment in Section 3 of the NJ4 HMP Regional Hazard Mitigation Plan.

Part 3: Hazard Identification and Risk Assessment

Table GC.17-8: South Harrison Township (Gloucester County) Critical Facilities Inventory

CF #	Name	Type	Sub-Type	Address	Co-located CF #	Shelter (Y/N)	Generator (Y/N)	Comments	Mitigation Measure #
CF-1	Township Hall	Municipal	Administrative Offices	664 Harrisonville Road, Harrisonville		Y	Y		M-12
CF-2	Emergency Operations Center	EOC	Co-located Facilities	664 Harrisonville Road, Harrisonville	CF-1	Y	Y		
CF-3	Police Station	Law Enforcement Facilities	Stations	664 Harrisonville Road, Harrisonville	CF-1	Y	Y		
CF-4	Harrisonville Fire Department	FireStation	Stations	30 Main Street, Harrisonville		N	Y ^{2 3}		M-5 / M-9 / M-13
CF-5	Public Works	Public Works	Combined Administrative Office, Maintenance / Work Area, Equipment / Material Storage, and Fueling Station	664 Harrisonville Road, Harrisonville	CF-1	Y	Y		
CF-6	South Harrison Elementary School	Schools	Public Schools	904 Mullica Hill Road, Harrisonville / P.O. Box 112		Y	Y ²		M-6 / M-14 / M-15

² Back-up generator provides partial building coverage for emergency lighting.

³ Harrisonville Fire Department has a portable generator.

Part 3: Hazard Identification and Risk Assessment

Table GC.17-9: South Harrison Township (Gloucester County) Critical Facilities Hazard Exposure

CF #	Name	Increased Inundation +1 Foot	Increased Inundation +2 Foot	Increased Inundation +3 Foot	Dam Failure	Flood – FIRM Zone V	Flood – FIRM Zone A	Flood – FIRM Zone 0.2%	Storm Surge – Category 1	Storm Surge – Category 2	Storm Surge – Category 3	Storm Surge – Category 4	Levee Failure	Wildfire Wildland High Density Urban Interface	Wildfire Extreme / High Fuel Level Risk
CF-1	Township Hall	N/A	N/A	N/A		N/A			N/A	N/A	N/A	N/A	N/A		
CF-2	Emergency Operations Center	N/A	N/A	N/A		N/A			N/A	N/A	N/A	N/A	N/A		
CF-3	Police Station	N/A	N/A	N/A		N/A			N/A	N/A	N/A	N/A	N/A		
CF-4	Harrisonville Fire Department	N/A	N/A	N/A		N/A			N/A	N/A	N/A	N/A	N/A		
CF-5	Public Works	N/A	N/A	N/A		N/A			N/A	N/A	N/A	N/A	N/A		
CF-6	South Harrison Elementary School	N/A	N/A	N/A		N/A			N/A	N/A	N/A	N/A	N/A		

Part 4: Mitigation Measures

Part 4.1: Mitigation Goals and Strategy

Part 4.1 includes:

- *Goal statements reviewed and approved by the Municipal Working Group based on goals included in the Southern Delaware Valley Region (New Jersey) Multi-Jurisdictional Hazard Mitigation Plans (SDVR HMPs) approved by FEMA in 2010 and 2011 for Camden, Cumberland, Gloucester, and Salem Counties*
- *Overarching strategy for the municipality's mitigation program*

Goals were originally established by the Southern Delaware Valley Region Hazard Mitigation Steering Committee and validated by the four County Hazard Mitigation Working Groups in response to risk and capability assessment results.

As part of the plan update process, these goals were reviewed and edited by the Municipal Working Group for use in the Municipal Appendix. All mitigation measures in the Municipal Appendix are related to at least one of these four goal statements.

- **Goal 1: Improve education and outreach efforts** regarding potential risk of natural hazards and appropriate mitigation measures that can be used to reduce risk (including programs, activities, and projects)
- **Goal 2: Improve data collection, use, and sharing** to reduce the risk of natural hazards
- **Goal 3: Improve capabilities and coordination** at municipal, county, and state levels to plan and implement hazard mitigation measures
- **Goal 4: Plan and implement projects** to mitigate identified natural hazards, known problems, and areas of concern

Based on these goals, the results of the NJ4 HMP Regional Hazard Mitigation Plan HIRA, and experience of participants in the plan update process, the Municipal Working Group identified an overarching strategy for mitigation:

- Focus on projects to address known problems or areas of concern for critical facilities and vulnerable populations as additional initial risk reduction efforts
- Provide opportunities for residents and property owners to access available information about risk reduction and mitigation measures
- Identify additional areas of concern for critical facilities and vulnerable populations for future plan updates
- Institutionalize hazard mitigation into municipal activities and programs through regular interactions of the Municipal Working Group and better integration of related regulatory programs and planning initiatives
- Stay informed regarding changing conditions and related improvements in hazard and risk data due to future natural hazard events and increasing understanding of the effects of climate change and use the information as part of periodic evaluations of and refinements or additions to the municipality's mitigation program

The mitigation measures described in Parts 4.3 through 4.5 of the Municipal Appendix reflect this strategy.

Part 4: Mitigation Measures

Part 4.2: SDVR HMP Mitigation Measures

Part 4.2 includes the status of mitigation measures identified for the municipality in the SDVR HMP.

Known problems and areas of concern were the basis for mitigation measures identified in the SDVR HMP. In cases where these problems and concerns still existed at the time of the plan update, the related SDVR HMP mitigation measures were candidates for inclusion in the Municipal Appendix.

Table GC.17-10 identifies the status of mitigation measures included in the SDVR HMP. These entries were based on information provided by the Municipal Working Group. In some cases, the SDVR HMP mitigation measures were carried over as part of the Municipal Appendix as indicated in the “Comments” column and the far right-hand column of Table GC.17-10.

Table GC.17-10: Status of South Harrison Township (Gloucester County) SDVR HMP Mitigation Measures

Mitigation Action, Program, or Project	Status	Comments	Mitigation Measure # (Notes A & B)
South Harrison 1: Engineering study to determine appropriate flood mitigation action and envelope hardening/improved load path for Fire/EMS building, Municipal building, and South Harrison Elementary School located on Main Street.	Not completed, not funded	Revised mitigation measure included in updated Municipal Appendix.	M-12 / M-13 / M-14
South Harrison 2: Public education and outreach program for residents in trailer park (between Mullica Hill Road and Cedar Grove) for hurricane/evacuation strategies.	Work-in-progress	This issue is an ongoing effort. Therefore, mitigation measure is included in updated Municipal Appendix.	M-1
South Harrison 3: Assess wind risk to communications tower (repeater tower).	Not completed, not funded	Multi-jurisdictional mitigation measure is included in updated Municipal Appendix.	MJ-2

Table GC.17-10 Notes:

- A. See Tables GC.17-11 and GC.17-12 for municipal (M-#) mitigation measures
- B. See Table GC.17-13 for multi-jurisdictional (MJ-#) mitigation measures

Part 4: Mitigation Measures

Part 4.3: Municipal Mitigation Measures – Identification

Part 4.3 includes brief descriptions of mitigation measures that are considered the sole responsibility of the municipality.

Table GC.17-11 includes the list of mitigation measures that are considered the responsibility of the municipality. These mitigation measures:

- Reflect the goals and strategy identified in Part 4.1
- Include projects carried over from SDVR HMPs as detailed in Part 4.2
- Include new projects, programs or activities identified by the Municipal Working Groups including measures to address known problems or areas of concern for critical facilities and vulnerable populations
- Address Repetitive Flood Loss (RL) and Severe Repetitive Flood Loss Properties (SRL)¹ if applicable

Note: South Harrison Township does not currently have RL or SRL properties per information provided by the New Jersey Department of Environmental Protection.

Table GC.17-11 includes:

- Brief description of the mitigation action, program or project
- Hazard(s) addressed by the measure
- Relevant goal(s) addressed by the measure
- Whether the measure pertains to existing or new structures or both

Note: Mitigation measures with discrete locations are shown in Figure GC.17-4.

Table GC.17-11: South Harrison Township (Gloucester County) Municipal Mitigation Measures Identification

#	Mitigation Action, Program, or Project	Hazard(s)	Goal (s)	Existing or New Structures	Basis / Rationale ²
M-1	Identify and pursue outreach and education opportunities to inform municipal residents, businesses, and property owners regarding: <ul style="list-style-type: none"> • Current hazards and risks • Changing conditions and actions that may reduce / increase risk • Best practices for hazard mitigation at the individual or property level.³ • Target outreach campaign to residents in Home Park located between Mullica Hill Road and Cedar Grove regarding hurricane / evacuation strategies. 	All	Goal #1	Both	The primary concern is damage during a hurricane, especially in vulnerable areas, such as the trailer park. Public alerting, warning and communication is identified as a risk concern.

¹ See Section 3: Hazard Identification and Risk Assessment and related portions of Annex D of the NJ4 HMP Regional Hazard Mitigation Plan for a description of RL and SRL properties.

² **Note to Draft NJ4 HMP Reviewers:** South Harrison Township Municipal Working Group added a column to Table GC.17-11 titled “Basis / Rationale”. In this column, the Municipal Working Group identifies the reasoning and importance of each outlined mitigation measure to the community for future reference.

³ For example, individual property owners can be informed about back-up power alternatives such as initial battery back-up for power disruptions.

Part 4: Mitigation Measures

#	Mitigation Action, Program, or Project	Hazard(s)	Goal (s)	Existing or New Structures	Basis / Rationale ²
M-2	Prioritize critical facilities and complete site and facility surveys to identify vulnerabilities and potential mitigation measures.	All	Goal #2	Existing	Are our facilities able to withstand hurricane force winds? An assessment should be conducted to determine the structural capabilities of our critical facilities.
M-3	Prioritize recurrent drainage problem areas and initiate data collection to track unreimbursed damages and related response and recovery expenses.	All	Goal #2	Existing	With limited ingress/egress routes, most hazards can result in isolation of residents and critical facilities. Past weather events that have led to flooding and damage to roadways should be reviewed in order to manage storm water runoff. Flooded roadways impede first responders and any evacuations that may be necessary.
M-4	Conduct regular Municipal Working Group meetings consistent with the plan maintenance program and the Municipal Adoption Resolution.	All	Goal #3	Both	Periodic meetings to keep focus on the plan, improve communications; and awareness.
M-5	Install permanent backup emergency power generator at Harrisonville Fire Department (CF-4).	All	Goal #4	Both	The fire department does not have a hard wired permanent emergency backup generator, which has affected operations during power outages.
M-6	Upgrade permanent backup emergency power generator at South Harrison Elementary School (CF-6).	All	Goal #4	Both	The school, as a shelter, only has backup power for a small portion of the building (cafeteria area only). The facility would need to provide power/access to additional rooms/areas if longer term sheltering is desired.
M-7	Develop and implement tree maintenance plan to assist with the reduction of power outages, damages to homes, and evacuation issues.	All	Goal #4	Both	Power distribution system follows roadways that have a heavy tree canopy. Downed trees and limbs constitute a major cause for power outages as well as access/egress route blockages during any significant storm. Either tree trimming or rerouting power lines underground should be evaluated. During a large storm, power could be out for days before the power company can clear the roadway and restore power.

Part 4: Mitigation Measures

#	Mitigation Action, Program, or Project	Hazard(s)	Goal (s)	Existing or New Structures	Basis / Rationale ²
M-8	Upgrade fuel storage capacity within South Harrison Township.	All	Goal #4	Both	Current fuel storage (Gasoline and Diesel fuel) is very limited at the municipal building. Fuel supply for emergency vehicle use is only sufficient for a few days.
M-9	Upgrade water tank storage capacity for use by the Harrisonville Fire Department (CF-4).	All	Goal #4	Both	This Township does not have any hydrants. The nearest large water supply is Harrisonville Lake. The logistics of running hose from the Lake, through a relay pumper, to one of our critical facilities will take time to set up. A 10,000 gallon tank, similar to ones already installed in the Township, will enable a more effective fire response for our critical facilities and residents of the town.
M-10	Upgrade culverts along Porches Mill Road.	Flood / Severe Storm – Winter Weather / Severe Storm – Summer Weather	Goal #4	Both	Upgrade culverts in known flooding problem areas.
M-11	Upgrade culverts at Marl Road.	Flood / Severe Storm – Winter Weather / Severe Storm – Summer Weather	Goal #4	Both	Upgrade culverts in known flooding problem areas.
M-12	Harden / retrofit infrastructure and loading path for Township Hall located on Harrisonville Road (CF-1).	High Wind	Goal #4	Both	Evaluate and upgrade a critical facility for high wind events.
M-13	Harden / retrofit infrastructure and loading path for Harrisonville Fire Department building located on Harrisonville Road (CF-4).	High Wind	Goal #4	Both	Evaluate and upgrade a critical facility for high wind events.
M-14	Harden / retrofit infrastructure and loading path for South Harrison Elementary School located on Harrisonville Road (CF-6).	High Wind	Goal #4	Both	Evaluate and upgrade a critical facility for high wind events.

Part 4: Mitigation Measures

#	Mitigation Action, Program, or Project	Hazard(s)	Goal (s)	Existing or New Structures	Basis / Rationale ²
M-15	Upgrade South Harrison Elementary School security system, specifically camera capabilities to better protect students and employees (CF-6). ⁴	Terrorism	Goal #4	Both	Provide additional security measures for the public school.

Part 4.4: Municipal Mitigation Measures – Implementation

Part 4.4 includes a tabulation of relevant aspects related to the implementation of the municipal mitigation measures.

Table GC.17-12 includes information identified by the Municipal Working Group:

- Part(ies) responsible for following up with implementation of the measure
- Priority for implementation considering a range of criteria⁵
- Project Type to help determine funding options and implementation mechanisms at the municipal level⁶
- Estimated Cost, including estimates provided by the Municipal Working Group or approximate ranges for projects that are in early stages of development
- Target Date, indicating desired completion dates assuming availability of funding
- Next step(s) anticipated to implement the identified mitigation measures at the municipal level

Table GC.17-12: South Harrison Township (Gloucester County) Municipal Mitigation Measures Implementation

#	Mitigation Action, Program, or Project	Responsible Part(ies) ⁷	Priority	Project Type	Estimated Cost (\$)	Target Date	Next Step(s)
M-1	Identify and pursue outreach and education opportunities.	Municipal OEM	Low	Public Outreach and Education	Staff time commitment	On-going	<ul style="list-style-type: none"> ▪ Work with County Working Group to identify resource needs and availability. ▪ Identify target audience(s).
M-2	Prioritize critical facilities and complete site and facility surveys to identify vulnerabilities and potential mitigation measures.	Municipal OEM and Facility Managers	Low	Data Acquisition and Management	Staff time commitment	On-going	Review critical facility list and establish priorities, procedures, and tentative time schedule for conducting site and facility surveys.

⁴ **Note to Draft NJ4 HMP Reviewers:** Although natural hazards are the focus of the NJ4 HMP, technological hazards are a continuing concern to the community and are documented in the Municipal Appendix to reflect the full range of hazards within South Harrison Township.

⁵ See *Section 4: Mitigation Measures* and related portions of Annex E of the NJ4 HMP Regional Hazard Mitigation Plan for a description of evaluation criteria considered by the Municipal Working Group.

⁶ See *Section 4: Mitigation Measures* and related portions of Annex F of the NJ4 HMP Regional Hazard Mitigation Plan for a description of project types and related information regarding funding options and implementation mechanisms.

⁷ South Harrison Township and other outlined responsible parties cannot commit to any of the projects outlined within the Update Hazard Mitigation Plan unless funds are provided.

Part 4: Mitigation Measures

#	Mitigation Action, Program, or Project	Responsible Part(ies) ⁷	Priority	Project Type	Estimated Cost (\$)	Target Date	Next Step(s)
M-3	Prioritize recurrent drainage problem areas and initiate data collection to track unreimbursed damages and related response and recovery expenses.	Municipal OEM and Municipal Working Group	Low	Capabilities and Coordination	Staff time commitment	On-going	Identify recurrent drainage problem areas, establish priorities, and identify data collection procedures.
M-4	Conduct regular Municipal Working Group meetings.	Municipal OEM and Municipal Working Group	Low	Capabilities and Coordination	Staff time commitment	On-going	Establish regular Municipal Working Group membership, reporting requirements, and meeting / work session schedule.
M-5	Install permanent backup emergency power generator at Harrisonville Fire Department (CF-4).	Municipal OEM and Fire Department	Moderate	Back-up Emergency Power Generator	< \$100K	One to three years	Conduct project scoping.
M-6	Install permanent backup emergency power generator at South Harrison Elementary School (CF-6).	Municipal OEM and School Board	Moderate	Back-up Emergency Power Generator	< \$100K	One to three years	Conduct project scoping.
M-7	Develop and implement tree maintenance plan to assist with the reduction of power outages, damages to homes, and evacuation issues.	Municipal OEM and Public Works Department	Moderate	Public Property Mitigation	\$50K - \$100K	Three to five years	Conduct project scoping.
M-8	Upgrade fuel storage capacity within South Harrison Township.	Municipal OEM and Fire Department	Moderate	Public Property Mitigation	< \$100K	Three to five years	Conduct project scoping.
M-9	Upgrade water tank storage capacity for use by the Harrisonville Fire Department (CF-4).	Municipal OEM and Fire Department	Moderate	Public Property Mitigation	< \$100K	Three to five years	Conduct project scoping.
M-10	Upgrade culverts along Porches Mill Road.	Municipal OEM and Public Works Department	Moderate	Private Property Flood Mitigation	< \$100K	Three to five years	Conduct project scoping.
M-11	Upgrade culverts at Marl Road.	Municipal OEM and Public Works Department	Moderate	Private Property Flood Mitigation	< \$100K	Three to five years	Conduct project scoping.
M-12	Harden / retrofit infrastructure and load path for Township Hall located on Harrisonville Road (CF-1).	Municipal OEM and Public Works Department	Moderate	Building Retrofit	\$100K - \$500K	Three to five years	Conduct project scoping.
M-13	Harden / retrofit infrastructure and load path for Harrisonville Fire Department building located on Harrisonville Road (CF-4).	Municipal OEM, Fire Department, and Public Works Department	Moderate	Building Retrofit	\$100K - \$500K	Three to five years	Conduct project scoping.

Part 4: Mitigation Measures

#	Mitigation Action, Program, or Project	Responsible Part(ies) ⁷	Priority	Project Type	Estimated Cost (\$)	Target Date	Next Step(s)
M-14	Harden / retrofit infrastructure and load path for South Harrison Elementary School located on Harrisonville Road (CF-6).	Municipal OEM, Public Works Department, and School Board	Moderate	Building Retrofit	\$100K - \$500K	Three to five years	Conduct project scoping.
M-15	Upgrade South Harrison Elementary School security system, specifically camera capabilities to better protect students and employees (CF-6).	Municipal OEM and School Board	Moderate	Risk / Threat Assessment	< \$50K	One to five years	Conduct project scoping.

Part 4.5: Multi-Jurisdictional Mitigation Measures

Part 4.5 includes brief descriptions of mitigation measures that require multiple jurisdictions to implement.

During the Municipal Working Group Work Sessions, the Municipal Working Group identified some SDVR HMP mitigation measures as well as new areas of concern as mitigation measures where implementation requires participation or leadership from other levels of government, including county, state, and federal agencies. These multi-jurisdictional mitigation measures are included in Table GC.17-13.

Section 4: Mitigation Measures of the NJ4 HMP Regional Hazard Mitigation Plan describes multi-jurisdictional implementation strategies in detail. Section 4 identifies multi-jurisdictional mitigation measures that Municipal Working Groups believe are partly or wholly the responsibility of County agencies. These measures have been referred to the County Working Group for consideration. As part of the mitigation measures in the County Appendix to the NJ4 HMP Regional Hazard Mitigation Plan, the County Working Group will be working with the municipalities to identify:

- Specific responsibilities amongst different level(s) of government to address these problem areas
- Mitigation measures or related projects which may address the described problem areas that are already acknowledged as County responsibilities including identifying the appropriate County agency or department taking the lead role and status of implementing these mitigation measures
- Which, if any, additional mitigation measures the member agencies of the County Working Group will assume responsibility to implement

Note: Multi-jurisdictional mitigation measures with discrete locations are shown in Figure GC.17-4.

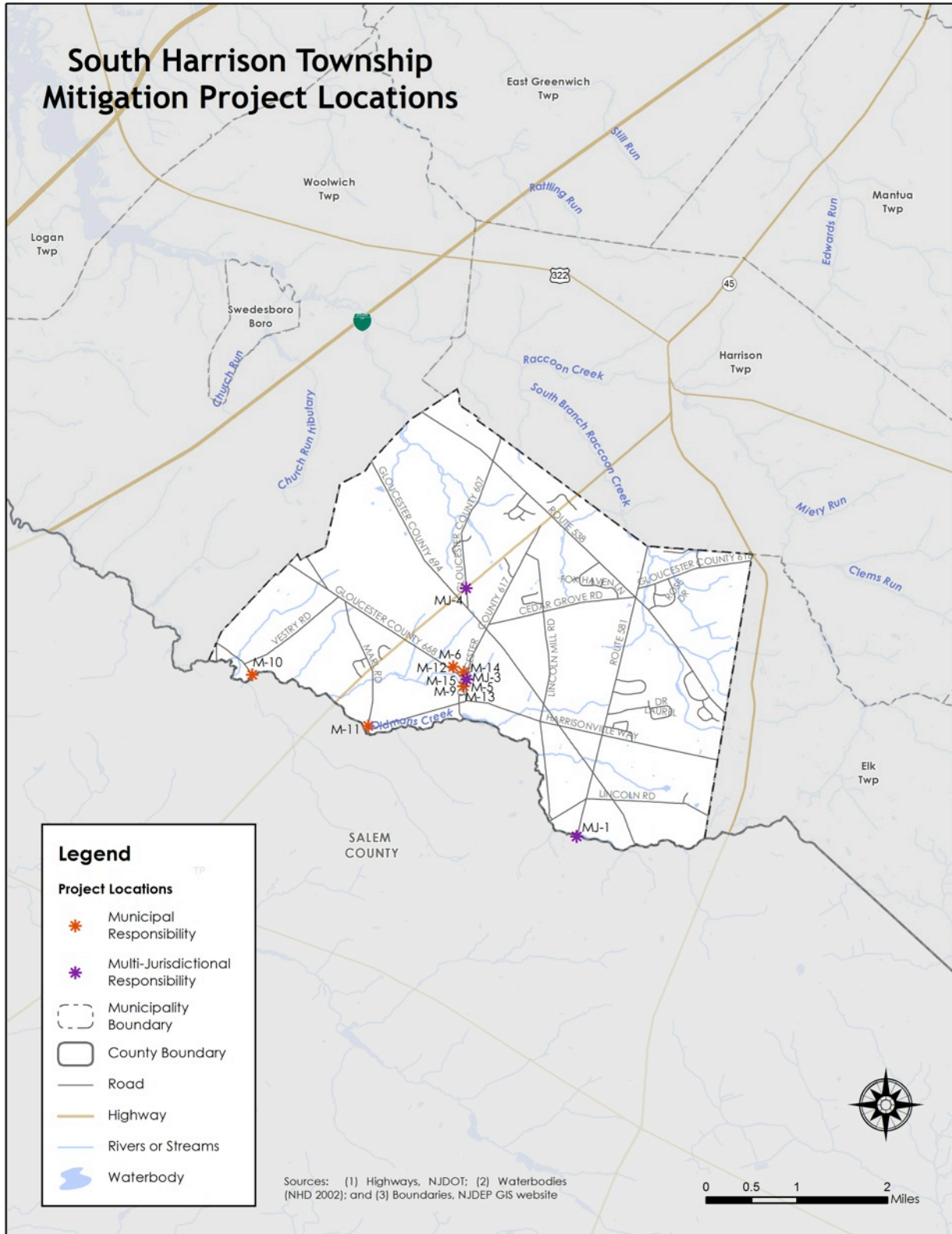
Part 4: Mitigation Measures

Table GC.17-13: South Harrison Township (Gloucester County) Multi-Jurisdictional Mitigation Measures

#	Problem Description	Hazard(s) Addressed	Goal Addressed	Applies to Existing or New Structures	Potential Partners	Priority
MJ-1	Risk Assessment of Algonkin Lake (Lincoln Lake) to South Harrison Township.	Dam Failure	Goal #4	Both	Municipal OEM, Gloucester County DPW, Salem County DPW, Upper Pittsgrove TWP DPW	Low
MJ-2	Wind risk to communications tower (repeater tower).	High Wind	Goal #4	Both	Municipal OEM, Communications Tower Private Owner	High
MJ-3	Alleviate flooding at County Route 617 (Mullica Hill Road), and County Route 668 (Harrisonville Road).	Flood	Goal #4	Both	Municipal OEM, Gloucester County DPW	Moderate
MJ-4	Alleviate flooding at intersection of State Route 45 and County Route 607 (Tomlin-Station Road).	Flood	Goal #4	Both	Municipal OEM, Gloucester County DPW	Moderate
MJ-5	Wind risk to communications tower (repeater tower).	High Wind	Goal #4	Both	Municipal OEM, Private Owners	High

Part 4: Mitigation Measures

Figure GC.17-4: South Harrison Township Mitigation Project Locations



Part 4: Mitigation Measures

Part 4.6: Authorities, Policies, Programs, Resources, and Plan Integration

Part 4.6 includes three (3) subparts:

- **Authorities, Policies, and Programs** - Cross referencing relevant information and recommendations in the NJ4 HMP Regional Hazard Mitigation Plan regarding existing authorities, policies, and programs in the region and specific information about the jurisdiction's participation and continued compliance in the National Flood Insurance Program (NFIP)
- **Capabilities and Coordination** - Cross referencing relevant information and recommendations in the NJ4 HMP Regional Hazard Mitigation Plan regarding improving capabilities and coordination at the municipal level and specific information about the jurisdiction's available resources
- **Plan Review and Integration** – Identifying plans and programs included in the development of Plan Integration recommendations in the NJ4 HMP Regional Hazard Mitigation Plan

Authorities, Policies, and Programs

Section 1.3: *Existing Authorities, Policies, Programs, and Resources* of the NJ4 HMP Regional Hazard Mitigation Plan summarizes relevant authorities, policies, and programs related to hazard mitigation in the region including the NFIP.

Continuing municipal participation in the NFIP as part of the implementation of the NJ4 HMP by the municipality, includes:

- Involvement of Floodplain Manager / Administrator during the NJ4 HMP implementation process
- Commitment to adopt updated FIRMs and evaluate / update the municipality's Flood Management Plan and/or Ordinance as appropriate per recommendations in Section 4.6 of the NJ4 HMP Regional Hazard Mitigation Plan

Capabilities and Coordination

The update of the SDVR HMP included reexamining municipal hazard mitigation capabilities; potential for improving capabilities and coordination within and between jurisdictions; and, plan integration considerations. Section 1.3: *Existing Authorities, Policies, Programs, and Resources* of the NJ4 HMP Regional Hazard Mitigation Plan includes summary statements regarding regional resources and the impact of resource limitations on the overall approach to the NJ4 HMP mitigation strategies. Section 4: *Mitigation Measures* and related portions of Annex F of the NJ4 HMP Regional Hazard Mitigation Plan include summary observations and recommendations concerning:

- Hazard mitigation planning and mitigation measure implementation capabilities and coordination at the regional, county, and municipal levels
- Coordination within municipal governments, between municipal governments and their communities, and between municipal, county, and state agencies responsible for hazard mitigation

Plan Review and Integration

Specific documents obtained during the plan update process from the Municipal Working Group include:

- Emergency Operations Plan (2013)
- Flood Damage Protection Ordinance⁸
- Master Plan (2008)⁹
- Environmental Resource Inventory (2008)¹⁰
- Open Space and Recreation Plan (2009)¹¹
- Protecting Our Streams¹²
- Stormwater Management Facilities Maintenance Manual (1989)¹³
- Township Map

Table RP.4-4 in *Section 4.6: Plan Review and Integration* of the NJ4 HMP Regional Hazard Mitigation Plan identifies the primary plans and documents collected from each of the participating municipalities. In addition, Annex E.2 provides a complete list of all the plans and documents collected from the participating municipalities.

Section 4.6 also includes the results of reviewing the primary plans and documents to determine the extent to which these documents reflect up-to-date hazard risk and mitigation. In addition, Section 4.6 includes recommendations for integrating the results of the NJ4 HMP, including hazard mitigation data, goals, measures, and/or recommendations with existing plans and programs at the municipal level that are relevant to all participating municipalities and incorporated by reference in each of the jurisdiction-specific Appendices including:

- Hazard Assessments
- Emergency Operations Plans
- Floodplain Management Ordinances
- Master Plans and Reexamination Reports
- Other plans and documents

The plan maintenance process includes a commitment to review and follow these recommendations during future scheduled updates of these various documents as considered appropriate by the Working Group and the governing body of the municipality.

⁸ <http://ecode360.com/9989764#9989764>

⁹ http://southharrison-nj.org/Master_Plan.shtml

¹⁰ http://southharrison-nj.org/MasterPlan/South_Harrison_ERI-opt-1.pdf

¹¹ http://southharrison-nj.org/MasterPlan/South_Harrison_OS RP.pdf

¹² http://southharrison-nj.org/images/Protecting_Our_Streams.pdf

¹³ http://southharrison-nj.org/images/Stormwater_Management_Facilities.pdf

Attachment A: Public Review Comments

The following comments were received during the public review of the South Harrison Township Municipal Appendix:

Table GC.17.A-1: Public Review Comments

Comment Date and Time	Comment	Response

Note: As of April 17, 2015, no public review comments were received for the South Harrison Township Municipal Appendix.

Attachment B: Adoption Resolution

Following this page is the Adoption Resolution for the South Harrison Township Municipal Appendix as approved by the South Harrison Township Committee.

Attachment C: Approval Letter

Following this page is the Approval Letter for the South Harrison Township Municipal Appendix.