



Salem County New Jersey
Multi-Jurisdictional Multi-Hazard Mitigation Plan Update
Participating Jurisdiction Appendices

**Appendix 10
Pilesgrove Township**

January 2025

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Part 1: Overview

Part 1.1: Salem County Multi-Jurisdictional Multi-Hazard Mitigation Plan Update

The *Salem County Multi-Jurisdictional Multi-Hazard Mitigation Plan Update* (SC HMPU) incorporates input from participating jurisdictions in Salem County, including Salem County and 14 separate municipalities.

The SC HMPU is an update of the *Mitigation Plan for Four New Jersey Counties* (NJ4 HMP) that was completed by all 16 jurisdictions in Salem County along with over 70 additional jurisdictions from Camden, Cumberland, and Gloucester, Counties. The Salem County portions of the NJ4 HMP were adopted by the participating jurisdictions and approved by the Federal Emergency Management Agency in January 2017.

The SC HMPU has two main parts:

- Salem County Multi-Hazard Mitigation Plan Update, or the “Base Plan”.
- County and Municipal Appendices.

The Base Plan includes descriptions and information common to all participating jurisdictions organized according to the following three focus areas:

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

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

Part 1.2: Pilesgrove Township Municipal Appendix

This Municipal Appendix is focused on Pilesgrove Township in Salem County, New Jersey.

The Pilesgrove Township Municipal Working Group developed the Pilesgrove Township Municipal Appendix for adoption by the Pilesgrove Township Committee and subsequent approval by Region II of the Federal Emergency Management Agency.

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 10-1 identifies the Municipal Working Group members. As detailed in Section 2: Planning Process of the Base 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.

Working Group meetings were conducted as both in-person and virtual meetings. Municipal Working Group members reviewed briefing materials and contributed during meetings and reviewed the Preliminary Draft and Public Review Draft versions of the SC HMPU Base Plan and Appendices. The Working Group will also continue to stay involved during the implementation and maintenance of the SC HMPU.

Note: Two members of the Working Group also participated in the development of the 2017 NJ4 HMP. These members are indicated with an () following their last names.*

Table 10-1: Pilesgrove Township Working Group

First Name	Last Name	Department	Position	Project Kick-off Meeting ¹	Round 1 Work Session ²	Round 2 Work Session ³	Contribution ⁴
Joseph	Gebely	Pilesgrove Township Office of Emergency Management (OEM)	OEM Coordinator	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Organized Working Group and Work Sessions.
Will	Wooton	Pilesgrove Township OEM	Deputy OEM Coordinator		<input checked="" type="checkbox"/>		
Kevin	Eachus*	Pilesgrove Township Committee	Mayor				
Dave	Bonowski	Pilesgrove Township Committee	Public Safety Director				
Joe	Crevino	Pilesgrove Township Committee	Committee Member			<input checked="" type="checkbox"/>	

¹ Project Kickoff Meeting was held on February 27, 2023.

² Round 1 Work Session was held on April 5, 2023.

³ Round 2 Work Session was held on June 20, 2023.

⁴ Additional or unusual contributions are noted in the far-right hand column.

Part 2: Participation

First Name	Last Name	Department	Position	Project Kick-off Meeting ¹	Round 1 Work Session ²	Round 2 Work Session ³	Contribution ⁴
Melissa	Fackler	Pilesgrove Township Administration	Clerk / Administrator		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Julie	Dobbs	Pilesgrove Township Construction Code Office	Technical Assistant		<input checked="" type="checkbox"/>		
Shannon	DuBois-Brody	Pilesgrove Township Business Office / Board of Education	SBA / BS		<input checked="" type="checkbox"/>		
James	McKelvie*	Pilesgrove Township Consulting Engineer	Township Engineer			<input checked="" type="checkbox"/>	
Allen	Coulter	Pilesgrove Township Public Works	Superintendent		<input checked="" type="checkbox"/>		
Brian	Facemyer	Reliance Fire Company	Fire Chief		<input checked="" type="checkbox"/>		
Jonathan	Esterheld	American Legion Ambulance Association	Operations Manager				
John	Holroyd	Pilesgrove Township Building Code Office	Construction Code Official / Floodplain Administrator				
Tanya	Timberman	Pilesgrove Township Zoning Office	Zoning Officer		<input checked="" type="checkbox"/>		
Joe	Blandino	Pilesgrove Township Planning Board and Joint Environmental Commission	Member				
Emily	Simmons	Pilesgrove Township Planning Board and Joint Environmental Commission	Member			<input checked="" type="checkbox"/>	
Mark	Manzo	New Jersey State Police, Woodstown Barracks	Commander		<input checked="" type="checkbox"/>		

Part 2: Participation

The following lists candidate positions and organizations within the community that were extended invitations to 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.

- Business Associations (including the Woodstown / Pilesgrove TWP Business Association)
- Community / Faith Based Organizations (including the Council of Churches)
- Environmental Commission
- Major employers and business (including members of the Township Local Emergency Planning Committee)
- Planning 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.

- Critical Infrastructure and Key Resources
- GIS Specialist
- Healthcare Institutions
- IT Specialist
- Non-Governmental Organizations
- Police (Police services provided by New Jersey State Police)
- Transportation Department Directors / Supervisors

Part 2: Participation

Part 2.2: Public Participation

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

Table 10-2 identifies the date, type of involvement, and location (where applicable) for all opportunities provided to the public and interested parties to participate in the development of the plan update.

Table 10-2: Public Participation

Date	Type of Involvement	Location
March 24, 2023	Link to Project Website ⁵ established and maintained.	Township website ⁶
April 2023	Public outreach conducted via posted signs	Township Municipal Building and Recycle / Trash Collection Center
Spring / Summer Edition	Public outreach conducted via Township Newsletter.	Mailed to all Township postal customers
May 2023	Notice posted re: Preliminary Draft Appendix and Round 2 Working Group Meeting with link to Project Website.	Township website ⁶
June 13, 2023	Public meeting conducted with "SC HMPU" as agenda item with Township Committee.	Township Hall
June 2023	Preliminary Draft Appendix available for public comment.	Project website ⁵
August 1, 2023	Availability of Public Review Draft announced at Township Committee Meeting	Township Hall
August 17, 2023	Notice posted re: Public Review Draft Appendix review period with link to Project Website.	Township website ⁶
August 17, 2023	Notice posted re: Public Review Draft Appendix review period.	Township sign board (in front of Township Hall)
August 18 through September 15, 2023	Public Review Draft Appendix available for public comment.	Project website ⁵
July 8, 2024	Revised Draft Municipal Appendix posted to Project Website	Project website ⁵
October 9, 2024 and November 14, 2024	Revised Draft Appendix Review Public Meetings (open to all County residents and interested parties)	PSEG Energy & Environmental Resource Center, Salem and Penn Towers South, Penns Grove
December 11, 2024	Final Municipal Appendix posted to Project Website	Project website ⁵

Public comments and input received for all versions of the Municipal Appendix were considered by the Municipal Working Group and incorporated into the Municipal Appendix where appropriate. For example, the Hazard Ranking for Flood was increased from Moderate to High in Part 3.7 as a result of the review process. In addition, the Municipal Appendix was adopted as part of a regularly scheduled public meeting.

Public education and outreach is an on-going mitigation measure included in the Municipal Appendix.⁷ In addition, public participation will continue to be encouraged during subsequent plan implementation and maintenance activities.⁸

⁵ <https://schmpu23.com/documents>

⁶ <http://pilesgrovenj.org/click-here-for-a-message-from-the-office-of-pilesgrove-twp-emergency-management/>

⁷ See Mitigation Measure M-1 in Part 4 of the Municipal Appendix.

⁸ Public education and outreach is described in *Section 4: Mitigation Measures* of the SC HMPU Base Plan.

Part 3: Hazard Identification and Risk Assessment

Part 3: Hazard Identification and Risk Assessment

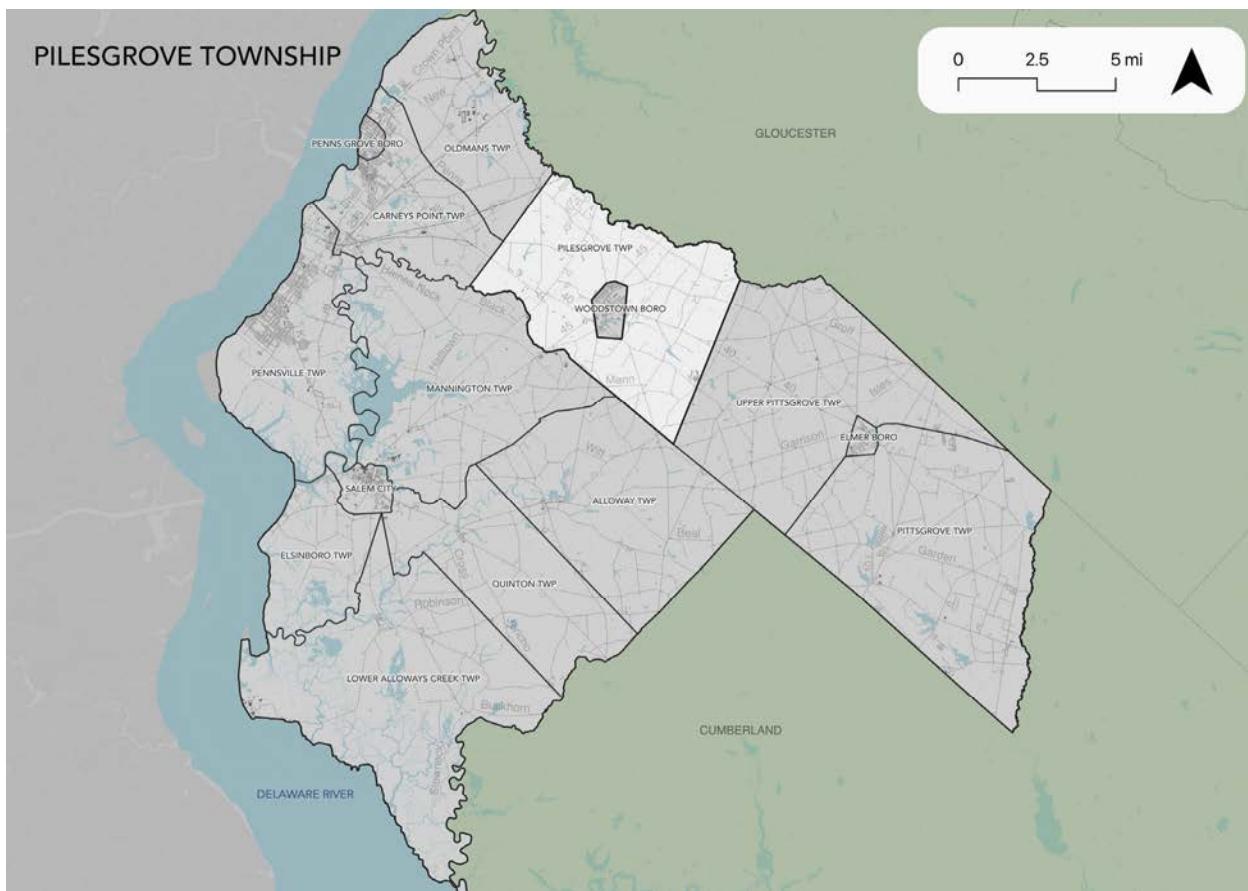
Part 3 includes seven subparts:

- *Part 3.1: Profile*
- *Part 3.2: General Building Stock*
- *Part 3.3: Critical Facilities*
- *Part 3.4: Hazard Exposure Assessment*
- *Part 3.5: Demographic Considerations*
- *Part 3.6: Observations*
- *Part 3.7: Hazard Priorities*

Part 3.1: Profile

Pilesgrove Township is located along the northeastern boundary of Salem County (See Figure 10-1).

Figure 10-1: Pilesgrove Township Location Map



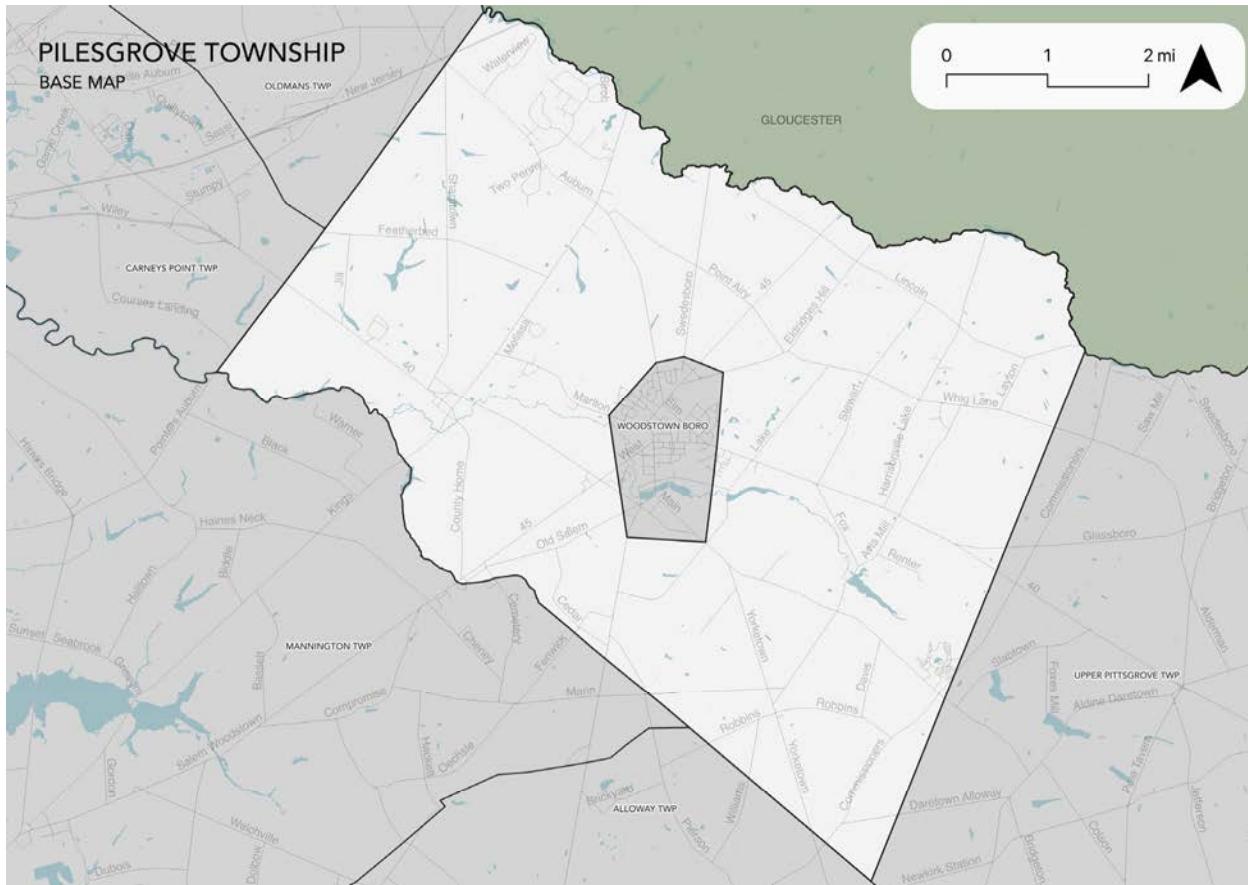
Part 3: Hazard Identification and Risk Assessment

Pilesgrove Township is a small agricultural community.

Per Figure 10-2, the major water courses include Oldmans Creek and Salem River. Major transportation routes include U.S. Highway 40 and State Highway 45.

The land is predominantly flat.

Figure 10-2: Pilesgrove Township Base Map



Part 3: Hazard Identification and Risk Assessment

Part 3.2: General Building Stock

As of 2021, there are 2,319 buildings in Pilesgrove Township with a total assessed value of improvements of \$246,211,900. Figure 10-3 shows the footprints of these buildings.

Figure 10-3: Pilesgrove Township Building Footprints⁹

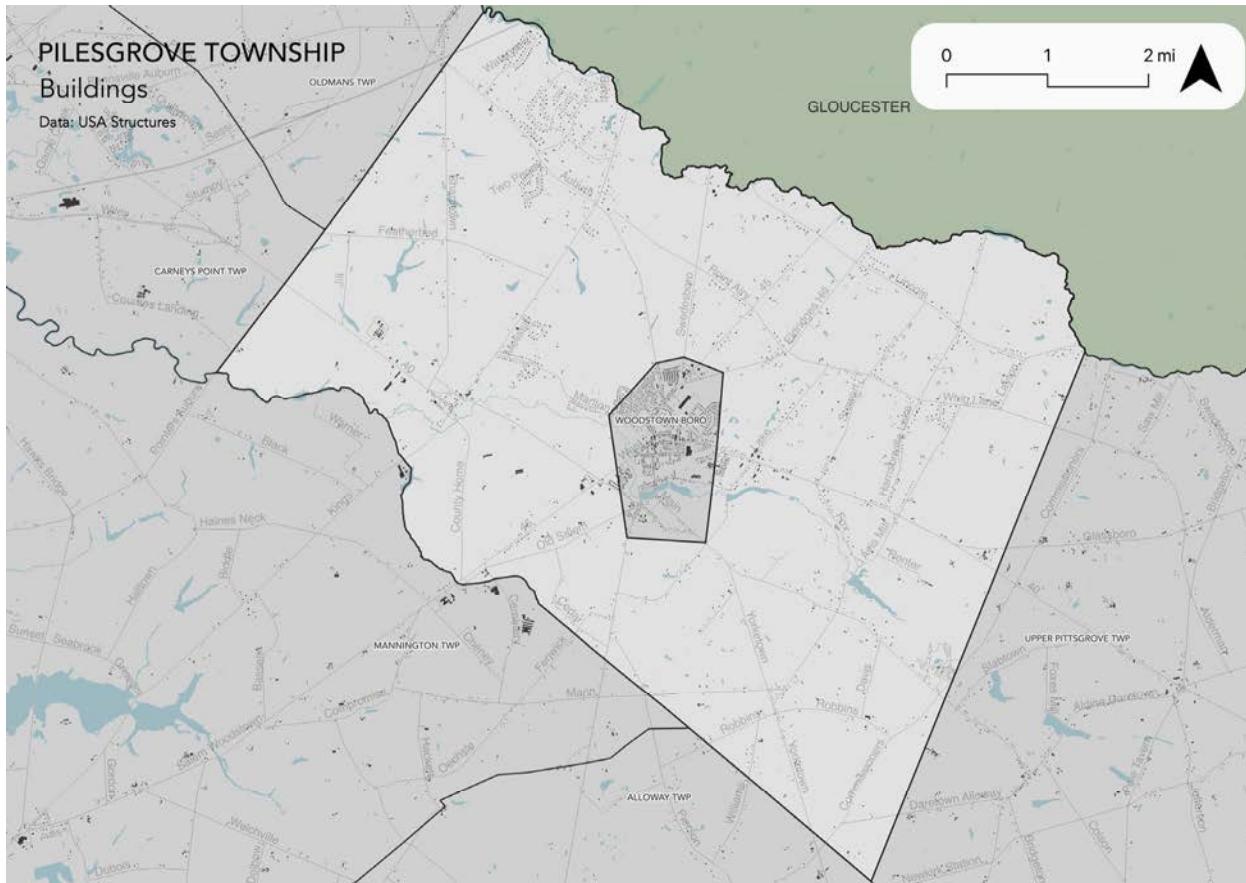


Table 10-3 shows the distribution of these structures according to land use distinctions.

Table 10-3: Pilesgrove Township Buildings per Land Use Type¹⁰

Land Use Type	Residential (<4 units)	Multi-Family	Farm	Commercial	Industrial	Other ¹¹
Number of Buildings	1,443	0	678	112	2	84
% of Total	62.2%	0.0%	29.2%	4.8%	0.1%	3.6%

⁹ Building footprint data was isolated from FEMA's "USA Structures" data (2022) per https://disasters.geoplatform.gov/publicdata/Partners/ORNL/USA_Structures/New%20Jersey/.

¹⁰ Land use types were isolated from MOD-IV Parcels and Tax Assessor data composite (2021) per <https://www.state.nj.us/treasury/taxation/pdf/lpt/modIV/manual.pdf>.

¹¹ Other includes: Schools, Public Use, and other Exempt uses

Part 3: Hazard Identification and Risk Assessment

Part 3.3: Critical Facilities

As of September 2023, there are fourteen (14) critical facilities in Pilesgrove Township.

Critical facilities are prime candidates for mitigation measures due to important functions staged from these facilities prior to, during, and after natural hazards including emergency services and housing vulnerable populations.

Table 10-4 includes current inventory information for municipal critical facilities and includes cross-references to related mitigation measures identified in Part 4 of the Municipal Appendix. Figure 10.4 shows the location of these critical facilities.

Table 10-4: Pilesgrove Township Critical Facilities Inventory

CF #	Name	Type ¹²	Sub-Type	Address	Co-located CF #	Shelter (Y/N)	Generator (Y/N)	Comments	Mitigation Measure #
CF-1	Township Hall	Municipal	Administrative Offices	1180 Route 40 East, Pilesgrove		Y ¹³	N		M-2
CF-2	Primary Emergency Operations Center	EOC	Stand - alone Facilities	25 Broad Street, Woodstown		N	N		
CF-3	Public Works	Public Works	Combined Administrative Office, Maintenance / Work Area, Equipment / Material Storage, and Fueling Station	1180 Route 40 East, Pilesgrove	CF-1	N	Y		
CF-4	Convenience Center	Trash and Recycling Disposal	Convenience Center	Robbins Road & Williams Road		N/A	N		
CF-5	Woodstown Pre-School Academy	Schools	Private Schools	343 Lincoln Road & Route 45, Pilesgrove		N	N		
CF-6	Early Childhood Development Center	Schools	Private Schools	211 East Lake Road, Pilesgrove		Y ¹³	N		M-3

¹² Critical facility type and subtype definitions and considerations are described in *Section 3: Hazard Identification and Risk Assessment* of the SC HMPU Base Plan.

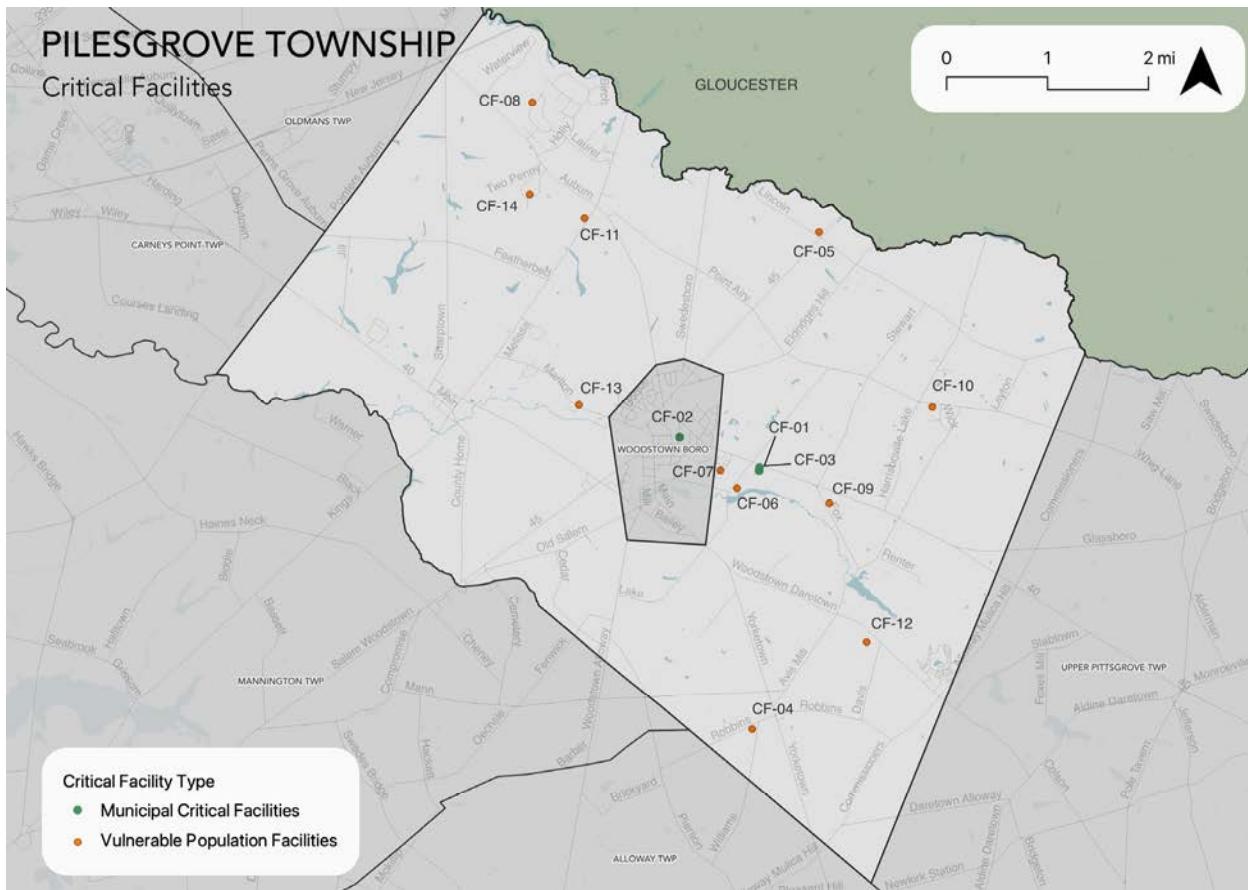
¹³ Shelter of last resort. Shelter has been used in the past as a warming station.

Part 3: Hazard Identification and Risk Assessment

CF #	Name	Type ¹²	Sub-Type	Address	Co-located CF #	Shelter (Y/N)	Generator (Y/N)	Comments	Mitigation Measure #
CF-7	Friends Village ¹⁴	Vulnerable Populations Facilities	Private Age-Restricted Housing	Friends Drive, Woodstown		N	N		
CF-8	Sevita Health	Vulnerable Populations Facilities	Private Group Home	31 Buttonwood Drive, Pilesgrove		N	N		
CF-9	Bancroft Facility	Vulnerable Populations Facilities	Private Group Home	76 Fox Road, Pilesgrove		N	N		
CF-10	Elwyn Facility	Vulnerable Populations Facilities	Private Group Home	383 Whig Lane Road, Pilesgrove		N	N		
CF-11	Bancroft Facility	Vulnerable Populations Facilities	Private Group Home	1335 Kings Highway, Pilesgrove		N	N		
CF-12	Devereaux Facility	Vulnerable Populations Facilities	Private Group Home	241 Woodstown-Daretown Road, Pilesgrove		N	N		
CF-13	Allied Behavioral Health	Vulnerable Populations Facilities	Private Group Home	129 Marlton Road, Pilesgrove		N	N		
CF-14	Sevita Health	Vulnerable Populations Facilities	Private Group Home	21 Two Penny Run, Pilesgrove		N	N		

¹⁴ Same facility listed in Woodstown Borough Appendix as part of the complex extends in Pilesgrove Township.

Figure 10-4: Pilesgrove Township Critical Facilities



Part 3.4: Hazard Exposure Assessment

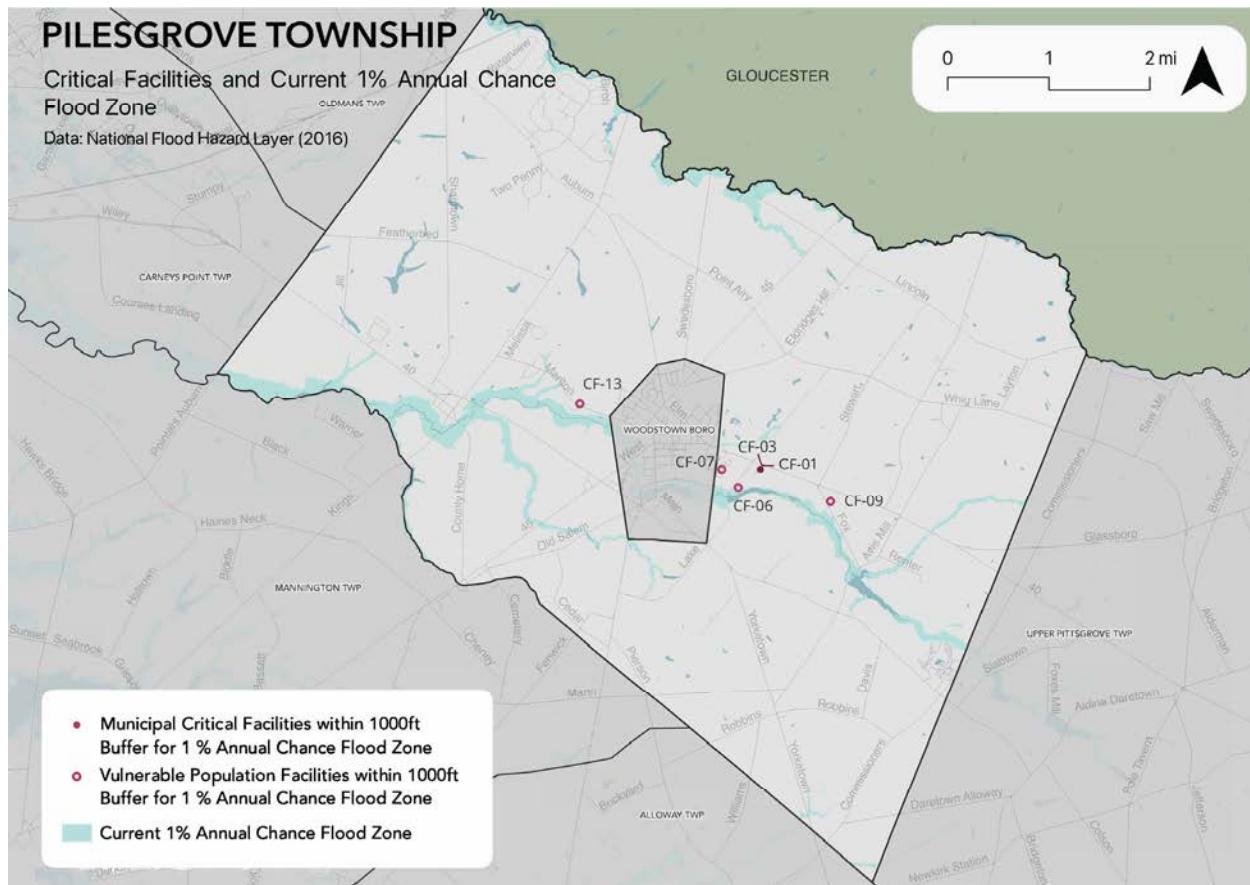
Hazard exposure assessments were completed for the eleven (11) natural hazards identified in the SC HMPU Base Plan¹⁵.

Key results for Pilesgrove Township are depicted in the following.

Mapping: Figure 10-5 is illustrative of the type of mapping available as a result of the hazard exposure assessment. This figure shows critical facilities that are located in or near (i.e., within 1,000 feet) the 1% annual chance flood zone on FEMA's Flood Insurance Rate Maps (FIRMs).

¹⁵ Hazard profiles are included for all eleven natural hazards in *Section 3: Hazard Identification and Risk Assessment* of the SC HMPU Base Plan.

Figure 10-5: Pilesgrove Township Critical Facilities and 1% Annual Chance Flood Zone



Mapping results are available for general building stock and critical facilities for the following hazards:¹⁶

- Earthquake
- Extreme High Temperature
- Flood - per FEMA flood hazard mapping
- High Wind and Severe Weather (heavy summer rains and winter snow loads)

Tabulations: Selected data culled from the hazard exposure assessment process is displayed in the following tables:

- Table 10-5 indicates hazard exposure for general building stock
- Table 10-6 indicates hazard exposure for critical facilities, differentiated between municipal and vulnerable population critical facilities

In addition, available information regarding Wildfire is included.

¹⁶ All mapping corresponding to results described in Parts 3.3 through 3.5 are viewable in .pdf format at: <https://www.dropbox.com/sh/1om9p8vogs03jxz/AABuCWd9odbr2KsbcD9YrFyCa?dl=0>.

Part 3: Hazard Identification and Risk Assessment

Table 10-5: Pilesgrove Township General Building Stock Hazard Exposure

Hazard	Number of Exposed Buildings	Percent of Total Buildings in the Jurisdiction	Value of Exposed Buildings	Percent of Total Value in the Jurisdiction
Sea Level Rise - 3 feet increase ¹⁷	0	N/A	N/A	N/A
Flood - Within 1 % Annual Chance Zone	10	0.4%	\$762,633	0.3%
Flood - Near (within 1,000 feet) of 1% Annual Chance Zone	740	31.9%	\$89,830,256	36.5%
Earthquake – Structure built before 1927 ¹⁸	164	11.1%	\$12,214,900	5.0%
High Winds / Severe Weather – Structure built before 1976	786	53.0%	\$81,816,900	38.9%

Table 10-6: Pilesgrove Township Critical Facilities Hazard Exposure¹⁹

Hazard	Number of Critical Facilities	Municipal CF #s	Vulnerable Populations CF #s
Sea Level Rise	0	N/A	N/A
Flood - Within 1 % Annual Chance Zone	0	N/A	N/A
Flood – Future potential (within 1,000 feet) 1% Annual Chance Zone	6	CF-01, CF-03	CF-06, CF-07, CF-09, CF-13

Regarding Wildfire, according to the 2017 NJ4 HMP, Pilesgrove Township is one of 7 municipalities in Salem County with more than one acre of land that intersects with an extreme level of potential fuel and potentially high levels of wildland urban interface. Pilesgrove Township was the fifth highest in Salem County with 4.43 acres.

In addition, all critical facilities in Salem County are exposed to the following hazards and potentially subject to power outages, and structural and/or contents damage:

- Earthquake
- Extreme Temperatures
- High Winds
- Severe Weather – Summer (including heavy rains)
- Severe Weather – Winter (including heavy snow loads)

¹⁷ All supporting data for Sea Level Rise (3-foot rise), and Flood (all) are viewable at [SALEM_Buildings_Values_SLR_Flood](#)

¹⁸ All supporting data for Earthquake, High Winds, and Severe Weather are viewable at [SALEM_Buildings_Values_EQ_Wind_SWW](#)

¹⁹ All supporting data for critical facility hazard exposure are viewable at [SALEM_CFs_HazardExposure](#)

Part 3: Hazard Identification and Risk Assessment

Information from the 2017 NJ4 HMP HIRA was also reviewed with the Working Group to determine the need for updates to hazard exposure results for Dam and Levee Failure.

Dam Failure

Per the New Jersey Department of Environmental Protection (NJDEP) data²⁰:

- There are no (0) "High Hazard" dams located in the Township.
- There are two (2) "Significant Hazard" dams located in the Township
 - East Lake Dam on Salem Creek – Per the Working Group, the dam washed out following Hurricane Irene and was rebuilt by Salem County. However, the dam is settling / collapsing on the downstream side with potential impacts to East Lake Road and houses on East Millbrook. This is also identified in the Woodstown Borough Appendix and NJDEP has been alerted.
 - K-L-P Dam Salem River – Per the Working Group, no potential downstream residential impacts but could impact Jill Road impacts which is already in poor condition.

In addition, there is a chain of dams in waterways leading into Pilesgrove Township starting in Upper Pittsgrove Township that can have impacts in Pilesgrove Township, e.g., a fatality resulted from flooding after Hurricane Irene.

- No (0) dam failure incidents had been recorded in the Township as of 2014

Levee Failure

Per the South Jersey Levee Inventory²¹:

- There are no (0) levees in the Township:

Working Group members were asked the following questions for Dam and Levee Failure:

- ✓ *Are these facilities still in operation?*
- ✓ *Are there updated Emergency Action Plans or inundation maps for these facilities?*
- ✓ *Have there been any other incidents of failure since the reported records?*

Per the Pilesgrove Township Working Group:

There were the following changes to the NJ4 HMP HIRA Dam Failure hazard exposure results:

- Details regarding both Significant Hazard dams
- Addition of chain of dams extending from Upper Pittsgrove Township

There were no changes to the NJ4 HMP HIRA Levee Failure hazard exposure results.

²⁰ (1) NJDEP Dam Safety and Flood Control (Dam Locations); (2) NJDEP Land Use / Land Cover; (3) US Census Bureau 2010 Census

²¹ US Department of Agriculture, National Resources Conservation Services (NRCS) South Jersey Levee Inventory, 2010.

Part 3: Hazard Identification and Risk Assessment

National Flood Insurance Program Information

One additional metric discussed with the Working Group was statistical information from the National Flood Insurance Program (NFIP)²². The following depicts relevant numbers for Pilesgrove Township as of September 2023 provided by the Region II office of the Federal Emergency Management Agency (FEMA):

Active Policies

- Active Policies – 9 active NFIP flood insurance policies, which represents 0.59% of all active policies in Salem County
- Total Premiums – \$7,414 paid in total annual premiums
- Average Premium – \$824 average annual premium per policy, as compared to the overall average for all Salem County of \$985

Repetitive Loss Properties

- No (0) properties are designated as either Repetitive Loss (RL) or Severe Repetitive Loss Properties (SRL)

For comparison relative to the number of active NFIP flood insurance policies, the following are the number of potentially exposed buildings (per Table 10-5), which are essentially the same as the number of active policies for properties in the 1 % Annual Chance Zone but significantly higher for properties within 1,000 of the 1% zone:

- Flood - Within 1 % Annual Chance Zone: 10 buildings ~ 0.4% of total buildings, with a value of \$762,633 ~ 0.3% of the total building value in the Township.
- Flood - Near (within 1,000 feet) of 1% Annual Chance Zone: 740 buildings ~ 31.9% of total buildings, with a value of \$89,830,256 ~ 36.5% of the total building value in the Township.

²² Information on the NFIP is described in *Section 3: Hazard Identification and Risk Assessment* of the SC HMPU Base Plan.

Part 3: Hazard Identification and Risk Assessment

Part 3.5: Demographic Considerations

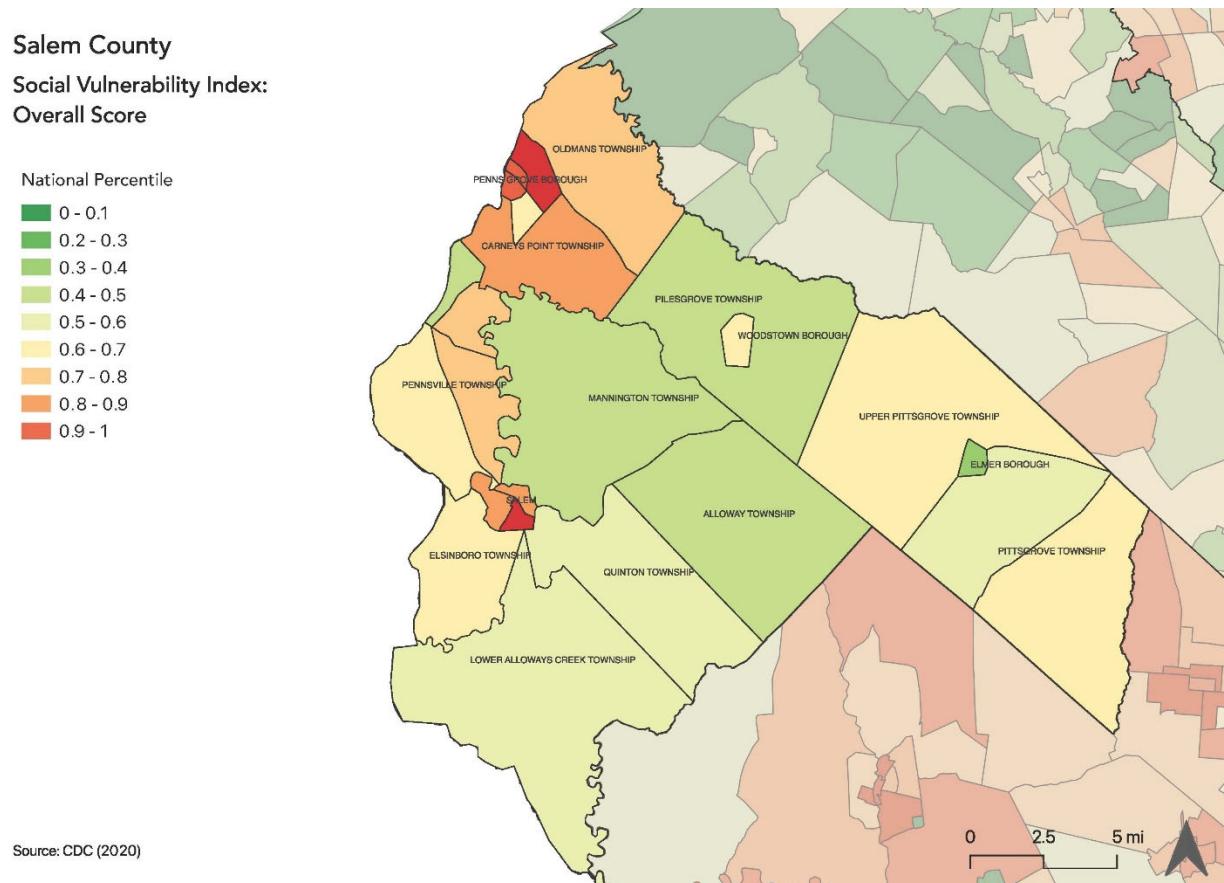
Demographic considerations include general population and land use factors. Table 10-7 includes current population estimates and changes since the previous US Census²³:

Table 10-7: Pilesgrove Township General Population Demographics

Metric	Current Estimates
2020 Population	4,183
Percent Population Change (2010-2020)	+ 4.16%
Land Area	34.84 sq. miles
Population Density	120.1 / sq. mile

Demographic considerations also include differences in social vulnerability²⁴. Figure 10-6 shows the overall Social Vulnerability (SVI) Index overall scores for Salem County.

Figure 10-6: Salem County Social Vulnerability Index: Overall Scores



²³ 2020 US Census

²⁴ Social vulnerability considerations are described in *Section 3: Hazard Identification and Risk Assessment* of the SC HMPU Base Plan.

Part 3: Hazard Identification and Risk Assessment

For Pilesgrove Township, Table 10-8 includes selected metrics where social vulnerability considerations are noteworthy when compared with all national census tracts:

Table 10-8: Pilesgrove Township Social Vulnerability Considerations²⁵

Metric	Comparison with all National Census Tracts
Socioeconomic Status	31 st percentile
Household Characteristics	33 rd percentile
Racial and Ethnic Minority Status	5 th percentile
Housing Type and Transportation	69 th percentile

The values above are averages across all social factors within the four themes. The following are notable factors where the results are above the 90th percentile:

- Housing Type and Transportation - Percentage of persons in group quarters

In addition, the percentage of residents earning below poverty level = 2.0% (compared with the average in Salem County of 12.6 % and New Jersey of 10.4%).

Part 3.6: Observations

- Outreach and guidance should be provided for residents, business owners, and property owners for:
 - Properties in or near flood, dam failure, and/or wildfire hazard areas.
 - Older buildings to help evaluate potential risk of damage due to hazards such as Earthquake, High Winds, and Severe Winter Weather (i.e., heavy snow loads).
- All critical facilities are potentially vulnerable to Earthquake, High Winds, and Severe Weather (heavy rains in summer and snow loads in winter).
- Several critical facilities are potentially vulnerable to flood, dam failure, and/or wildfire hazards and will be identified as priorities for follow-up critical facility field evaluations.
- Priority for follow-up should also be focused on critical facilities housing vulnerable populations related to Extreme Temperature and Severe Weather hazards. For example, determining and documenting (cross referencing EOP) how residents will be moved to facilities providing shelter including cooling and warming centers (all of which would need adequate back-up power and hardening).

²⁵ All supporting data for SVI is viewable at [SVI Data](#) .

Part 3: Hazard Identification and Risk Assessment

Part 3.7: Hazard Priorities

As a key step in the Hazard Identification and Risk Assessment (HIRA) process, the eleven (11) natural hazards identified in the SC HMPU Base Plan were discussed during the Municipal Working Group Work Sessions and the relative priority of these hazards was identified.

Based on their personal experience as well as the results of the HIRA, the Municipal Working Group rated the hazards as follows:

High Priority

- Dam Failure
- Flood

Moderate Priority

- High Wind
- Severe Weather - Summer

Low Priority

- Drought
- Earthquake
- Extreme Temperature: Hot & Cold
- Severe Weather – Winter

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

- Levee Failure
- Sea Level Rise
- Wildfire

Note: These hazard priorities differ from the NJ4 HMP results per the following:

- ✓ *Flood moved from Moderate to High*

Part 3: Hazard Identification and Risk Assessment

Part 3.8: Climate Change Considerations

The following is based on results and assumptions from Sections 3.2 and 3.6 of the Base Plan regarding potential consequences of climate change. Table 10-9 is an excerpt from Table BP.3-44 that shows the potential impacts of climate change on a hazard-by-hazard basis for Pilesgrove Township.

Table 10-9: Potential Climate Change Impacts

Municipality	Dam Failure	Drought	Earthquake	Extreme Temperature	Flood	High Wind	Levee Failure	Sea Level Rise	Wildfire	Composite Score
Pilesgrove Township	M	H	L	M	L	H	N/A	N/A	L	M

Based on these results and assumptions, when compared to the other 13 participating municipalities, the overall potential for climate change impacts on Pilesgrove Township is moderate.

The hazards where climate change may create the most impact for Pilesgrove Township are:

- Dam Failure
- Drought
- Extreme Temperature
- High Wind

See the discussion in Section 3.2 and summary points in Section 3.6 of the Base Plan regarding how these potential impacts can be reflected in the implementation of the SC HMPU and mitigation measures in the community's Appendix.

Part 4: Mitigation Measures

Part 4: Mitigation Measures

Part 4 includes six subparts:

- *Part 4.1: Mitigation Goals and Strategy*
- *Part 4.2: NJ4 HMP Mitigation Measures*
- *Part 4.3: Municipal Mitigation Measures – Identification*
- *Part 4.4: Municipal Mitigation Measures – Implementation*
- *Part 4.5: Multi-Jurisdictional Mitigation Measures*
- *Part 4.6: Authorities, Policies, Programs, Resources, and Plan Integration*

Part 4.1: Mitigation Goals and Strategy

Goals were originally established by the SDVR 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 NJ4 HMP plan update process, these goals were reviewed and edited by the Municipal Working Groups for use in the Municipal Appendices. In addition, the Municipal Working Groups for the SC HMPU reviewed and reaffirmed these goals for continued use in the Appendices.

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 HIRA, and experience of participants in the plan update process, the Municipal Working Group identified an overarching strategy for mitigation:

- Identify and address known problems or areas of concern for critical facilities and vulnerable populations
- Provide opportunities for residents and property owners to access available information about risk reduction and mitigation measures, e.g., useful links added to municipal websites
- Institutionalize hazard mitigation into municipal activities and programs through regular interactions of the Municipal Working Group and 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: NJ4 HMP Mitigation Measures

Known problems and areas of concern were the basis for mitigation measures identified in the NJ4 HMP. In cases where these problems and concerns still exist at the time of the SC HMPU, the related NJ4 HMP mitigation measures were candidates for inclusion in the Municipal Appendix.

Table 10-10 identifies the status of mitigation measures included in the NJ4 HMP. These entries were based on information provided by the Municipal Working Group. In some cases, the NJ4 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 10-10.

Table 10-10: Status of Pilesgrove Township NJ4 HMP Mitigation Measures

Mitigation Action, Program, or Project	Status	Comments	Mitigation Measure # 2627
M-1: Identify and pursue outreach and education opportunities to inform municipal residents, businesses, and property owners.	Work-in-progress	<p>Work-in-progress included:</p> <ul style="list-style-type: none"> ▪ M-1: Completed two working group meetings (04/05/23 and 06/20/23) where mitigation actions have been reviewed. ▪ M-2: Working with Salem County OEM personnel regarding site visits of Group Homes. ▪ M-3: Currently being addressed with individual meetings with Township Public Works Supervisor. ▪ M-4: Ready to proceed further with future meetings to be scheduled. 	Carried over as part of M-1
M-2: Prioritize critical facilities and complete site and facility surveys to identify vulnerabilities and potential mitigation measures.			
M-3: Prioritize recurrent drainage problem areas and initiate data collection to track unreimbursed damages and related response and recovery expenses.			
M-4: Conduct regular Municipal Working Group meetings.			
M-5: Provide permanent backup emergency power generator to Pilesgrove Township Hall (CF-1).	No progress	Lack of funding	Carried over as M-2
M-6: Provide permanent backup emergency power generator to Pilesgrove Township Emergency Operations Center (CF-2).	Completed	Completed in 2020 using Fire Department and Township funds.	N/A
M-7: Support installation of permanent backup emergency power generator for Early Childhood Development Center (CF-6).	No progress	Lack of funding	Carried over as M-3

²⁶ Detailed information for identification and implementation of municipal (designated with “M”) mitigation measures is included in Tables 10-11 and 10-12.

²⁷ Detailed information for identification and implementation of multi-jurisdictional (designated with “MJ”) mitigation measures is included in Table 10-13.

Part 4: Mitigation Measures

Mitigation Action, Program, or Project	Status	Comments	Mitigation Measure # 2627
M-8: Develop and implement tree maintenance plan to assist with the reduction of power outages, damages to homes, and evacuation issues.	Completed	Completed in 2020 using ACE grant funds.	N/A
M-9: Engineering study to determine flood mitigation measure for Lincoln Road.	No progress	Lack of funding	Carried over as M-4
M-10: Engineering study to determine flood mitigation measure at Hanzel Residence on Avis Mill Road.	No longer considered a valid municipal mitigation measure	Is considered part of MJ-1.	Carried over as part of MJ-1
M-11: Engineering study to determine erosion mitigation measure for Waterview Drive.	No progress	Lack of funding	Carried over as M-5
M-12: Engineering study to determine best location for warning sirens throughout Township.	No progress	Lack of funding	Carried over as M-6
MJ-1: Alleviate flooding Camp Crocket Lake ²⁸ at Avis Mill Pond.	No progress	Not yet assigned priority by Salem County.	Carried over as MJ-1
MJ-2: Alleviate flooding and erosion on County Road 602 (Pointers Auburn Road).	No progress	Not yet assigned priority by Salem County.	Carried over as MJ-2

In addition, since the 2017 NJ4 HMP, the Township completed the following additional project:

- Drainage inlet repairs and resolution of erosion issues completed by the Township at Laurel Lane in 2021

²⁸ Crocket Lake is located in Camp Crocket County Park.

Part 4: Mitigation Measures

Part 4.3: Municipal Mitigation Measures – Identification

Table 10-11 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 NJ4 HMP 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)²⁹ if applicable

Table 10-11 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

Table 10-11: Pilesgrove Township Municipal Mitigation Measures Identification

#	Mitigation Action, Program, or Project	Hazard(s)	Goal (s)	Existing or New Structures
M-1	<u>Municipal Mitigation Program</u> – including sustained efforts in cooperation with Salem County Office of Emergency Management (SC OEM) to: <ul style="list-style-type: none">▪ Conduct outreach and education for residents, businesses, and property owners▪ Complete critical facility field evaluations to identify potential vulnerabilities and mitigation measures▪ Compile relevant data regarding hazard impacts▪ Support regular interactions of the Municipal Working Group▪ Seek integration of hazard mitigation with other parallel planning initiatives	All	All	All
M-2	Provide permanent backup emergency power generator to Pilesgrove Township Hall (CF-1).	All	Goal #4	Both
M-3	Support installation of permanent backup emergency power generator for Early Childhood Development Center (CF-6).	All	Goal #4	Both
M-4	Engineering study to determine flood mitigation measure for Lincoln Road.	Flood	Goal #4	Existing

²⁹ Section 3: Hazard Identification and Risk Assessment of the SC HMPU Base Plan includes a description of RL and SRL properties.

Part 4: Mitigation Measures

#	Mitigation Action, Program, or Project	Hazard(s)	Goal (s)	Existing or New Structures
M-5	Engineering study to determine erosion mitigation measure for Waterview Drive.	Flood	Goal #4	Existing
M-6	Engineering study to determine best location for warning sirens throughout Township.	Flood	Goal #4	Existing

Part 4.4: Municipal Mitigation Measures – Implementation

Table 10-12 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 criteria³⁰
- Project Type to help determine funding options and implementation mechanisms at the municipal level³¹
- 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 10-12: Pilesgrove Township Municipal Mitigation Measures Implementation

#	Mitigation Action, Program, or Project	Responsible Part(ies)	Priority	Project Type	Estimated Cost (\$)	Target Date	Next Step(s)
M-1	Municipal Mitigation Program	Office of Emergency Management (OEM)	High	Program	Staff Time	On-going, sustained effort	<ul style="list-style-type: none"> ▪ Identify outreach and education objectives and methods (working with SC OEM) ▪ Set priorities (if necessary) and initiate critical facility field assessments ▪ Identify schedule for plan updates (including sustained public participation and plan integration efforts)
M-2	Provide permanent backup emergency power generator to Pilesgrove Township Hall (CF-1).	Township OEM and Public Works Department	High	Back-up Emergency Power Generator	< \$100K	One to three years	Conduct project scoping. ³²

³⁰ Section 4: Mitigation Measures of the SC HMPU Base Plan includes a description of evaluation criteria considered by the Municipal Working Group.

³¹ Section 4: Mitigation Measures of the SC HMPU Base Plan includes a description of project types and related information regarding funding options and implementation mechanisms.

³² Project scoping for M-2 and M-3 to include determining feasibility to install hookup and transfer switch for using portable generator(s) to accommodate need, at least as a temporary measure

Part 4: Mitigation Measures

#	Mitigation Action, Program, or Project	Responsible Part(ies)	Priority	Project Type	Estimated Cost (\$)	Target Date	Next Step(s)
M-3	Support installation of permanent backup emergency power generator for Early Childhood Development Center (CF-6).	Township OEM and Early Childhood Development Center	High	Back-up Emergency Power Generator	< \$100K	One to three years	Conduct project scoping.
M-4	Engineering study to determine flood mitigation measure for Lincoln Road.	Township OEM, Public Works Department, and Engineering	Low	Private Property Mitigation	< \$50K	Three to five years	Develop scope of work for engineering study and procure professional consulting services.
M-5	Engineering study to determine erosion mitigation measure for Waterview Drive.	Township OEM, Public Works Department, and Engineering	Moderate	Private Property Mitigation	< \$50K	One to three years	Develop scope of work for engineering study and procure professional consulting services.
M-6	Engineering study to determine best location for warning sirens throughout Township.	Township OEM, Public Works Department, and Engineering	Low	Private Property Mitigation	< \$50K	One to three years	Develop scope of work for engineering study and procure professional consulting services (in coordination with Salem County OEM).

The following are additional notes regarding the implementation of Mitigation Measure M-1 (consistent with *Part 3.6: Observations*):

- Outreach and guidance should be provided for owners of :
 - Buildings potentially exposed to Dam Failure and/or Wildfire.
 - Buildings in or near the 1% annual chance flood zone regarding potential risk and availability of NFIP flood insurance.
 - Older buildings to help evaluate potential risk of damage due to hazards such as Earthquake, High Winds, and Severe Weather (heavy rains in summer and heavy snow loads in winter).
 - Considerations for prioritizing and conducting critical facility field evaluations were reviewed as part of the Round 2 Working Group Meeting and include:
 - All CFs are potentially vulnerable to Earthquake, High Winds, and Severe Weather (heavy rains in summer and heavy snow loads in winter).
 - In addition, some CFs are potentially vulnerable to Flood, Dam Failure, and/or Wildfire and should also be considered as candidates for follow-up facility-level evaluations.
 - Priority for follow-up should also be focused on critical facilities housing vulnerable populations, e.g., group homes, related to Extreme Temperature and Severe Weather hazards. For example, determining and documenting (cross referencing the jurisdiction's Emergency Operations Plan) how residents will be moved to facilities providing shelter including cooling and warming centers (all of which would need adequate back-up power and hardening).
- Provisions for Plan Maintenance include :
 - Sustain public outreach and participation (including but not limited to targeted outreach and guidance efforts)
 - Conduct regular interactions of the Working Group to keep the plan current (e.g., an annual plan review and amendment process at a minimum)
 - Track and take advantage of plan integration opportunities including noting all upcoming plan updates as part of regular Working Group interactions

Part 4: Mitigation Measures

Part 4.5: Multi-Jurisdictional Mitigation Measures

During the Municipal Working Group Work Sessions, the Working Group identified some NJ4 HMP mitigation measures to be carried over, as well as adding new areas of concern, all of which were designated as multi-jurisdictional mitigation measures. Implementation of these measures, in the opinion of the Municipal Working Groups, requires participation or leadership from other levels of government, including county, state, and federal agencies. These multi-jurisdictional mitigation measures were compiled in Table 10-13.

These measures have been referred to the County Working Group for consideration. As part of the implementation of the SC HMPU, the County Working Group will be working with the municipalities to:

- Confirm identified issues are valid multi-jurisdictional measures
- Identify specific responsibilities amongst different level(s) of government to address these problem areas
- Identify 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
- Identify which, if any, additional mitigation measures the member agencies of the County Working Group will assume responsibility to implement

Table 10-13: Pilesgrove Township Multi-Jurisdictional Mitigation Measures

#	Problem Description	Hazard(s) Addressed	Goal Addressed	Applies to Existing or New Structures	Potential Partners	Priority
MJ-1	Alleviate flooding Camp Crocket Lake at Avis Mill Pond including flood mitigation at Hazel and Avis Mill Road.	Flood	Goal #4	Both	Municipal OEM, Salem County DPW, NJ DEP	Moderate
MJ-2	Alleviate flooding and erosion on County Road 602 (Pointers Auburn Road).	Flood	Goal #4	Both	Municipal OEM, Salem County DPW	Low

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 SC HMPU Base Plan regarding existing authorities, policies, and programs in the County and specific information about the Pilesgrove Township's participation and continued compliance in the National Flood Insurance Program (NFIP)
- Resources - Cross referencing relevant information and recommendations in the SC HMPU Base Plan regarding improving capabilities and coordination at the County and municipal level and specific information about Pilesgrove Township's available resources
- Plan Review and Integration – Identifying plans and programs included in the development of Plan Integration recommendations in the SC HMPU Base Plan

4.6.1: Authorities, Policies, and Programs

Section 4.6: Authorities, Policies, Programs, Resources, and Plan Integration of the SC HMPU Base Plan summarizes relevant authorities, policies, and programs related to hazard mitigation in Salem County including the NFIP.

Continuing participation in the NFIP as part of the implementation of the SC HMPU includes:

- Involvement of Floodplain Administrator during the SC HMPU implementation process
- Commitment to adopt updated FIRMs (if appropriate) and evaluate / update the municipality's Flood Damage Prevention Ordinance as appropriate per recommendations included in Section 4.6 of the SC HMPU Base Plan and under Part 4.6.3: Plan Review and Integration of this Appendix.

4.6.2: Resources

The update of the NJ4 HMP included reexamining participating jurisdictions' hazard mitigation and floodplain management capabilities; potential for improving capabilities and coordination within and between jurisdictions; and plan integration considerations, including:

- *Section 4: Mitigation Measures* of the SC HMPU Base Plan includes summary observations and recommendations concerning:
 - Capabilities for hazard mitigation planning and mitigation measure implementation and floodplain management for the participating jurisdictions
 - Coordination within municipal governments, between municipal governments and their communities, and between municipal, county, and state agencies responsible for hazard mitigation
- *Section 4.6: Authorities, Policies, Programs, Resources, and Plan Integration* of the SC HMPU Base Plan also includes summary statements regarding county and municipal resources and the impact of resource limitations on the overall approach to the SC HMPU mitigation strategies.

Table 10-14 compares the results of the Capability Assessment Survey for the County as a whole and Pilesgrove Township.

Part 4: Mitigation Measures

Table 10-14: Pilesgrove Township Capability Assessment Survey Results

Metric	Pilesgrove Township Results (n=3)	Salem County "as a whole" Results (n=52)
Position Type: Full-time	33%	29%
Position Type: Part-time	66%	71%
Position Type: Volunteer	0%	0%
Time in Position: Less than 1 year	33%	23%
Time in Position: 1 to 2 years	0%	12%
Time in Position: 2 to 5 years	0%	19%
Time in Position: More than 5 years	66%	46%
Prior Experience: None	33%	50%
Prior Experience: with hazard mitigation planning	66%	37%
Prior Experience: with HMA grant administration	33%	12%
Prior Experience: with floodplain management	0%	12%
Training / Certifications: None	66%	71%
Training / Certifications: for hazard mitigation planning and implementation	33%	19%
Training / Certifications: for floodplain management	0%	10%

In general terms, when compared to the sampled individuals from across all the Working Groups, Pilesgrove Township has:

- Similar percentage of full-time staff
- Similar average time in current positions
- Higher percentage of staff with experience in hazard mitigation planning and HMA grant administration
- Lower percentage of staff with experience in floodplain management
- Higher percentage of staff with training for hazard mitigation planning and implementation
- Lower percentage of staff with training for floodplain management

4.6.3: Plan Review and Integration

Section 4.6: Authorities, Policies, Programs, Resources, and Plan Integration of the SC HMPU Base Plan includes:

- Table BP.4-2 that identifies primary plans and documents collected from each of the participating municipalities.
- Results of reviewing primary plans and documents to determine the extent to which these documents reflect up-to-date hazard risk and mitigation.
- Recommendations for integrating the results of the SC HMPU, 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

The plan maintenance process articulates and specifies 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.

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

- Emergency Operations Plan - Base Plan (March 2020)
- Master Plan and Reexamination Report (2021)
- Land Use Development³³
- Stormwater Management Plan (2021)
- Farmland Preservation Plan – *Note: Update is ongoing as of June 2023.*
- Capital Improvement Program (2023)³⁴

In addition, the following is the status of the Flood Damage Prevention Ordinance (FDPO):

- Current version was adopted in 2016 and is consistent with the most recent FDPO per NJDEP available at that time.
- The Township Floodplain Administrator is currently designated in the Flood Damage Prevention Ordinance as the Construction Official. The Township is in the process of changing the Floodplain Administrator designation to the Township Engineer. The individuals who occupy both positions are included in the Township Working Group and the Township Engineer has completed the Capability Assessment Survey.
- The document is accessible to the public via internet.³⁵

³³ <http://ecode360.com/11317493#11317493>

³⁴ <http://www.pilesgrovenj.org/pg2014budget.pdf>

³⁵ <https://ecode360.com/11316047>

Part 4: Mitigation Measures

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