



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

**Appendix 1**  
**Salem County**

January 2025

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### Part 1.1: Salem County 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: Salem County Appendix

This County Appendix is focused on Salem County, New Jersey.

The Salem County Working Group developed the Salem County Appendix for adoption by the Salem County Board of County Commissioners and subsequent approval by Region II of the Federal Emergency Management Agency.

## Part 2: Participation

### Part 2.1: County Working Group Participation

Part 2.1 includes:

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

Table 1-1 identifies the County Working Group members. As detailed in *Section 2: Planning Process* of the Base Plan, the County Working Group is comprised of representatives who worked to make sure mitigation measures included in the County Appendix addressed the risks faced by residents, businesses, and property owners and reflected the priorities of the County as a whole.

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: Five 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 1-1: Salem County Working Group**

First Name	Last Name	Department	Position	Project Kickoff Meeting <sup>1</sup>	Round 1 Work Session <sup>2</sup>	Round 2 Work Session <sup>3</sup>	Contribution <sup>4</sup>
Scott	Haines*	Office of Emergency Management (OEM)	OEM Coordinator / EMS Coordinator				
Jeff	Pompper*	OEM	Deputy OEM Coordinator / Fire Coordinator	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Organized Working Group and Work Sessions.
Ed	Ramsey	Salem County Commissioner- Public Works / Engineering Department. Liaison	County Commissioner			<input checked="" type="checkbox"/>	
Jeffrey	Ridgway*	Salem County Administration	Director			<input checked="" type="checkbox"/>	

<sup>1</sup> Project Kickoff Meeting was held on February 27, 2023.

<sup>2</sup> Round 1 Work Session was held on March 30, 2023.

<sup>3</sup> Round 2 Work Session was held on June 22, 2023.

<sup>4</sup> Additional or unusual contributions are noted in the far-right hand column.

## Part 2: Participation

First Name	Last Name	Department	Position	Project Kickoff Meeting <sup>1</sup>	Round 1 Work Session <sup>2</sup>	Round 2 Work Session <sup>3</sup>	Contribution <sup>4</sup>
Jon	Sever	Salem County Engineering Department / Salem County Road Department	Supervisor		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
James	McKelvie*	Engineering Consultant to the County	Associate, Alaimo Group				
Jolyn	Mitchell	Salem County Road Department / Salem County Mosquito Control	Supervisor / Director				
Joe	Sever	Salem County OEM Rad and Planning	Officer		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Matthew	Goff*	Salem County Planning Department	Principal Planning Aide			<input checked="" type="checkbox"/>	
Lauren	Pomykala	Salem County Department of Health & Human Services	Public Preparedness Division Supervisor		<input checked="" type="checkbox"/>		
Julie	Acton	Salem County Improvement Authority	Director				
Peggy	Nicolosi	Salem County Board of Education	Executive County Superintendent of Schools			<input checked="" type="checkbox"/>	

The following lists candidate positions and organizations within the County that were extended invitations to participate during the development of the County Appendix. These positions and organizations will continue to be extended invitations to participate during subsequent plan implementation and maintenance activities.

- Improvement Authority
- Soil and Water Conservation District-shared with Cumberland County
- Long Term Healthcare Facilities (via regularly scheduled quarterly meetings)

The following lists positions and organizations that are generally recommended for consideration as members of the County 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.

- Floodplain Administrator/Manager – There is no unincorporated land in Salem County so there are no parcels that could potentially be covered under the National Flood Insurance Program.
- Chambers of Commerce - multiple organizations at the municipal level
- County Volunteers Active in Disaster
- Salem County environmental organizations (organized at the municipal level)

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## Part 2: Participation

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### Part 2.2: Public Participation

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

Since all county residents reside in an incorporated municipality, it is assumed the main connections with the public are made through municipalities and their respective Working Groups. However, Table 1-2 identifies the date, type of involvement, and location (where applicable) for all opportunities provided by Salem County to the public and interested parties to participate in the development of the plan update.

**Table 1-2: Public Participation**

Date	Type of Involvement	Location
March 8, 2023	Link to Project Website <sup>5</sup> established and maintained.	County ReadySalem website <sup>6</sup>
August 16, 2023	Public meeting conducted with "SC HMPU" as agenda item with Salem County Board of Commissioners.	Historic Salem Courthouse - 104 Market Street, Salem, NJ 08079
July 19, 2023	Notice posted re: Preliminary Draft Appendix and Round 2 Working Group Meeting with link to Project Website.	County website <sup>6</sup>
June 2023	Preliminary Draft Appendix available for public comment.	Project website <sup>5</sup>
August 4, 2023	Notice posted re: Public Review Draft County Appendix review period with link to Project Website.	County website <sup>6</sup>
August 16, 2023	Availability of Public Review Draft announced at County Council Meeting	Historic Salem Courthouse - 104 Market Street, Salem, NJ 08079
August 18 through September 15, 2023	Public Review Draft County Appendix available for public comment.	Project Website <sup>5</sup>
July 8, 2024	Revised Draft County Appendix posted to Project Website	Project website <sup>5</sup>
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 County Appendix posted to Project Website	Project website <sup>5</sup>

Public comments and input received for all versions of the County Appendix were considered by the County Working Group and incorporated into the County Appendix where appropriate. In addition, the County Appendix was adopted as part of a regularly scheduled public meeting.

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

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<sup>5</sup> <https://schmpu23.com>

<sup>6</sup> <https://readysalem.org/>

<sup>7</sup> See Mitigation Measure M-1 in Part 4 of the County Appendix.

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



### Part 3: Hazard Identification and Risk Assessment

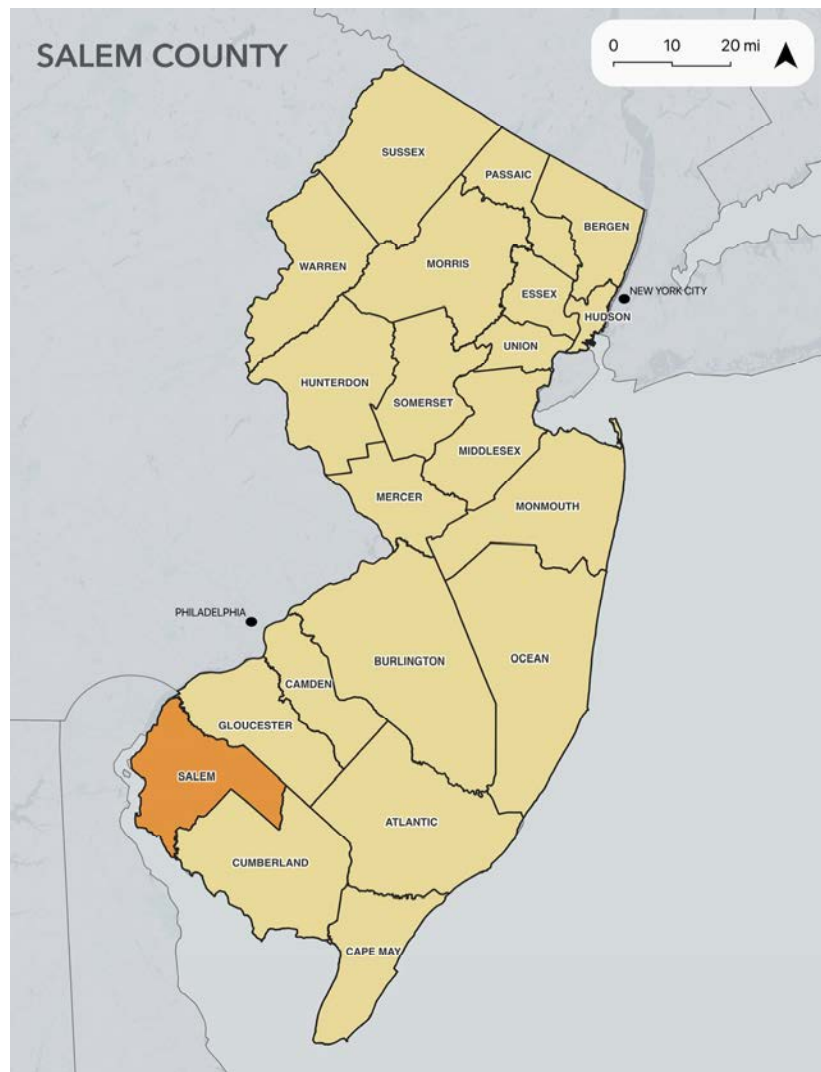
*Part 3 includes seven subparts:*

- *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

Salem County is located in southwest New Jersey along the Delaware Bay and River and bordered by Gloucester County to the northeast and Cumberland County to the southeast (See Figure 1-1).

**Figure 1-1: Salem County Location Map**



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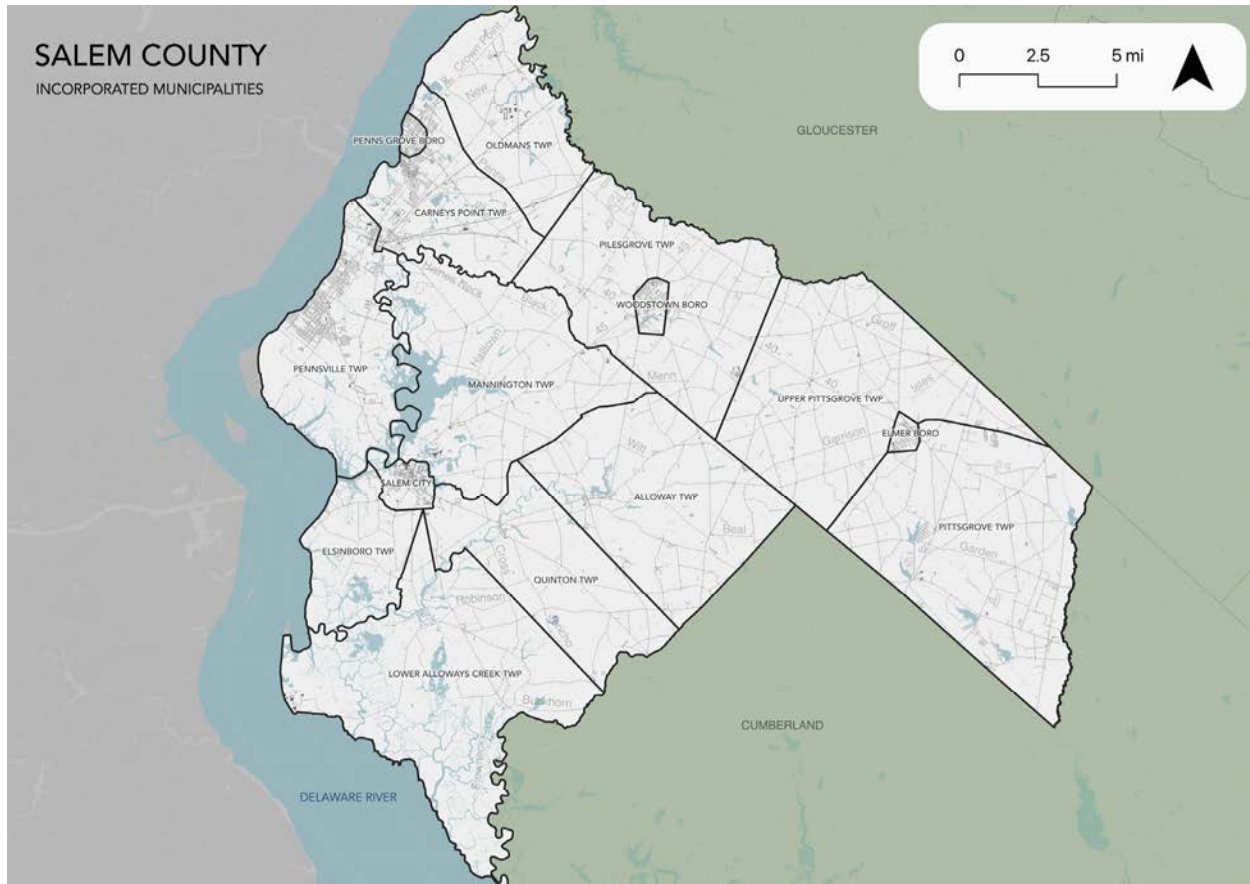
### Part 3: Hazard Identification and Risk Assessment

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Per Figure 1-2, major water courses include the Delaware Bay / Delaware River which forms the western boundary, Stow Creek which forms much of the boundary between Salem and Cumberland Counties, Oldmans Creek between Salem and Gloucester County, Alloways Creek and the Salem River. Major transportation routes include the New Jersey Turnpike, Interstate 295, US Routes 40 and 130 and New Jersey Routes 45, and 49.

The land is predominantly flat including large areas of salt marsh and wetlands with the highest elevation no more than 160 feet above sea level.

**Figure 1-2: Salem County Base Map**



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### Part 3: Hazard Identification and Risk Assessment

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Figure 1-2 also shows the 15 cities, townships, and boroughs that are located within Salem County. Like the other three counties in the region, Salem County includes communities influenced by their proximity to the Delaware Bay and River as well as inland municipalities although the influence of the bay on the development patterns in Salem County municipalities is similar to Cumberland County and more pronounced than in Gloucester and Camden Counties.

The following are the 14 municipalities that completed the plan update process<sup>9</sup>:

- Alloway Township
- Carneys Point Township
- Elmer Borough
- Elsinboro Township
- Lower Alloways Creek Township
- Mannington Township
- Oldmans Township
- Penns Grove Borough
- Pilesgrove Township
- Pittsgrove Township
- Quinton Township
- Salem City
- Upper Pittsgrove Township
- Woodstown Borough

Individual information for each of these participating jurisdictions can be found in their respective Appendices.<sup>10</sup>

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<sup>9</sup> Salem County has a total of 15 municipalities. All 15 municipalities originally were participants in the plan update process in 2023. However, in early 2024, while the SC HMPU was under review by NJOEM and FEMA RII, Pennsville Township received approval of a single jurisdiction local HMP. Some vestigial references to Pennsville Township remain in the resulting SC HMPU but no separate appendix was produced in the Final SC HMPU.

<sup>10</sup> See Appendices 2 through 15.

**Part 3.2: General Building Stock**

As of 2021, there are 31,577 buildings in Salem County with a total assessed value of improvements of \$3,332,157,710. Figure 1-3 shows an example from the Salem City Municipal Appendix illustrating the level of detail shown for the footprints of these buildings.

**Figure 1-3: Salem City Building Footprints<sup>11</sup>**



Table 1-3 shows the distribution of these structures according to land use distinctions.

**Table 1-3: Salem County Buildings per Land Use Type<sup>12</sup>**

Land Use Type	Residential (<4 units)	Multi-Family	Farm	Commercial	Industrial	Other <sup>13</sup>
Number of Buildings	22,647	344	4,894	1,680	538	1,474
% of Total	71.7%	1.1%	15.5%	5.3%	1.7%	4.7%

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<sup>11</sup> Building footprint data was isolated from FEMA's "USA Structures" data (2022) per [https://disasters.geoplatform.gov/publicdata/Partners/ORN/USA\\_Structures/New%20Jersey/](https://disasters.geoplatform.gov/publicdata/Partners/ORN/USA_Structures/New%20Jersey/).

<sup>12</sup> Land use types were isolated from MOD-IV Parcels and Tax Assessor data composite (2021) per <https://www.state.nj.us/treasury/taxation/pdf/tp/modIVmanual.pdf>.

<sup>13</sup> 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 seventeen (17) critical facilities in Salem County.

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 1-4 includes current inventory information for county critical facilities and includes cross-references to related mitigation measures identified in Part 4 of the County Appendix. Figure 1.4 shows the location of these critical facilities.

**Table 1-4: Salem County Critical Facilities Inventory**

#	Name	Type <sup>14</sup>	Subtype	Jurisdiction	Owner / Operator	Address	Shelter (Y/N)	Generator (Y/N)	Other?
CF-1	Salem Community College	Schools	Public Schools	Carneys Point Township	Salem Community College	460 Hollywood Avenue, Carneys Point	Y <sup>15</sup>	Y	
CF-2	Salem County Correctional Facility	Law Enforcement Facilities	Correctional Facilities	Mannington Township	Salem County Sheriff's Office	125 Cemetery Road, Woodstown	N	Y	
CF-3	Salem County Emergency Services	Administrative Offices	Stations	Mannington Township	Salem County Department of Emergency Services	135 Cemetery Road, Woodstown	N	Y	
CF-4	Salem County Emergency Operations Center	EOC	Co-located Facility	Mannington Township	Salem County Department of Emergency Services	135 Cemetery Road, Woodstown	N	Y	Co-located with Emergency Services
CF-5	Salem County Public Works / Roads Department	Public Works	Combined Administrative Office, Maintenance / Work Area, Equipment / Material Storage, and Fueling Station	Mannington Township	Salem County Public Works / Road Department	153 Cemetery Road, Woodstown	N	Y	

<sup>14</sup> Critical facility type and subtype definitions and considerations are described in *Section 3: Hazard Identification and Risk Assessment* of the SC HMPU Base Plan.

<sup>15</sup> Penns Grove Borough currently relies on Salem County College located at 460 Hollywood Avenue in Carneys Point (mailing address in Penns Grove Borough) for sheltering.

### Part 3: Hazard Identification and Risk Assessment

#	Name	Type <sup>14</sup>	Subtype	Jurisdiction	Owner / Operator	Address	Shelter (Y/N)	Generator (Y/N)	Other?
CF-6	Salem County Career & Technical High School	Schools	Public Schools	Mannington Township	Salem County Vocational Technical School District	880 NJ Route 45 (Salem - Woodstown Road), Woodstown	Y	N	
CF-7	Salem County Community Bus Services	Transportation <sup>16</sup>	Maintenance / Work Area	Pennsville Township	Salem County Community Bus Services	88 B Industrial Park Rd, Pennsville	N	N	
CF-8	County Offices	County	Administrative Offices	Salem City	Salem County Commissioners	94 Market Street, Salem	N	Y	Includes, Sheriff's and Prosecutors Offices, etc.
CF-9	Main County Offices	County	Administrative Offices	Salem City	Salem County Health Department	110 5 <sup>th</sup> Street, Salem	N	Y	Board of Commissioners Offices, Public Health and Human Services, et al
CF-10	Salem Campus	Schools	Special Services School	Mannington	Salem County Special Services School District	45 Cheney Road, Woodstown	N	N	Located in same vicinity as CF-6
CF-11	Cumberland Campus	Schools	Special Services School	Fairfield Township (Cumberland County)	Salem County Special Services School District	13 Ramah Road, Bridgeton	N	Y	
CF-12	Ware Ag Building	County	Administrative Offices	Mannington	Salem County	51 Cheney Road, Woodstown	N	Y	
CF-13	Salem County Board of Social Services	County	Administrative Offices	Penns Grove	Salem County	147 South Virginia Avenue, Penns Grove	N	N	
CF-14	Old Salem County Courthouse	County	Court House	Salem City	Salem County	113 Market Street, Salem	N	N	

<sup>16</sup> County-owned garage currently rented to private business.

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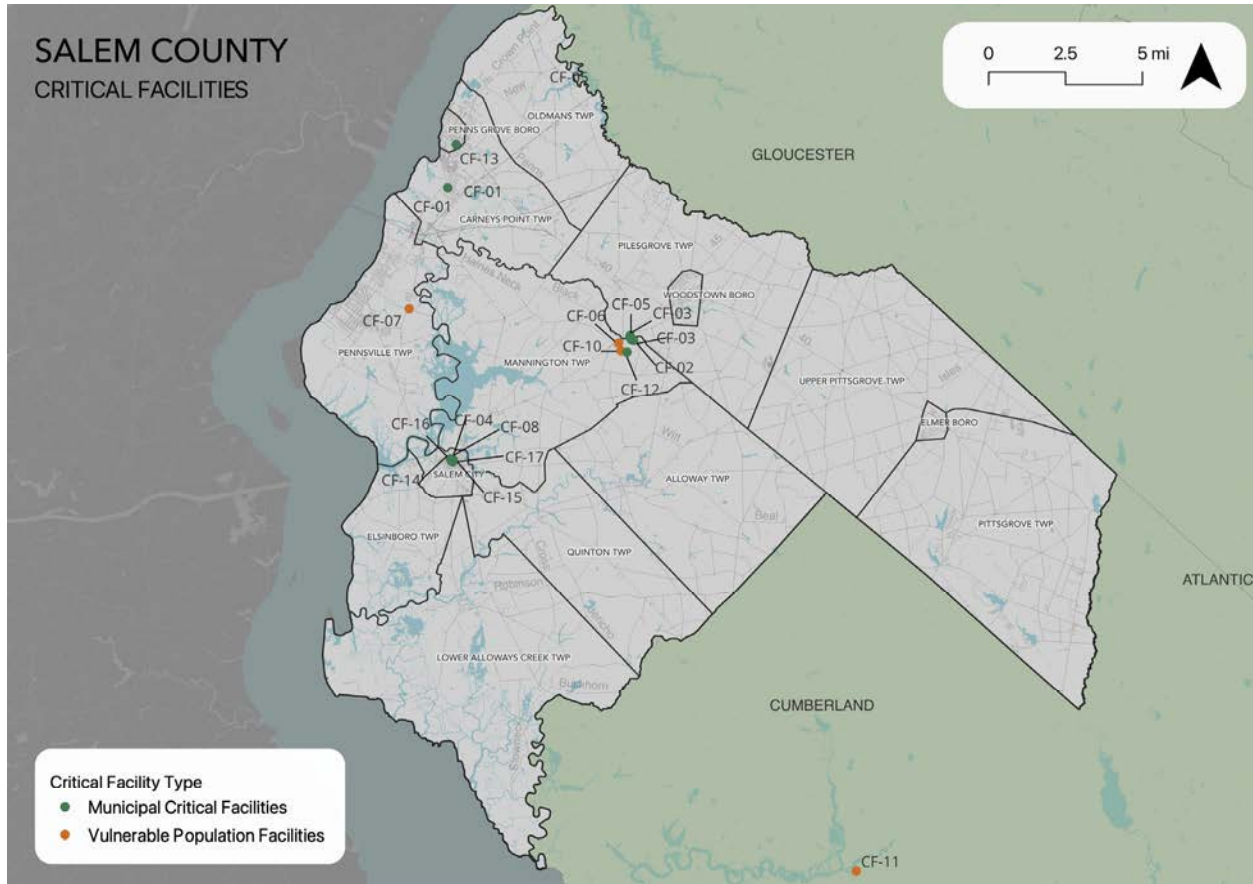
**Part 3: Hazard Identification and Risk Assessment**

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#	Name	Type <sup>14</sup>	Subtype	Jurisdiction	Owner / Operator	Address	Shelter (Y/N)	Generator (Y/N)	Other?
CF-15	Salem County Court House	County	Court House	Salem City	Salem County	92 Market Street, Salem	N	Y	
CF-16	Salem County Prosecutors Office	County	Administrative Offices	Salem City	Salem County	87 Market Street, Salem	N	N	
CF-17	Salem County Superintendent of Schools	County	Administrative Offices	Salem City	Salem County	174 East Broadway, 2 <sup>nd</sup> Floor Salem	N	N	



Figure 1-4: Salem County 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 Plan<sup>17</sup>.

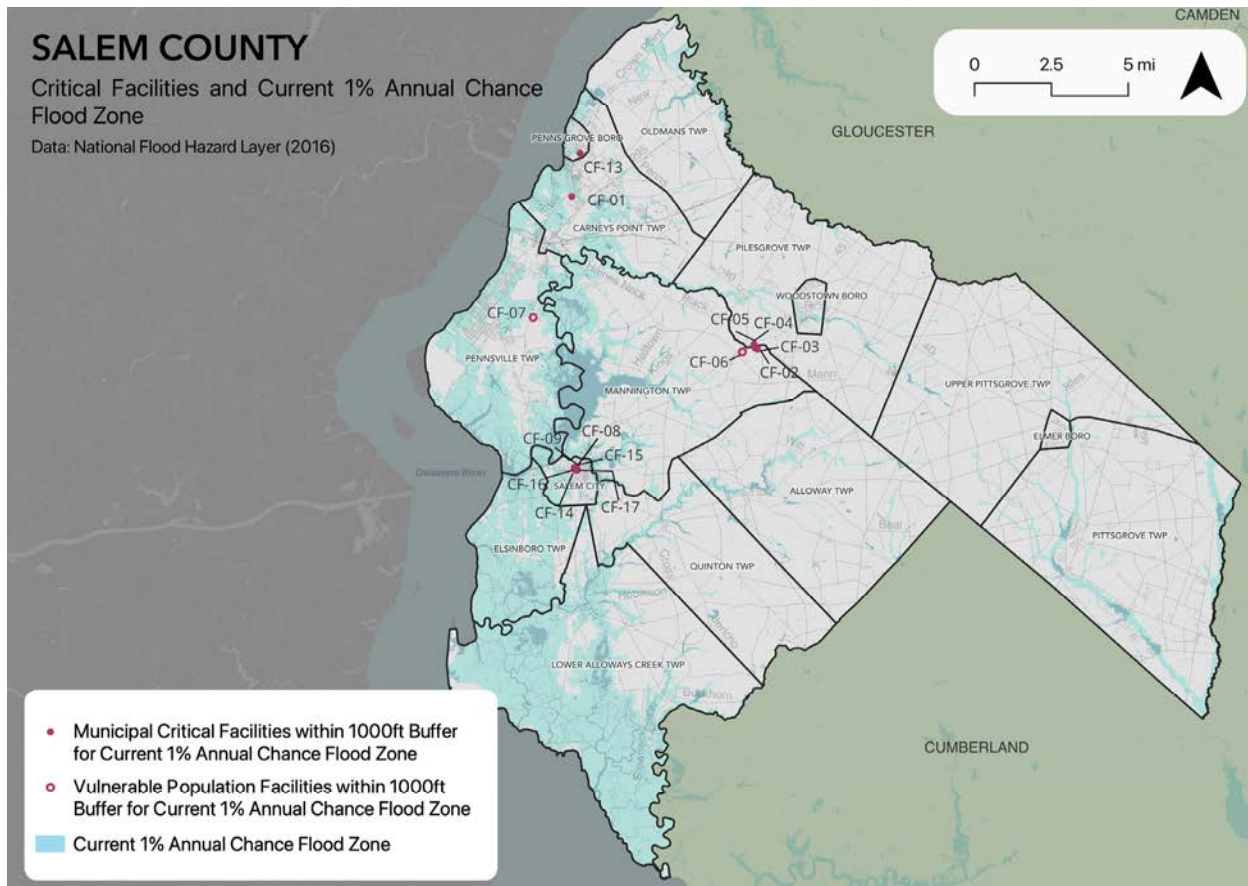
Key results for Salem County are depicted in the following.

**Mapping:** Figure 1-5 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).

<sup>17</sup> Hazard profiles are included for all eleven natural hazards in *Section 3: Hazard Identification and Risk Assessment* of the SC HMPU Base Plan.



**Figure 1-5: Salem County Critical Facilities and 1% Annual Chance Flood Zone**



Mapping results are available for general building stock and critical facilities for the following hazards:<sup>18</sup>

- Sea Level Rise
- 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 1-5 indicates hazard exposure for general building stock for all municipalities
- Table 1-6 indicates hazard exposure for critical facilities owned or operated by Salem County, facilities, differentiated between County and vulnerable population critical facilities

In addition, available information regarding Wildfire is included.

<sup>18</sup> 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 1-5: Salem County 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 <sup>19</sup>	2,493	7.9%	\$235,626,805	7.1%
Flood - Within 1 % Annual Chance Zone	4,825	15.3%	\$496,789,429	14.9%
Flood - Near (within 1,000 feet) of 1% Annual Chance Zone	13,823	43.8%	\$1,477,888,844	44.4%
Earthquake – Structure built before 1927 <sup>20</sup>	4,411	18.5%	\$317,648,800	9.5%
High Winds / Severe Weather – Structure built before 1976	17,538	73.7%	\$1,519,685,600	61.3%

**Table 1-6: Salem County Critical Facilities Hazard Exposure<sup>21</sup>**

Hazard	Number of Critical Facilities	County 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	14	CF-01, CF-02, CF-03, CF-04, CF-05, CF-08, CF-09, CF-13, CF-14, CF-15, CF-16, CF-17	CF-06, CF-07

Regarding Wildfire, according to the 2017 NJ4 HMP, 7 municipalities in Salem County have more than one acre of land that intersects with an extreme level of potential fuel and potentially high levels of wildland urban interface. The total acreage in Salem County in this category is 243.65 acres.<sup>22</sup>

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)

<sup>19</sup> All supporting data for Sea Level Rise (3-foot rise), and Flood (all) are viewable at [SALEM\\_Buildings\\_Values\\_SLR\\_Flood](#)

<sup>20</sup> All supporting data for Earthquake, High Winds, and Severe Weather are viewable at [SALEM\\_Buildings\\_Values\\_EQ\\_Wind\\_SWW](#)

<sup>21</sup> All supporting data for critical facility hazard exposure are viewable at [SALEM\\_CFs\\_HazardExposure](#)

<sup>22</sup> See Table BP.33 in the Base Plan for breakout by municipality.

## Part 3: Hazard Identification and Risk Assessment

### Dam Failure and Levee Failure

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

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?*

### National Flood Insurance Program Information

One additional metric discussed with all of the Municipal Working Groups was statistical information from the National Flood Insurance Program (NFIP)<sup>23</sup>. The following depicts combined numbers for Salem County participating municipalities as of September 2023 as provided by the Region II office of the Federal Emergency Management Agency (FEMA):

#### **Active Policies**

- Active Policies – 1,531 active NFIP flood insurance policies
- Total Premiums – \$1,507,310 paid in total annual premiums
- Average Premium – \$985 average annual premium per policy for all Salem County

#### **Repetitive Loss Properties**

- Repetitive Loss Properties (RL) – fifty-one (51) properties are designated as RL. These properties have a total of 168 claims totaling \$5,378,664
- Severe Repetitive Loss Properties (SRL) – ten (10) of the RL properties are designated as SRL. These properties have a total of sixty-three (63) claims totaling \$3,443,592, which represents 64.0% of RL claims for the total Salem County RL claims of \$5,378,664

For comparison relative to the number of active NFIP flood insurance policies, the following are the number of potentially exposed buildings (per Table 1-5), which are significantly higher than the number of active policies:

- Flood - Within 1 % Annual Chance Zone: 4,825 buildings ~ 15.3% of total buildings, with a value of \$496,789,429 ~ 14.9% of the total building value in the County.
- Flood - Near (within 1,000 feet) of 1% Annual Chance Zone: 13,823 buildings ~ 43.8% of total buildings, with a value of \$1,477,888,844 ~ 44.4% of the total building value in the County.

### **Part 3.5: Demographic Considerations**

Demographic considerations include general population and land use factors. Table 1-7 includes current population estimates and changes since the previous US Census<sup>24</sup>:

**Table 1-7: Salem County General Population Demographics**

Metric	Current Estimates
2019 Population	64,797
Percent Population Change (2010-2019)	- 1.95%
Land Area	331.90 sq. miles
Population Density	195.2 / sq. mile

<sup>23</sup> Information on the NFIP is described in *Section 3: Hazard Identification and Risk Assessment* of the SC HMPU Base Plan.

<sup>24</sup> 2020 US Census

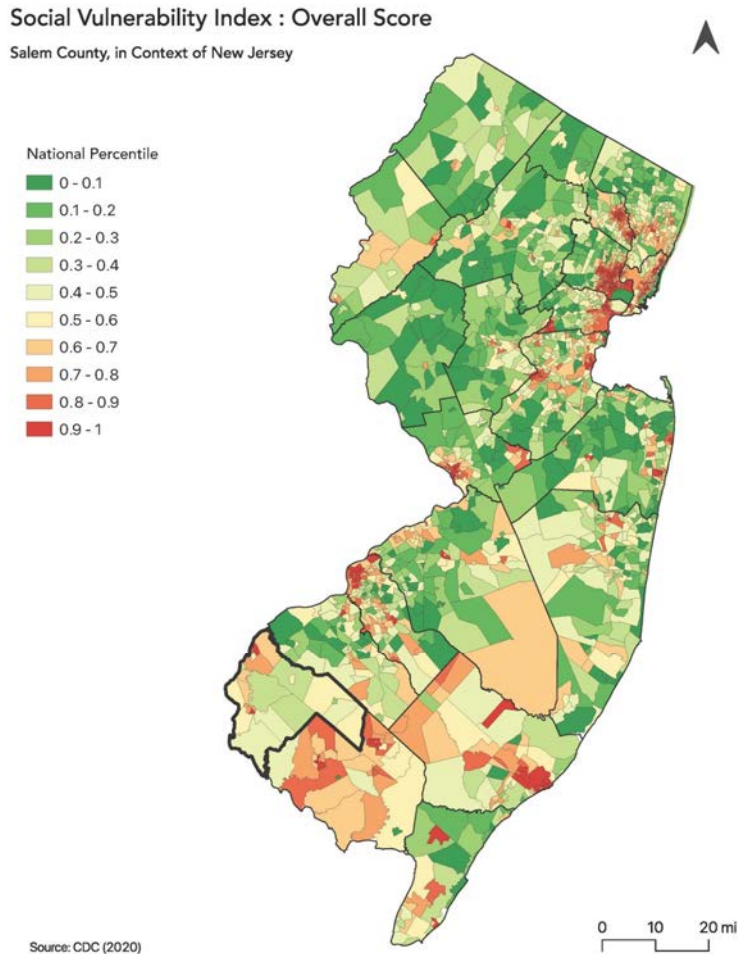
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### Part 3: Hazard Identification and Risk Assessment

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Demographic considerations also include differences in social vulnerability<sup>25</sup>. Figure 1-6 shows the overall Social Vulnerability (SVI) Index scores for Salem County in comparison to the rest of New Jersey.<sup>26</sup>

**Figure 1-6: Salem County Social Vulnerability Index: Overall Scores**



Finally, as detailed in Section 1.2.2 of the Base Plan, four municipalities in Salem County have been designated by the NJDEP as an “overburdened” community based on environmental justice criteria. As noted in Section 3.6 of the Base Plan, the Working Groups for these communities shall make a concerted effort during plan implementation and future updates of the plan to determine the extent to which natural hazard events and future climate change impacts may disproportionately affect disadvantaged members of the community.

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<sup>25</sup> Social vulnerability considerations are described in *Section 3: Hazard Identification and Risk Assessment* of the SC HMPU Base Plan.

<sup>26</sup> All supporting data for SVI is viewable at [SVI Data](#).

### Part 3.6: Observations

- Outreach and guidance in cooperation with the Municipal Working Groups, should be provided for residents, business owners, and property owners for:
  - Properties in or near coastal erosion, sea level rise, flood zones 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).
- Priority for follow-up efforts with the Municipal Working Groups 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).
- All critical facilities are potentially vulnerable to earthquakes, high winds, and severe weather (heavy rains in summer and snow loads in winter).
- A significant number of critical facilities are also potentially vulnerable to coastal erosion, sea level rise, flood, and wildfire and will be identified as priorities for follow-up critical facility field evaluations.

### 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 Groups rated the hazards.<sup>27</sup> The following represents the average hazard ranking from the SC HMPU for Salem County municipalities (in order per average priority):<sup>28</sup>

#### High Priority

- High Wind
- Levee Failure
- Flood
- Sea Level Rise

#### Moderate Priority

- Dam Failure
- Severe Weather – Winter
- Wildfire

#### Low Priority

- Severe Weather – Summer
- Extreme Temperature
- Drought
- Earthquake

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<sup>27</sup> See Part 3.7 in Appendices 2 through 16 for the 15 participating municipalities for their respective individual hazard priorities.

<sup>28</sup> Section 3 of the Base Plan, Table BP.3-7 and Figure BP.3-1 includes tabular and mapped results related to these average hazard rankings.

## 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 1-9 is the same as Table BP.3-44 and shows the potential impacts of climate change on a hazard-by-hazard basis for the 14 participating municipalities.

**Table 1-9: Potential Climate Change Impacts**

Municipality	Dam Failure	Drought	Earthquake	Extreme Temperature	Flood	High Wind	Levee Failure	Sea Level Rise	Wildfire	Composite Scores
Salem City	N/A	L	M	H	H	M	H	H	N/A	H
Elsinboro Township	N/A	L	L	M	H	H	M	H	N/A	H
Lower Alloways Creek Township	M	L	L	M	M	M	H	H	L	H
Carneys Point Township	M	L	L	L	H	H	L	M	N/A	H
Penns Grove Borough	N/A	N/A	M	H	H	M	N/A	M	N/A	M
Quinton Township	H	L	L	M	L	H	M	L	M	M
Mannington Township	L	H	L	L	L	H	M	L	N/A	M
Pilesgrove Township	M	H	L	M	L	H	N/A	N/A	L	M
Alloway Township	M	M	L	L	L	M	N/A	L	M	M
Pittsgrove Township	M	L	L	M	L	M	N/A	N/A	H	M
Oldmans Township	N/A	M	L	L	L	H	N/A	L	N/A	L
Upper Pittsgrove Township	M	H	L	L	N/A	H	N/A	N/A	H	L
Woodstown Borough	L	L	M	L	L	M	N/A	N/A	N/A	L
Elmer Borough	N/A	L	H	L	L	M	N/A	N/A	N/A	L

Based on these results and assumptions, the municipalities where climate change may create the most impact are:

- Salem City
- Elsinboro Township
- Lower Alloways Creek Township
- Carneys Point Township

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 each community's Appendix.

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## Part 4: Mitigation Measures

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### 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 Appendices 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 Groups identified an overarching strategy for mitigation:

- Identify and address known problems or areas of concern for critical facilities and vulnerable populations and situations that apply to multiple municipalities
- 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, in particular for Repetitive Flood Loss properties where appropriate
- 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 County Appendix also reflects support for 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 County Appendix.

Table 1-9 identifies the status of mitigation measures included in the NJ4 HMP. These entries were based on information provided by the County Working Group. In some cases, the NJ4 HMP mitigation measures were carried over as part of the County Appendix as indicated in the "Comments" column and the far right-hand column of Table 1-9.

**Table 1-9: Status of Salem County NJ4 HMP Mitigation Measures**

Mitigation Action, Program, or Project	Status	Comments	Mitigation Measure # 29
<b>M-1:</b> Support municipal outreach and education programs by providing access to current resources and reference materials that Municipal Working Groups can use to inform residents, businesses, and property owners	Work-in-progress	Work-in-progress included: <ul style="list-style-type: none"> <li>General hazard mitigation support for Municipal OEM Coordinators. Salem County OEM has held regularly scheduled meetings for several years. Hazard mitigation is a regular component of the agendas for the Municipal OEM Coordinator Meetings including recommendations for implementation of the NJ4 HMP and work-in-progress for the SC HMPU.</li> <li>New critical facilities were added to the critical facilities list in the SC HMPU.</li> <li>SC OEM also secured the Pre-Disaster Mitigation Program grant to fund the consultant support for the SC HMPU and supervised all work under the contract.</li> </ul>	Carried over as part of M-1
<b>M-2:</b> Prioritize county critical facilities and complete site and facility surveys to identify vulnerabilities and potential mitigation measures.			
<b>M-3:</b> Support efforts by Municipal Working Groups to survey municipal critical facilities by providing data management services including facilitating periodic updates to inventory and hazard exposure data.			
<b>M-4:</b> Support on-going plan maintenance and update processes by County and Municipal Working Groups by providing the most up-to-date information about natural hazards including refinements to flood mapping, evolving data regarding climate change, and related impacts of sea level rise and hazard event frequencies.			

<sup>29</sup> Detailed information for identification and implementation of county (M-#) mitigation measures is included in Tables 1-10 and 1-11.



## Part 4: Mitigation Measures

Mitigation Action, Program, or Project	Status	Comments	Mitigation Measure # 29
<b>M-5:</b> Prioritize recurrent drainage problem areas and initiate data collection with county and, where appropriate, municipal agencies <sup>30</sup> to track unreimbursed damages and related response and recovery expenses.	Work-in-progress	The new Engineering Department Director hired in 2022 has instituted major record keeping changes to better track and maintain storm water and drainage facilities.	Carried over as part of M-1
<b>M-6:</b> Conduct regular County Working Group meetings consistent with the plan maintenance program and the County Adoption Resolution.	Work-in-progress	County working group meetings are held as part of Salem County's monthly OEM staff meetings.	Carried over as part of M-1
<b>M-7:</b> Support regular Municipal Working Group meetings and related implementation efforts including reminders at quarterly Municipal OEM Coordinators' meetings, tracking progress toward implementation of municipal mitigation measures, training regarding implementation issues such as project scoping, identification of current available options for funding, etc.	Work-in-progress	Salem County OEM has attended several working group meetings for the municipalities both for the update in 2023 and their annual meetings. Hazard mitigation is a standing item on Salem County's regular Local OEM Coordinator's Meeting agenda.	Carried over as part of M-1
<b>M-8:</b> Facilitate meetings with state, county, and municipal officials to discuss and resolve implementation issues related to multi-jurisdictional mitigation measures.	Work-in-progress	SC OEM has participated in State, County, and Municipal trainings and meetings. In addition, Pennsville Township has been working with NJOEM for potential seawall replacement, and SC OEM has been involved in those meetings.	Carried over as part of M-1
<b>M-9:</b> Elsinboro Township Pump Station.	Work-in-progress	The Elsinboro Township project scope was changed and approved by FEMA and NJOEM in 2022. This will now be a road elevation scope and is in the final engineering phase. The Historical Preservation study was completed in March 2023.	Carried over as M-2
<b>M-10:</b> Elsinboro Township Beach Replenishment Project.	Completed	Project was completed around 2021 by US Army Corp of Engineers.	N/A

<sup>30</sup> See Part 4.5: Multi-Jurisdictional Mitigation Measures.

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## Part 4: Mitigation Measures

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In addition, since the 2017 NJ4 HMP, the County completed the following projects related to hazard mitigation:

- Multiple sluice gate repairs and replacements throughout the County, including:
  - Sluice gate repairs on Ft Elfsborg Road in Elsinboro Township in 2018
  - Sluice gate repairs on Delaware Ave in Carneys Point Township in 2022
- Ongoing stormwater management program enhancements including routine ditch/dike maintenance, retention pond maintenance, etc.
- Engineering and design for
  - Elevation of Fort Elfsborg Road in Elsinboro 2022
  - Camp Crockett water control structures in Pilesgrove 2022
- Resurfacing and road elevation work including:
  - Road elevation (phase 1) on Hook Road in Pennsville Township in 2019
  - County Route 611 in Alloway Township including drainage improvements 2021
  - County Route 604 in Upper Pittsgrove Township including drainage improvements 2021

### Part 4.3: County Mitigation Measures – Identification

Table 1-10 includes the list of mitigation measures that are considered the responsibility of the County. 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 County Working Group including measures to address known problems or areas of concern for critical facilities and vulnerable populations

Table 1-10 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

## Part 4: Mitigation Measures

**Table 1-10: Salem County Mitigation Measures Identification**

#	Mitigation Action, Program, or Project	Hazard(s)	Goal (s)	Existing or New Structures
M-1	<u>County Mitigation Program</u> – including sustained efforts in cooperation with municipal Offices of Emergency Management (OEMs) to: <ul style="list-style-type: none"> <li>Conduct outreach and education for residents, businesses, and property owners (see Notes below)</li> <li>Complete critical facility field evaluations to identify potential vulnerabilities and mitigation measures</li> <li>Compile relevant data regarding hazard impacts</li> <li>Support regular interactions of the County Working Group</li> <li>Seek integration of hazard mitigation with other parallel planning initiatives</li> </ul>	All	Goal #s 1, 2, and 3	All
M-2	Fort Elfsborg Road Raising and Resurfacing (CR #624), Elsinboro Township	Flood	Goal #4	All
M-3 <sup>31</sup>	Hook Road, Phase 2, Raising and Resurfacing, (CR #551) Pennsville Township	Flood	Goal #4	All
M-4	Camp Karney Dam Rehabilitation, NJ Dam #30-8, Avis Mill Road, Pilesgrove Township	Dam Failure	Goal #4	All
M-5	Replacement of Centerton Bridge, CB #1701-235, Centerton Road, CR #553, Pittsgrove Township	Flood	Goal #4	All
M-6	Replacement of Avis Mill Bridge, CB #1704-139, Avis Mill Road, Pilesgrove Township	Flood	Goal #4	All
M-7	Implement new stormwater management recordkeeping programs to comply with the new NJDEP stormwater regulations. The recordkeeping will also allow for better maintenance of our water control structures.	Flood	Goal #s 2 and 3	All
M-8	Work with municipalities on wildfire reduction planning, training, and projects.	Wildfire	All	All
M-9	Work with municipalities to plan and implement early warning systems.	All	Goal #4	All

**Note re: Mitigation Measure M-1:**

Consistent with Section 2.2 of the SC HMPU Base Plan, SCOEM and the municipal Working Groups have placed a high priority on an expanded effort on stakeholder participation in future plan updates. This enhanced future effort is anticipated to include more concerted and targeted outreach to the public and other stakeholders, and the inclusion of Working Group members who are not elected or appointed municipal officials, or who are not contracted by municipalities to provide professional services.

<sup>31</sup> M-3 through M-9 are new mitigation measures identified by the SC HMPU Working Group.

## Part 4: Mitigation Measures

### Part 4.4: County Mitigation Measures – Implementation

Table 1-11 includes information identified by the County Working Group:

- Part(ies) responsible for following up with implementation of the measure
- Priority for implementation considering a range of criteria<sup>32</sup>
- Project Type to help determine funding options and implementation mechanisms at the municipal level<sup>33</sup>
- Estimated Cost, including estimates provided by the County 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 1-11: Salem County Mitigation Measures Implementation**

#	Mitigation Action, Program, or Project	Responsible Part(ies)	Priority	Project Type	Estimated Cost (\$)	Target Date	Next Step(s)
M-1	County Mitigation Program	County Office of Emergency Management (OEM) and County Working Group	High	Program	Staff Time	On-going, sustained effort	<ul style="list-style-type: none"> <li>▪ Identify outreach and education objectives and methods (working with OEMs)</li> <li>▪ Complete digital version of Critical Facility Field Evaluation for use by OEMs</li> <li>▪ Set priorities (if necessary) and conduct critical facility field evaluations</li> <li>▪ Identify schedule for plan updates (including sustained public participation and plan integration efforts)</li> <li>▪ Seek training and technical assistance from NJOEM et al, for hazard mitigation planning and implementation</li> <li>▪ Review Multi-jurisdictional Mitigation Measure list for initial feedback</li> </ul>

<sup>32</sup> Section 4: Mitigation Measures of the SC HMPU Base Plan includes a description of evaluation criteria considered by the County Working Group.

<sup>33</sup> 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.

## Part 4: Mitigation Measures

#	Mitigation Action, Program, or Project	Responsible Part(ies)	Priority	Project Type	Estimated Cost (\$)	Target Date	Next Step(s)
M-2	Fort Elfsborg Road Raising and Resurfacing (CR #624), Elsinboro Township	Salem County OEM and Department of Public Works (DPW)	High	Private and Public Property Flood Mitigation	\$1 Million	Q1 2024	Final design and contracting
M-3	Hook Road, Phase 2, Raising and Resurfacing, (CR #551) Pennsville Township	Salem County Engineering	High	Private and Public Property Flood Mitigation	To be determined pending permitting	2024	Awaiting NJDEP permitting
M-4	Camp Karney Dam Rehabilitation, NJ Dam #30-8, Avis Mill Road, Pilesgrove Township	Salem County Engineering / Pilesgrove Township	High	Private and Public Property Dam Failure Mitigation	To be determined pending permitting	2025	Awaiting NJDEP permitting
M-5	Replacement of Centerton Bridge, CB #1701-235, Centerton Road, CR #553, Pittsgrove Township	Salem County Engineering	Medium	Private and Public Property Flood Mitigation	\$2.5 million	To be determined	Engineering design
M-6	Replacement of Avis Mill Bridge, CB #1704-139, Avis Mill Road, Pilesgrove Township	Salem County Engineering / Pilesgrove Township	Medium	Private and Public Property Flood Mitigation	\$1.5 million	2025	Final Engineering design and DEP permits
M-7	Implement new stormwater management recordkeeping programs,	Salem County Engineering and Public Works	High	Data Management	To be determined pending vendor selection	2023	Working with a software vendor to set up program
M-8	Work with municipalities on wildfire reduction planning, training, and projects.	Salem County / Municipal OEM's and Fire Departments	Medium	Wildfire Mitigation	To be determined	Ongoing	Continuation of ongoing public education efforts.
M-9	Work with municipalities to plan and implement early warning systems.	Salem County OEM and Salem County Engineering	High	Warning Systems	To be determined	One to two years	Determine active proposals among municipalities for warning systems and potential for other municipalities. Determine funding guidelines from NJOEM

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## Part 4: Mitigation Measures

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### Note re: Mitigation Measure M-1 Implementation:

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

- Supporting efforts of the participating municipalities' OEM Coordinators to conduct outreach and guidance should be focused on :
  - Properties with valid Repetitive Loss designations
  - Buildings potentially exposed to Sea Level Rise, Dam Failure, Levee Failure, and/or Wildfire.
  - Buildings in or near the 1% annual 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).

Support may take the form of:

- ✓ Working with Salem County Planning Department, as well as NJDEP to conduct a workshop for coastal communities re: NJDEP draft regulations
- ✓ Working with NJDEP and FEMA Region II to conduct training regarding NFIP floodplain management requirements
- Considerations for prioritizing and conducting County 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 Sea Level Rise, Flood, and/or Wildfire and should also be considered as candidates for follow-up facility-level evaluations.
- Supporting efforts of participating municipalities to conduct critical facility evaluations includes developing and implementing a digital version of the Critical Facility Field Evaluation forms.
- Provisions for Plan Maintenance by the County include :
  - 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
- Supporting efforts of participating municipalities to maintain the plan (beyond those efforts identified above) should include advocating and tracking regular interactions and reporting requirements for participating municipalities

## Part 4: Mitigation Measures

### Part 4.5: Multi-Jurisdictional Mitigation Measures

During the Municipal Working Group Work Sessions, the Working Groups identified some NJ4 HMP mitigation measures to be carried over, as well as adding new areas of concern, 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. This effort resulted in the identification of 32 measures. These multi-jurisdictional mitigation measures are compiled in Table 1-12.

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 and identify projects that are already in the capital improvements program
- 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 1-12: Salem County Multi-Jurisdictional Mitigation Measures**

Municipality	#	Problem Description	Hazard(s) Addressed	Goal Addressed	Applies to Existing or New Structures	Potential Partners	Priority
Alloway Township	MJ-1	Risk Assessment - Camp Roosevelt Dam, Camp Grice Dam, and Camp Edge Dam.	Dam Failure	Goal #4	Existing	Municipal OEM, NJ DEP, Salem County Engineering, Local Boy Scouts Chapter	Moderate
	MJ-2	Critical facilities in wildfire risk areas.	Wildfire	Goal #4	Existing	Municipal OEM, NJ State Forest Fire Service	Moderate
Carneys Point Township	MJ-1	Coordinate timing of releases from upstream dams.	Dam Failure	Goal #3	Both	Upstream municipalities, Salem County DPW, Salem County OEM	High
	MJ-2	Delaware River Levee at boundary with Penns Grove Borough.	Sea Level Rise / Flood / Levee Failure	Goal #4	Both	Penns Grove Borough, NJ DEP	High
	MJ-3	Alleviate flooding along Delaware River near Plant Road south of Pumping Station.	Sea Level Rise / Flood / Levee Failure	Goal #4	Both	DuPont (property land owner), NJ DEP	High
	MJ-4	Alleviate flooding at Game Creek on Sportsman Road.	Dam Failure	Goal #4	Both	NJDOT	High

## Part 4: Mitigation Measures

Municipality	#	Problem Description	Hazard(s) Addressed	Goal Addressed	Applies to Existing or New Structures	Potential Partners	Priority
Elmer Borough	MJ-1	Muddy Run Drainage Improvements/Canal Project.	Flood	Goal #4	Both	Elmer Borough, Salem County Department of Public Works.	High
Elsinboro Township	MJ-1	Oakwood Beach Storm Damage Reduction Project – Phase 2	Sea Level Rise / Flood (Storm Surge & Tidal)	Goal #4	Both	Municipal OEM, NJ DEP, USACE	High
	MJ-2	Address breach along the Tide Marsh.	Flood (Storm Surge & Tidal)	Goal #4	Both	Municipal OEM, NJ DEP	High
	MJ-3	Alleviate flooding along Salem-Fort Elfsborg Road (County Route 625).	Flood	Goal #4	Existing	Municipal OEM, Salem County DPW	High
	MJ-4	Alleviate flooding along Sinnickson Landing Road (County Route 661).	Flood	Goal #4	Existing	Municipal OEM, Salem County DPW	High
Lower Alloways Creek Township	MJ-1	Alleviate flooding at County Route 658 (Salem Hancock Bridge Road) and County Route 606 (Front Street).	Flood (Storm Surge & Tidal)	Goal #4	Both	Municipal OEM, Salem County DPW	High
	MJ-2	Alleviate flooding at County Route 623 (New Bridge) and County Route 651 (Beasley Neck Road).	Flood (Storm Surge & Tidal)	Goal #4	Both	Municipal OEM, Salem County DPW	High
	MJ-3	Replace bridge on County Route 623 that has been out of service for lengthy period.	Flood (Storm Surge & Tidal)	Goal #4	Both	Municipal OEM, Salem County, DPW]	High
Mannington Township	MJ-1	Alleviate tidal flooding on NJ Route 45 at Keasbey Creek at border between Mannington Township and Salem City (key egress point for Mannington Township and for Mill Operation).	Flood	Goal #4	Existing	Township OEM, NJDOT, Electric and Gas Utilities	Low



## Part 4: Mitigation Measures

Municipality	#	Problem Description	Hazard(s) Addressed	Goal Addressed	Applies to Existing or New Structures	Potential Partners	Priority
	MJ-2	Coordinate with Salem County Road Department to clear debris from drainage ditches which will then be maintained by the Township Road Department.	Flood	Goal #4	Existing	Township OEM, Township Road Department, Salem County Road Department	High
Oldmans Township	MJ-1	Alleviate flooding at South Railroad Avenue where road meets County Route 602 (Pedericktown Woodstown Road).	Flood	Goal #4	Both	Township OEM, Salem County DPW, Salem County Road Department	High
	MJ-2	Alleviate flooding at Center Square Road Causeway at intersection of County Route 620 (Center Square Road) and County Route 601 (Pedricktown Road).	Flood	Goal #4	Both	Township OEM, Salem County DPW, Gloucester County DPW	High
Penns Grove Borough	MJ-1	Improvement of maintenance of the State and County stormwater outfalls located in Penns Grove.	Flood / Sea Level Rise	Goal #4	All	NJ DEP, Salem County DPW, Salem County Engineering	High
Pilesgrove Township	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
Pittsgrove Township	MJ-1	Coordinate with Salem County OEM and potentially other Municipal OEMs regarding planning, funding, and implementation of early warning systems	All	Goal #4	All	Salem County OEM	High

## Part 4: Mitigation Measures

Municipality	#	Problem Description	Hazard(s) Addressed	Goal Addressed	Applies to Existing or New Structures	Potential Partners	Priority
Quinton Township	MJ-1	Alleviate flooding at County Route 655 (Sickler Street) between Smithfield Street and County Route 651 (Beasley Neck Road).	Flood	Goal #4	Both	Municipal OEM, Salem County DPW	High
Quinton Township	MJ-2	Alleviate flooding at Waterworks Road and County Route 581 (Quinton Alloway Road).	Flood	Goal #4	Both	Municipal OEM, Salem County DPW	High
Quinton Township	MJ-3	Alleviate flooding at intersection of County Route 653 and NJ Route 49 (Acton Station Road).	Flood	Goal #4	Both	Municipal OEM, Salem County DPW	Low
Quinton Township	MJ-4	Alleviate flooding on NJ Route 49 (evacuation route) at Keasbey Creek at border between Quinton Township and Salem City.	Flood	Goal #4	Both	Municipal OEM, Salem City OEM, NJ DOT	High
Salem City	MJ-1	Alleviate flooding on NJ Route 45 at Keasbey Creek at border between Salem City and Mannington Township.	Flood	Goal #4	Existing	Municipal OEM, Mannington Township OEM, NJ DOT	High
	MJ-2	Alleviate flooding on NJ Route 49 (evacuation route) at Keasbey Creek at border between Salem City and Quinton Township.	Flood	Goal #4	Existing	Municipal OEM, Quinton Township OEM, NJ DOT.	Moderate
Upper Pittsgrove Township	Upper Pittsgrove Township did not identify any multi-jurisdictional mitigation measures.						
Woodstown Borough	MJ-1	Alleviate erosion under County Route 672 (South Main Street).	Flood (Storm Surge & Tidal)	Goal #4	Both	Municipal OEM, Salem County DPW	High
	MJ-2	Alleviate flooding at Chestnut Run Creek culvert located under NJ Route 40.	Flood	Goal #4	Both	Municipal OEM and NJ DOT	High

## Part 4: Mitigation Measures

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Municipality	#	Problem Description	Hazard(s) Addressed	Goal Addressed	Applies to Existing or New Structures	Potential Partners	Priority
	MJ-3	Alleviate flooding at Chestnut Run Creek culvert under South Main Street.	Flood	Goal #4	Both	Municipal OEM, Salem County DPW	High
	MJ-4	Alleviate flooding at pipe along Elm Street (in between NJ Route 45 and NJ Route 40).	Flood	Goal #4	Both	Municipal OEM, Salem County DPW, and NJ DOT	High

### 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
- 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 Salem County'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.

Salem County does not directly participate in the NFIP. However, as part of the implementation of the SC HMPU, efforts of the Salem County Working Group includes:

- Encouraging involvement of participating municipalities' Floodplain Managers / Administrators during the SC HMPU implementation process
- Supporting the 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 1-13 compares the results of the Capability Assessment Survey for the County as a whole and Salem County.

## Part 4: Mitigation Measures

**Table 1-13: Salem County Capability Assessment Survey Results**

Metric	Salem County Results (n=5)	Salem County "as a whole" Results (n=52)
Position Type: <b>Full-time</b>	60%	29%
Position Type: <b>Part-time</b>	40%	71%
Position Type: <b>Volunteer</b>	0%	0%
Time in Position: <b>Less than 1 year</b>	40%	23%
Time in Position: <b>1 to 2 years</b>	0%	12%
Time in Position: <b>2 to 5 years</b>	0%	19%
Time in Position: <b>More than 5 years</b>	60%	46%
Prior Experience: <b>None</b>	40%	50%
Prior Experience: <b>with hazard mitigation planning</b>	60%	37%
Prior Experience: <b>with HMA grant administration</b>	40%	12%
Prior Experience: <b>with floodplain management</b>	0%	12%
Training / Certifications: <b>None</b>	60%	71%
Training / Certifications: <b>for hazard mitigation planning and implementation</b>	40%	19%
Training / Certifications: <b>for floodplain management</b>	0%	10%

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

- Higher 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.
- Includes results of reviewing primary plans and documents to determine the extent to which these documents reflect up-to-date hazard risk and mitigation.
- Includes 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 Salem County Working Group include:

- Salem County Emergency Operations Plan- Updated and approved by NJOEM on April 28, 2023
- Salem County master plans and related documents<sup>34</sup>

*Note: Salem County is not a participating community in the NFIP and therefore does not have a Flood Damage Prevention Ordinance::*

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<sup>34</sup> Can be viewed at: <https://www.salemcountynj.gov/departments/planning-board/>