



Cumberland County Multi-Hazard Mitigation Plan Update  
**Participating Jurisdiction Appendices**

**Appendix 1**  
**Cumberland County, New Jersey**

Preliminary Draft

September 7, 2021

## Notes to Preliminary Draft Reviewers

This Preliminary Draft of the Cumberland County Appendix to the Cumberland County Multi-Hazard Mitigation Plan Update (CC HMPU) includes:

Updated tables containing information available as of September 7<sup>th</sup> for the community's:

- Working Group
- Critical Facilities
- Mitigation Measures included in the 2016 Mitigation Plan for Four New Jersey Counties (NJ4 HMP)
- Plan Review and Integration document status

In addition, the Preliminary Draft contains:

- Preliminary Hazard Identification and Risk Assessment (HIRA) Update – including mapping and data tabulations regarding vulnerability to natural hazards and social vulnerability considerations
- Hazard Priorities – as determined by the Working Group
- Goals and Strategies

Finally, the Preliminary Draft includes initial lists of proposed County Mitigation Measures to be included in the CC HMPU.

Text highlighted in **yellow** indicates information requested of the County's Working Group as part of this review.

Text highlighted in **blue** indicates information to be provided and/or actions to be taken at a later date.

Please provide any questions, input, or comments to the County's Deputy Emergency Management Coordinator:

James Manski

[jamesma@co.cumberland.nj.us](mailto:jamesma@co.cumberland.nj.us)

This review period will close on Friday, October 1<sup>st</sup>. However, there will be additional opportunities to participate in the development of the CC HMPU. These opportunities will be identified on the project website (<https://cchmpu21.com>).

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## Part 1: Overview

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### Part 1.1: Cumberland County Multi-Hazard Mitigation Plan Update

The Cumberland County Multi-Hazard Mitigation Plan Update (CC HMPU) incorporates input from all 15 participating jurisdictions in Cumberland County, including Cumberland County and 14 separate municipalities.

The CC HMPU is an update of the Mitigation Plan for Four New Jersey Counties (NJ4 HMP) that was completed by all fifteen jurisdictions in Cumberland County along with over 70 additional jurisdictions from Camden, Gloucester, and Salem Counties. The Cumberland County portions of the NJ4 HMP were adopted by the participating jurisdictions and approved by the Federal Emergency Management Agency in 2016.

The CC HMPU has two main parts:

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

The Base Plan **will include** descriptions and information that is common to all 15 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 15 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: Cumberland County Appendix

This Municipal Appendix is focused on Cumberland County, New Jersey.

The Cumberland County Working Group **will recommend** the Cumberland County Appendix for adoption to the Cumberland County Board of County Commissioners.

The Cumberland County Board of County Commissioners **will adopt** the County Appendix by resolution (see Attachment B: Adoption Resolution).

Region II of the Federal Emergency Management Agency **will approve** the County Appendix (see Attachment C: Approval Letter).

## 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 **will be** 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.

County Working Group members reviewed briefing materials and contributed during Work Sessions and Meetings and **will review** the Preliminary Draft and Draft versions of the CC HMPU Base Plan and Appendices. The Working Group will also continue to stay involved during the implementation and maintenance of the CC HMPU.

Due to the on-going COVID-19 pandemic during the plan update process, Working Group meetings were conducted in a variety of ways including virtual meetings. However, when local conditions permitted, in-person meetings were conducted.

*Note: Five members of the Working Group also participated in the development of the 2016 NJ4 HMP. These members are indicated with an (\*) following their last names.*

**Table 1-1: Cumberland 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>
Gabriel	Scarpa	Office of Emergency Management (OEM)	OEM Coordinator	☑	☑		
James	Manski *	OEM	Deputy OEM Coordinator	☑	☑		Organized Working Group and Work Sessions.
Melinda	Weisgerber *	OEM	Conference Assistant	☑	☑		
Matt	Witta	OEM	Deputy OEM Coordinator	☑	☑		
William	Mosley	OEM	Communications Systems Technician II	☑	☑		
Bryan	Everingham	OEM	Conference Assistant	☑	☑		

<sup>1</sup> Project Kickoff Meeting was held on May 20, 2021

<sup>2</sup> Round 1 Work Session was held on July 28, 2021.

<sup>3</sup> Round 2 Work Session **will be** held on **to be determined**.

<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>
Kimberly	Wood *	Department of Administration	County Administrator				
Jody	Hirata	Department of Administration	Deputy County Administrator				
John	Knoop	Department of Public Works and Public Property	County Engineer				
Douglas	Whitaker *	Department of Engineering	Assistant County Engineer		☑		
James	Neher	Department of Public Works and Public Property	Assistant Director of Public Works		☑		
Matt	Pisarski	Planning Department	Planning Director		☑		
Joseph	Zaccaria	Planning Department	GIS Specialist		☑		
Joseph	Sever *	N/A	Private Citizen		☑		Former OEM Coordinator during NJ4 HMP development

The following lists candidate positions and organizations within the community that [will be 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.<sup>5</sup>

- Board of Commissioners
- Sheriff's Office
- Fire Coordinator
- Fire Marshall
- Improvement Authority
- Chambers of Commerce
- Soil and Water Conservation District
- Educational Institutions
- Healthcare Institutions (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 Cumberland County so there are no parcels that could potentially be covered under the National Flood Insurance Program.
- County Volunteers Active in Disaster
- Cumberland County environmental organizations

<sup>5</sup> Plan implementation and maintenance activities [will be] described in Section 4: Mitigation Measures of the CC HMPU Base Plan.

## Part 2: Participation

### Part 2.2: Public Participation

Part 2.2 **[will include]** 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 that the main connections with the public are made through the municipalities and their respective Working Groups. However, Table 1-2 **[will identify]** 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 1-2: Public Participation**

Date	Type of Involvement	Location
<b>[insert date link was established]</b>	Link to Project Website <sup>6</sup> established and maintained.	<b>[insert County website URL]</b>
<b>[insert date meeting was held (if applicable)]</b>	Public meeting conducted with presentation and open discussion.	<b>[insert location]</b>
September 8, 2021	Preliminary County Appendix available for public comment.	Project Website
<b>[insert date link was established]</b>	Notice posted re: Preliminary County Appendix review period with link to Project Website.	<b>[insert County website URL]</b>
<b>[date(s) to be determined]</b>	Public outreach via <b>[insert audience(s) and outreach method(s)]</b> .	<b>[insert location(s)]</b>
<b>[date to be determined]</b>	Draft County Appendix <b>[will be]</b> available for public comment.	Project Website
<b>[date to be determined]</b>	Public hearing <b>[will be]</b> conducted regarding the Draft County Appendix providing for open discussion and public comment.	<b>[insert location]</b>

Public comments and input received for the Preliminary Draft and Draft versions of the County Appendix **[will be]**:

- Considered by the County Working Group and **[will be]** incorporated into the County Appendix where appropriate.
- Included in Attachment A to the County Appendix along with a brief explanation of if and how the comments were addressed in the County Appendix.

In addition, the County Appendix **[will be]** adopted as part of a regularly scheduled public meeting (see Attachment B: Adoption Resolution).

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

<sup>6</sup> <https://cchmpu21.com/documents>

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

<sup>8</sup> Public education and outreach **[will be]** described in *Section 4: Mitigation Measures* of the CC HMPU Base Plan.



## Part 3: Hazard Identification and Risk Assessment

### Part 3: Hazard Identification and Risk Assessment

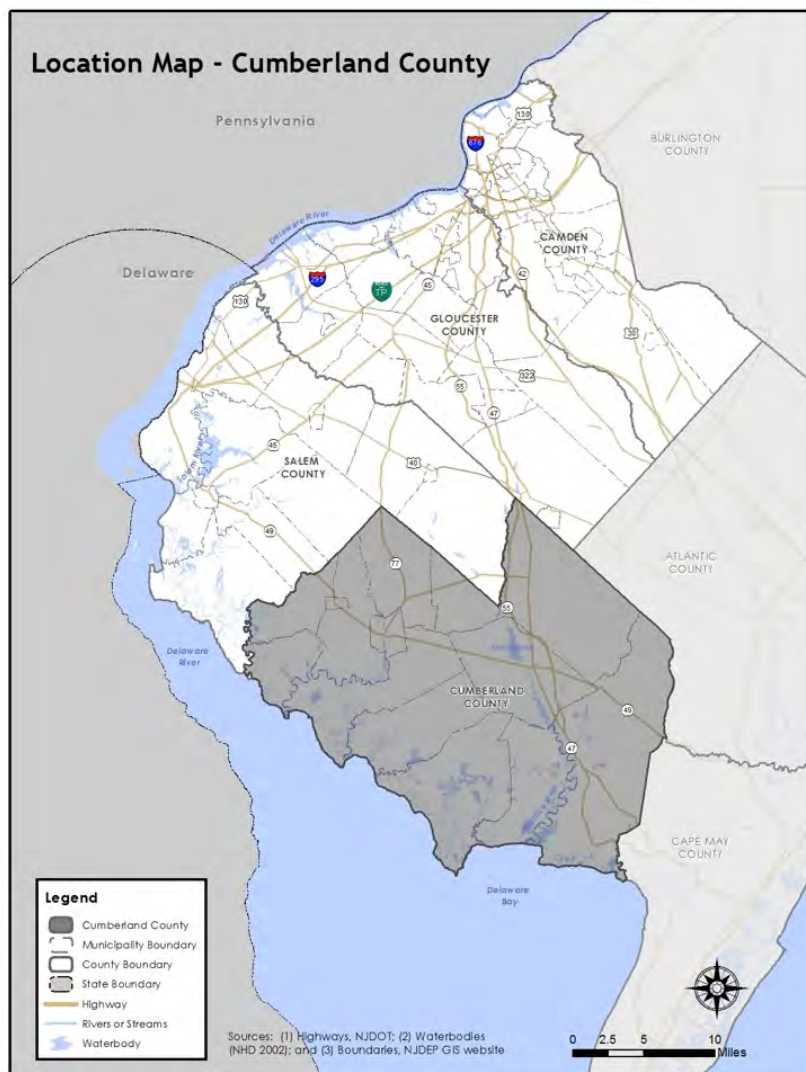
Part 3 includes seven subparts:

- 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: County Profile

Cumberland County is located in southwest New Jersey along the Delaware Bay and bordered by Gloucester and Salem Counties to the north, Atlantic County to the northeast, and Cape May County to the southeast (See Figure 1-1).

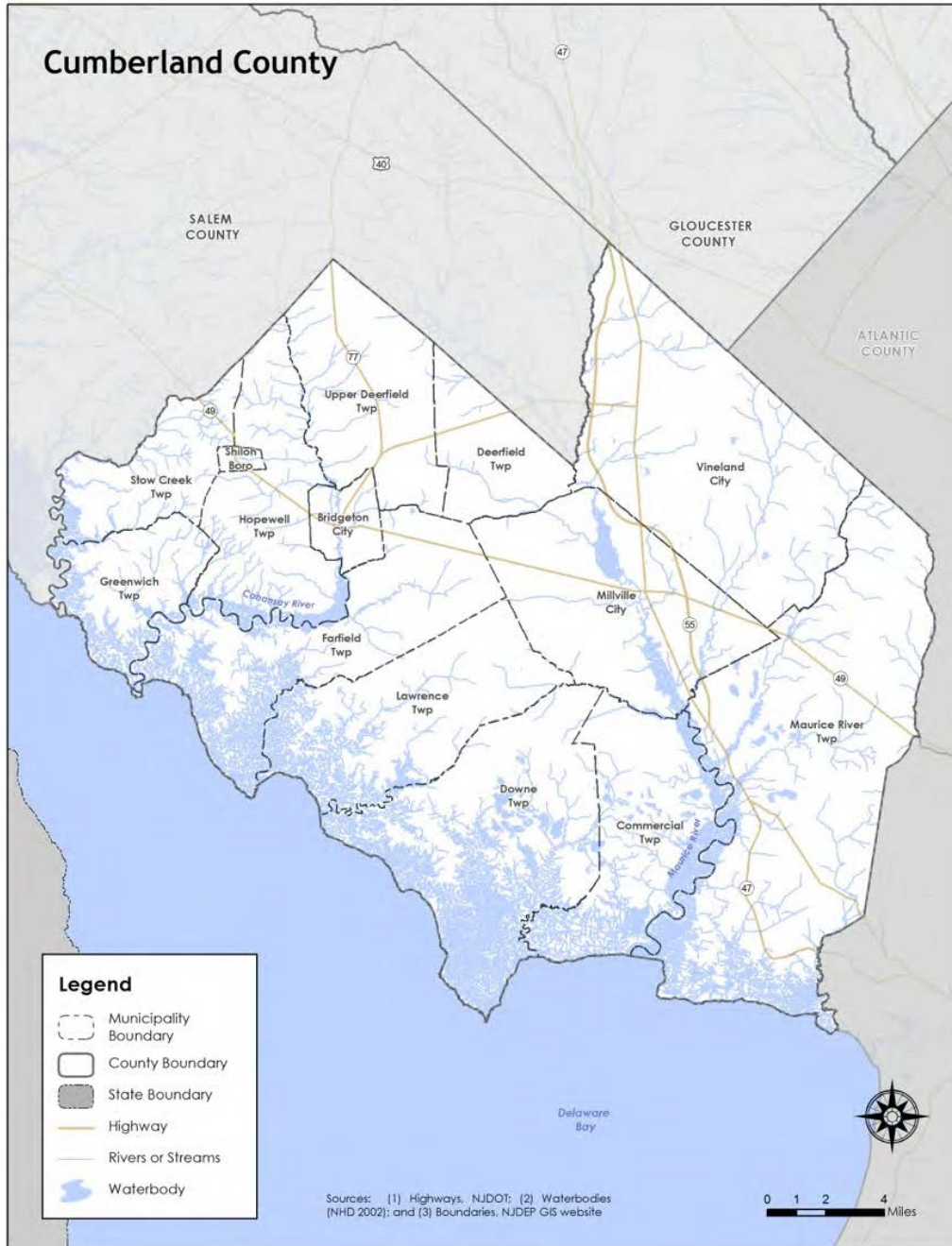
Figure 1-1: Cumberland County Location Map



### Part 3: Hazard Identification and Risk Assessment

Per Figure 1-2, major water courses include the Delaware Bay which forms the southern boundary, Stow Creek which forms much of the boundary between Cumberland and Salem Counties, the tidal Cohansey and Maurice Rivers and Union Lake in Millville City which formed by a large dam on the upper reaches of the Maurice River. Major transportation routes include New Jersey Routes 47, 49, and 55. The land is predominantly flat including large areas of salt marsh and wetlands along the bay shore with the highest elevation only 140 feet above sea level.

Figure 1-2: Cumberland County Base Map



### Part 3: Hazard Identification and Risk Assessment

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Figure 1-2 also shows the 14 cities, townships, and boroughs that are located within Cumberland County. Like the other three counties in the region, Cumberland County includes communities influenced by their proximity to the Delaware Bay as well as inland municipalities although the influence of the bay on the development patterns in Cumberland County municipalities is more pronounced than in Gloucester and Camden Counties:

- Bridgeton City
- Commercial Township
- Deerfield Township
- Downe Township
- Fairfield Township
- Greenwich Township
- Hopewell Township
- Lawrence Township
- Maurice River Township
- Millville City
- Shiloh Borough
- Stow Creek Township
- Upper Deerfield Township
- Vineland City

All 14 Cumberland County municipalities participated in the NJ4 HMP planning process. Individual information for each of these participating jurisdictions can be found in their respective Appendices.<sup>9</sup>

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<sup>9</sup> See Appendices 2 through 15.

## Part 3: Hazard Identification and Risk Assessment

### Part 3.2: General Building Stock

As of 2015, there are 67,045 buildings in Cumberland County with a total assessed value of improvements of \$8,922,929,128. Figure 1-3 shows an example from the Bridgeton City Municipal Appendix illustrating the level of detail shown for the footprints of these buildings.

Figure 1-3: Bridgeton City Building Footprints<sup>10</sup>

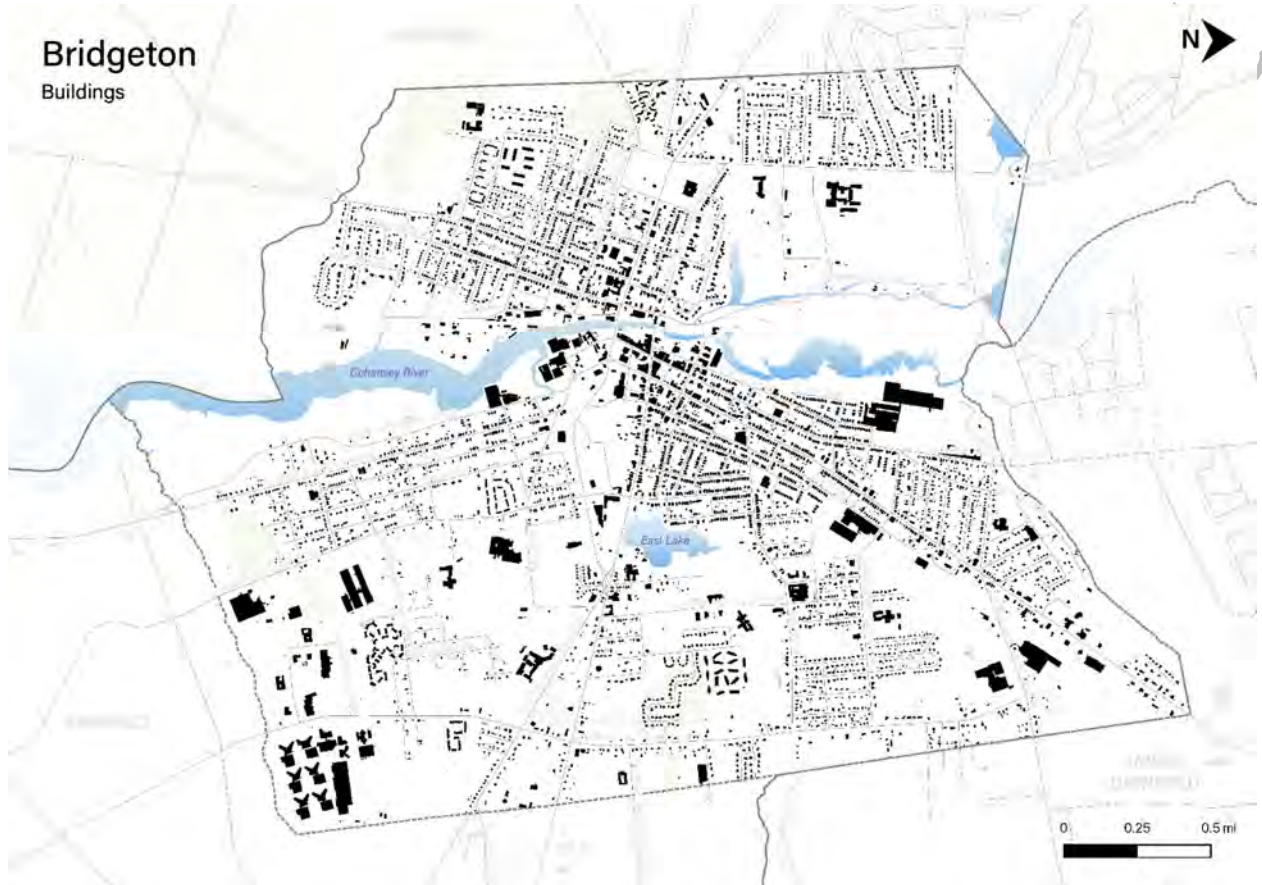


Table 1-3 [will show] the distribution of these structures according to land use distinctions.

Table 1-3: Cumberland County Buildings per Land Use Type<sup>11</sup>

Land Use Type	Number of Buildings
Residential	[TBD]
Commercial	[TBD]
Industrial	[TBD]

<sup>10</sup> Building footprint data was isolated from “Impervious Surfaces” data (2015) per <https://gisdata-njdep.opendata.arcgis.com/>. Note: This (map/publication/report) was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not state-authorized or endorsed.

<sup>11</sup> Land use types [will be] isolated from MOD-IV Parcels and Tax Assessor data composite (2021) per <https://njogis-newjersey.opendata.arcgis.com/documents/parcels-and-mod-iv-of-cumberland-county-nj-shp-download/about> from the New Jersey Office of GIS



## Part 3: Hazard Identification and Risk Assessment

### Part 3.3: Critical Facilities<sup>12</sup>

As of July 2021, there are twenty-nine (29) critical facilities in Cumberland 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 will include] cross-references to related mitigation measures [to be] identified in Part 4 of the County Appendix. Figure 1.4 shows the location of these critical facilities.

*In addition to reviewing all entries for accuracy, need to provide confirmation and/or information for all highlighted entries.*

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

#	Name	Type	Subtype	Jurisdiction	Owner / Operator	Address	Shelter (Y/N)	Generator (Y/N)	Other?
CF-1	Cumberland County Sheriff's Department	Law Enforcement Facilities	Administrative Offices	Bridgeton City	Cumberland County Sheriff's Department	220 North Laurel Street, Bridgeton	N	Y	
CF-2	Cumberland County Prosecutor's Office	Law Enforcement Facilities	Administrative Offices	Bridgeton City	Cumberland County Prosecutor's Office	115 Vine Street, Bridgeton	[TBD]	[TBD]	
CF-3	Cumberland County Public Works Facility #2	Public Works	Combined Administrative Office, Maintenance / Work Area, Equipment / Material Storage, and Fueling Station	Bridgeton City	Cumberland County Department of Public Works	800 East Commerce Street, Bridgeton	N	Y	
CF-4	Cumberland County Tax Board and Superintendent of Schools	Municipal	Administrative Offices	Bridgeton City	Cumberland County Board of Freeholders	43 Fayette Street, Bridgeton	[TBD]	[TBD]	

<sup>12</sup> Critical facility definitions and considerations [will be] described in Section 3: Hazard Identification and Risk Assessment of the CC HMPU Base Plan.

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

#	Name	Type	Subtype	Jurisdiction	Owner / Operator	Address	Shelter (Y/N)	Generator (Y/N)	Other?
CF-5	Cumberland County Department of Human Services	Municipal	Administrative Offices	Bridgeton City	Cumberland County Board of Freeholders	70-74 Broad Street, Bridgeton	N	[TBD]	
CF-6	Cumberland County Administrative Offices	Municipal	Administrative Offices	Bridgeton City	Cumberland County Board of Freeholders	164 West Broad Street, Bridgeton	N	Y	
CF-7	Cumberland County Jail	Law Enforcement Facilities	Correctional Facility	Bridgeton City	Cumberland County Department of Corrections	54 West Broad Street, Bridgeton	N	Y <sup>13</sup>	
CF-8	Cumberland County Public Works Facility #1	Public Works	Combined Administrative Office, Maintenance / Work Areas, and Equipment / Material Storage,	Commercial Township	Cumberland County Department of Public Works	North Avenue, Port Norris	N	N	
CF-9	Cumberland County EOC and 911 Communications Center	Communications	Co-located 911 Communications / Dispatch Centers	Deerfield Township	Cumberland County Department of Emergency Services	637 Bridgeton Avenue, Bridgeton	N	Y	
CF-10	4-H Extension Center	[TBD]	[TBD]	Deerfield Township	Rutgers University Cooperative Extension	291 Morton Avenue, Millville	[TBD]	N	
CF-11	Cumberland County Fire / Rescue Training Academy	Schools	Public Training Center	Deerfield Township	Cumberland County Department of Emergency Services	601 Vineland Avenue, Bridgeton	Y	N	C-POD site and emergency worker shelter

<sup>13</sup> Existing back-up emergency power generator limited to emergency lighting.

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

#	Name	Type	Subtype	Jurisdiction	Owner / Operator	Address	Shelter (Y/N)	Generator (Y/N)	Other?
CF-12	CCIA Solid Waste Complex	Utilities – Solid Waste	Landfill / Transfer Station	Deerfield Township	Cumberland County Improvement Authority	169 Jesse Bridge Road Millville,	N	Y	
CF-13	Cumberland County Building and Grounds Maintenance Facility and Emergency Communications Center (and Communications Tower)	Public Works	Combined Administrative Offices, Maintenance / Work Areas, and Equipment / Material Storage	Hopewell Township	Cumberland County Department of Buildings and Grounds	189 Trench Road, Bridgeton	N	N	
CF-14	Cumberland County Board of Elections	Municipal – Other	Administrative Offices	Hopewell Township	Cumberland County Board of Elections	555 Shiloh Pike, Bridgeton	N	Y	Back-up COG site
CF-15	Building 1”	[TBD]	[TBD]	Hopewell Township	Cumberland County Department of Corrections	135 Sunny Slope Drive, Bridgeton	N	Y	
CF-16	Building 2	Municipal	Data Storage and Retrieval	Hopewell Township	Cumberland County Department of Administration, Property Division	135 Sunny Slope Drive, Bridgeton	[TBD]	Offices and location of CC IT equipment	
CF-17	Cumberland Fire Station and Communication Tower	FireStations	Station	Maurice River Township	Cumberland County Department of Emergency Services	5272 NJ Route 49, Millville	Y	Y <sup>14</sup>	
CF-18	CCIA Administrative Office	Utilities – Solid Waste	Administrative Offices	Millville City	Cumberland County Improvement Authority	2 N. High Street Millville	N/A	Y	

<sup>14</sup> 100 kW, diesel fuel.

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

#	Name	Type	Subtype	Jurisdiction	Owner / Operator	Address	Shelter (Y/N)	Generator (Y/N)	Other?
CF-19	Cumberland County Public Works Facility #3	Public Works	Combined Administrative Office, Maintenance / Work Area, Equipment / Material Storage, and Fueling Station	Vineland City	Cumberland County Department of Public Works	1728 West Sherman Avenue, Vineland	N	Y <sup>15</sup>	
CF-20	Cumberland County College	Schools	Public Schools	Vineland City	Cumberland County College	3322 College Drive, Vineland	Y	Y <sup>16</sup>	
CF-21	Center Tower	Communications	Communications Tower	Deerfield Township	Cumberland County Department of Emergency Services	637 Bridgeton Avenue, Bridgeton	N/A	Y	
CF-22	Cumberland Tower	Communications	Communications Tower	Maurice River Township	Cumberland County Department of Emergency Services	5272 State Highway 49, Millville	N/A	Y	
CF-23	Hopewell Tower	Communications	Communications Tower	Hopewell Township	Cumberland County Department of Emergency Services	179 Trench Road, Bridgeton	N/A	Y <sup>17</sup>	
CF-24	Port Norris Tower	Communications	Communications Tower	Commercial Township	Cumberland County Department of Emergency Services	1800 North Avenue, Port Norris same as CF-10	N/A	Y	

<sup>15</sup> 100 kW, diesel fuel.

<sup>16</sup> Existing electrical systems were required for emergency operations.

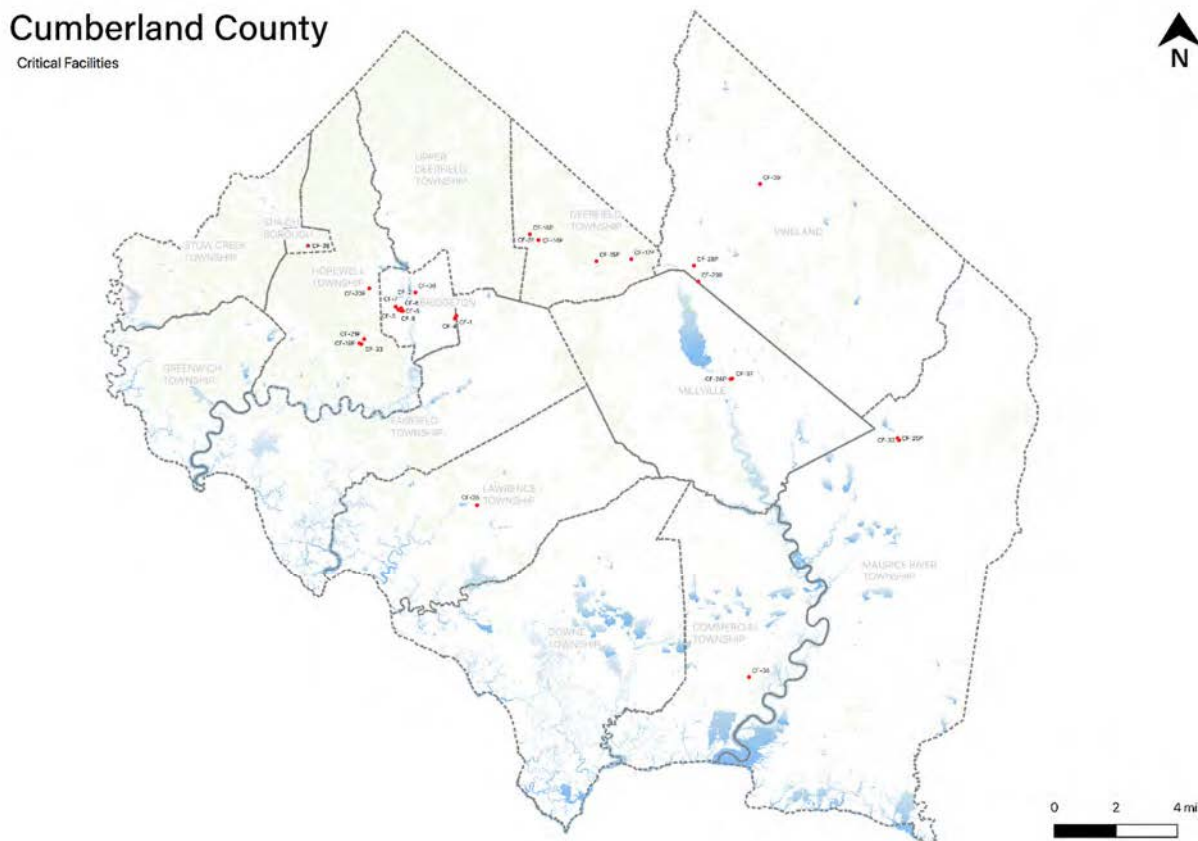
<sup>17</sup> 80 kW, diesel fuel



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

#	Name	Type	Subtype	Jurisdiction	Owner / Operator	Address	Shelter (Y/N)	Generator (Y/N)	Other?
CF-25	Cedarville Tower	Communications	Communications Tower	Lawrence Township	Cumberland County Department of Emergency Services	30 Maple Avenue, Cedarville	N/A	Y	
CF-26	Sheriffs Tower	Communications	Communications Tower	Bridgeton City	Cumberland County Sheriff's Office	222 North Laurel Street, Bridgeton	N/A	Y	
CF-27	Millville Tower	Communications	Communications Tower	Millville City	Cumberland County Department of Emergency Services	122 East Main Street, Millville	N/A	Y	Located at Millville Housing Authority
CF-28	Vineland Tower	Communications	Communications Tower	Vineland City	Cumberland County Department of Emergency Services	640 East Wood Street, Vineland	N/A	Y	Located at City of Vineland Fire 1 Dispatch
CF-29	Shiloh Tower	Communications	Communications Tower	Shiloh Borough	Cumberland County Department of Emergency Services	900 Main Street, Shiloh	N/A	Y	Located at Shiloh Borough School Repeater

Figure 1-4: Cumberland County Critical Facilities



Note: All mapping corresponding to results described in Parts 3.3 through 3.5 can be viewed in .pdf format at: <https://www.dropbox.com/sh/yh4gwvyccclwsgyh/AACS5yEJWHI82KKi4BJYFL8ta?dl=0>

### Part 3.4: Hazard Exposure Assessment

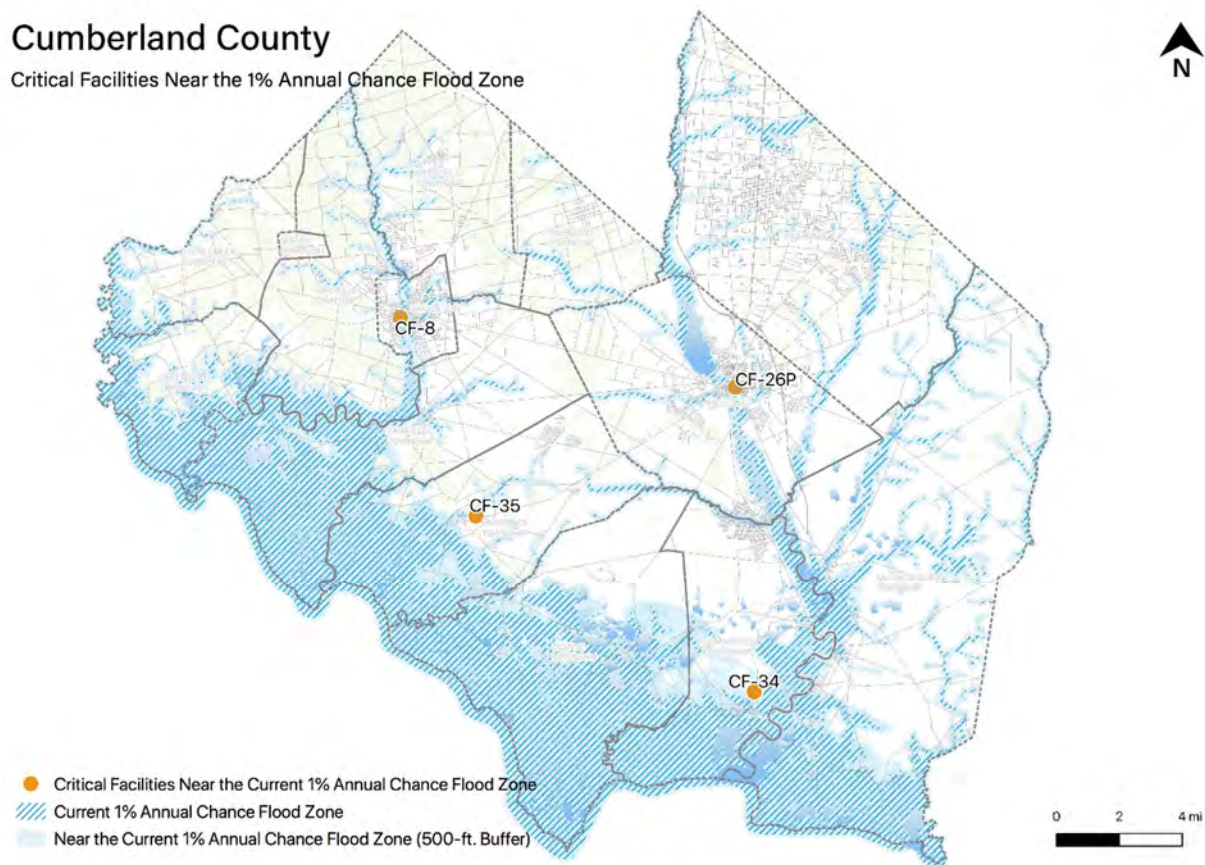
Hazard exposure assessments **will be completed** for the twelve (12) natural hazards identified in the CC HMPU Base Plan<sup>18</sup>.

Key results for Cumberland 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 500 feet) the 1% annual flood zone on FEMA's Flood Insurance Rate Maps (FIRMs) or within a potential future 1% annual chance flood zone (i.e., within 1,000 feet).

<sup>18</sup> Hazard profiles **will be** included for all twelve natural hazards in *Section 3: Hazard Identification and Risk Assessment* of the CC HMPU Base Plan.

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



Mapping results are available for the following hazards (where applicable for individual jurisdictions):

- Coastal Erosion & Sea Level Rise
- Dam Failure [pending data from NJDEP]
- Earthquake
- Extreme High Temperature
- Flood – per FEMA FIRM mapping
- Flood - per National Flood Insurance Program data [pending data from FEMA Region II]
- Geologic Hazards
- High Wind and Severe Weather (heavy summer rains and winter snow loads)
- Levee Failure [pending data from NJDEP]
- Wildfire

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
- Table 1-6 indicates hazard exposure for critical facilities

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

**Table 1-5: Cumberland 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
Coastal Erosion <sup>19</sup>	6	-	\$254,300	-
Sea Level Rise - 3 feet increase	1,187	1.77%	\$83,233,793	0.93%
Flood - Within 1 % Annual Chance Zone	2,432	4%	\$209,840,477	2%
Flood - Near (within 500 feet) of 1% Annual Chance Zone	13,545	20%	\$1,621,300,858	18%
Earthquake – Structure built before 1927 <sup>20</sup>	12,156	22%	\$1,290,874,290	18%
High Winds / Severe Weather – Structure built before 1975	40,386	72%	\$4,452,858,554	61%
Wildfire – Composite score > 2.5 <sup>21</sup>	705	-	\$61,766,977	0.69%

**Table 1-6: Cumberland County Critical Facilities Hazard Exposure<sup>22</sup>**

Hazard	Number of Critical Facilities	CF #s
Coastal Erosion	None	N/A
Sea Level Rise	None	N/A
Flood - Within 1 % Annual Chance Zone	None	N/A
Flood - Near (within 500 feet) of 1% Annual Chance Zone	4	CF-7, CF-18, CF-24, CF-25
Flood – Future potential (within 1,000 feet) 1% Annual Chance Zone	7	CF-1, CF-4, CF-5, CF-11, CF-17, CF-26, CF-27
Wildfire	11	CF-3, CF-9, CF-10, CF-11, CF-17, CF-19, CF-20, CF-21, CF-22, CF-24, CF-25

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

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

<sup>19</sup> All supporting data for Coastal Erosion, Sea Level Rise (3-foot rise), Flood (all) can be viewed at [https://docs.google.com/spreadsheets/d/1fcN5hL3Jz4X7mldFyKs6wol6J6IAR9bSsvJPiQE\\_A0Q/edit?usp=sharing](https://docs.google.com/spreadsheets/d/1fcN5hL3Jz4X7mldFyKs6wol6J6IAR9bSsvJPiQE_A0Q/edit?usp=sharing)

<sup>20</sup> All supporting data for Earthquake, High Winds, and Severe Weather can be viewed at <https://docs.google.com/spreadsheets/d/1Zx1LZwKQ8esqdv4c9hbbSZurtMjH4UITQWJY1LrZezc/edit?usp=sharing>

<sup>21</sup> All supporting data for Wildfire can be viewed at [https://docs.google.com/spreadsheets/d/1JAbfd3A-eCHI93pZFaPVuM\\_H2yvuUzeHCmoijv-oxsw/edit?usp=sharing](https://docs.google.com/spreadsheets/d/1JAbfd3A-eCHI93pZFaPVuM_H2yvuUzeHCmoijv-oxsw/edit?usp=sharing)

<sup>22</sup> All supporting data for critical facility hazard exposure can be viewed at [https://docs.google.com/spreadsheets/d/1xdwAlryhxXb6KxrmwqVVMhw190BgC6cl6VbbNCB0\\_AM/edit?usp=sharing](https://docs.google.com/spreadsheets/d/1xdwAlryhxXb6KxrmwqVVMhw190BgC6cl6VbbNCB0_AM/edit?usp=sharing)



## Part 3: Hazard Identification and Risk Assessment

### Part 3.5: Demographic Considerations

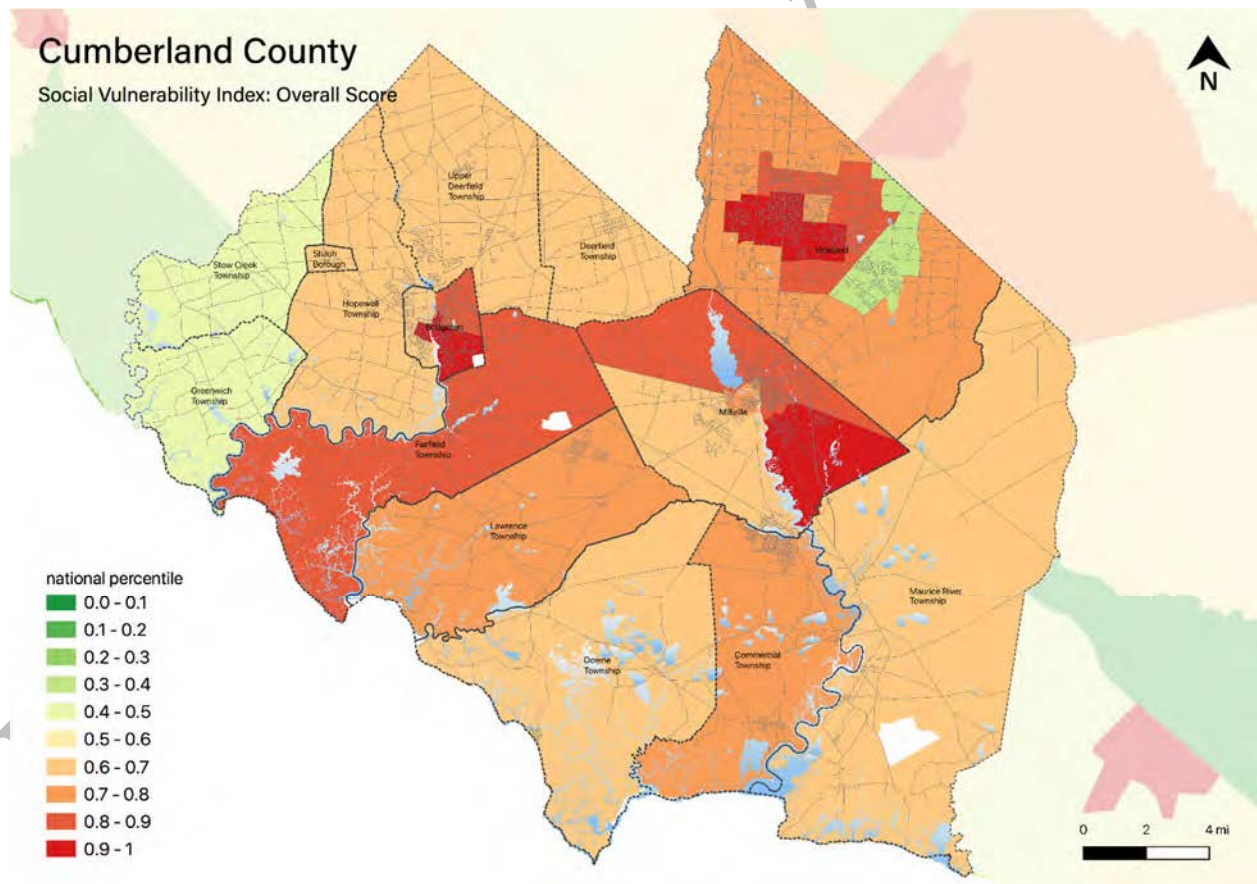
Demographic considerations include general population and land use factors. Table 1-7 includes current population estimates and changes since the previous US Census<sup>23</sup>:

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

Metric	Current Estimates
2010 Population	156,898
2019 Population	151,906
Percent Population Change (2010-2019)	- 3.18%
Land Area	483.70 sq. miles
Population Density	314.0 / sq. mile

Demographic considerations also include differences in social vulnerability<sup>24</sup>. Figure 1-6 shows the overall Social Vulnerability (SVI) Index overall scores for Cumberland County.

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



<sup>23</sup> US Census, 2019 ACS 5 Year Estimates, Table ID DP5

<sup>24</sup> Social vulnerability considerations **will be** described in *Section 3: Hazard Identification and Risk Assessment* of the CC HMPU Base Plan.

### Part 3: Hazard Identification and Risk Assessment

For Cumberland County, Table 1-8 includes selected metrics where social vulnerability considerations are notably higher when compared with all national census tracts:

**Table 1-8: Cumberland County Social Vulnerability Considerations<sup>25</sup>**

Metric	Percentile
[TBD based on compilation of municipal tabulations]	

#### 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 Earthquake, High Winds, and Severe Weather (heavy rains in summer and snow loads in winter).
- A few critical facilities are potentially vulnerable to Flood and Wildfire and will be identified as priorities for follow-up critical facility field evaluations.

<sup>25</sup> All supporting data for SVI can be viewed at [https://docs.google.com/spreadsheets/d/10zb\\_Qlg2CqGxb45\\_fcKiP46swaC16-fORxYTIOiAKP0/edit#gid=1481479799](https://docs.google.com/spreadsheets/d/10zb_Qlg2CqGxb45_fcKiP46swaC16-fORxYTIOiAKP0/edit#gid=1481479799)

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## Part 3: Hazard Identification and Risk Assessment

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### Part 3.7: Hazard Priorities

As a key step in the Hazard Identification and Risk Assessment (HIRA) process, the twelve (12) natural hazards identified in the CC 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.

The following [will represent, pending review of the Preliminary Draft Municipal Appendices] the average hazard ranking from the NJ4 HMP for Cumberland County municipalities (in order per average priority):

#### High Priority

1. High Wind
2. Flood
3. Severe Weather – Winter
4. Severe Weather – Summer

#### Moderate Priority

5. Extreme Temperature
6. Wildfire
7. Coastal Erosion and Sea Level Rise
7. Dam Failure

#### Low Priority

9. Drought
10. Earthquake
11. Levee Failure
12. Geologic Hazards

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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 [review / confirm or revise highlighted entries]

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 CC HMPU reviewed and [reaffirmed/edited] 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, in particular for Repetitive Flood Loss properties
- 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 [to be] described in Parts 4.3 through 4.5 of the County Appendix reflect 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 CC HMPU, the related NJ4 HMP mitigation measures **will be** 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 **will be** carried over as part of the County Appendix as **will be** indicated in the “Comments” column and the far right-hand column of Table 1-9.

*In addition to reviewing all entries for accuracy, need to provide confirmation and/or information for all highlighted entries.*

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

Mitigation Action, Program, or Project	Status	Comments	Mitigation Measure # <sup>26</sup>
<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: General hazard mitigation support for Municipal OEM Coordinators.	To be 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.		Cumberland 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 CC HMPU.	
<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.		CC OEM also secured the Pre-Disaster Mitigation Program grant to fund the consultant support for the CC HMPU and supervised all work under the contract.	
<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>26</sup> Detailed information for identification and implementation of county (M-#) mitigation measures **will be included** in Tables 8-10 and 8-11.

**Part 4: Mitigation Measures**

Mitigation Action, Program, or Project	Status	Comments	Mitigation Measure # <sup>26</sup>
<p><b>M-5:</b> Prioritize recurrent drainage problem areas and initiate data collection with county and, where appropriate, municipal agencies to track unreimbursed damages and related response and recovery expenses.</p>			
<p><b>M-6:</b> Conduct regular County Working Group meetings consistent with the plan maintenance program and the County Adoption Resolution.</p>			
<p><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.</p>			
<p><b>M-8:</b> Facilitate meetings with state, county, and municipal officials to discuss and resolve implementation issues related to multi-jurisdictional mitigation measures.</p>	Work-in-progress		To be carried over as part of M-2
<p><b>M-9:</b> Cumberland County Courthouse flooding and mitigation study and action.</p>	Resolved	Window well barriers and pipe upgrades (sleeving) seem to have solved the problem (for recent events) using county funds	
<p><b>M-10:</b> Cumberland County Emergency Operations Center and 911 Center Hardening.</p>	Work-in-progress	Some roofing replacement and strapping added for securing roof with county funding. Applied for EOC grant program to upgrade (and addition) for hurricane wind protection.	To be carried over as <b>[# TBD]</b>
<p><b>M-11:</b> Hardening Cumberland County Department of Emergency Services communications towers. Security, monitoring for temperature.</p>	Work-in-progress	Fencing installed, temperature monitoring installed at towers with existing internet capability.	To be carried over as <b>[# TBD]</b>
<p><b>M-12:</b> Cumberland County Back-up Emergency Power Generator Program – Round 1</p>	Completed	See below.	

## Part 4: Mitigation Measures

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Cumberland County OEM secured Hazard Mitigation Grant Program funding for nine (9) back-up emergency power generators and related improvements to key county and municipal facilities including:

1. Buckshuttem School (diesel fuel; 1200 Kw)
2. Cumberland County Fuel Yard and County Area Transit System (diesel fuel; 150 Kw)
3. Cumberland Fire Company (diesel fuel; 100 Kw)
4. Downe Township Municipal Hall (diesel fuel; 150 Kw)
5. Fortescue Fire Department (diesel fuel; 100 Kw)
6. Greenwich School (diesel fuel; 150 Kw)
7. Haleyville School (diesel fuel; 1250 Kw)
8. Maurice River Township Hall (diesel fuel; 150 Kw)
9. Cumberland County College (retrofit electrical wiring to maximize existing generator use)

The total budget for the Cumberland County Generator Program was approximately \$1.4 million.

## Part 4: Mitigation Measures

### Part 4.3: County Mitigation Measures – Identification

Table 1-10 [will include] 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 [will include]:

- 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 1-10: Cumberland County Municipal Mitigation Measures Identification**

#	Mitigation Action, Program, or Project	Hazard(s)	Goal (s)	Existing or New Structures
M-1	<p><u>Municipal Mitigation Program</u> – including sustained efforts in cooperation with Cumberland County Office of Emergency Management (CC OEM) to:</p> <ul style="list-style-type: none"> <li>▪ Conduct outreach and education for residents, businesses, and property owners</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 Municipal Working Group</li> <li>▪ Seek integration of hazard mitigation with other parallel planning initiatives</li> </ul>	All	All	All
M-2	Facilitate meetings with state, county, and municipal officials to discuss and resolve implementation issues related to multi-jurisdictional mitigation measures. <sup>27</sup>	All	Goals 3 and 4	All
M-3	“Round 2” Generator Program including: [provide details]	All	Goal 4	Existing

<sup>27</sup> Part 4.5: Multi-Jurisdictional Mitigation Measures [will include] lists of multi-jurisdictional projects as identified by the Municipal Working Groups.

## Part 4: Mitigation Measures

### Part 4.4: County Mitigation Measures – Implementation

Table 1-11 **[will include]** 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>28</sup>
- Project Type to help determine funding options and implementation mechanisms at the municipal level<sup>29</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: Cumberland County Municipal 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	Office of Emergency Management (OEM)	High	Program	Staff Time	On-going, sustained effort	<ul style="list-style-type: none"> <li>▪ Identify outreach and education objectives and methods (working with Local OEM Coordinators and Municipal Working Groups)</li> <li>▪ Set priorities (if necessary) and initiate critical facility field assessments</li> <li>▪ Identify schedule for plan updates (for plan integration efforts)</li> <li>▪ Support on-going plan maintenance and update processes by County and Municipal Working Groups</li> </ul>

<sup>28</sup> Section 4: Mitigation Measures of the CC HMPU Base Plan **[will include]** a description of evaluation criteria considered by the County Working Group.

<sup>29</sup> Section 4: Mitigation Measures of the CC HMPU Base Plan **[will include]** 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	Facilitate meetings with state, county, and municipal officials to discuss and resolve implementation issues related to multi-jurisdictional mitigation measures.	OEM	High	Program	Staff Time	On-going, sustained effort	Review multi-jurisdictional mitigation measures identified by the Municipal Working Groups to identify projects: <ul style="list-style-type: none"> <li>▪ Already under consideration and/or already programmed.</li> <li>▪ With potential for inclusion in future capital improvements.</li> <li>▪ Not considered high priorities by the County Working Group.</li> </ul>
M-3	"Round 2" Generator Program	OEM	[TBD]	Back-up Emergency Power Generators	[TBD]	[TBD]	[TBD]

## Part 4: Mitigation Measures

### Part 4.5: Multi-Jurisdictional Mitigation Measures

During the Municipal Working Group Work Sessions, the Municipal Working Groups [will identify] some NJ4 HMP mitigation measures that need to be carried over, as well as new areas of concern, as mitigation measures where implementation requires participation or leadership from other levels of government, including county, state, and federal agencies. These multi-jurisdictional mitigation measures [will be] included in Table 1-12.

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

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

**Table 1-12: Cumberland County Multi-Jurisdictional Mitigation Measures**

Municipality	#	Problem Description	Hazard(s) Addressed	Goal Addressed	Applies to Existing or New Structures	Potential Partners

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## Part 4: Mitigation Measures

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### 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 CC HMPU Base Plan regarding existing authorities, policies, and programs in the region
- Capabilities and Coordination - Cross referencing relevant information and recommendations in the CC HMPU Base Plan regarding improving capabilities and coordination at the County level and specific information about the jurisdiction's available resources
- Plan Review and Integration – Identifying plans and programs included in the development of Plan Integration recommendations in the CC HMPU Base Plan

#### Authorities, Policies, and Programs

*Section 1.3: Existing Authorities, Policies, Programs, and Resources* of the CC HMPU Base Plan **will summarize** relevant authorities, policies, and programs related to hazard mitigation in the County.

#### Capabilities and Coordination

The update of the NJ4 HMP **will include** reexamining County hazard mitigation capabilities; potential for improving capabilities and coordination within and between jurisdictions; and plan integration considerations, including:

- *Section 1.3: Existing Authorities, Policies, Programs, and Resources* of the CC HMPU Base Plan **will include** summary statements regarding county and municipal resources and the impact of resource limitations on the overall approach to the CC HMPU mitigation strategies.
- *Section 4: Mitigation Measures* of the CC HMPU Base Plan **will include** summary observations and recommendations concerning:
  - Hazard mitigation planning and mitigation measure implementation capabilities and coordination at the county and municipal levels
  - Coordination within municipal governments, between municipal governments and their communities, and between municipal, county, and state agencies responsible for hazard mitigation



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## Part 4: Mitigation Measures

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### Plan Review and Integration

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

- Cumberland County Emergency Operations Plan
- Cumberland County master plans and related documents

Table BP.4-4 in *Section 4.6: Plan Review and Integration* of the CC HMPU Base Plan:

- [Will identify] the primary plans and documents collected from each of the participating municipalities.
- [Will include] the results of reviewing the primary plans and documents to determine the extent to which these documents reflect up-to-date hazard risk and mitigation.
- [Will include] recommendations for integrating the results of the CC 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 including:
  - Hazard Assessments
  - Emergency Operations Plans
  - Floodplain Management Ordinances
  - Master Plans and Reexamination Reports
  - Other plans and documents

The plan maintenance process [will articulate and specify] 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 County.

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**Attachment A: Public Review Comments**

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Public review comments [will be] recorded during the public review of the Cumberland County Preliminary Draft and Draft versions of the County Appendix on [dates to be determined]:

**Table 1.A-1: Public Review Comments**

Comment Date and Time	Comment	Response

Preliminary Draft

## Attachment B: Adoption Resolution

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Following this page [will be] the Adoption Resolution for the Cumberland County Appendix as approved by the Cumberland County Board of Commissioners.

Preliminary Draft

**Attachment C: Approval Letter**

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Following this page [will be] the Approval Letter for the Cumberland County Appendix.

Preliminary Draft