



Cumberland County Multi-Hazard Mitigation Plan Update
Participating Jurisdiction Appendices

Appendix 2
Bridgeton City, New Jersey

August 22, 2022

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Part 1: Overview

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 includes descriptions and information 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: Bridgeton City Municipal Appendix

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

The Bridgeton City Municipal Working Group developed the Bridgeton City Municipal Appendix for adoption by the Bridgeton City Council and subsequent approval by Region II of the Federal Emergency Management Agency.

Part 2: Participation

Part 2.1: Municipal Working Group Participation

Part 2.1 includes:

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

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

Municipal Working Group members reviewed briefing materials and contributed during Work Sessions and Meetings and reviewed the Preliminary Draft and Public Review 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: Two 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 2-1: Bridgeton City Working Group

First Name	Last Name	Department	Position	Project Kick-off Meeting ¹	Round 1 Work Session ²	Round 2 Work Session ³	Contribution ⁴
Gary	Denby	Office of Emergency Management / Fire / EMS Department	OEM Coordinator	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Organized Working Group and Work Sessions.
Kevin	Rabago, Sr. *	Administration / Office of Development and Planning	Business Administrator / Director			<input checked="" type="checkbox"/>	
Michael	Gaimari	Police Department	Chief of Police			<input checked="" type="checkbox"/>	
Dean	Dellaquila	Public Works	Director Public Works / Recycling Coordinator				

¹ Project Kickoff Meeting was held on May 20, 2021.

² Round 1 Work Session was held on August 27, 2021.

³ Round 2 Work Session was held on February 9, 2022.

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

Part 2: Participation

First Name	Last Name	Department	Position	Project Kick-off Meeting ¹	Round 1 Work Session ²	Round 2 Work Session ³	Contribution ⁴
Todd	Bowen	Fire and EMS Department	Chief		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Michael	Hitchner	Fire and EMS Department	Deputy Chief		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Alex	Bowen	Development and Planning Department	Zoning Officer			<input checked="" type="checkbox"/>	
William	White	Construction	Construction Official / Floodplain Administrator				
Camille	Rabago	Construction / Code Enforcement	Code Inspector			<input checked="" type="checkbox"/>	
Nicole	Albanese *	Bridgeton Board of Education	Business Administrator			<input checked="" type="checkbox"/>	
Oloruntobi	Olusa	Bridgeton Board of Education	Director of Facilities and Capital Planning			<input checked="" type="checkbox"/>	
Kenneth	Farrell	Bridgeton Board of Education	Security Director			<input checked="" type="checkbox"/>	
Charles	Carter	Bridgeton Board of Education	Maintenance Supervisor				
Joanne	Sbrana	Bridgeton Housing Authority	Executive Director				

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

- Elected Officials - Mayor and City Council
- Business Associations – via the Chamber of Commerce
- Community / Faith-Based Organizations
- Major Employers and Businesses – including Ardagh Glass (glass manufacturer)
- Healthcare Institutions – including Complete Care Health Care Network

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

- GIS / IT Specialist (services are provided by Cumberland County)]
- Environmental Organizations

Part 2: Participation

Part 2.2: Public Participation

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

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

Table 2-2: Public Participation

Date	Type of Involvement	Location
	Link to Project Website ⁵ established and maintained.	Township website ⁶
September 8, 2021	Preliminary Draft Municipal Appendix available for public comment.	Project Website ⁵
April 15, 2022	Notice posted re: Public Review Draft Municipal Appendix review period with link to Project Website.	Township website ⁶
April 19, 2022	Public Review Draft Municipal Appendix available for public comment.	Project Website ⁵

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

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

⁵ <http://www.cityofbridgeton.com/HazardMitigation.php>

⁶ See Mitigation Measure M-1 in Part 4 of the Municipal Appendix.

⁷ Public education and outreach is 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

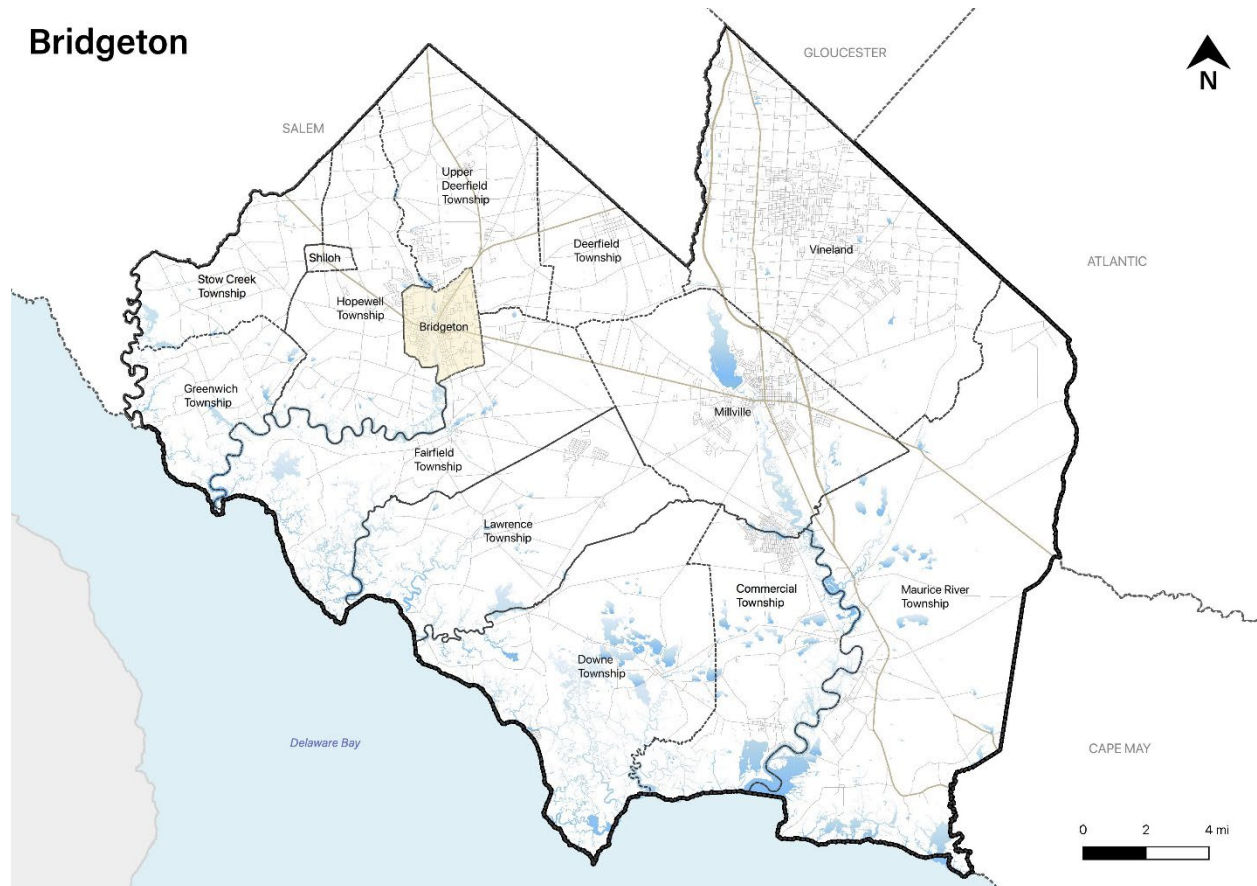
Part 3 includes seven subparts:

- *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: Profile

Bridgeton City is located in the north-central part of Cumberland County (See Figure 2-1).

Figure 2-1: Bridgeton City Location Map

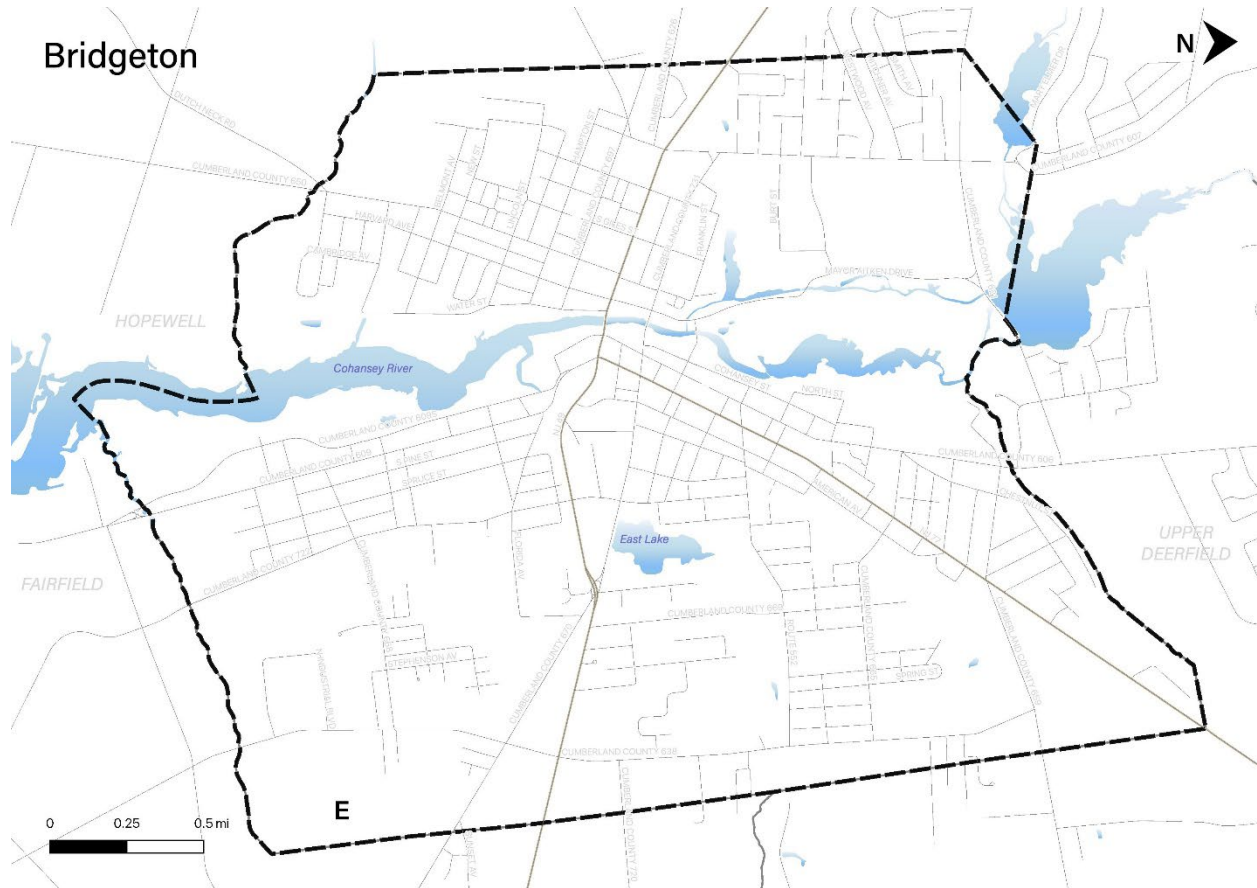


Part 3: Hazard Identification and Risk Assessment

Bridgeton City is a small inland city with the highest population density of the fourteen municipalities in Cumberland County. Over 85% of the housing stock was built before 1980, and one-third are more than 70 years old.

Per Figure 2-2, major water courses include the Cohanse River and Jackson Run. Major transportation routes include State Highway Routes 49 and 77. The land is gently rolling.

Figure 2-2: Bridgeton City Base Map



Part 3: Hazard Identification and Risk Assessment

Part 3.2: General Building Stock

As of 2015, there are 5,598 buildings in Bridgeton City with a total assessed value of improvements of \$853,168,265. Figure 2-3 shows the footprints of these buildings.

Figure 2-3: Bridgeton City Building Footprints⁹

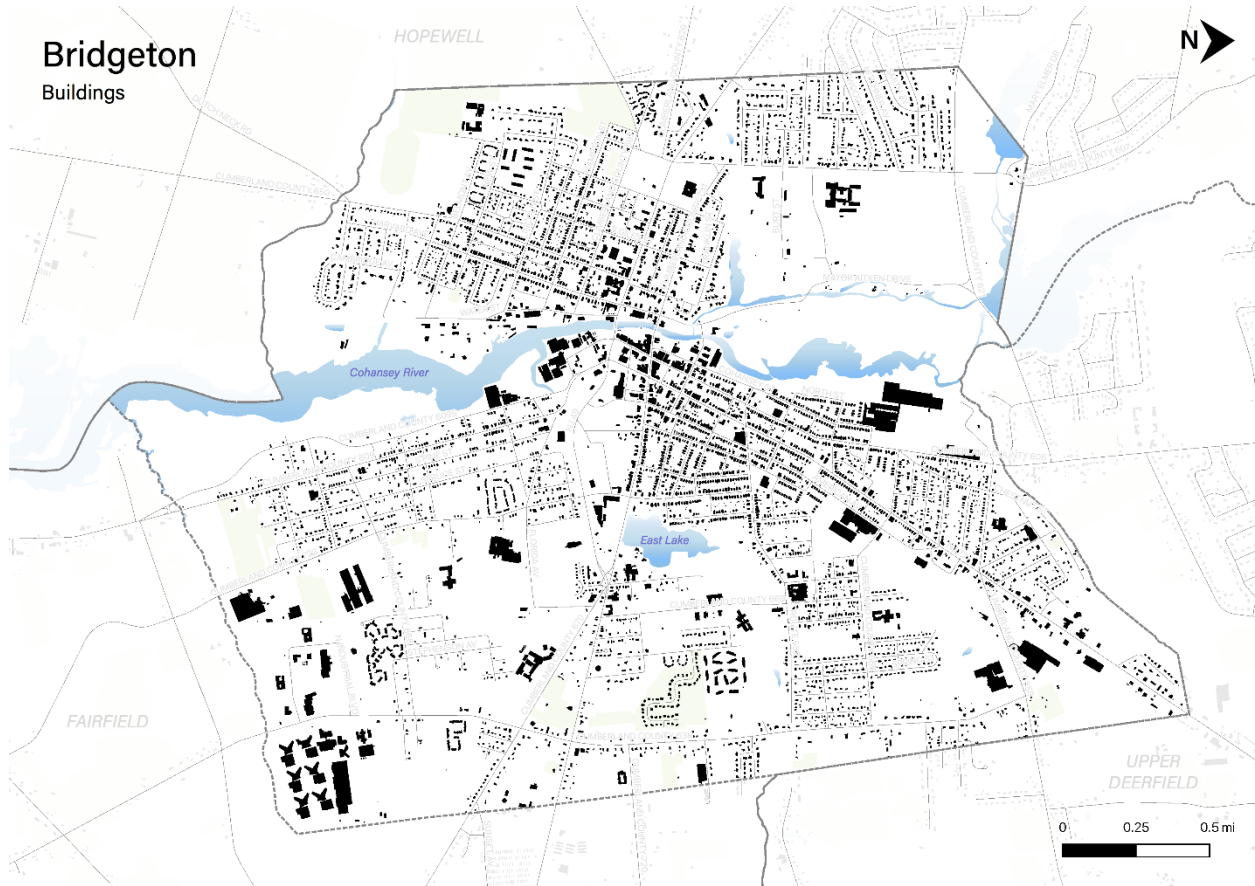


Table 2-3 shows the distribution of these structures according to land use distinctions.

Table 2-3: Bridgeton City Buildings per Land Use Type¹⁰

Land Use Type	Residential	Commercial	Industrial	Other
Number of Buildings	4,453	314	96	593
% of Total	82%	6%	2%	10%

⁹ 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.

¹⁰ Land use types were 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 Facilities¹¹

As of April 2022, there are fifty-six (56) critical facilities in Bridgeton City.

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 2-4 includes current inventory information for municipal critical facilities and includes cross-references to related mitigation measures identified in Part 4 of the Municipal Appendix. Figure 2.4 shows the location of these critical facilities.

Table 2-4: Bridgeton City Critical Facilities Inventory

CF #	Name	Type	Sub-Type	Address	Co-located CF #	Shelter (Y/N)	Generator (Y/N)	Comments	Mitigation Measure #
CF-1	City Hall Annex	Municipal	Administrative Offices	181 East Commerce Street, Bridgeton		N	N		M-2
CF-2	Emergency Operations Center	EOC	Stand-alone Facilities	1 Orange Street		N	Y		
CF-3	Bridgeton Police Department	Law Enforcement Facilities	Stations	330 Fayette Street, Bridgeton		Y	Y		
CF-4	Bridgeton Fire/EMS Headquarters	FireStations / EMS	Stations	4 Orange Street, Bridgeton		N	Y		
CF-5	EMS	FireStations / EMS	Stations	15 Mayor Aitken Drive, Bridgeton		N	N		
CF-6	Bridgeton Hospital	Health Care Facilities	Private Hospitals	333 Irving Avenue, Bridgeton		N	Y		
CF-7	Bridgeton Public Works	Public Works	Combined Administrative Office / Maintenance Yard	101 Florida Avenue, Bridgeton		N/A	N		M-3
CF-8	Water Department	Utilities – Water	Administrative Offices	2 South Industrial Boulevard		N/A	N		M-4
CF-9	Main Reservoir	Utilities – Water	Reservoir	2 Park Avenue, Bridgeton		N/A	Y		

¹¹ Critical facility definitions and considerations are described in *Section 3: Hazard Identification and Risk Assessment* of the CC HMPU Base Plan.

Part 3: Hazard Identification and Risk Assessment

CF #	Name	Type	Sub-Type	Address	Co-located CF #	Shelter (Y/N)	Generator (Y/N)	Comments	Mitigation Measure #
CF-10	Treatment Plant and Elevated Storage	Utilities – Water	Combined Water Treatment Plant / Water Tower	Sunny Slope Drive, Bridgeport		N/A	Y	No physical address.	
CF-11	Treatment Plant	Utilities – Water	Treatment Plants	2 South Industrial Boulevard, Bridgeport		N/A	N	Radium treatment plant	M-9
CF-12	Well #s 2 and 24	Utilities – Water	Combined Pump Station / Wellhead	440 South East Street, Bridgeton		N/A	N ¹²	2 nd largest production well	M-5
CF-13	Well 13	Utilities – Water	Combined Pump Station / Wellhead	Sunny Slope Drive, Bridgeton	CF- 9	N/A	Y	No physical address. Largest production well; includes Radium Treatment Plant.	
CF-14	Well #s 18 and 22	Utilities – Water	Combined Pump Station / Wellhead	310 South Burlington Road, Bridgeton		N/A	#18: Y #22: Y		
CF-15	Well #s 19, 20, and 23	Utilities – Water	Combined Pump Station / Wellhead	445 South East Street, Bridgeton		N/A	N ¹²		M-6
CF-16	Well 21	Utilities – Water	Combined Pump Station / Wellhead	190 South Burlington Road, Bridgeton		N/A	Y		
CF-17	Station #3	Utilities – Wastewater	Pump Stations / Lift Stations	622 South Avenue, Bridgeton		N/A	N ¹²		M-10
CF-18	Station #4	Utilities – Wastewater	Pump Stations / Lift Stations	39 Park Avenue, Bridgeton		N/A	N ¹²		M-10
CF-19	Station #5	Utilities – Wastewater	Pump Stations / Lift Stations	North Burlington, Bridgeton		N/A	N ¹²	No physical address.	M-10
CF-20	Station #6	Utilities – Wastewater	Pump Stations / Lift Stations	360 North West Avenue, Bridgeton		N/A	N ¹²		M-10
CF-21	Station #7	Utilities – Wastewater	Pump Stations / Lift Stations	29 Bertini Drive, Bridgeton		N/A	N ¹²		M-10

¹² City of Bridgeton has a portable back-up power generator that is adequate to run individual pump stations, but existing wellhead and pump stations do not have hook-ups for portable back-up power generator.

Part 3: Hazard Identification and Risk Assessment

CF #	Name	Type	Sub-Type	Address	Co-located CF #	Shelter (Y/N)	Generator (Y/N)	Comments	Mitigation Measure #
CF-22	Station #8	Utilities – Wastewater	Pump Stations / Lift Stations	89 Manheim Avenue, Bridgeton		N/A	N ¹²		M-10
CF-23	Station #9	Utilities – Wastewater	Pump Stations / Lift Stations	West Broad Street, Bridgeton		N/A	N ¹²	No physical address.	M-10
CF-24	Raceway Comfort Station	Utilities – Wastewater	Pump Stations / Lift Stations	35 Mayor Aitken Drive, Bridgeton		N/A	N ¹²		M-10
CF-25	Zoo	Utilities – Wastewater	Pump Stations / Lift Stations	35 Mayor Aitken Drive, Bridgeton		N/A	N ¹²		M-10
CF-26	Zoo Station	Utilities – Wastewater	Pump Stations / Lift Stations	35 Mayor Aitken Drive, Bridgeton		N/A	N ¹²		M-10
CF-27	Sunset Lake Station	Utilities – Wastewater	Pump Stations / Lift Stations	79 West Park Drive, Bridgeton		N/A	N ¹²		M-10
CF-28	School Board Office	Schools	Public Schools Administrative Offices	41 Bank Street, Bridgeton		N	N		
CF-29	Warehouse, Bus Storage and Maintenance	Schools	Public School Combined Maintenance Yard / Equipment and Material Storage	515 Bank Street, Bridgeton		N	N		
CF-30	Cherry Street Elementary School	Schools (K-8)	Public Schools	11 Cherry Street, Bridgeton		N	N		
CF-31	Quarter Mile Lane Elementary School	Schools (K-8)	Public Schools	300 Quarter Mile Lane, Bridgeton		N	Y		
CF-32	Indian Avenue Elementary School	Schools (K-8)	Public Schools	399 Indian Avenue, Bridgeton		N	N		
CF-33	West Avenue Elementary School	Schools (K-8)	Public Schools	51 North West Avenue, Bridgeton		N	N		

Part 3: Hazard Identification and Risk Assessment

CF #	Name	Type	Sub-Type	Address	Co-located CF #	Shelter (Y/N)	Generator (Y/N)	Comments	Mitigation Measure #
CF-34	Buckshutem Road Elementary School and Foster Early Childhood Center	Schools (K-8)	Public Schools	550 Buckshutem Road, Bridgeton		Y	N ¹³		M-7
CF-35	Broad Street School	Schools (K-8)	Public Schools	251 West Broad Street, Bridgeton		Y	Y	Back-up Nuclear Event Congregate Care Shelter. ¹⁴	
CF-36	Bridgeton Senior High School	Schools	Public Schools	111 North West Avenue, Bridgeton		Y ¹⁵	Y ¹⁶	Radiological Event Congregate Care Shelter.	M-8
CF-37	Excel Program	Schools	Public Schools	398 Pearl Street, Bridgeton		N	N		
CF-38	Bridgeton Christian School	Schools	Private Schools	27 Central Avenue, Bridgeton		N	N		
CF-39	Excel Charter School	Schools	Private Schools	7 Washington Street, Bridgeton		N	N		
CF-40	South Jersey Extended Care	Vulnerable Populations Facilities	Private Nursing Homes	99 Manheim Avenue, Bridgeton		N	Y		
CF-41	Cheryl L. Chadwich Early Learning Center	Vulnerable Populations Facilities	Private Child Day Care	10 Washington Street, Bridgeton		N	N	Capacity = 75	
CF-42	Cheryl L. Chadwich Early Learning Center	Vulnerable Populations Facilities	Private Child Day Care	110 Cohansey Street, Bridgeton		N	N	Capacity = 125	
CF-43	Infinite Blessings Day Care	Vulnerable Populations Facilities	Private Child Day Care	27 Gilmore Street, Bridgeton		N	N	Capacity = 43	

¹³ Generator is in place for Early Childhood Center but does not provide back-up emergency power to the Elementary School.

¹⁴ Roof structure and windows are not considered adequate.

¹⁵ Gymnasium is Red Cross-certified.

¹⁶ Existing back-up power generator for emergency lights only.

Part 3: Hazard Identification and Risk Assessment

CF #	Name	Type	Sub-Type	Address	Co-located CF #	Shelter (Y/N)	Generator (Y/N)	Comments	Mitigation Measure #
CF-44	Little Red Hen Pre-School & Day Care, Inc.	Vulnerable Populations Facilities	Private Child Day Care	159 Fayette Street, Bridgeton		N	N	Capacity = 20	
CF-45	New Horizon's Child Enrichment Center	Vulnerable Populations Facilities	Private Child Day Care	240 Walnut Street, Bridgeton		N	N	Capacity = 84	
CF-46	River's Edge Child Care Center	Vulnerable Populations Facilities	Private Child Day Care	110 Cohansey Street		N	N	Capacity = 136	
CF-47	The Cumberland Empowerment Zone 21 st Century Learning Center	Vulnerable Populations Facilities	Private Child Day Care	20 Cherry Street, Bridgeton		N	N	Capacity = 74	
CF-48	Toy Box Pre-School, LLC	Vulnerable Populations Facilities	Private Child Day Care	344 Fayette Street, Bridgeton		N	N	Capacity = 26	
CF-49	Bridgeton City Zoo	Other Municipal	Zoos	35 Mayor Aitken Drive, Bridgeton		N	N		
CF-50	Oakview Community Room	Vulnerable Populations Facilities	Public Housing / Community Room	429 Oakview Heights, Bridgeton		Y ¹⁷	N	Total of 58 Units / Maximum community room capacity = 40	M-11
CF-51	George Jamison Community Room	Vulnerable Populations Facilities	Public Housing / Community Room	19 Maple Drive, Bridgeton		Y ¹⁷	N	Total of 100 Units / Maximum community room capacity = 50	M-11
CF-52	Highrise Community Room	Vulnerable Populations Facilities	Public Housing / Community Room	110 East Commerce Street, Bridgeton		Y ¹⁷	Y	Total of 100 Units	M-11
CF-53	Overlook Housing Facility	Vulnerable Populations Facilities	Public Housing	1 Overlook Drive, Bridgeton		Y ¹⁷	N	Total of 14 Units	M-11

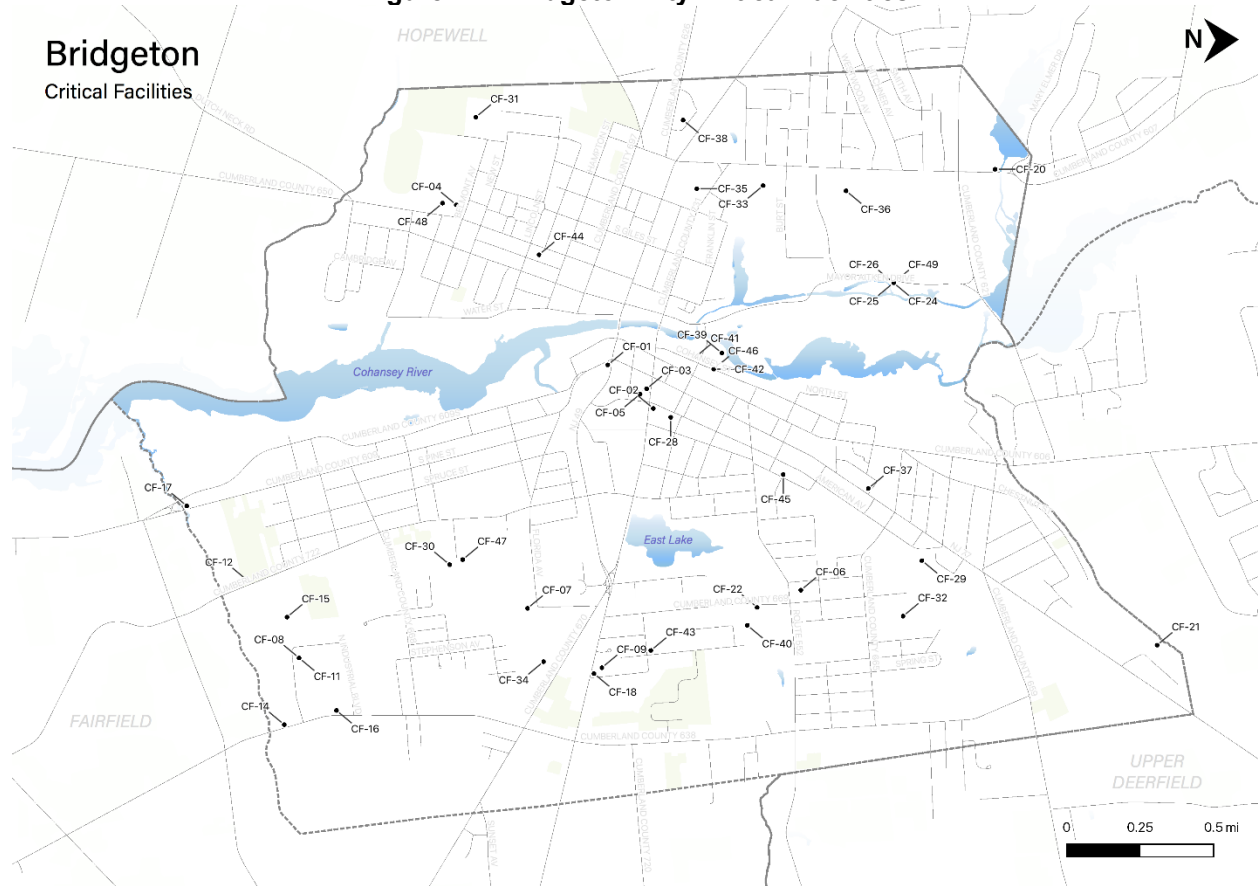
¹⁷ Shelter-in-place

Part 3: Hazard Identification and Risk Assessment

CF #	Name	Type	Sub-Type	Address	Co-located CF #	Shelter (Y/N)	Generator (Y/N)	Comments	Mitigation Measure #
CF-54	Ramblewood Housing Facility	Vulnerable Populations Facilities	Public Housing	2 Ramblewood Drive, Bridgeton		Y ¹⁷	N	Total of 14 Units	M-11
CF-55	Pine Street Housing Facility	Vulnerable Populations Facilities	Public Housing	17 Pine Street, Bridgeton		Y ¹⁷	N	Total of 8 Units	M-11
CF-56	Dare Avenue Housing Facility	Vulnerable Populations Facilities	Public Housing	33 Dare Avenue, Bridgeton		Y ¹⁷	N	Total of 28 Units	M-11

Part 3: Hazard Identification and Risk Assessment

Figure 2-4: Bridgeton City Critical Facilities



Part 3.4: Hazard Exposure Assessment

Hazard exposure assessments were completed for the eleven (11) natural hazards identified in the CC HMPU Base Plan¹⁸.

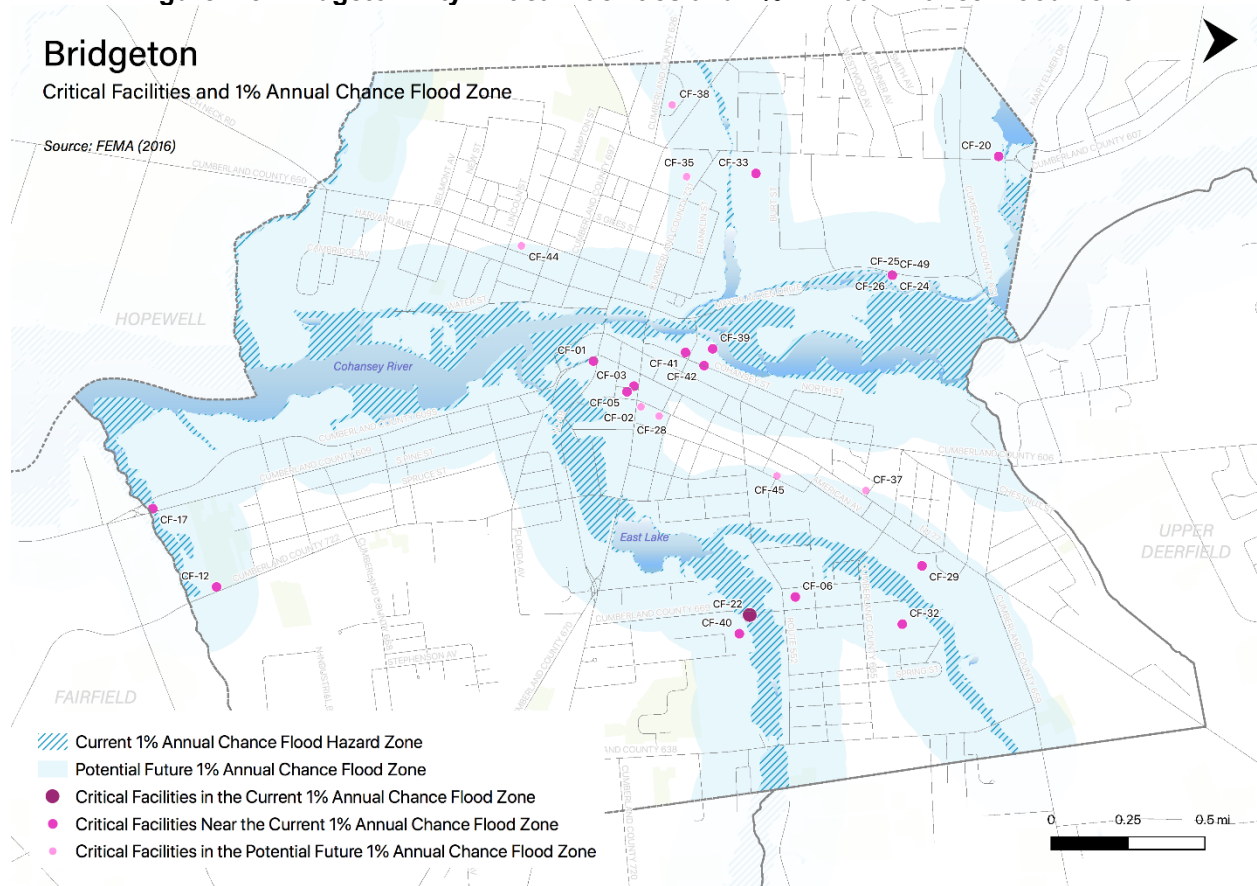
Key results for Bridgeton City are depicted in the following.

Mapping: Figure 2-5 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).

¹⁸ Hazard profiles are included for all eleven natural hazards in *Section 3: Hazard Identification and Risk Assessment* of the CC HMPU Base Plan.

Part 3: Hazard Identification and Risk Assessment

Figure 2-5: Bridgeton City Critical Facilities and 1% Annual Chance Flood Zone



Mapping results are available for general building stock and critical facilities for the following hazards:¹⁹

- 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 2-5 indicates hazard exposure for general building stock
- Table 2-6 indicates hazard exposure for critical facilities

¹⁹ 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/q5zbdd4agdp62gs/AAAFhSe62jS1bNh1OHLyIuTGa?dl=0>

Part 3: Hazard Identification and Risk Assessment

Table 2-5: Bridgeton City 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 ²⁰	0	N/A	0	N/A
Sea Level Rise - 3 feet increase	26	0.46%	\$3,513,912	0.41%
Flood - Within 1 % Annual Chance Zone	111	2%	\$23,636,365	3%
Flood - Near (within 500 feet) of 1% Annual Chance Zone	1,291	23%	\$184,689,275	21%
Earthquake – Structure built before 1927 ²¹	1,609	35%	\$103,719,300	30%
High Winds / Severe Weather – Structure built before 1975	4,273	94%	\$302,697,600	87%
Wildfire – Composite score > 2.5 ²²	3	-	\$136,400	0.02%

Table 2-6: Bridgeton City Critical Facilities Hazard Exposure²³

Hazard	Number of Critical Facilities	CF #s
Coastal Erosion	None	N/A
Sea Level Rise	None	N/A
Flood - Within 1 % Annual Chance Zone	2	CF-05, CF-22
Flood - Near (within 500 feet) of 1% Annual Chance Zone	19	CF-02, CF-04, CF-06, CF-12, CF-17, CF-20, CF-24, CF-25, CF-26, CF-27, CF-29, CF-32, CF-33, CF-39, CF-40, CF-41, CF-42, CF-46, CF-49
Flood – Future potential (within 1,000 feet) 1% Annual Chance Zone	9	CF-01, CF-10, CF-13, CF-28, CF-35, CF-37, CF-38, CF-44, CF-45
Wildfire	21	CF-03, CF-07, CF-08, CF-11, CF-12, CF-15, CF-17, CF-18, CF-20, CF-21, CF-22, CF-24, CF-25, CF-26, CF-30, CF-31, CF-34, CF-40, CF-47, CF-48, CF-49

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

²⁰ All supporting data for Coastal Erosion, Sea Level Rise (3-foot rise), Flood (all) can be viewed at https://docs.google.com/spreadsheets/d/1fcN5hL3Jz4X7mldFyKs6wol6J6lAR9bSsvJPIgE_A0Q/edit?usp=sharing

²¹ All supporting data for Earthquake, High Winds, and Severe Weather can be viewed at <https://docs.google.com/spreadsheets/d/1Zx1LZwKQ8esqdv4c9hbbSZurtMjH4UITQWJY1LrZeZc/edit?usp=sharing>

²² All supporting data for Wildfire can be viewed at https://docs.google.com/spreadsheets/d/1JAbfd3A-eCHI93pZFaPVuM_H2yvuUzeHCmoijv-oxsw/edit?usp=sharing

²³ All supporting data for critical facility hazard exposure can be viewed at <https://docs.google.com/spreadsheets/d/1MPLIOANm7fHoyKuxyWqyang26LTSPayTxJvLmK5lGPg/edit?usp=sharing>

Part 3: Hazard Identification and Risk Assessment

Information from the 2016 NJ4 HMP HIRA was also reviewed with the Working Group to determine the need for updates to hazard exposure results for Dam Failure.

Dam Failure

Per the New Jersey Department of Environmental Protection (NJDEP) data²⁴:

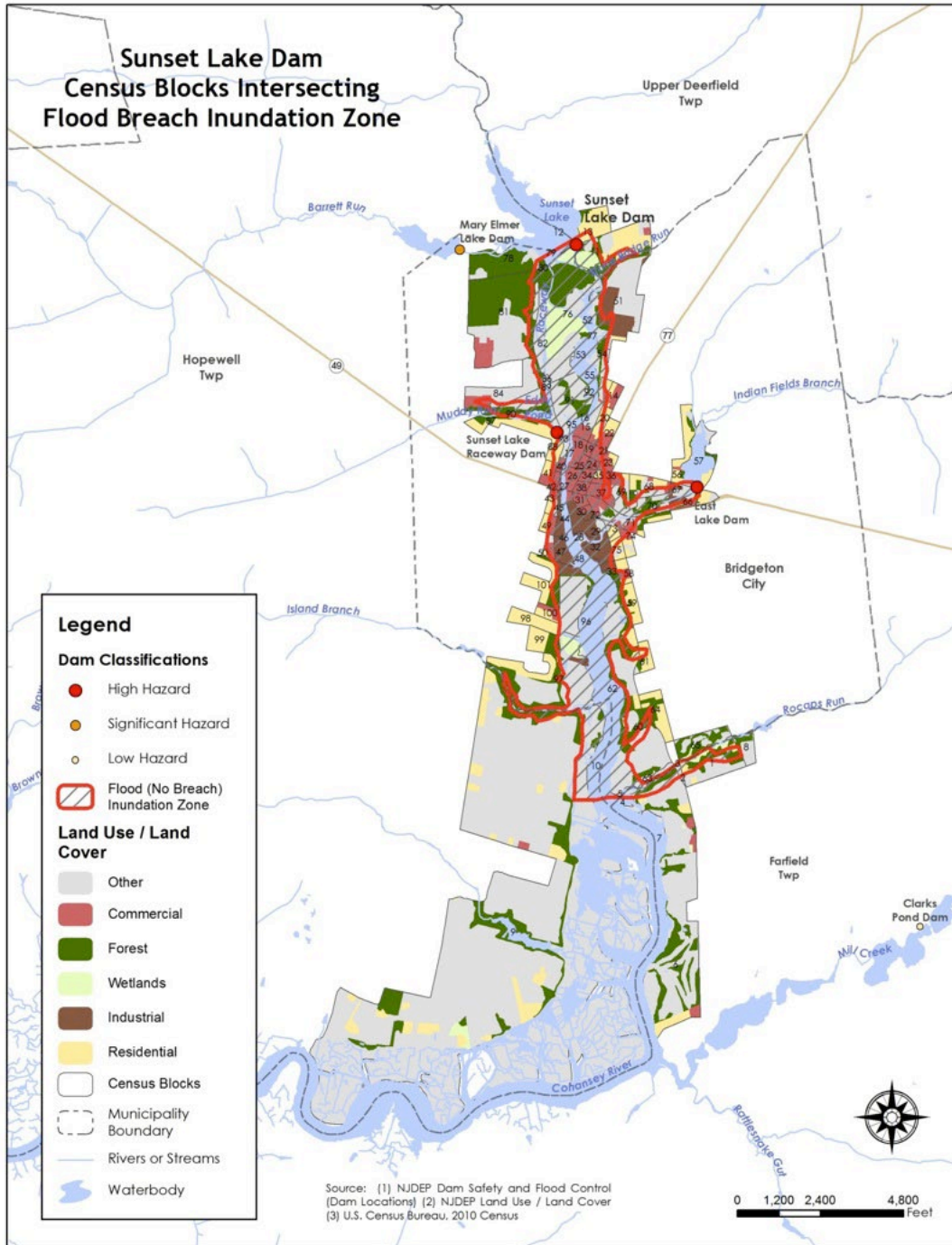
- There are three (3) “High Hazard” dams located in the City.
 - Sunset Lake Dam on the Cohansey River
 - Sunset Lake Raceway Dam on the Cohansey River
 - East Lake Dam on Indian Fields Branch
- There is one (1) “Significant Hazard dam located in the City
 - Mary Elmer Lake Dam on the Cohansey River
- One (1) dam failure incident had been recorded in the City as of 2014 at Sunset Lake Raceway Dam in 2011

Figures 2-6 through 2-8 depict results from the 2016 NJ4 HMP HIRA showing land use within Census Blocks intersecting the Flood Breach Inundation Zone for the three High Hazard dams.

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

Part 3: Hazard Identification and Risk Assessment

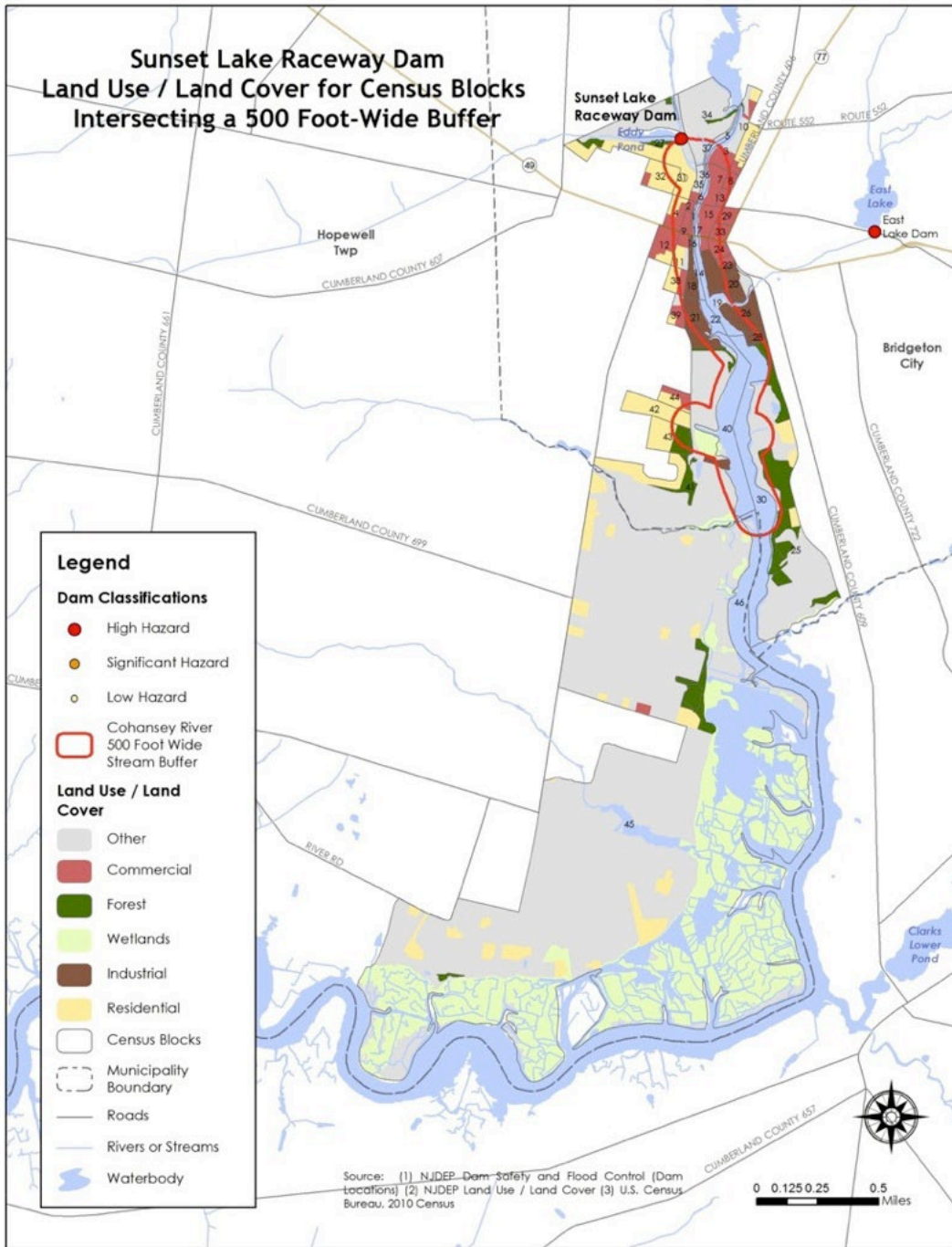
Figure 2 -6: Sunset Lake Dam Land Use/Land Cover for Census Blocks Intersecting Flood (With Breach) Inundation Zone



An estimated 1,027 housing units and 2,711 residents are potentially located downstream of the Sunset Lake Dam within Bridgeton City.

Part 3: Hazard Identification and Risk Assessment

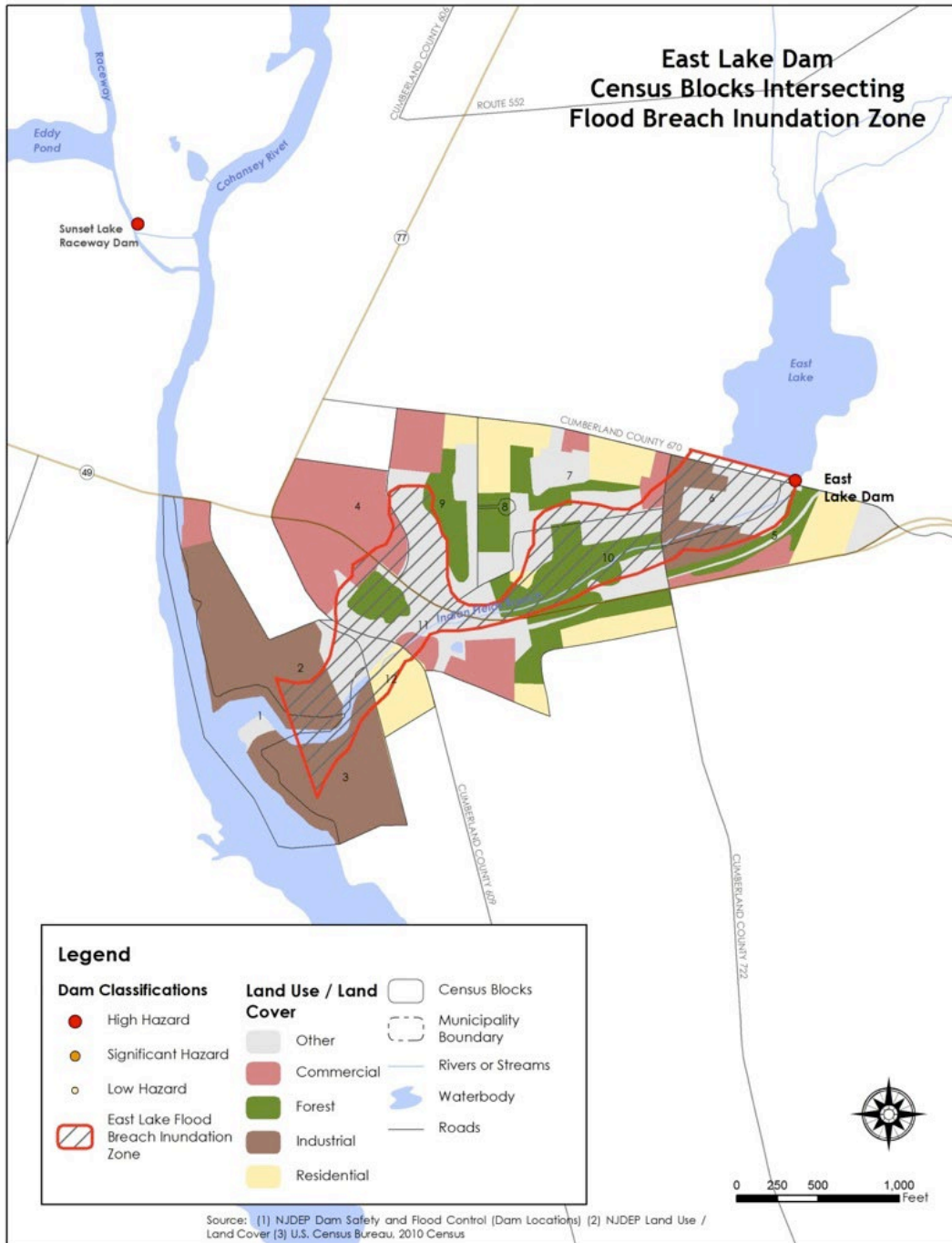
Figure 2 -7: Sunset Lake Raceway Dam Land Use/Land Cover for Census Blocks Intersecting Flood (With Breach) Inundation Zone



An estimated 416 housing units and 1,514 residents are potentially located downstream of the Sunset Raceway Lake Dam within Bridgeton City.

Part 3: Hazard Identification and Risk Assessment

Figure 2 -8: East Lake Dam Land Use/Land Cover for Census Blocks Intersecting Flood (With Breach) Inundation Zone



An estimated 76 housing units and 224 residents are potentially located downstream of the East Lake Dam within Bridgeton City.

Part 3: Hazard Identification and Risk Assessment

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

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

Per the Bridgeton City Working Group, there were no changes to the NJ4 HMP HIRA Dam Failure hazard exposure results.

National Flood Insurance Program Information

One additional metric discussed with the Working Group was statistical information from the National Flood Insurance Program (NFIP)²⁵. The following are relevant numbers for Bridgeton City as provided by the New Jersey Office of Emergency Management (NJOEM)²⁶:

- Active Policies – seventeen (17) active NFIP flood insurance policies
- Claims History – thirteen (13) claims made against the NFIP between 1980 and 2021
- Repetitive Loss Properties (RL) – no (0) properties designated as RL

For comparison relative to the number of active NFIP flood insurance policies, the following are the number of potentially exposed buildings (per Table 3-5), which are significantly higher than the number of active policies:

- Flood - Within 1 % Annual Chance Zone: 111 buildings ~ 2% of total buildings, with a value of \$23,636,365 ~ 3% of the total building value in the City.
- Flood - Near (within 500 feet) of 1% Annual Chance Zone: 1,219 buildings ~ 23% of total buildings, with a value of \$184,689,275 ~ 21% of the total building value in the City.

²⁵ Information on the NFIP is described in *Section 3: Hazard Identification and Risk Assessment* of the CC HMPU Base Plan.

²⁶ Spreadsheets provided by NJOEM in October 2021.

Part 3: Hazard Identification and Risk Assessment

Part 3.5: Demographic Considerations

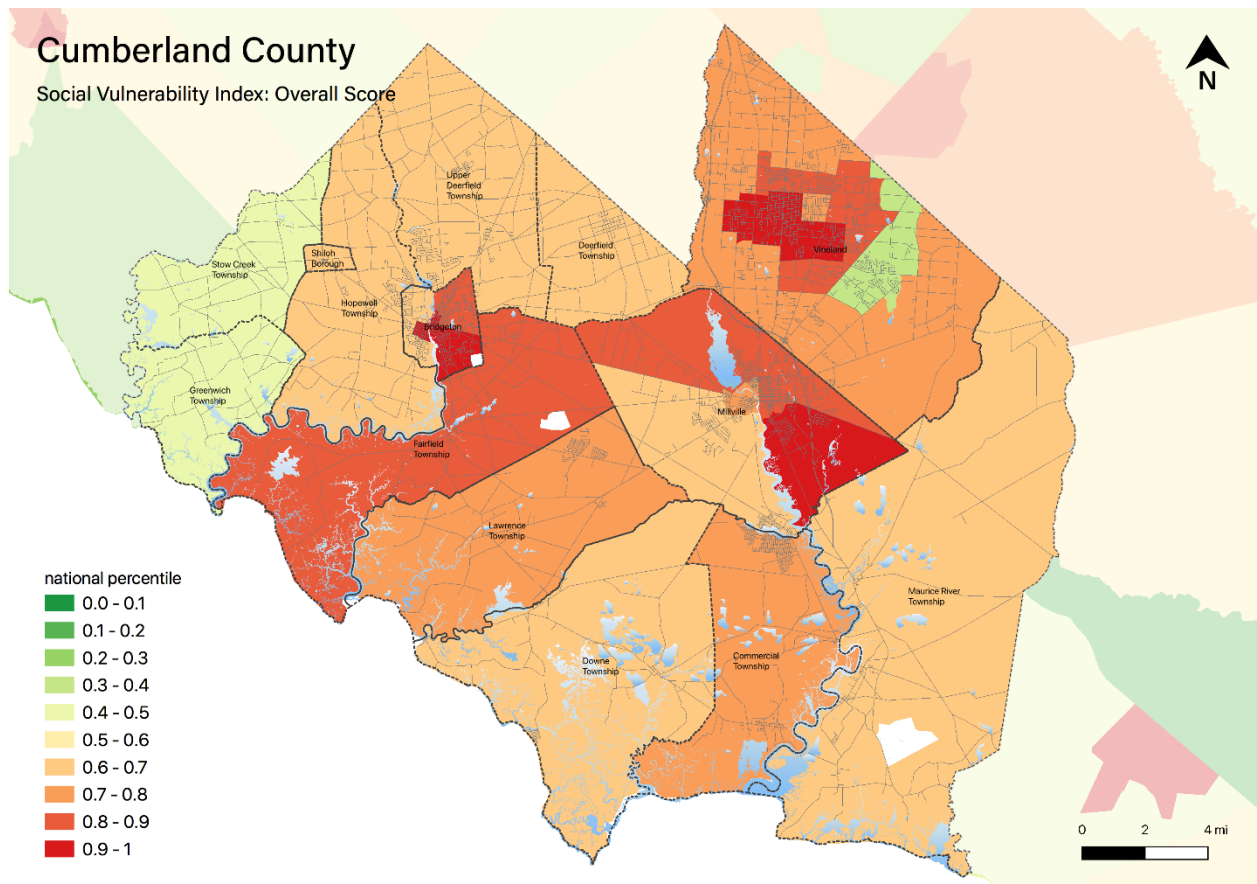
Demographic considerations include general population and land use factors. Table 2-7 includes current population estimates and changes since the previous US Census²⁷:

Table 2-7: Bridgeton City General Population Demographics

Metric	Current Estimates
2010 Population	25,349
2019 Population	24,540
Percent Population Change (2010-2019)	- 3.19%
Land Area	6.18 sq. miles
Population Density	3,970.9 / sq. mile

Demographic considerations also include differences in social vulnerability²⁸. Figure 2-9 shows the overall Social Vulnerability (SVI) Index overall scores for Cumberland County.

Figure 2-9: Cumberland County Social Vulnerability Index: Overall Scores



²⁷ US Census, 2019 ACS 5 Year Estimates, Table ID DP5

²⁸ Social vulnerability considerations are described in *Section 3: Hazard Identification and Risk Assessment* of the CC HMPU Base Plan.

Part 3: Hazard Identification and Risk Assessment

For **Bridgeton City**, Table 2-8 includes selected metrics where social vulnerability considerations are noteworthy when compared with all national census tracts:

Table 2-8: Bridgeton City Social Vulnerability Considerations²⁹

Metric	Comparison with all National Census Tracts
Socioeconomic Status	Lower than 90%
Household Composition & Diversity	Lower than 72%
Minority Status & Language	Lower than 87%
Housing Type & Transportation	Lower than 65%

In addition, the percentage of residents earning below poverty level = 34.5% (compared with the average in New Jersey of 10.4%).

Part 3.6: Observations

- Outreach and guidance should be provided for residents, business owners, and property owners for:
 - Properties in or near 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).
- All critical facilities are potentially vulnerable to Earthquake, High Winds, and Severe Weather (heavy rains in summer and snow loads in winter).
- Several critical facilities are potentially vulnerable to Flood and Wildfire and will be identified as priorities for follow-up critical facility field evaluations.
- Priority for follow-up should also be focused on critical facilities housing vulnerable populations related to Extreme Temperature and Severe Weather hazards. For example, determining and documenting (cross referencing EOP) how residents will be moved to facilities providing shelter including cooling and warming centers (all of which would need adequate back-up power and hardening).

²⁹ All supporting data for SVI can be viewed at https://docs.google.com/spreadsheets/d/10zb_Qlg2CgGxb45_fcKiP46swaC16-fORxYTIOiAkP0/edit#gid=1481479799

Part 3: Hazard Identification and Risk Assessment

Part 3.7: Hazard Priorities

As a key step in the Hazard Identification and Risk Assessment (HIRA) process, the eleven (11) natural hazards identified in the 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 Group rated the hazards as follows:

High Priority

- High Wind

Moderate Priority

- Earthquake
- Severe Weather – Winter

Low Priority

- Coastal Erosion and Sea Level Rise
- Dam Failure³⁰
- Drought
- Extreme Temperature: Cold & Hot
- Flood
- Severe Weather – Summer

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

- Levee Failure
- Wildfire

³⁰ NJ DEP Division of Dam Safety and Flood Control records indicate three (3) high hazard dams in Bridgeton City. However, extensive repairs and renovations completed at Sunset Lake and Sunset Lake Raceway in 2016 by the US Army Corps of Engineers have resulted in changes in classifications and an overall reduction of risk for the City.

Part 4: Mitigation Measures

Part 4: Mitigation Measures

Part 4 includes six subparts:

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

Part 4.1: Mitigation Goals and Strategy

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

As part of the NJ4 HMP plan update process, these goals were reviewed and edited by the Municipal Working Groups for use in the Municipal Appendices. In addition, the Municipal Working Groups for the CC HMPU reviewed and reaffirmed these goals for continued use in the Appendices.

All mitigation measures in the Municipal Appendix are related to at least one of these four goal statements.

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

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

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

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

Part 4: Mitigation Measures

Part 4.2: NJ4 HMP Mitigation Measures

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

Table 2-9 identifies the status of mitigation measures included in the NJ4 HMP. These entries were based on information provided by the Municipal Working Group. In some cases, the NJ4 HMP mitigation measures were carried over as part of the Municipal Appendix as indicated in the “Comments” column and the far right-hand column of Table 2-9.

Table 2-9: Status of Bridgeton City NJ4 HMP Mitigation Measures

Mitigation Action, Program, or Project	Status	Comments	Mitigation Measure # <small>3132</small>
M-1: Identify and pursue outreach and education opportunities to inform municipal residents, businesses, and property owners.	Work-in-progress	Work-in-progress included: ■ Regularly utilize website and social media re: emergency / hazard events	Carried over as part of M-1
M-2: Prioritize critical facilities and complete site and facility surveys to identify vulnerabilities and potential mitigation measures.			
M-3: Prioritize recurrent drainage problem areas and initiate data collection to track unreimbursed damages and related response and recovery expenses.			
M-4: Conduct regular Municipal Working Group meetings.			
M-5: Install backup emergency power generator at Bridgeton City Hall Annex (CF-1).	No progress, lack of funding	Back-up emergency power used to be provided (to some degree) by link with City Hall but link is no longer in operation.	Carried over as M-2
M-6: Install backup emergency power generator at Bridgeton City Public Works Garage (CF-7).	No progress, lack of funding		Carried over as M-3
M-7: Install backup emergency power generator at Bridgeton City Water Department (CF-8).	No progress, lack of funding		Carried over as M-4
M-8: Install backup emergency power generator at Well #s 2 & 24 (CF-12).	No progress, lack of funding		Carried over as M-5
M-9: Install backup emergency power generator at Well # 13 (CF-13).	Completed	Completed in 2010 as part of well development project.	N/A

³¹ Detailed information for identification and implementation of municipal (M-#) mitigation measures is included in Tables 2-10 and 2-11.

³² Detailed information for identification and implementation of multi-jurisdictional (MJ-#) mitigation measures is included in Table 2-12.

Part 4: Mitigation Measures

Mitigation Action, Program, or Project	Status	Comments	Mitigation Measure # 3132
M-10: Install backup emergency power generator at Well #s 18 & 22 (CF-14).	Resolved	Back-up emergency power provided by South Woods Prison.	N/A
M-11: Install backup emergency power generator at Well #s 19, 20, & 23 (CF-15).	No progress		Carried over as M-6
M-12: Install backup emergency power generator at Well # 21 (CF-16).	Resolved	Back-up emergency power provided by South Woods Prison.	N/A
M-13: Upgrade backup emergency power generator at Bridgeton Senior High School (CF-36).	Work-in-progress	School Board intends to implement as part of capital improvements in 2023	Carried over as M-8
M-14: Install backup emergency power generator at Broad Street School (CF-35).	Completed	Completed in 2018 by the School Board using general capital improvement funds. Generator is adequate to operate emergency lighting, boilers for heating, et al.	N/A
M-15: Install backup emergency power generator at Buckshutem Road Elementary School (shelter) (CF-34).	Work-in-progress	Generator installed at Early Childhood Center does not serve Elementary School. Still considered valid for supporting shelter operations within School building	Carried over as M-7
M-16: Harden School Board Offices to address roof structure resilience (CF-28).	Completed	Roof replacement completed in 2014 by School Board using School District funds	N/A
M-17: Harden Bridgeton Schools Warehouse and Bus Maintenance Facility (shelter) to address roof structure resilience (CF-29).	Completed	Same as M-16	N/A
M-18: Drainage improvements to the "Raceway" that protects the city from flooding from Sunset Lake.	Completed	Completed in 2015 using FEMA HMA funding from Superstorm Sandy.	N/A
M-19: Install Cohansey River Bulkhead ³³ .	Completed	Completed using City general funds.	N/A
M-20: Purchase Jet-Vac Truck and three (3) portable trash pumps.	Completed	Completed using City general funds.	N/A
M-21: Address identified Repetitive Flood Loss Properties.	No longer an issue.	No properties are currently listed by FEMA as RL in the City.	N/A

³³ The project consists of 1,375 feet of sheet piling on the west side of the Cohansey River starting north of Commerce Street and continuing 300 feet past the Washington Street Bridge.

Part 4: Mitigation Measures

Mitigation Action, Program, or Project	Status	Comments	Mitigation Measure # 3132
MJ-1: Sunset Lake Dam. ³⁴ .	Work-in-progress	Work related to the Dam and East Gate were completed. However, work on the West Gate was not completed.	Carried over as multi-jurisdictional mitigation measure MJ-1

In addition, since the 2016 NJ4 HMP, the City completed two additional projects for critical facilities:

- CF-31: Quarter Mile Lane Elementary School - Back-up emergency power generator was added as part of renovation completed by 2016, using funding from the NJ School Development Authority (NJSDA). The generator provides back-up power for the entire school addition and emergency lighting in older sections.
- CF-36: Bridgeton Senior High School - Roof replacement was completed in 2016 with funding from the NJSDA.

Part 4.3: Municipal Mitigation Measures – Identification

Table 2-10 includes the list of mitigation measures that are considered the responsibility of the municipality. These mitigation measures:

- Reflect the goals and strategy identified in Part 4.1
- Include projects carried over from NJ4 HMP as detailed in Part 4.2
- Include new projects, programs or activities identified by the Municipal Working Groups including measures to address known problems or areas of concern for critical facilities and vulnerable populations
- Address Repetitive Flood Loss (RL) and Severe Repetitive Flood Loss Properties (SRL)³⁵ if applicable

Table 2-10 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

³⁴ Problem involved needed improvements to the East and West Gate structures. As of October 2, 2014, repairs to the East Gate structure and related sheet piling installations were on-going as part of improvements to the Raceway. However, the West Gate is not part of the current project.

³⁵ *Section 3: Hazard Identification and Risk Assessment* of the CC HMPU Base Plan includes a description of RL and SRL properties.

Part 4: Mitigation Measures

Table 2-10: Bridgeton City 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"> ▪ Conduct outreach and education for residents, businesses, and property owners ▪ Complete critical facility field evaluations to identify potential vulnerabilities and mitigation measures ▪ Compile relevant data regarding hazard impacts ▪ Support regular interactions of the Municipal Working Group ▪ Seek integration of hazard mitigation with other parallel planning initiatives 	All	All	All
M-2	Install backup emergency power generator at Bridgeton City Hall Annex (CF-1).	Power outage due to multiple hazard types.	Goal #4	Existing
M-3	Install backup emergency power generator at Bridgeton City Public Works Garage (CF-7).	Power outage due to multiple hazard types.	Goal #4	Existing
M-4	Install backup emergency power generator at Bridgeton City Water Department (CF-8).	Power outage due to multiple hazard types.	Goal #4	Existing
M-5	Install backup emergency power generator at Well #s 18 & 22 (CF-14).	Power outage due to multiple hazard types.	Goal #4	Existing
M-6	Install backup emergency power generator at Well #s 19, 20, & 23 (CF-15).	Power outage due to multiple hazard types.	Goal #4	Existing
M-7	Install backup emergency power generator at Buckshutem Road Elementary School (shelter) (CF-34).	Power outage due to multiple hazard types.	Goal #4	Existing
M-8	Upgrade backup emergency power generator at Bridgeton Senior High School (CF-36).	Power outage due to multiple hazard types.	Goal #4	Existing
M-9 ³⁶	Install backup emergency power generator at Water Treatment Plant (CF-11).	Power outage due to multiple hazard types.	Goal #4	Existing
M-10 ³⁶	Establish hook-ups and transfer switches and acquire portable generators to serve multiple pump stations and lift stations (CF-15, CF-17 through CF-27).	Power outage due to multiple hazard types.	Goal #4	Existing

³⁶ Mitigation Measures M-9 through M-11 are new items identified by the Working Group.

Part 4: Mitigation Measures

#	Mitigation Action, Program, or Project	Hazard(s)	Goal (s)	Existing or New Structures
M-11 ³⁶	Establish hook-ups and transfer switches and acquire portable generators to serve community rooms for sheltering-in-place at multiple Housing Authority locations (Oakview Heights, George Jamison Community Center, Overlook, Ramblewood, Pine Street, Dare Avenue).	Power outage due to multiple hazard types.	Goal #4	Existing

Part 4.4: Municipal Mitigation Measures – Implementation

Table 2-11 includes information identified by the Municipal Working Group:

- Part(ies) responsible for following up with implementation of the measure
- Priority for implementation considering a range of criteria³⁷
- Project Type to help determine funding options and implementation mechanisms at the municipal level³⁸
- Estimated Cost, including estimates provided by the Municipal Working Group or approximate ranges for projects that are in early stages of development
- Target Date, indicating desired completion dates assuming availability of funding
- Next step(s) anticipated to implement the identified mitigation measures at the municipal level

Table 2-11: Bridgeton City Municipal Mitigation Measures Implementation

#	Mitigation Action, Program, or Project	Responsible Part(ies)	Priority	Project Type	Estimated Cost (\$)	Target Date	Next Step(s)
M-1	Municipal Mitigation Program	Office of Emergency Management	High	Program	Staff Time	On-going, sustained effort	<ul style="list-style-type: none"> ▪ Identify outreach and education objectives and methods (working with CC OEM) ▪ Set priorities (if necessary) and initiate critical facility field assessments ▪ Identify schedule for plan updates (including sustained public participation and plan integration efforts)
M-2	Install backup emergency power generator at Bridgeton City Hall Annex (CF-1).	Bridgeton Department of Public Works	High	Back-up Emergency Power Generator	< \$100K	One year	Conduct project scoping ³⁹

³⁷ Section 4: Mitigation Measures of the CC HMPU Base Plan includes a description of evaluation criteria considered by the Municipal Working Group.

³⁸ Section 4: Mitigation Measures of the CC HMPU Base Plan includes a description of project types and related information regarding funding options and implementation mechanisms.

³⁹ Project scoping for M-2 through M-11 to include determining feasibility to install hookup and transfer switch for using portable generator(s) to accommodate need, at least as a temporary measure

Part 4: Mitigation Measures

#	Mitigation Action, Program, or Project	Responsible Part(ies)	Priority	Project Type	Estimated Cost (\$)	Target Date	Next Step(s)
M-3	Install backup emergency power generator at Bridgeton City Public Works Garage (CF-7).	Bridgeton Department of Public Works	High	Back-up Emergency Power Generator	< \$100K	One year	Conduct project scoping ³⁹
M-4	Install backup emergency power generator at Bridgeton City Water Department (CF-8).	Bridgeton Department of Public Works	Moderate	Back-up Emergency Power Generator	< \$100K	One to three years	Conduct project scoping ³⁹
M-5	Install backup emergency power generator at Well #s 2 & 24 (CF-12).	Bridgeton Department of Public Works	High	Back-up Emergency Power Generator	< \$100K	One year	Conduct project scoping ³⁹
M-6	Install backup emergency power generator at Well #s 19, 20, & 23 (CF-15).	Bridgeton Department of Public Works	Moderate	Back-up Emergency Power Generator	< \$100K	One to three years	Conduct project scoping ³⁹
M-7	Install backup emergency power generator at Buckshutem Road Elementary School (shelter) (CF-34).	Bridgeton Board of Education	High	Back-up Emergency Power Generator	< \$100K	One year	Conduct project scoping ³⁹
M-8	Upgrade backup emergency power generator at Bridgeton Senior High School (CF-36).	Bridgeton Board of Education	High	Back-up Emergency Power Generator	< \$100K	One year	Issue RFP for purchase and installation when funds are allocated for 2023 ³⁹
M-9	Install backup emergency power generator at Water Treatment Plant (CF-11).	Bridgeton Department of Public Works	High	Back-up Emergency Power Generator	To be determined per project scoping	One to two years	Conduct project scoping ³⁹
M-10	Establish hook-ups and transfer switches and acquire portable generators to serve multiple pump stations and lift stations (CF-15, CF-17 through CF-27).	Bridgeton Department of Public Works	High	Back-up Emergency Power Generator	To be determined per project scoping	One to two years	Conduct project scoping ³⁹
M-11	Establish hook-ups and transfer switches and acquire portable generators to serve community rooms for sheltering-in-place at multiple Housing Authority locations.	Bridgeton Housing Authority	High	Back-up Emergency Power Generator	To be determined per project scoping	One to three years	Conduct project scoping ³⁹

Part 4: Mitigation Measures

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

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

Part 4: Mitigation Measures

Part 4.5: Multi-Jurisdictional Mitigation Measures

During the Municipal Working Group Work Sessions, the Working Group identified some NJ4 HMP mitigation measures to be carried over, as well as adding new areas of concern, all of which were designated as multi-jurisdictional mitigation measures. Implementation of these measures, in the opinion of the Municipal Working Groups, requires participation or leadership from other levels of government, including county, state, and federal agencies. These multi-jurisdictional mitigation measures have been compiled in Table 2-12.

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

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

Table 2-12: Bridgeton City Multi-Jurisdictional Mitigation Measures

#	Problem Description	Hazard(s) Addressed	Goal Addressed	Applies to Existing or New Structures	Potential Partners	Priority
MJ-1	Sunset Lake Dam West Gate Improvements.	Dam Failure	Goal #4	Existing and New	Municipal OEM, Cumberland County	On-going

Part 4: Mitigation Measures

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

Part 4.6 includes three (3) subparts:

- Authorities, Policies, and Programs - Cross referencing relevant information and recommendations in the CC HMPU Base Plan regarding existing authorities, policies, and programs in the County and specific information about the Bridgeton City's participation and continued compliance in the National Flood Insurance Program (NFIP)
- Resources - Cross referencing relevant information and recommendations in the CC HMPU Base Plan regarding improving capabilities and coordination at the County and municipal level and specific information about Bridgeton City'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

4.6.1: Authorities, Policies, and Programs

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

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

- Involvement of Floodplain Administrator during the CC HMPU implementation process
- Commitment to adopt updated FIRMs (if appropriate) and evaluate / update the municipality's Flood Damage Prevention Ordinance as appropriate per recommendations included in Section 4.6 of the CC 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 CC 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 CC HMPU Base Plan also includes summary statements regarding county and municipal resources and the impact of resource limitations on the overall approach to the CC HMPU mitigation strategies.

Table 2-13 compares the results of the Capability Assessment Survey for the County as a whole and Bridgeton City.

Part 4: Mitigation Measures

Table 2-13: Bridgeton City Capability Assessment Survey Results

Metric	Bridgeton City Results (n=7)	Cumberland County "as a whole" Results (n=85)
Position Type: Full-time	71.43%	51.76%
Position Type: Part-time	28.57%	36.47%
Position Type: Volunteer	0.00%	11.76%
Time in Position: Less than 1 year	42.86%	12.94%
Time in Position: 1 to 2 years	0.00%	8.24%
Time in Position: 2 to 5 years	14.29%	23.53%
Time in Position: More than 5 years	42.86%	55.29%
Prior Experience: None	57.14%	57.65%
Prior Experience: with hazard mitigation planning	28.57%	31.76%
Prior Experience: with HMA grant administration	14.29%	12.94%
Prior Experience: with floodplain management	0.00%	7.06%
Training / Certifications: None	57.14%	75.29%
Training / Certifications: for hazard mitigation planning and implementation	28.57%	9.41%
Training / Certifications: for floodplain management	14.29%	15.29%

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

- Higher percentage of full-time staff
- Slightly lower average time in current positions
- Similar 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
- Similar percentage of staff with training for floodplain management

Part 4: Mitigation Measures

4.6.3: Plan Review and Integration

Section 4.6: *Authorities, Policies, Programs, Resources, and Plan Integration* of the CC 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 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

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 Bridgeton City Working Group include:

- Flood Damage Prevention Ordinance
- Emergency Operations Plan (2018) – *Note: Next update to be completed in 2022.*
- Master Plan (2008)⁴⁰ – *Note: Reexamination Report completed in 2018.*
- Land Development Applications and Checklists⁴¹
- Zoning Ordinance (2013)
- 2014 Capital Improvement Budget and Capital Improvement Program

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

- Current version was adopted in 2016 and is consistent with the most recent FDPO per NJDEP]
- The Construction Code Official is the responsible party for enforcement. The individual who currently holds that position is included on the Working Group and has completed the capability assessment survey.
- The document is accessible to the public via internet⁴².

⁴⁰ <http://www.cityofbridgeton.com/masterplan.php>

⁴¹ <http://www.cityofbridgeton.com/planningzoning.php>

⁴² <https://ecode360.com/31436611>