



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

**Appendix 14**  
**Upper Deerfield Township, New Jersey**

Preliminary Draft

September 7, 2021

## Notes to Preliminary Draft Reviewers

This Preliminary Draft of the Upper Deerfield Township 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 Municipal and Multi-Jurisdictional Mitigation Measures to be included in the CC HMPU.

Text highlighted in **yellow** indicates information requested of the community'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 your community's Emergency Management Coordinator:

Chad Ott

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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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## Table of Contents

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<b>Table of Contents</b>	<b>14-i</b>
<b>Part 1 Overview</b>	<b>14-1</b>
1.1: Cumberland County Multi-Hazard Mitigation Plan Update	14-1
1.2: Upper Deerfield Township Municipal Appendix	14-1
<b>Part 2 Participation</b>	<b>14-2</b>
2.1: Municipal Working Group Participation	14-2
2.2: Public Participation	14-4
<b>Part 3 Hazard Identification and Risk Assessment</b>	<b>14-5</b>
3.1: Profile	14-5
3.2: General Building Stock	14-7
3.3: Critical Facilities	14-8
3.4: Hazard Exposure Assessment	14-11
3.5: Demographic Considerations	14-14
3.6: Observations	14-15
3.7: Hazard Priorities	14-16
<b>Part 4 Mitigation Measures</b>	<b>14-17</b>
4.1: Mitigation Goals and Strategy	14-17
4.2: NJ4 HMP Mitigation Measures	14-18
4.3: Municipal Mitigation Measures – Identification	14-21
4.4: Municipal Mitigation Measures – Implementation	14-22
4.5: Multi-Jurisdictional Mitigation Measures	14-23
4.6: Authorities, Policies, Programs, Resources, and Plan Integration	14-25

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## Table of Contents

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### List of Figures

Figure 14-1: Upper Deerfield Township Location Map	14-5
Figure 14-2: Upper Deerfield Township Base Map	14-6
Figure 14-3: Upper Deerfield Township Building Footprints	14-7
Figure 14-4: Upper Deerfield Township Critical Facilities	14-11
Figure 14-5: Upper Deerfield Township Critical Facilities & 1% Annual Chance Flood Zone	14-12
Figure 14-6: Upper Deerfield Township Social Vulnerability Index: Overall Scores	14-14
Figure 14-7: Upper Deerfield Township Mitigation Project Locations	14-24

### List of Tables

Table 14-1: Upper Deerfield Township Working Group	14-2
Table 14-2: Public Participation	14-4
Table 14-3: Upper Deerfield Township Buildings per Land Use Type	14-7
Table 14-4: Upper Deerfield Township Critical Facilities Inventory	14-8
Table 14-5: Upper Deerfield Township General Building Stock Hazard Exposure	14-13
Table 14-6: Upper Deerfield Township Critical Facilities Hazard Exposure	14-13
Table 14-7: Upper Deerfield Township General Population Demographics	14-14
Table 14-8: Upper Deerfield Township Social Vulnerability Considerations	14-15
Table 14-9: Status of Upper Deerfield Township NJ4 HMP Mitigation Measures	14-18
Table 14-10: Upper Deerfield Township Municipal Mitigation Measures Identification	14-21
Table 14-11: Upper Deerfield Township Municipal Mitigation Measures Implementation	14-22
Table 14-12: Upper Deerfield Township Multi-Jurisdictional Mitigation Measures	14-23

### Attachments

Attachment 14.A: Public Review Comments	14.A-1
Attachment 14.B: Adoption Resolution	14.B-1
Attachment 14.C: Approval Letter	14.C-1

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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: Upper Deerfield Township Municipal Appendix

This Municipal Appendix is focused on Upper Deerfield Township in Cumberland County, New Jersey.

The Upper Deerfield Township Municipal Working Group **will recommend** the Upper Deerfield Township Municipal Appendix for adoption to the Upper Deerfield Township Committee.

The Upper Deerfield Township Committee **will adopt** the Municipal Appendix by resolution (see Attachment B: Adoption Resolution).

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

## Part 2: Participation

### Part 2.1: Municipal Working Group Participation

Part 2.1 includes:

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

Table 14-1 identifies the Municipal Working Group members. As [will be] 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 [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: Four 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 14-1: Upper Deerfield Township Working Group**

First Name	Last Name	Department	Position	Project Kick-off Meeting <sup>1</sup>	Round 1 Work Session <sup>2</sup>	Round 2 Work Session <sup>3</sup>	Working Group Meeting <sup>4</sup>	Contribution <sup>5</sup>
Chad	Ott *	OEM / EMS	OEM Coordinator / Fire Department Liaison / EMS Chief / Public Works Director	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			Organized Working Group and Work Sessions.
James (Jim)	Crilly *	Administration	Mayor					
John	Daddario	Township Committee	Deputy Mayor					
Roy	Spoltore *	Administration	Administrator / Floodplain Administrator		<input checked="" type="checkbox"/>			

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

<sup>2</sup> Round 1 Work Session was held on August 10, 2021.

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

<sup>4</sup> Working Group Meeting [will be] held on [to be determined (if applicable)].

<sup>5</sup> 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 <sup>1</sup>	Round 1 Work Session <sup>2</sup>	Round 2 Work Session <sup>3</sup>	Working Group Meeting <sup>4</sup>	Contribution <sup>5</sup>
Brian	Murphy *	Engineering	Engineer					
Teresa	Warburton	Construction / School Board	Construction Official / Member					

The following lists candidate positions and organizations within the community that [will be 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.<sup>6</sup>

- Community / Faith-Based Organizations
- Major Employers and Businesses (via Local Emergency Planning Committee regularly scheduled meetings)

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
- Police
- Transportation Department
- Environmental Organizations
- Non-Governmental Organizations
- Critical Infrastructure and Key Resources
- Healthcare Institutions

<sup>6</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 municipality to participate during the plan update process.

Table 14-2 **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 14-2: Public Participation**

Date	Type of Involvement	Location
[insert date link was established]	Link to Project Website <sup>7</sup> established and maintained.	[insert municipal website URL]
[insert date meeting was held (if applicable)]	Public meeting conducted with presentation and open discussion.	[insert location]
September 8, 2021	Preliminary Municipal Appendix available for public comment.	Project Website
[insert date link was established]	Notice posted re: Preliminary Municipal Appendix review period with link to Project Website.	[insert municipal website URL]
[date(s) to be determined]	Public outreach via [insert audience(s) and outreach method(s)].	[insert location(s)]
[date to be determined]	Draft Municipal Appendix <b>will be</b> available for public comment.	Project Website
[date to be determined]	Public hearing <b>will be</b> conducted regarding the Draft Municipal Appendix providing for open discussion and public comment.	[insert location]

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

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

In addition, the Municipal 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 Municipal Appendix.<sup>8</sup> In addition, public participation will continue to be encouraged during subsequent plan implementation and maintenance activities.<sup>9</sup>

<sup>7</sup> <https://cchmpu21.com/documents>

<sup>8</sup> See Mitigation Measure M-1 in Part 4 of the Municipal Appendix.

<sup>9</sup> Public education and outreach **will be** described in *Section 4: Mitigation Measures* of the CC HMPU Base Plan.



## Part 2: Participation

### Part 3: Hazard Identification and Risk Assessment

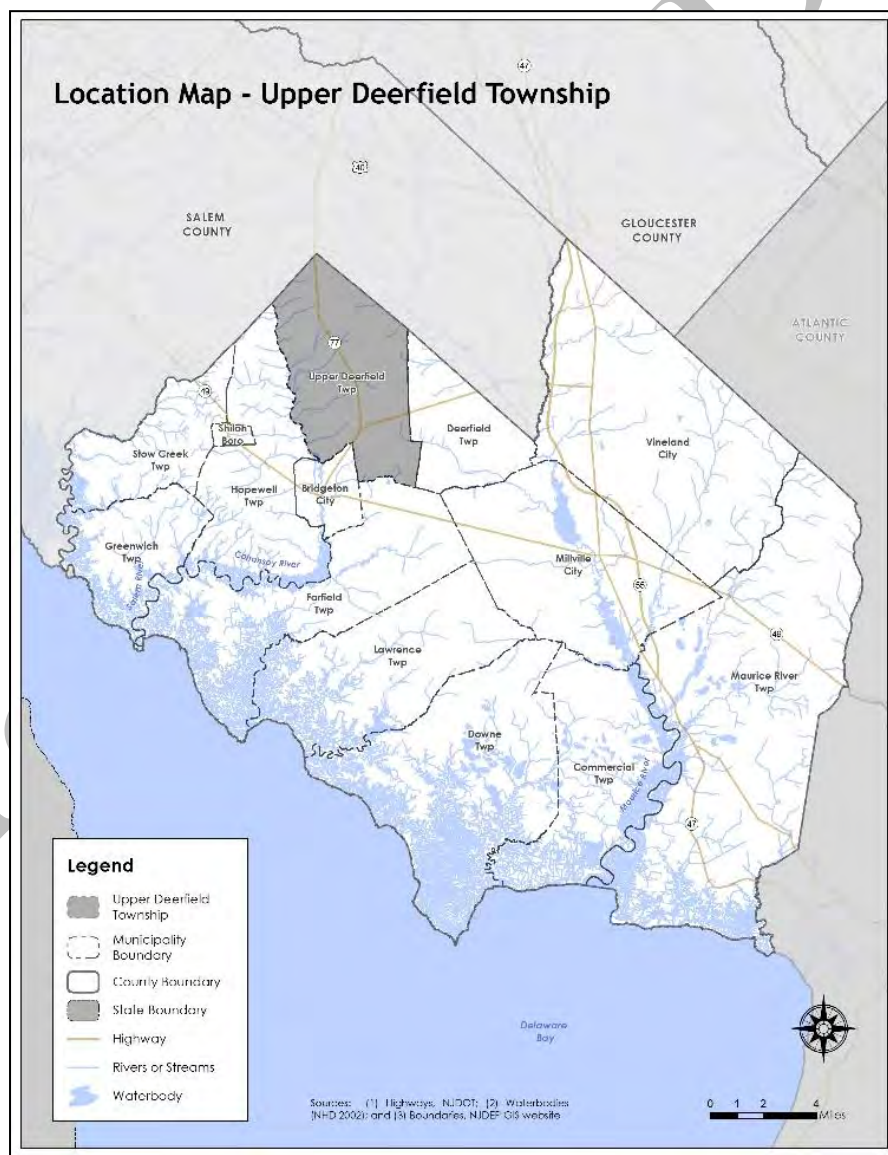
Part 3 includes seven subparts:

- 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: Municipal Profile

Upper Deerfield Township is located in the northern corner of Cumberland County (See Figure 14-1).

Figure 14-1: Upper Deerfield Township Location Map

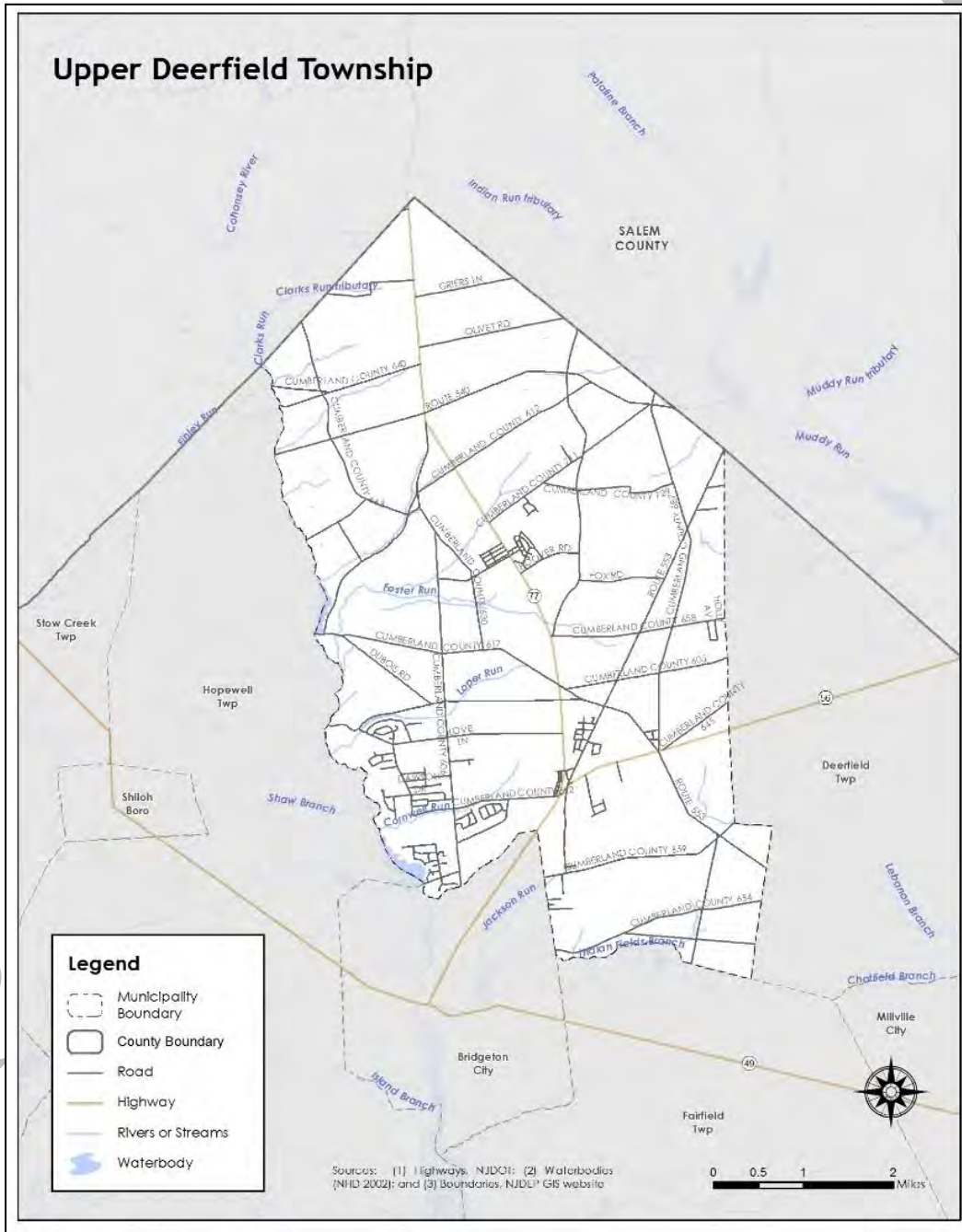


## Part 2: Participation

Upper Deerfield Township is a farming community with a growing commercial and residential area. Seabrook Farms is the one unincorporated community in the municipality.

Per Figure 14-2, major water courses include the Cohansy River, which forms the western boundary of the municipality, and Foster Run. Major transportation routes include State Highway Routes 77 and 56, and County Routes 540 (Almond Road), 553 (Centerton Road) and 606 (Old Deerfield Pike). The land is predominantly flat to gently rolling and existing land cover is mostly farmland.

**Figure 14-2: Upper Deerfield Township Base Map**



## Part 2: Participation

### Part 3.2: General Building Stock

As of 2015, there are 4,553 buildings in Upper Deerfield Township with a total assessed value of improvements of \$593,103,021. Figure 14-3 shows the footprints of these buildings.

**Figure 14-3: Upper Deerfield Township Building Footprints<sup>10</sup>**

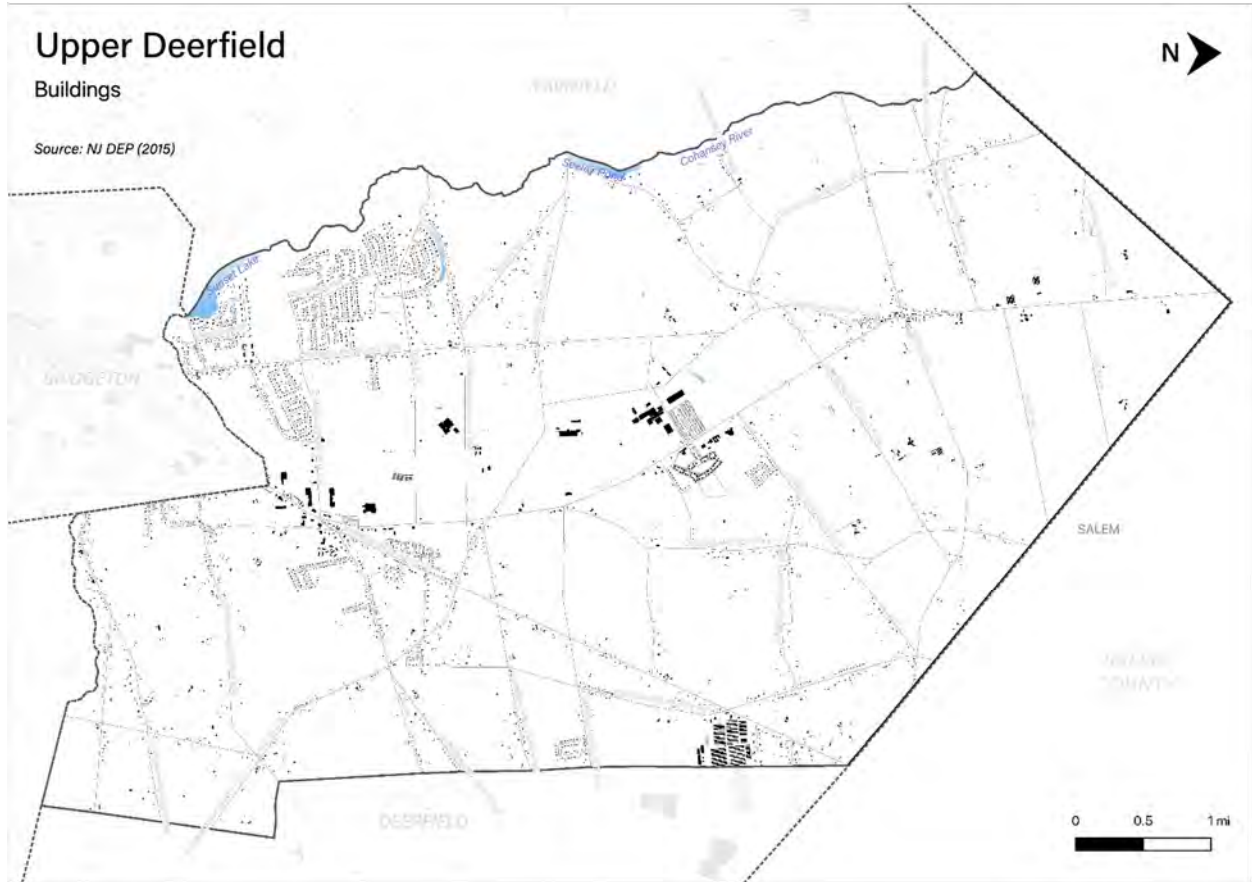


Table 14-3 [will show] the distribution of these structures according to land use distinctions.

**Table 14-3: Upper Deerfield Township 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 2: Participation

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

As of August 2021, there are twenty-five (25) critical facilities in Upper Deerfield Township.

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

Table 14-4 includes current inventory information for municipal critical facilities **and will include** cross-references to related mitigation measures **to be** identified in Part 4 of the Municipal Appendix. Figure 14.4 shows the location of these critical facilities.

**Table 14-4: Upper Deerfield Township Critical Facilities Inventory**

CF #	Name	Type	Sub-Type	Address	Co-located CF #	Shelter (Y/N)	Generator (Y/N)	Comments	Mitigation Measure #
CF-1	Township Hall	Municipal	Administrative Offices	1325 Highway 77, Seabrook		N	Y <sup>13</sup>		<b>[TBD]</b>
CF-2	Emergency Operations Center	EOC	Co-located Facilities	69 Cornwell Drive, Bridgeton	CF-5	N	Y		<b>[TBD]</b>
CF-3	Station #1	FireStation	Stations	1538 State Highway 77, Bridgeton		N	Y		<b>[TBD]</b>
CF-4	Station #32	FireStation	Stations	90 Foster Road, Seabrook		Y	Y	Holding area, e.g., no shower facilities, until access to County facilities is available.	<b>[TBD]</b>
CF-5	Station #33	FireStation	Stations	69 Cornwell Drive, Bridgeton		N	Y		<b>[TBD]</b>
CF-6	EMS	EMS	Municipal Stations	10 Hoover Road, Seabrook		N	Y		<b>[TBD]</b>

<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.

<sup>13</sup> Back-up generator provides partial building coverage for emergency lighting.

**Part 2: Participation**

CF #	Name	Type	Sub-Type	Address	Co-located CF #	Shelter (Y/N)	Generator (Y/N)	Comments	Mitigation Measure #
CF-7	Public Works	Public Works	Co-located Administrative Office, Maintenance / Work Area, Equipment / Material Storage, and Fueling Station	80 Old Burlington Road, Seabrook		N	N		[TBD]
CF-8	Love Lane Plant	Utilities – Water	Treatment Plants	56 Love Lane, Bridgeton		N/A	Y		[TBD]
CF-9	Seabrook Plant	Utilities – Water	Treatment Plants	1368 Highway 77, Bridgeton		N/A	Y		[TBD]
CF-10	Carlls Corner Pump Station	Utilities – Wastewater	Pump Stations / Lift Stations	Carlls Corner, Upper Deerfield		N/A	Y		[TBD]
CF-11	Sunset Lake	Utilities – Wastewater	Pump Stations / Lift Stations	Sunset Lake, Upper Deerfield		N/A	Y		[TBD]
CF-12	Padgetts Lift Station	Utilities – Wastewater	Pump Stations / Lift Stations	Padgetts, Upper Deerfield		N/A	N		[TBD]
CF-13	Upper Deerfield Estates Lift Station	Utilities – Wastewater	Pump Stations / Lift Stations	Upper Deerfield Estates, Upper Deerfield		N/A	N		[TBD]
CF-14	Johns Way Lift Station	Utilities – Wastewater	Pump Stations / Lift Stations	Johns Way, Upper Deerfield		N/A	N		[TBD]
CF-15	West Sunset Drive Lift Station	Utilities – Wastewater	Pump Stations / Lift Stations	West Sunset Drive, Seabrook		N/A	N		[TBD]
CF-16	C.F. Seabrook Elementary School	Schools	Public Schools	1373 Highway 77, Seabrook		N	Y <sup>14</sup>		[TBD]
CF-17	Cumberland Regional High School	Schools	Public Schools	90 Silver Lake Road, Bridgeton		Y	Y	Shelter is ARC-certified. Generator adequate to run shelter functions	[TBD]
CF-18	Elizabeth F. Moore Elementary School	Schools	Public Schools	1369 Highway 77, Seabrook		N	N		[TBD]
CF-19	Woodruff Elementary School	Schools	Public Schools	1385 Highway 77, Seabrook		N	Y <sup>14</sup>		[TBD]

<sup>14</sup> Back-up generator provides partial building coverage for IT.



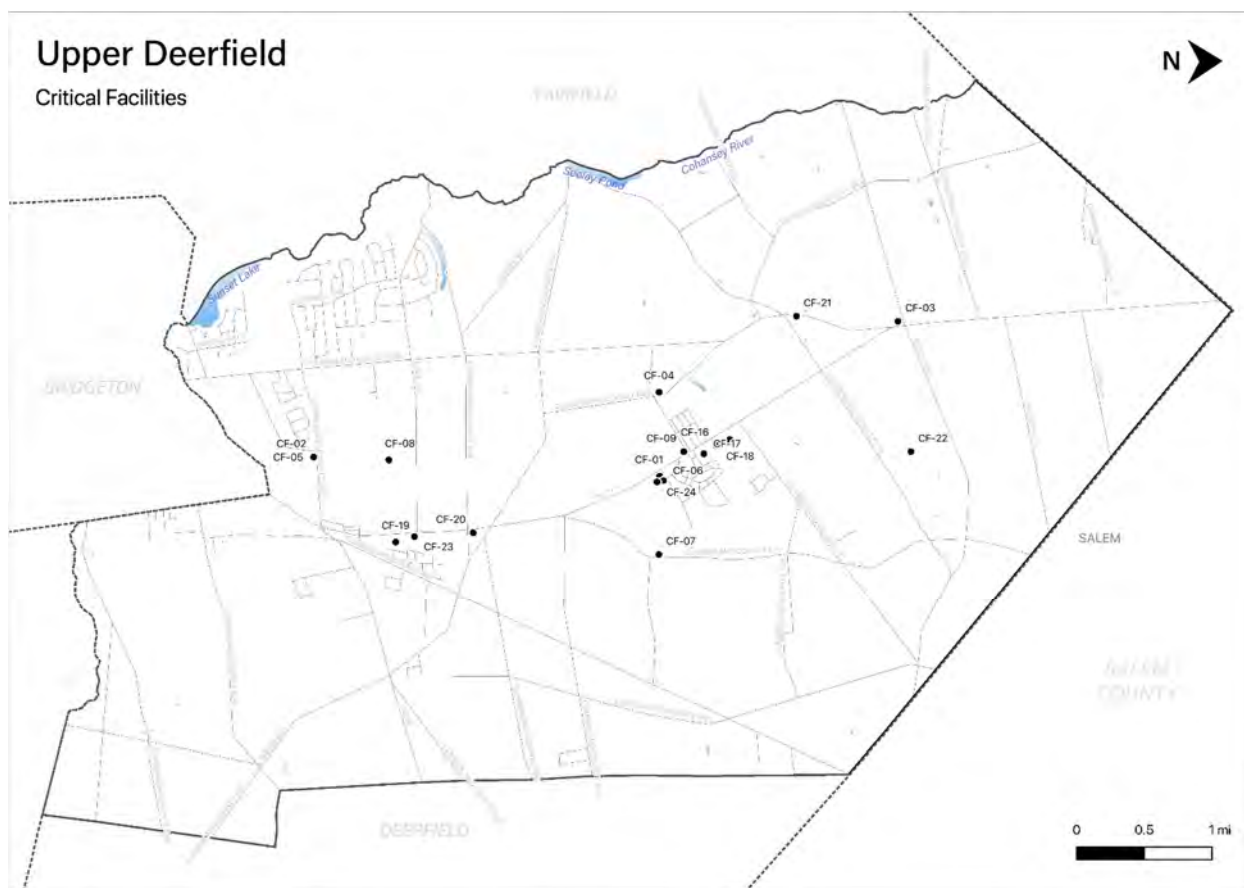
**Part 2: Participation**

CF #	Name	Type	Sub-Type	Address	Co-located CF #	Shelter (Y/N)	Generator (Y/N)	Comments	Mitigation Measure #
CF-20	Upper Deerfield Pre-School and Kindergarten	Schools	Private Schools	1123 Highway 77, Bridgeton		N	N		[TBD]
CF-21	Remsterville Learning Center in Bridgeton	Schools	Private Schools	1185 Highway 77, Bridgeton		N	N		[TBD]
CF-22	Upper Deerfield Presbyterian Church	Schools	Private Schools	530 Old Deerfield Pike, Bridgeton		N	N		[TBD]
CF-23	Seabrook House Group Home/ Administration Drug Rehabilitation	Vulnerable Populations Facilities	Private Group Home	133 Polk Lane, Bridgeton		N <sup>15</sup>	Y	Two buildings at this facility location.	[TBD]
CF-24	Senior Care Centers of America	Vulnerable Populations Facilities	Private Adult Day Care	1137 Highway 77, Bridgeton		N <sup>15</sup>	N		[TBD]
CF-25	Senior Center	Vulnerable Populations Facilities	Senior Centers	1323 Highway 77, Seabrook		N	N		[TBD]

<sup>15</sup> Shelter in place.

## Part 3: Hazard Identification and Risk Assessment

Figure 14-4: Upper Deerfield Township 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/s8jb3aiu4rxqf2v/AADAwlbOcPPTK3NJI73EJiS-a?dl=0>

### Part 3.4: Hazard Exposure Assessment

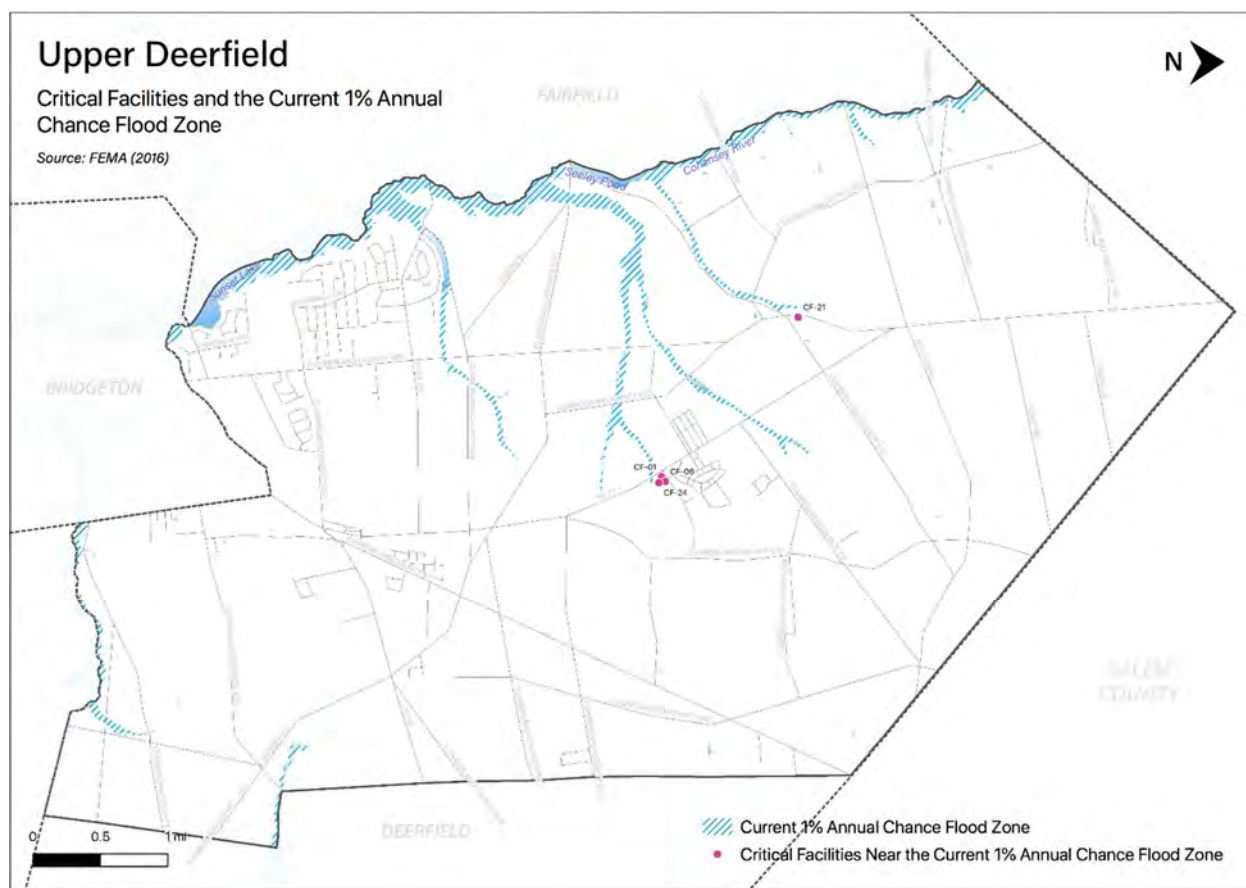
Hazard exposure assessments **will be completed** for the twelve (12) natural hazards identified in the CC HMPU Base Plan<sup>16</sup>.

Key results for Upper Deerfield Township are depicted in the following.

**Mapping:** Figure 14-5 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>16</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 14-5: Upper Deerfield Township 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 14-5 indicates hazard exposure for general building stock
- Table 14-6 indicates hazard exposure for critical facilities



### Part 3: Hazard Identification and Risk Assessment

**Table 14-5: Upper Deerfield Township General Building Stock Hazard Exposure**

Hazard	Number of Exposed Buildings	Percent of Total Buildings in the Jurisdiction	Value of Exposed Buildings	Percent of Total Value in the Jurisdiction
Coastal Erosion <sup>17</sup>	0	N/A	0	N/A
Sea Level Rise - 3 feet increase	0	N/A	0	N/A
Flood - Within 1 % Annual Chance Zone	12	-	\$683,500	-
Flood - Near (within 500 feet) of 1% Annual Chance Zone	505	11%	\$78,356,733	13%
Earthquake – Structure built before 1927 <sup>18</sup>	300	9%	\$35,478,733	8%
High Winds / Severe Weather – Structure built before 1975	2,214	67%	\$255,920,633	57%
Wildfire – Composite score > 2.5 <sup>19</sup>	47	1.03%	\$9,665,600	1.63%

**Table 14-6: Upper Deerfield Township Critical Facilities Hazard Exposure<sup>20</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-01, CF-06, CF-21, CF-24
Flood – Future potential (within 1,000 feet) 1% Annual Chance Zone	None	N/A
Wildfire	4	CF-04, CF-19, CF-22, CF-24

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>17</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>18</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>19</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>20</sup> All supporting data for critical facility hazard exposure can be viewed at <https://docs.google.com/spreadsheets/d/1MPLiOANm7fHoyKuxyWqyang26LTSPayTxJvLmK5IGPg/edit?usp=sharing>

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

**Part 3.5: Demographic Considerations**

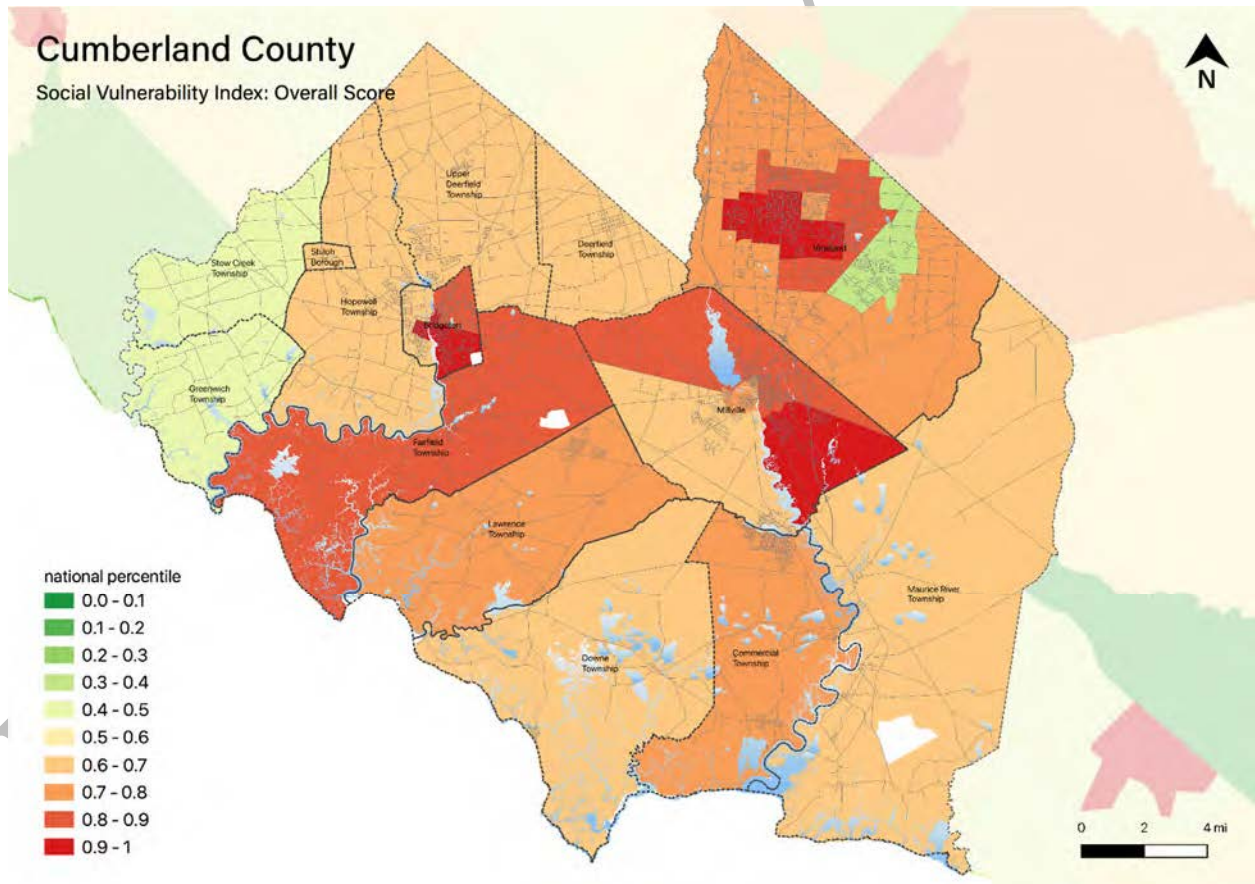
Demographic considerations include general population and land use factors. Table 14-7 includes current population estimates and changes since the previous US Census<sup>21</sup>:

**Table 14-7: Upper Deerfield Township General Population Demographics**

Metric	Current Estimates
2010 Population	7,660
2019 Population	7,379
Percent Population Change (2010-2019)	- 3.67%
Land Area	31.10 sq. miles
Population Density	237.3 / sq. mile

Demographic considerations also include differences in social vulnerability<sup>22</sup>. Figure 14-6 shows the overall Social Vulnerability (SVI) Index overall scores for Cumberland County.

**Figure 14-6: Cumberland County Social Vulnerability Index: Overall Scores**



<sup>21</sup> US Census, 2019 ACS 5 Year Estimates, Table ID DP5

<sup>22</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 Upper Deerfield Township, Table 14-8 includes selected metrics where social vulnerability considerations are notably higher when compared with all national census tracts:

**Table 14-8: Upper Deerfield Township Social Vulnerability Considerations<sup>23</sup>**

Metric	Percentile
Percentage of persons: With a disability	79 <sup>th</sup>
Percentage of persons: Living in group quarters	75 <sup>th</sup>
Percentage of persons: Older than 65 years of age	82 <sup>nd</sup>

In addition, the percentage of residents earning below poverty level = 13.4% (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 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).
- A few 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).

<sup>23</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)

## Part 3: Hazard Identification and Risk Assessment

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### Part 3.7: Hazard Priorities [review / confirm or revise highlighted entries]

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 Group rated the hazards as follows:

#### High Priority

- None

#### Moderate Priority

- Drought
- Extreme Temperature: Cold & Hot
- High Wind
- Severe Weather – Summer
- Severe Storm – Winter Weather

#### Low Priority

- Dam Failure
- Earthquake
- Flood
- Wildfire

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

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

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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 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 **will be** candidates for inclusion in the Municipal Appendix.

Table 14-9 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 **will be** carried over as part of the Municipal Appendix as **will be** indicated in the “Comments” column and the far right-hand column of Table 14-9.

**Table 14-9: Status of Upper Deerfield Township NJ4 HMP Mitigation Measures**

Mitigation Action, Program, or Project	Status	Comments	Mitigation Measure # <sup>2425</sup>
<b>M-1:</b> Identify and pursue outreach and education opportunities to inform municipal residents, businesses, and property owners.	Work-in-progress	Work-in-progress included: <ul style="list-style-type: none"> <li>▪ Newsletter 2X per year re: flooding status and emergency status and website updates</li> <li>▪ On-going discussions (e.g., visits from consulting engineer every Tuesday)</li> </ul>	To be carried over as part of M-1
<b>M-2:</b> Prioritize critical facilities and complete site and facility surveys to identify vulnerabilities and potential mitigation measures.			
<b>M-3:</b> Prioritize recurrent drainage problem areas and initiate data collection to track unreimbursed damages and related response and recovery expenses.			
<b>M-4:</b> Conduct regular Municipal Working Group meetings.			
<b>M-5:</b> Install permanent backup emergency power generator at Upper Deerfield Municipal Building (CF-1).	Work-in-progress	Looking at reworking covered functions using Township funding, e.g., to cover IT but still interested in replacing to cover all functions simultaneously	To be carried over as <b>[# TBD]</b>
<b>M-6:</b> Install permanent backup emergency power generator at Fire Station #1 (CF-3).	Completed	Completed in 2019 with Township general funds	
<b>M-7:</b> Install permanent backup emergency power generator at Public Works facility (CF-7).	No progress, lack of funding	Township secured mobile generator in 2019 for emergency purposes. It may be possible to install hookups and transfer switch to accommodate need, at least as a temporary measure.	To be carried over as <b>[# TBD]</b>
<b>M-8:</b> Install permanent backup emergency power generator at C.F. Seabrook Elementary School (CF-16).	No progress	Same as M-7	To be carried over as <b>[# TBD]</b>

<sup>24</sup> Detailed information for identification and implementation of municipal (M-#) mitigation measures **will be included** in Tables 14-10 and 8-11.

<sup>25</sup> Detailed information for identification and implementation of multi-jurisdictional (MJ-#) mitigation measures **will be included** in Table 14-12.



**Part 4: Mitigation Measures**

<b>Mitigation Action, Program, or Project</b>	<b>Status</b>	<b>Comments</b>	<b>Mitigation Measure # <sup>2425</sup></b>
<b>M-9:</b> Install permanent backup emergency power generator at Elizabeth F. Moore Elementary School (CF-17).	No progress	Same as M-7	To be carried over as <b># TBD</b>
<b>M-10:</b> Install permanent backup emergency power generator at Woodruff Elementary school (CF-18).	No progress	Same as M-7	To be carried over as <b># TBD</b>
<b>M-11:</b> Install permanent backup emergency power generator at Senior Center (CF-24).	No progress	Same as M-7	To be carried over as <b># TBD</b>
<b>M-12:</b> Elevate Love Lane between Old Deerfield Pike and railroad tracks.	Completed	Paving project was completed in 2018 with Township funds and state grant funds (NJ Trust / i.e., gas tax funds)	
<b>M-13:</b> Upgrade stormwater management system at the end of Third and Fourth Streets.	No progress, no funding		To be carried over as <b># TBD</b>
<b>M-14:</b> Engineering study to identify floodproofing mechanisms for Township Hall (CF-1).	Work-in-progress	Video produced for all drains, engineering is on-going.	To be carried over as <b># TBD</b>
<b>MJ-1:</b> Install backup power for Cumberland Regional High School.	<b>[confirm status as] Completed</b>	<b>[confirm source of funding and identify date completed]</b> Seven municipalities contributed, with 9 representatives (Upper Deerfield and Fairfield Townships have 2 each)	
<b>MJ-2:</b> Alleviate flooding at County Route 540 (East Deerfield Road) between New Jersey Route 77 and Old Burlington Road (closer to Old Burlington Road).	Completed	Paving project completed in 2019 by Cumberland County	
<b>MJ-3:</b> Alleviate flooding on Freesburg Road (NJ Route 77). Most frequent, most impact on the Township. E.G., July 2021 highway closed for 4 hours.	No progress	State has been working but unable to get resolution yet (including working to gain cooperation from local landowner)	To be carried over as multi-jurisdictional mitigation measure <b># TBD</b>
<b>MJ-4:</b> Alleviate flooding in the Hildreth Track Development. Storm drainage system is outdated	Work-in-progress	Project is more appropriate as a Municipal Mitigation Action. The Township is looking into NJ Small Cities grant program as a funding source.	To be carried over as <b># TBD</b>
<b>MJ-5:</b> Alleviate flooding on County Route 617 (Finley Road) and New Jersey Highway 77.	Work-in-progress	County currently working on drainage and pipe issues	To be carried over as multi-jurisdictional mitigation measure <b># TBD</b>

**Part 4: Mitigation Measures**

Mitigation Action, Program, or Project	Status	Comments	Mitigation Measure # <sup>2425</sup>
<b>MJ-6:</b> Alleviate flooding on New Jersey Highway 77 and Hoover Road.	Completed	State drainage improvements completed in 2018	
<b>MJ-7:</b> Alleviate flooding on Highway 77 between Big Oak and Hoover Road. Drainage pile issue (lower priority)	No progress		To be carried over as multi-jurisdictional mitigation measure [# TBD]
<b>MJ-8:</b> Alleviate flooding on County Route 606 (Old Deerfield Pike) and County Route 662 (Center Road).	Completed	County paving and drainage improvements completed in 2019.	



## Part 4: Mitigation Measures

### Part 4.3: Municipal Mitigation Measures – Identification

Table 14-10 [will include] 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)<sup>26</sup> if applicable

Table 14-10 [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

*Note:* Mitigation measures with discrete locations [will be] shown in Figure 14-7.

**Table 14-10: Upper Deerfield Township 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

<sup>26</sup> Section 3: Hazard Identification and Risk Assessment of the CC HMPU Base Plan [will include] a description of RL and SRL properties.

## Part 4: Mitigation Measures

### Part 4.4: Municipal Mitigation Measures – Implementation

Table 14-11 **[will include]** 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 criteria<sup>27</sup>
- Project Type to help determine funding options and implementation mechanisms at the municipal level<sup>28</sup>
- 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 14-11: Upper Deerfield Township Municipal Mitigation Measures Implementation**

#	Mitigation Action, Program, or Project	Responsible Part(ies)	Priority	Project Type	Estimated Cost (\$)	Target Date	Next Step(s)
M-1	Municipal Mitigation Program	Office of Emergency Management	High	Program	Staff Time	On-going, sustained effort	<ul style="list-style-type: none"> <li>▪ Identify outreach and education objectives and methods (working with CC OEM)</li> <li>▪ Set priorities (if necessary) and initiate critical facility field assessments</li> <li>▪ Identify schedule for plan updates (for plan integration efforts)</li> </ul>

<sup>27</sup> Section 4: Mitigation Measures of the CC HMPU Base Plan **[will include]** a description of evaluation criteria considered by the Municipal Working Group.

<sup>28</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

### Part 4.5: Multi-Jurisdictional Mitigation Measures

During the Municipal Working Group Work Sessions, the Municipal Working Group [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 14-12.

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

Note: Multi-jurisdictional mitigation measures with discrete locations [will be] shown in Figure 14-7.

**Table 14-12: Upper Deerfield Township Multi-Jurisdictional Mitigation Measures**

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

Figure 14-7: Upper Deerfield Township Mitigation Project Locations

Preliminary Draft

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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 and specific information about the jurisdiction's participation and continued compliance in the National Flood Insurance Program (NFIP)
- Capabilities and Coordination - Cross referencing relevant information and recommendations in the CC HMPU Base Plan regarding improving capabilities and coordination at the municipal level and specific information about the jurisdiction's available resources
- Plan Review and Integration – Identifying plans and programs included in the development of Plan Integration recommendations in the 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 including the NFIP.

Continuing municipal participation in the NFIP as part of the implementation of the CC HMPU by the municipality, includes:

- Involvement of Floodplain Manager / Administrator during the CC HMPU implementation process
- Commitment to adopt updated FIRMs and evaluate / update the municipality's Flood Management Plan and/or Ordinance as appropriate per recommendations **to be included** in Section 4.6 of the CC HMPU Base Plan

#### Capabilities and Coordination

The update of the NJ4 HMP **will include** reexamining municipal 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 Municipal Working Group include:

- Upper Deerfield Township Emergency Operations - Base Plan (2021)
- Flood Damage Prevention Plan ([confirm date as 2016])
- Master Plan Reexamination Report (2017)<sup>29</sup>
- Environmental Resource Inventory (2006)<sup>6</sup>
- Farmland Preservation Plan (adopted 2012)<sup>6</sup> [confirm possible update in 2022]
- Land Use Development Regulations (2006)
- Land Use Element Plan (2006)
- Open Space and Recreation Plan ([confirm date])<sup>7</sup>
- Roadway Improvement Map<sup>6</sup> (1992)
- Redevelopment Plan (2005)<sup>6</sup>
- Water and Sewer Master Plan (1991)<sup>7</sup>
- Zoning Map (2011)<sup>7</sup>

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 municipality.

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<sup>29</sup> <http://upperdeerfield.com/Planning%20Documents.htm>

**Attachment A: Public Review Comments**

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Public review comments [will be] recorded during the public review of the Upper Deerfield Township Preliminary Draft and Draft versions of the Municipal Appendix on [dates to be determined]:

**Table 14.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 Upper Deerfield Township Municipal Appendix as approved by the Upper Deerfield Township Committee.

Preliminary Draft



**Attachment C: Approval Letter**

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Following this page [will be] the Approval Letter for the Upper Deerfield Township Municipal Appendix.

Preliminary Draft