



5.2 IDENTIFICATION OF HAZARDS OF CONCERN

2021 HMP Update Changes

- The 2021 HMP flood hazard includes more discussion of urban flooding.
- The 2021 HMP tsunami hazard includes discussion of meteotsunamis.
- The 2021 HMP includes two new hazard profiles: disease outbreak and drought.

To provide a strong foundation for mitigation strategies considered in Section 6 (Mitigation Strategy), Cape May County considered a full range of natural hazards that could impact the area, and then identified and ranked those hazards that presented the greatest concern. The natural hazard of concern identification process incorporated input from the County and participating jurisdictions; review of the State of New Jersey Hazard Mitigation Plan (NJ HMP) and previous hazard identification efforts; research and local, state, and federal information on the frequency, magnitude, and costs associated with the various hazards that have previously, or could feasibly, impact the region; and qualitative or anecdotal information regarding natural hazards and the perceived vulnerability of the study area’s assets to them. Table 5.2-1 documents the process of identifying the natural hazards of concern for further profiling and evaluation.

Hazards of Concern are defined as those hazards that are considered most likely to impact a community. These are identified using available data and local knowledge.

For the purposes of this planning effort, the Planning Partnership chose to group some natural hazards together, based on the similarity of hazard events, their typical concurrence or their impacts, consideration of how hazards have been grouped in FEMA guidance documents (FEMA 386-1, “Understanding Your Risks, Identifying Hazards and Estimating Losses; FEMA’s “Multi-Hazard Identification and Risk Assessment – The Cornerstone of the National Mitigation Strategy”), and consideration of hazard grouping in the NJ HMP.



Table 5.2-1. Identification of Natural Hazards of Concern for Cape May County

Hazard	Is this a hazard that may occur in Cape May County?	If yes, does this hazard pose a significant threat to the County?	Why was this determination made?	Source(s)
Avalanche	No	No	<ul style="list-style-type: none"> The NJ HMP does not identify avalanche as a hazard of concern for New Jersey. The topography and climate of Cape May County does not support the occurrence of an avalanche event. New Jersey in general has a very low occurrence of avalanche events based on statistics provided by the American Avalanche Association (AAA) between 1950 and 2014. 	<ul style="list-style-type: none"> NJ HMP Review of NAC-AAA database Steering and Planning Committee Input
Climate Change and Sea Level Rise	Yes	Yes	<ul style="list-style-type: none"> Numerous studies and reports are available documenting the occurrence and risks associated with climate change and sea level rise, on global, regional, state and even local scales. While climate change and sea level rise act as exacerbating conditions for the primary hazards of concern (flood, severe storm, wildfire, etc.), the Steering Committee has elected to develop a separate hazard profile for climate change and sea level rise for this update. 	<ul style="list-style-type: none"> Various studies and reports from Federal and State agencies and other interested Steering Committee Input
Coastal Erosion	No	No	<ul style="list-style-type: none"> The NJ HMP identifies coastal erosion as a hazard of concern for New Jersey. Counties bounded by coastal waters are most affected by coastal erosion. A majority of Cape May County is bounded by coastal waters; therefore, coastal erosion was identified as a hazard of concern by the Steering Committee. Coastal Cape May municipalities have a long history of coastal erosion. 	<ul style="list-style-type: none"> FEMA FIRMs NJ HMP NOAA Stockton CRC Steering and Planning Committee Input
Coastal Storm	Yes	Yes	<ul style="list-style-type: none"> The NJ HMP identifies hurricanes/tropical storms and nor'easters as hazards of concern for New Jersey. Due to its proximity to the Atlantic Ocean, Cape May County is susceptible to hurricanes, tropical storms, and Nor'Easters. For the purpose of this HMP Update, hurricanes and tropical storms will be included in 'Hurricanes/Tropical Storms' and Nor'Easters will be included separately in 'Nor'Easters'. Please see those sections for information regarding hurricanes, tropical storms, and Nor'Easters in Cape May County. 	<ul style="list-style-type: none"> NJ HMP FEMA NOAA NOAA-NCEI Storm Database Steering and Planning Committee Input
Dam Failure	Yes	No	<ul style="list-style-type: none"> The NJ HMP identifies dam failure as a hazard of concern for New Jersey. According to NJDEP, there are 11 dams located in Cape May County; however, none of these dams are identified as high hazard dams and there have been no incidents recorded at these dams. The Steering Committee did not identify dam failure as a hazard of concern for Cape May County. 	<ul style="list-style-type: none"> NJ HMP NJ DEP Steering and Planning Committee Input



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Disease Outbreak	Yes	Yes	<ul style="list-style-type: none"> • The NJ HMP identifies pandemic as a hazard of concern for New Jersey. • According to the NJ HMP, New Jersey’s geographic and demographic characteristics make it particularly vulnerable to importation and spread of infectious diseases. All 21 counties in New Jersey have experienced the effects of a pandemic or disease outbreak. • Cape May County has been impacted by mosquito and tick-borne diseases, food-borne illness and most recently the COVID-19 pandemic. • Cape May County was part of a statewide emergency declaration for West Nile Virus in 2000 (EM-3156) and the DR-4488/EM-3451 for COVID-19. 	<ul style="list-style-type: none"> • NJ HMP • FEMA • Steering and Planning Committee Input
Drought	Yes	Yes	<ul style="list-style-type: none"> • The NJ HMP identifies drought as a hazard of concern for New Jersey. • Since 1954, Cape May County has been included in two drought related federal disaster or emergency management declarations; EM-3083 and DR-205. Both events were for water shortage. • Since 2012, the USDA has included Cape May County in three agriculture disaster declarations related to drought, between 2012 and 2020: <ul style="list-style-type: none"> ○ S3487 - June-November 2012 ○ S3932 – July-September 2015 ○ S34071 – April-September 2016 • Cape May County is located in the Southern and Coastal Climate Divisions. According to the NRCC, these climate divisions has been impacted by the following periods of severe and extreme drought: <ul style="list-style-type: none"> ○ December 1930 – February 1931 ○ November 1931 – February 1932 ○ November 1949 – February 1950 ○ July-November 1957 ○ October-December 1964 ○ May 1965 – June 1966 ○ July-August 1977 ○ March-June 1985 ○ May-June 1986 ○ September-October 1986 ○ January-May 1992 ○ November-December 1998 ○ July-August 1999 ○ November 2001 – September 2002 ○ August-September 2010 	<ul style="list-style-type: none"> • NJ HMP • FEMA • USGS • NRCC • NOAA • NOAA-NCEI Storm Database • Steering and Planning Committee Input



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Hazard	Is this a hazard that may occur in Cape May County?	If yes, does this hazard pose a significant threat to the County?	Why was this determination made?	Source(s)
			<ul style="list-style-type: none"> o November-December 2010 • Drought is considered a hazard of concern due to the impact on drinking water resources, agriculture, and potential to accelerate saltwater intrusion. 	
Earthquake	Yes	No	<ul style="list-style-type: none"> • The NJ HMP identifies earthquake as a hazard of concern for New Jersey. Although they are known to occur on a regular basis, records indicate that no major earthquakes have struck the state since the establishment of historical record-keeping (1500's). Between 1783 and 2017, there have been 204 earthquakes recorded for New Jersey. One of these events have been epicentered in Cape May County. • Cape May County is located in an area with less than 2%g (peak acceleration) and has relatively low seismic risk. • The Steering Committee did not identify earthquake as a hazard of concern for Cape May County. 	<ul style="list-style-type: none"> • NJ HMP • NJDEP • NJGWS • USGS • Steering and Planning Committee Input
Expansive Soils	No	No	<ul style="list-style-type: none"> • The NJ HMP does identify expansive soils as a hazard of concern for New Jersey; however, the Planning Committee did not identify this as a hazard of concern for Cape May County. • Soils that expand (swell) as they become wet and contract (shrink) as they dry are called expansive soils. This change can cause the ground to move up and down several inches during a cycle of wetting and drying. Expansive soils that are predominately clay minerals have the ability to absorb water. • In Cape May County, the entire area is underlain by soils with little to no swelling clays. 	<ul style="list-style-type: none"> • NJ HMP • USGS 1989 Swelling Clays Map of the Conterminous U.S. • Steering and Planning Committee Input
Extreme Temperature	Yes	Yes	Please see Severe Weather	
Flood (Riverine, Flash Flooding, Urban Flooding)	Yes	Yes	<ul style="list-style-type: none"> • The NJ HMP identifies flooding as a hazard of concern in New Jersey. • The County has 30,586 NFIP policies There has been a total of over \$179 million paid claims in Cape May County. • There are 2,233 repetitive loss properties and 519 severe repetitive loss properties in the County. • The 2017 FEMA DFIRMs indicate over 51.4% of the County is located in the 1-percent annual chance floodplain; and 56.3% of the County is located in the 0.2-percent annual chance floodplain. 	<ul style="list-style-type: none"> • NJ HMP • FEMA • FEMA FIS • NFIP • NOAA-NCEI Storm Database • Steering and Planning Committee Input
Geological Hazards	Yes	No	<ul style="list-style-type: none"> • The NJ HMP identifies geological hazards as a hazard of concern for New Jersey. 	<ul style="list-style-type: none"> • NJ HMP • NJGWS



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Hazard	Is this a hazard that may occur in Cape May County?	If yes, does this hazard pose a significant threat to the County?	Why was this determination made?	Source(s)
			<ul style="list-style-type: none"> According to NJGWS, Cape May County does not have a history of landslide occurrences. Cape May County is located within a low susceptibility and low incidence landslide areas. Additionally, the County is not underlain by carbonate rock. The Steering and Planning Committees did not identify geological hazards as a hazard of concern for Cape May County. 	<ul style="list-style-type: none"> NJDEP Steering and Planning Committee Input
Hailstorm	Yes	Yes	Please see Severe Weather	
Hazardous Materials	Yes	No	<ul style="list-style-type: none"> The NJ HMP identifies geological hazards as a hazard of concern for New Jersey. Several major transportation routes are located in Cape May County and pose a threat to spills, accidents, and incidents. The Steering and Planning Committees did not identify hazardous materials as a hazard of concern for Cape May County. 	<ul style="list-style-type: none"> NJ HMP Steering and Planning Committee Input
Hurricane (and other Tropical Cyclones)	Yes	Yes	<ul style="list-style-type: none"> The NJ HMP identifies hurricanes and tropical storms as hazards of concern for New Jersey. According to FEMA, between 2009 and 2020, Cape May County was included in three declarations associated with hurricanes and tropical storms. <ul style="list-style-type: none"> November 11-15, 2009 – FEMA-DR-1867 – Severe Storms and Flooding Associated with Tropical Storm Ida and a Nor'Easter August 26-September 5, 2011 – FEMA-DR-4021 – Hurricane Irene October 26-November 8, 2011 – FEMA-DR-4086 – Hurricane Sandy Since 2016, there have been two tropical cyclones that tracked within 65 nautical miles of Cape May County. Tropical cyclones beyond 65 nautical miles have impacted the County through large swells, rip currents, and coastal erosion. The Steering and Planning Committees identified hurricanes and tropical storms as a hazard of concern for Cape May County. 	<ul style="list-style-type: none"> NJ HMP NOAA – NCEI NHC FEMA Steering and Planning Committee Input
Ice Storm	Yes	Yes	Please see Severe Winter Weather	
Land Subsidence	Yes	No	Please see Geological Hazards	
Landslide	Yes	No	Please see Geological Hazards	
Nor'Easters	Yes	Yes	<ul style="list-style-type: none"> The NJ HMP identifies Nor'Easters as hazards of concern for New Jersey. According to FEMA, between 2009 and 2020, Cape May County was included in two declarations associated with Nor'Easters. 	<ul style="list-style-type: none"> NJ HMP NOAA – NCEI FEMA





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			<ul style="list-style-type: none"> ○ November 11-15, 2009 – FEMA-DR-1867 – Severe Storms and Flooding Associated with Tropical Storm Ida and a Nor'Easter ○ October 29, 2011 – FEMA-DR-4048 – Severe Weather (snowstorm/Nor'Easter) ○ March 12, 2016 – FEMA-DR-4264 – Severe Winter Storm and Snowstorm ● The Steering and Planning Committees identified Nor'Easter events as a hazard of concern for Cape May County. 	<ul style="list-style-type: none"> ● Steering and Planning Committee Input
Severe Weather (Windstorms, Thunderstorms, Hail, Lightning, Extreme Temperature, and Tornadoes)	Yes	Yes	<ul style="list-style-type: none"> ● The NJ HMP identifies thunderstorms, lightning, tornadoes, extreme winds and extreme temperature as hazards of concern for New Jersey. ● According to FEMA, between 2009 and 2020, Cape May County was included in three declarations associated with severe weather events. <ul style="list-style-type: none"> ○ November 11-15, 2009 – FEMA-DR-1867 – Severe Storms and Flooding Associated with Tropical Depression Ida and a Nor'Easter ○ March 12-April 15, 2010 – FEMA-DR-1897 - Severe Storms and Flooding ○ October 29, 2011 – FEMA-DR-4048 – Severe Weather ● Cape May has experienced nine tornadoes between 1950 and 2020. ● NOAA's NCDC storm events database indicates that Cape May County was impacted by approximately 151 severe weather events between 2009 and 2020 causing a total of over \$214 million in property damages. ● The Steering and Planning Committees identified severe weather (windstorms, thunderstorms, hail, lightning, extreme temperatures, and tornadoes) as a hazard of concern for Cape May County. 	<ul style="list-style-type: none"> ● NJ HMP ● NOAA – NCEI ● FEMA ● NJ OEM ● Steering and Planning Committee Input
Severe Winter Weather (Heavy Snow, Blizzards, Freezing Rain/Sleet, Ice Storms)	Yes	Yes	<ul style="list-style-type: none"> ● The NJ HMP identifies severe winter weather as a hazard of concern for New Jersey and includes snow, blizzards, and ice storms. For the purpose of this HMP update, Cape May County is including blizzards, heavy snow, and ice storms under the severe winter weather hazard. ● According to FEMA, between 2009 and 2020, Cape May County was included in three declarations associated with severe winter weather events. <ul style="list-style-type: none"> ○ February 5-6, 2010 – FEMA-DR-1889 – Severe Winter Storm and Snowstorm ○ December 26-27, 2010 – FEMA-DR-1954 – Severe Winter Storm and Snowstorm ○ March 12, 2016 – FEMA-DR-4264 – Severe Winter Storm and Snowstorm 	<ul style="list-style-type: none"> ● NJ HMP ● FEMA ● NOAA – NCEI Storm Database ● ONJSC ● Steering and Planning Committee Input



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Hazard	Is this a hazard that may occur in Cape May County?	If yes, does this hazard pose a significant threat to the County?	Why was this determination made?	Source(s)
			<ul style="list-style-type: none"> NOAA-NCDC has indicated that Cape May County has experienced the impacts of 25 winter storm events between 2009 and 2015 causing a total of over \$ 101 million in property damages. Based on the history of occurrences and losses, and based on input from the Planning and Steering Committees, Cape May County identified severe winter weather as a hazard of concern. 	
Tornado	Yes	Yes	Please see Severe Weather	
Tsunami	Yes	Yes	<ul style="list-style-type: none"> The NJ HMP does not identify tsunami as a hazard of concern for New Jersey. Cape May County exposure and vulnerability to coastal flooding is well recognized, as documented in the associated hazard profiles in this update to the HMP. The impact and rate of occurrence of meteotsunamis has recently become better understood in the region. Meteotsunamis have been identified as a threat to Cape May County. The Cape May County Steering Committee identified tsunami as a hazard of concern for the County in the 2010 HMP and recognizes it as an ongoing risk during this update process. As with earthquake risk in many parts of the state, while the probability of tsunami occurrence is believed to be very low, even a moderate tsunami would have vast impacts throughout the County. 	<ul style="list-style-type: none"> NJ HMP NOAA – NCEI Storm Database Steering and Planning Committee Input
Volcano	No	No	<ul style="list-style-type: none"> The NJ HMP does not identify volcano as a hazard of concern for New Jersey. 	<ul style="list-style-type: none"> NJ HMP
Wildfire	Yes	Yes	<ul style="list-style-type: none"> The NJ HMP identifies wildfire as a hazard of concern for New Jersey. In Cape May County, 61.8 square miles are located in the high to extreme wildfire fuel zones according to the New Jersey Forest Fires Service. According to the NJ Forest Fire Service, between 2010 and 2019, there have been 381 wildfire incidents in Cape May County. Based on input from the Planning Committee, wildfire is considered a hazard of concern for Cape May County due to the large areas of State forests and development proximate to these areas. 	<ul style="list-style-type: none"> NJ HMP NOAA – NCEI Storm Events Query USGS NJFFS Steering and Planning Committee Input
Windstorm	Yes	Yes	Please see Severe Weather	

DIR
DR

Drought Impact Reporter
Presidential Disaster Declaration Number

EM
FEMA

Presidential Disaster Emergency Number
Federal Emergency Management Agency





<i>HMP</i>	<i>Hazard Mitigation Plan</i>
<i>K</i>	<i>Thousands (\$)</i>
<i>M</i>	<i>Millions (\$)</i>
<i>NJ</i>	<i>New Jersey</i>
<i>NJDEP</i>	<i>New Jersey Department of Environmental Protection</i>
<i>NJDOH</i>	<i>New Jersey Department of Health</i>
<i>NJFFS</i>	<i>New Jersey Forest Fire Service</i>
<i>NJGS</i>	<i>New Jersey Geological Survey (as part of the NJDEP)</i>
<i>NOAA</i>	<i>National Oceanic and Atmospheric Administration</i>
<i>NRCC</i>	<i>Northeast Regional Climate Center</i>
<i>NWS</i>	<i>National Weather Service</i>
<i>OEM</i>	<i>Office of Emergency Management</i>
<i>ONJSC</i>	<i>Office of New Jersey State Climatologist</i>
<i>PHSMA</i>	<i>Pipeline and Hazardous Materials Safety Administration</i>
<i>SPC</i>	<i>Storm Prediction Center</i>
<i>USEPA</i>	<i>United States Environmental Protection Agency</i>
<i>USGS</i>	<i>U.S. Geologic Survey</i>



According to input from the County, and review of all available resources, a total of 11 hazards of concern were identified as significant hazards affecting the entire planning area, to be addressed at the county level in this plan:

Hazards of Concern

- Climate Change and Sea Level Rise
- Coastal Erosion
- Disease Outbreak
- Drought
- Flood (including riverine, flash, sea level rise, urban flooding)
- Hurricane and Tropical Storms
- Nor'Easter
- Severe Weather (High Winds, Tornadoes, Thunderstorms, Hail, Extreme Temperatures)
- Severe Winter Storm (Heavy Snow, Blizzards, Ice Storms)
- Tsunami
- Wildfire

Other natural and human-caused hazards of concern have occurred within Cape May County but have a low potential to occur and/or result in significant impacts within the County. Therefore, these hazards will not be further addressed within this version of the HMP. However, if deemed necessary by the County, these hazards may be considered in future HMP updates.