

APPENDIX H: SUPPLEMENTARY DATA



This appendix contains information and details to support information provided in Chapters 6 through 18 (Hazard Profiles).

HISTORY OF HAZARD EVENTS WITHIN THE COUNTY

To supplement the information provided in this plan, events prior to the update of this plan are included below by hazard of concern type. Many sources provided historical information regarding previous occurrences and losses associated with hazards throughout New Jersey and Sussex County. It is noted that, with a number of sources reviewed for the purpose of this HMP, loss and impact information for many events could vary depending on the sources.

For more information on past events and impacts, refer to the 2021 Sussex County Hazard Mitigation Plan.

DAM FAILURE

Known dam failure events that have impacted The State of New Jersey and Sussex County between 1996 and 2019 are identified in Table H-1. Many sources were researched for historical information regarding dam failure events in Sussex County; therefore, Table H-1 may not include all dam failure events that have impacted the County.

Table H-1. Dam Failure Events in Sussex County Between 1996 and 2019

| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|-----------------------------------|-------------------------|--------------------|---|---|
| December 2, 1996 | N/A | N/A | Township of Vernon | Failure, seepage incident occurred at the Upper East Highland Lake Dam in the Township of Vernon. |
| September 16, 1999 | EM-3148 | Yes | Township of Vernon | Hurricane Floyd struck New Jersey, causing widespread damage throughout the state. A peak flow of 628 cfs was recorded at USGS Gage No. 01445000 on the Pequest River at Huntsville, which corresponded to one of the largest peak flows on record. Damage occurred to the Mountain Creek Pond Dam in the Township of Vernon. A Federal Disaster was declared on September 17 for damages associated with Hurricane Floyd. |
| August 11, 2000 – August 14, 2000 | DR-1337 | Yes | Township of Sparta, Township of Stanhope, Borough of Ogdensburg | Heavy thunderstorms produced record amounts of rain, exceeding 14 inches in 4 days. Peak flows on Lake Musconetcong and Musconetcong River exceeded the 1-percent annual chance flows. A peak flow of 1,900 was recorded at USGS Gage No. 01455500 on the Musconetcong River at the outlet of Lake Hopatcong. The flood completely destroyed the dams on Seneca Lake, Tomahawk Lake, Furnace Pond and Edison Pond in Sussex County, and caused damage to numerous other dams. Several bridges in the Township of Sparta and Borough of Ogdensburg collapsed. A Federal Disaster was declared on August 16 for damages associated with the severe storm. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------|-------------------------|--------------------|---------------------|---|
| April 4, 2011 | N/A | N/A | Township of Andover | A non-failure event occurred on April 4, 2011 at the Lake Lenape Dam in Andover Township due to the cofferdam being undermined during construction. |

Sources: Stanford University 2018; FEMA 2024; USGS 2024; Association of State Dam Safety Officials 2021

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

USGS United States Geological Survey

N/A Not Applicable

FEMA Federal Emergency Management Administration

DISEASE OUTBREAK

Known disease outbreak events that have impacted The State of New Jersey and Sussex County between 2014 and 2019 are identified in Table H-2. Many sources were researched for historical information regarding disease outbreak events in Sussex County; therefore, Table H-2 may not include all disease outbreak events that have impacted the County.

Table H-2. Disease Outbreak Events in Sussex County Between 2014 and 2019

| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------|-------------------------|--------------------|-------------------|---|
| 2014 | N/A | N/A | Countywide | In 2014, 65 cases of influenzas were reported in Sussex County. |
| 2014 | N/A | N/A | Countywide | In 2014, 258 cases of Lyme disease were reported in Sussex County. |
| 2015 | N/A | N/A | Countywide | In 2015, 43 cases of influenza were reported in Sussex County. |
| 2015 | N/A | N/A | Countywide | In 2015, 309 cases of Lyme disease were reported in Sussex County. |
| 2016 | N/A | N/A | Countywide | In 2016, 54 cases of influenza were reported in Sussex County. |
| 2016 | N/A | N/A | Countywide | In 2016, 260 cases of Lyme disease were reported in Sussex County. |
| 2017 | N/A | N/A | Countywide | In 2017, 151 cases of influenza were reported in Sussex County. |
| 2017 | N/A | N/A | Countywide | In 2017, 331 cases of Lyme disease were reported in Sussex County. |
| 2017 | N/A | N/A | Countywide | In 2017, one case of West Nile Virus was reported in Sussex County. |
| 2017 | N/A | N/A | Countywide | In 2017, one case of Zika virus was reported in Sussex County. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------|-------------------------|--------------------|-------------------|--|
| 2018 | N/A | N/A | Countywide | In 2018, 306 cases of influenza were reported in Sussex County. |
| 2018 | N/A | N/A | Countywide | In 2018, 246 cases of Lyme disease were reported in Sussex County. |
| 2019 | N/A | N/A | Countywide | In 2019, 251 cases of influenza were reported in Sussex County. |
| 2019 | N/A | N/A | Countywide | In 2019, 246 cases of Lyme disease were reported in Sussex County. |

Sources: FEMA 2020; NJDOH 2021

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

N/A Not Applicable

FEMA Federal Emergency Management Administration

NJDOH New Jersey Department of Health

DROUGHT

Known drought events that have impacted The State of New Jersey and Sussex County between 2008 and 2019 are identified in Table H-3. Many sources were researched for historical information regarding drought events in Sussex County; therefore, Table H-3 may not include all drought events that have impacted the County.

Table H-3. Drought Events in Sussex County Between 2008 and 2019

| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------------------|-------------------------|--------------------|-------------------|---|
| February 2009 | N/A | N/A | Countywide | The NJ State Climatologist records indicate this year is one of the top 5 on record for lowest amounts of precipitation in the month of February since 1893. The recorded amount was 0.74 inches. |
| June 1 to September 30, 2010 | N/A | N/A | Countywide | The New Jersey Herald issued an article that aid was being made available to all farmers affected by the summer drought. In addition, Sussex County, along with 15 other counties in the state were listed as natural disaster areas. |
| July 7, 2010 | N/A | N/A | Countywide | The New Jersey Herald issued an article urging residents to conserve water. |
| September 8, 2010 | N/A | N/A | Countywide | The New Jersey Herald issued an article notifying residents of a drought watch in the State. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|----------------------|-------------------------|--------------------|-------------------|--|
| September 1-30, 2010 | N/A | N/A | Countywide | September was another unseasonably warm month in New Jersey. Statewide it was the 4th warmest September on record since 1895 with an average temperature of 69.2°F. Because of the heavy rain on the last day of the month, September averaged closer to normal rainfall. It was the 7th warmest (71.0°F) September on record at the Atlantic City International Airport and the warm season as a whole established a new record for the number of days that the maximum temperature reached or exceeded 90°F(46 days). The NJDEP issued a drought watch for the entire state on September 8th. The NJDEP asked all state residents to voluntarily conserve water. The hot and dry summer taxed reservoir stream and groundwater levels. Shallow groundwater (private) wells were also starting to show stress. |
| October 1-26, 2010 | N/A | N/A | Countywide | <p>The wet weather on September 30th and October 1st started to recharge water supplies in the state of New Jersey. On October 26th, the NJDEP cancelled the drought watch for most of the state, except for Monmouth and Ocean Counties. Despite improvements elsewhere, conditions in those counties showed that the combination of reservoir storage remained below the long-term average and severely dry and shallow ground water levels were still occurring.</p> <p>The summer drought took its toll on New Jersey farmers and the United States Secretary of Agriculture Thomas Vilsack declared all counties in southern, central and northwest New Jersey natural disaster areas in November. The declaration made farm operators eligible for assistance from the Farm Service Agency. The assistance included low interest loans which could cover up to 100 percent of the dollar value of the crop losses.</p> <p>The statewide October monthly precipitation average for New Jersey was 4.88 inches, about one hundred forty percent of normal and 1.37 inches wetter than average.</p> |
| February 2012 | N/A | N/A | Countywide | The NJ State Climatologist records indicate this year is one of the top 5 on record for lowest amounts of precipitation in the month of February since 1893. The recorded amount was 0.97 inches. |
| March 2012 | N/A | N/A | Countywide | The NJ State Climatologist records indicate this year is one of the top 5 on record for lowest amounts of precipitation in the month of March since 1893. The recorded amount was 1.37 inches. |
| April 4, 2012 | N/A | N/A | Countywide | The New Jersey Herald issued an article warning residents that dry conditions had heightened the wildfire alert level. |
| June 2, 2012 | N/A | N/A | Countywide | USDA 2012 Disaster Designation issued for Sussex County. No damages were listed. No end date to the event was listed. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|---------------------------------------|-------------------------|--------------------|-------------------|--|
| August 15, 2014 | N/A | N/A | Countywide | USDA 2012 Disaster Designation issued for Sussex County. No damages were listed. No end date to the event was listed. |
| May 2015 | N/A | N/A | Countywide | The NJ State Climatologist records indicate this year is one of the top 5 on record for lowest amounts of precipitation in the month of May since 1893. The recorded amount was 0.93 inches. |
| August 26, 2014 – June 29, 2015 | N/A | N/A | Countywide | <p>According to the U.S. Drought Monitor, conditions held at a D0 or “abnormally dry” status across Sussex County from August 26, 2014 – May 18, 2015; D1 or “moderate drought” status from May 19, 2015 – June 22, 2015; D0 or “abnormally dry” from June 23, 2015 – June 29, 2015.</p> <p>Residents around Lake Hopatcong, concerned about the lake level, sought a reduction in water release.</p> |
| August 11, 2015 – January 11, 2016 | N/A | N/A | Countywide | <p>According to the U.S. Drought Monitor, conditions held at a D0 or “abnormally dry” status across Sussex County from August 11, 2015 – January 11, 2016.</p> <p>Boats were pulled early from Lake Hopatcong. Water restrictions were placed in Newton.</p> |
| February 2-28, 2016 | N/A | N/A | Countywide | According to the U.S. Drought Monitor, conditions held at a D0 or “abnormally dry” status across Sussex County from February 2-28, 2016. |
| March 29, 2016 – April 10, 2017 | N/A | N/A | Countywide | <p>According to the U.S. Drought Monitor, conditions held at a D0 or “abnormally dry” status across Sussex County from March 29, 2016 – June 13, 2016; D1 or “moderate drought” status from June 14, 2016 – August 15, 2016; D0 or “abnormally dry” status from August 16, 2016 – September 12, 2016; D1 or “moderate drought” status from September 13, 2016 – October 17, 2016; D2 or “severe drought” from October 18, 2016 – March 20, 2017; D1 or “moderate drought” from– March 20, 2017 – April 10.</p> <p>Warm, low waters negatively impacted New Jersey trout. A drought watch was issued in July 2016. A drought warning was issued in October 2016. Water conservation was urged in northern New Jersey. The warning was lifted in April 2017.</p> |
| October 3-30, 2017 | N/A | N/A | Countywide | According to the U.S. Drought Monitor, conditions held at a D0 or “abnormally dry” status across Sussex County from October 3-30, 2017. |
| November 28, 2017 – February 12, 2018 | N/A | N/A | Countywide | According to the U.S. Drought Monitor, conditions held at a D0 or “abnormally dry” status across Sussex County from November 28, 2017 – February 12, 2018. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|--|-------------------------|--------------------|-------------------|--|
| September 24, 2019 – November 11, 2019 | N/A | N/A | Countywide | According to the U.S. Drought Monitor, conditions held at a D0 or “abnormally dry” status across Sussex County from September 24, 2019 – November 11, 2019. A fire restriction was issued in northern New Jersey. |

Sources: NOAA-NCDC 2015; FEMA 2015; Drought Reporter – University of Nebraska-Lincoln 2015; USDA 2020, NDMC 2020, FEMA 2020, US Drought Monitor 2020

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

N/A Not Applicable

NOAA-NCDC National Oceanic Atmospheric Administration – National Climatic Data Center

FEMA Federal Emergency Management Administration

USDA United States Department of Agriculture

NDMC National Drought Mitigation Center

EARTHQUAKE

Known earthquake events that have impacted The State of New Jersey and Sussex County between 2008 and 2019 are identified in Table H-4. Many sources were researched for historical information regarding earthquake events in Sussex County; therefore, Table H-4 may not include all earthquake events that have impacted the County.

Table H-4. Earthquake Events in Sussex County Between 2008 and 2019

| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------|-------------------------|--------------------|---------------------|---|
| February 2, 2009 | N/A | N/A | Victory Gardens, NJ | The earthquake occurred at 10:34:19 p.m. at the epicenter, at a depth of 5 km (3.1 miles). There is a horizontal location uncertainty of +/- 0.4 km (0.2 miles). The earthquake was reported by the Lamont-Doherty Cooperative Seismographic Network. It was also reported by 1,126 people in 153 ZIP codes. The earthquake was a magnitude 3.0. There was no documentation of impacts or damages to the County from this event. |
| February 3, 2009 | N/A | N/A | Rockaway, NJ | This earthquake occurred at 3:34:19, with a depth of 5 km. Its epicenter was 3.5 km SSW of Rockaway, NJ (Morris County). The earthquake was a magnitude 3.0. There was no documentation of impacts or damages to the County from this event. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|-------------------|-------------------------|--------------------|--|---|
| February 14, 2009 | N/A | N/A | Near Rockaway Valley and Montville, NJ | <p>This earthquake had a depth of 2 km, and it occurred at 17:22:22. It was reported by 97 people in 26 ZIP codes, with a maximum intensity of light. The earthquake was a magnitude 2.4.</p> <p>There was no documentation of impacts or damages to the County from this event.</p> |
| February 16, 2009 | N/A | N/A | Dover, NJ | <p>This earthquake occurred at 6:42:35, with a depth of 4 km. Its epicenter was 2 km SSE of Dover, NJ (Morris County). The earthquake was a magnitude 2.3.</p> <p>There was no documentation of impacts or damages to the County from this event.</p> |
| February 18, 2009 | N/A | N/A | Kinnelon, NJ | <p>This earthquake occurred at 18:17:55, with a depth of 2 km. Its epicenter was 3 km SSW of Kinnelon, NJ (Morris County). The earthquake was a magnitude 1.1.</p> <p>There was no documentation of impacts or damages to the County from this event.</p> |
| February 18, 2009 | N/A | N/A | Victory Gardens, NJ | <p>This earthquake had a depth of 4 km, and it occurred at 01:42:35. It was reported by 63 people in 23 ZIP codes, and it had a maximum intensity of weak. The earthquake was a magnitude 2.3.</p> <p>There was no documentation of impacts or damages to the County from this event.</p> |
| December 26, 2009 | N/A | N/A | Morris Plains, NJ | <p>This earthquake had a depth of 6 km, and it occurred at 23:53:14. Its epicenter was 8 km NW of Morris Plains, NJ (Morris County). It was reported by 31 people in 14 ZIP codes, and it had a maximum intensity of weak. The earthquake was a magnitude 2.0.</p> <p>There was no documentation of impacts or damages to the County from this event.</p> |
| February 9, 2010 | N/A | N/A | Wanaque, NJ | <p>This earthquake occurred at 20:17:31, with a depth of 7km. The earthquake was a magnitude 2.2.</p> <p>There was no documentation of impacts or damages to the County from this event.</p> |
| February 10, 2010 | N/A | N/A | Wanaque, NJ | <p>This earthquake had a depth of 4 km, and it occurred at 01:17:30. Its epicenter was 1 km W of Wanaque, NJ (Passaic County). The earthquake was a magnitude 2.2.</p> <p>There was no documentation of impacts or damages to the County from this event.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|-------------------|-------------------------|--------------------|-----------------------|--|
| February 21, 2010 | N/A | N/A | Peapack Gladstone, NJ | <p>This earthquake had a depth of 5 km, and it occurred at 08:59:25. It was reported by 870 people in 83 ZIP codes, and it had a maximum intensity of light. The earthquake was a magnitude 2.6.</p> <p>There was no documentation of impacts or damages to the County from this event.</p> |
| February 21, 2010 | N/A | N/A | Bedminster, NJ | <p>This earthquake occurred at 12:31:57, with a depth of 5 km. It was reported by 150 people in 40 ZIP codes, with a maximum intensity of light. The earthquake was a magnitude 2.3.</p> <p>There was no documentation of impacts or damages to the County from this event.</p> |
| December 25, 2010 | N/A | N/A | Clifton, NJ | <p>This earthquake had a depth of 2 km, and it occurred at 18:32:31. Its epicenter was 1 km W of Clifton, NJ (Passaic County). The earthquake was a magnitude 2.1.</p> <p>There was no documentation of impacts or damages to the County from this event.</p> |
| May 5, 2011 | N/A | N/A | Clifton, NJ | <p>This earthquake had a depth of 5.6 km, and it occurred at 12:32:00. Its epicenter was 1.2 km W of Clifton, NJ (Passaic County). The earthquake was a magnitude 1.2.</p> <p>There was no documentation of impacts or damages to the County from this event.</p> |
| August 23, 2011 | N/A | N/A | State of Virginia | <p>A moderate earthquake occurred in central Virginia and was felt throughout most of the east, from Georgia to southern Canada and from Indiana to coastal Maine. It was followed by four aftershocks. The earthquake was a magnitude 5.9.</p> <p>In New Jersey, the intensity ranged from 1 to 4 (weak to light). Areas underlain by thick silt and clay felt a stronger ground motion than did those where rock was very close to the surface. There was minor scattered power outages reported throughout the State. There was no documentation of impacts or damages to the County from this event.</p> |
| July 17, 2012 | N/A | N/A | Morristown, NJ | <p>This earthquake's epicenter is 16 km NW of Morristown, NJ (Morris County), and it had a depth of 2 km. It occurred at 2:25:45. The earthquake was a magnitude 1.1.</p> <p>There was no documentation of impacts or damages to the County from this event.</p> |
| July 18, 2012 | N/A | N/A | Morristown, NJ | <p>This earthquake's epicenter was 18 km NW of Morristown, NJ (Morris County), and it had a depth of 2 km. It occurred at 8:94:10. The earthquake was a magnitude 1.1.</p> <p>There was no documentation of impacts or damages to the County from this event.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------|-------------------------|--------------------|-------------------|--|
| August 23, 2012 | N/A | N/A | Ringwood, NJ | <p>This earthquake had a depth of 5.2 km, and it occurred at 15:57:36. Its epicenter was 1.4 km E of Ringwood, NJ (Passaic County). The earthquake was a magnitude 1.2.</p> <p>There was no documentation of impacts or damages to the County from this event.</p> |
| November 5, 2012 | N/A | N/A | Mahwah, NJ | <p>This earthquake had a depth of 5 km, and it occurred at 01:19:11. It was reported by 54 people in 32 ZIP codes, with a maximum intensity of light. The earthquake was a magnitude 2.0.</p> <p>There was no documentation of impacts or damages to the County from this event.</p> |
| April 18, 2013 | N/A | N/A | Kinnelon, NJ | <p>This earthquake had a depth of 3 km, and it occurred at 1-:15:20. It was reported by 6 people in 6 ZIP codes, with a maximum intensity of weak. The earthquake was a magnitude 2.1.</p> <p>There was no documentation of impacts or damages to the County from this event.</p> |
| June 23, 2013 | N/A | N/A | Rockaway, NJ | <p>This earthquake occurred at 15:54:40, with a depth of 2 km. Its epicenter was 1 km E of Rockaway, NJ (Morris County). The earthquake was a magnitude 2.1.</p> <p>There was no documentation of impacts or damages to the County from this event.</p> |
| May 31, 2014 | N/A | N/A | Boonton, NJ | <p>This earthquake occurred at 9:28:36, with a depth of 8 km. Its epicenter is 6 km N of Boonton, NJ (Morris County). The earthquake was a magnitude 1.0.</p> <p>There was no documentation of impacts or damages to the County from this event.</p> |
| July 18, 2015 | N/A | N/A | Ringwood, NJ | <p>This earthquake had a depth of 5 km, and it occurred at 15:43:50. Its epicenter was 4 km SW of Ringwood, NJ (Passaic County). The earthquake was a magnitude 1.2.</p> <p>There was no documentation of impacts or damages to the County from this event.</p> |
| July 12, 2015 | N/A | N/A | Wanaque, NJ | <p>This earthquake occurred at 4:05:55, with a depth of 2 km. Its epicenter was 2 km N of Wanaque, NJ (Passaic County). The earthquake was a magnitude 1.2.</p> <p>There was no documentation of impacts or damages to the County from this event.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|-------------------|-------------------------|--------------------|--|---|
| August 14, 2015 | N/A | N/A | Between Bernardsville and Morristown, NJ | This earthquake had a depth of 3 km, and it occurred at 3:41:24 a.m. with its epicenter in Somerset County, New Jersey. Approximately 276 people reported having felt this event. The earthquake was a magnitude 2.7. Sparta Township in Sussex County had reports of nearly 1,246 residents being without power as a result of the earthquake. Power was restored to all residents by 9:10 a.m. |
| January 2, 2016 | N/A | N/A | Ringwood, NJ | A magnitude 2.1 earthquake in Ringwood, NJ was faintly felt in eastern areas of Sussex County. |
| November 30, 2017 | N/A | N/A | Dover, DE | A magnitude 4.1 earthquake in Dover, DE was felt throughout the mid-Atlantic region. The quake was felt from central Virginia to Massachusetts. |

Sources: NJGWS 2015; USGS 2015; New Jersey State HMP 2014; Miller 2015; FEMA 2020; NOAA-NCEI 2020; NWS 2020; SPC 2020; NJOEM 2019

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

N/A Not Applicable

NJ The State of New Jersey

KM Kilometers

SSW South-Southwest

SSE South-Southeast

NW Northwest

W West

E East

N North

DE The State of Delaware

NJGWS New Jersey Geological and Water Survey

USGS United States Geological Survey

HMP Hazard Mitigation Plan

FEMA Federal Emergency Management Administration

NOAA-NCDC National Oceanic Atmospheric Administration – National Climatic Data Center

NWS National Weather Service

SPC Storm Prediction Center

NJOEM New Jersey Office of Emergency Management

FLOOD

Known flood events that have impacted The State of New Jersey and Sussex County between 2008 and 2019 are identified in Table H-5. Many sources were researched for historical information regarding flood events in Sussex County; therefore, Table H-5 may not include all flood events that have impacted the County.



Table H-5. Flood Events in Sussex County Between 2008 and 2019

| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|----------------------|-------------------------|--------------------|--|---|
| February 12-13, 2008 | N/A | N/A | Lafayette Township, Andover Borough, Walpack Township, Hopatcong, Township | <p>A protracted precipitation event that started as a wintry mix and then changed to rain caused flooding across the Passaic and Raritan Basins in northern New Jersey. The heaviest rain fell during the first half of the day and into the early afternoon on the 13th. The combination of the heavy rain and snow and ice melt caused flooding of many creeks and rivers as well as poor drainage flooding in urban areas. Clogged catch basins exacerbated the problems. Storm totals averaged between two and three and a half inches.</p> <p>Runoff from the heavy rain and ice melt caused flooding across Sussex County. Twenty-one county roads were blocked either by downed trees and wires or flooding. Much of the flooding resulted from blocked storm drains. U.S. Route 206 was flooded in several portions, and New Jersey State Route 15 was shut down in Lafayette Township due to an overflowing river. Precipitation totals included 2.91 inches in Andover Borough, 2.41 inches in Flatbrookville (Walpack Township) and 2.06 inches in Hopatcong Borough. No property damages were reported.</p> |
| March 4-5, 2008 | N/A | N/A | Walpack Township, Andover Borough, Hamburg Borough | <p>The combination of a prolonged period of rain and melting snow caused poor drainage flooding throughout northwestern New Jersey as well as flooding of some of the rivers and streams. Rain began during the morning of the 4th and ended on the morning of the 5th.</p> <p>In Sussex County, the runoff from the heavy rain and snow melt caused flooding along the Flat Brook. The Flat Brook at Flatbrookville (Walpack Township) was above its estimated 6 foot flood stage from the 5th through the 6th. It crested at 6.75 feet at 5:15pm on the 5th. Storm total precipitation included 2.31 inches in Andover Borough, 2.14 inches in Walkill (Hamburg Borough) and 1.85 inches in Sussex Borough. No property damages were reported.</p> |
| July 8, 2008 | N/A | N/A | Montague Township, Sandyston Township | <p>A pair of thunderstorms with heavy rain caused flooding of smaller streams and poor drainage areas in and around Hainesville in Montague and Sandyston Townships. No property damages were reported.</p> |
| January 27, 2009 | N/A | N/A | Montague Township | <p>An ice jam on the Delaware River at Minisink Island was reported to be creating several feet of backwater in the vicinity of Old Mine Road in Montague Township. No property damages were reported.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|-------------------|-------------------------|--------------------|---|--|
| March 12-15, 2010 | N/A | N/A | Sparta Township, Ogdensburg Borough, Walpack Township, Sussex Borough, Wantage Township | <p>Four days of rain, heaviest on the 13th, combined with snowmelt culminated in major flooding in the Passaic and Raritan Basins and flooding throughout New Jersey. It was the worst flooding in the Raritan Basin since April 2007 and the worst flooding in the Passaic Basin since April 1984. New Jersey Governor Chris Christie declared a state of emergency on March 14th. Periods of rain started during the morning of the 12th and fell at its heaviest on the 13th. The heaviest rain fell during the morning in the southern third of the state, afternoon in the central part of the state and in the afternoon into the evening in the northern third of the state. Periods of lighter rain persisted into the 14th and 15th which slowed the recession of streams and rivers in the area.</p> <p>In Sussex County, the worst reported flooding was along its eastern border. In Sparta Township, Lower Main Street was closed due to its undermining by flood waters. Edison Road in Ogdensburg Borough was closed because of washouts. New York Susquehanna and Western Railroad suspended service because of the flooding. The Flat Brook at Flatbrookville (Walpack Township) was above its 6-foot flood stage on the 14th. It crested at 6.81 feet at 1230 p.m. Event precipitation totals were 3.89 inches in Andover Borough, 2.94 inches in Sussex Borough and 2.75 inches in Wantage Township. No property damages were reported.</p> |
| October 1, 2010 | N/A | N/A | Walpack Township, Andover Borough, Hardyston Township, Sparta Township | <p>A series of low-pressure systems that moved north along a slowly moving cold front brought heavy rain into the western half of New Jersey on September 30th and October 1st. Event precipitation totals average three to seven inches. Several streams and rivers flooded across the area and there was also poor drainage flooding. The first round of heavy rain occurred mainly west of New Jersey during the early morning of September 30th. The second and heavier round of precipitation moved in during the evening of September 30th and continued into the morning of October 1st. The rain ended by the early afternoon of October 1st.</p> <p>In Sussex County, the Flat Brook at Flatbrookville (Walpack Township) was above its 6-foot flood stage on the 1st. It crested at 6.27 feet at 530 p.m. Event precipitation totals included 5.50 inches in Andover Borough and Hardyston Township, 5.20 inches in Sparta Township and 5.01 inches in Stockholm (Hardyston Township). No property damages were reported.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------|-------------------------|--------------------|---|---|
| January 31, 2011 | N/A | N/A | Montague Township | Solid ice cover was observed on the Delaware River upstream from the Milford-Montague toll bridge. There was significant backwater from ice at the Montague Township gaging station. There was an ice jam upstream in the area of Mashipacong Island. No property damages were reported. |
| March 6-7, 2011 | N/A | N/A | Franklin Borough, Hampton Township, Stillwater Township, Walpack Township, Hardyston Township, Sussex Borough, Andover Borough, Wantage Township, Vernon Township | <p>A slow-moving cold front with waves of low pressure that developed along it brought a precipitation event that dropped between 1.5 and four inches of water equivalent across Northern New Jersey from the early morning of the 6th into the early morning of the 7th. Melting snow contributed to the runoff. The heaviest rain fell during the late afternoon and evening of the 6th. Precipitation ended briefly as snow over the higher terrain of northwest New Jersey during the early morning on the 7th.</p> <p>Governor Christie declared a state of emergency before the start of the second round of heavy rain on March 9th. Some rivers did not fall below flood stage until after Eastern Daylight Time began (on March 13th). Throughout the state, 683 dwellings were affected by both flooding events and 207 suffered at least major damage.</p> <p>A few streams and rivers flooded in Sussex County from the combination of heavy rain and melting snow. In Franklin Borough, Newton Road was flooded by the Walkill River. In Hampton Township, Parson Road was flooded by the Paulinskill River. Vernon Crossing was overrun by the Black Creek. In Stillwater Township, on Swartswood Road some basement homes were flooded by a brook. The Flat Brook at Flatbrookville (Walpack Township) was above its 6-foot flood stage on the 7th. It crested at the moderate flooding level threshold of 8.00 feet at 1030 a.m. Event precipitation totals are 2.95 inches in Hardyston Township, 2.57 inches in Sussex Borough, 2.25 inches in Andover Borough, Wantage Township and Sussex Borough and 2.02 inches in Vernon Township. The County had approximately \$10,000 in property damage.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|-------------------|-------------------------|--------------------|--|---|
| March 11-12, 2011 | N/A | N/A | Walpack Township, Sparta Township, Wantage Township, Vernon Township, Andover Township | <p>For the second time within a week, heavy rain fell across New Jersey, especially the northern half of the state. An additional two to five inches of precipitation fell and caused continued flooding in the Passaic Basin and renewed flooding on the Delaware and Raritan Rivers. Snowmelt in the upper reaches of the Delaware Basin contributed to the flooding. Governor Christie declared a state of emergency before the start of the second round of heavy rain on March 9th. Throughout the state, 683 dwellings were affected by both flooding events and 207 suffered at least major damage. The second round of rain started during the early morning of the 10th, fell heavy at times during the daylight hours and evening on the 10th and ended between four a.m. and eight a.m. on the morning on the 11th.</p> <p>In Sussex County, the Flat Brook at Flatbrookville (Walpack Township) was above its six-foot flood stage from 956 a.m. through 837 p.m. EST on the 11th. It crested at 6.46 feet at 215 p.m. Event precipitation totals included 3.18 inches in Sparta Township, 2.61 inches in Walpack Township, 2.54 inches in Wantage Township, 2.42 inches in Flatbrookville (Walpack Township), 2.29 inches in Vernon Township and 2.23 inches in Andover Township. No property damages were reported.</p> |
| June 23, 2011 | N/A | N/A | Andover Borough, Hampton Township, Sparta Township, Andover Township | <p>Thunderstorms moved over Sussex and northwestern Morris Counties and caused flash flooding of smaller streams across southeastern sections of Sussex County. Event precipitation totals averaged two to 4.5 inches. In Andover Borough, U.S. Route 206 was closed near Stickle Pond Road. High Street was closed in the Town of Newton and parking lots off U.S. Route 206 were flooded in Hampton Township. Precipitation totals included 4.47 inches in Sparta and 2.93 inches in Andover Township. No property damages were reported.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|--------------------|-------------------------|--------------------|---|--|
| August 26-30, 2011 | DR-4021 | Yes | Branchville Borough, Ogdensburg Borough, Frankford Township, Hampton Township, Hardyston Township, Vernon Township, Town of Newton, Walpack Township, Wantage Township, Sandyston Township, Stillwater Township | <p>Hurricane Irene moved north along the Atlantic Coast, making landfall near Cape Lookout, North Carolina, on August 27th. The hurricane moved back over open water before making landfall for a second time at Little Egg Inlet in New Jersey on August 28th. This was the first time since 1903 that a hurricane made landfall in New Jersey. Rain fell for an 18-hour period, with totals ranging from six to eight inches across New Jersey. Higher amounts were observed in southwestern, central, and northeastern New Jersey. Irene brought tropical storm force winds, destructive storm surge, and record-breaking freshwater inland flooding across northeast New Jersey. There were thousands of mandatory and voluntary evacuations along the coast and rivers from surge and freshwater flooding, and widespread power outages that lasted for up to two weeks. The Governor of New Jersey declared a state of emergency on August 25th.</p> <p>In Sussex County, flooding impacted Branchville and Ogdensburg boroughs, Frankford, Hampton, Hardyston, and Vernon townships, and the Town of Newton. These municipalities were the hardest hit in the County. Flooding forced the closure of over 100 roadways in the county including U.S. Route 206 as well as state and County Routes 94, 15, 23, 517 and 628. The Borough of Branchville was literally cut off after flooding occurred along the Dry Brook. About 100 people were evacuated within the Borough. The Flat Brook at Flatbrookville (Walpack Township) had major flooding and its second highest crest since Hurricane Diane in 1955. The brook was above its six-foot flood stage from 810 a.m. on the 28th through 404 p.m. EDT on the 29th. It crested at 10.59 feet at 1215 a.m. on the 29th.</p> <p>Over 100 bridges in the County were damaged and nine bridges were lost (two in Vernon, one in Wantage, three in Frankford, two in Sandyston, and in Stillwater there were bridges down to one lane due to lost stream banks). In Vernon Township, eight families were cut off after another bridge washed out. In Montague, two culverts were lost.</p> <p>A few county facilities were damaged as a result of Hurricane Irene as well. The County record retention center flooded, the County-owned DPW garage in Vernon Township flooded and a tree fell on the County jail. Two regional shelters were open for residents – Sussex County VoTech High School and Hopatcong High School. There were utility outages across the County. Costs to the County included overtime for OEM, DPW, Engineering, Sheriff's Office, Prosecutors Office, and the Health Department. The County had \$12.5 million in damages from Hurricane Irene.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|----------------------|-------------------------|--------------------|---|---|
| September 5-14, 2011 | DR-4039 | Yes | Green Township, Andover Township, Sparta Township, Hardyston Township, Vernon Township, Franklin Township, Hopatcong Township, Stillwater Township, Branchville Borough, Walpack Township | <p>The remnants of Tropical Storm Lee arrived in New Jersey on September 5, 2011, bringing heavy rains throughout the State. Parts of Trenton and other municipalities along the Delaware River were inundated. Hundreds of residents along the Passaic River and its tributaries had to evacuate. There were a total of 162 roads closed due to flooding throughout the State of New Jersey. Storm totals ranged from three to eight inches of rain. The heavy rain and flooding impacted crops, with farmers reporting up to 75% losses of pumpkin and tomato crops. The State had an estimated \$11.5 million in damages.</p> <p>The heavy rain caused widespread flooding and flash flooding of smaller streams in Sussex County as well as poor drainage flooding across eastern Sussex County from Green Township northeast through parts of Andover, Sparta, Hardyston, and Vernon Townships. Many roadways were closed. Schools were closed on the 8th in Vernon and Sparta Townships. A few homes were flooded in Andover Township. Sections of New Jersey State Route 23 and 94 were closed in Franklin Township and Stockholm (Hardyston Township). There were road and culvert washouts in Hopatcong, Stillwater, and Sparta. Areas that were impacted during Irene were also affected again from Lee.</p> <p>The Flat Brook flooded a few homes in southwest Sussex County. A flash flood along the Culver Creek in Branchville Borough led to a State of Emergency declaration after the creek tore away the Mill Street Bridge in the borough. Ten homes had over eight feet of water in them, the most severely damaged were at the end of Mill Street. Residents from about 50 homes evacuated, with residents from all but one home being able to return at Noon that day. The Flat Brook at Flatbrookville (Walpack Township) had moderate flooding and was above its 6-foot flood stage from 903 a.m. EDT on the 7th through 905 a.m. EDT on the 9th. It crested at 8.90 feet at 600 p.m. EDT on the 8th.</p> <p>The County opened two regional shelters – Sussex County VoTech and Hopatcong High School – both of which were still opened from Hurricane Irene. County-owned facilities experienced damage from wind; windows were damaged, and shingles were blow-off the buildings. Costs to the County included overtime for OEM, DPW, Engineering, Sheriff's Office, Prosecutors Office, and the Health Department. Overall, the County approximately \$1 million in damages from this event.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|--------------------|-------------------------|--------------------|---|---|
| September 28, 2011 | N/A | N/A | Andover Township, Byram Township, Green Township, Sparta Township, Stanhope Borough, Town of Newton, Walpack Township | <p>In eastern Sussex County, thunderstorms with heavy downpours caused flash flooding along smaller streams and roadways mainly in the County. The heavy rain primarily affected Andover, Byram, Green, and Sparta Townships and Stanhope Borough. Several roads were also closed in Sparta Township and one school was evacuated because a nearby creek flooded. Ponds also overflowed in the township along Stanhope Road. In Andover Township, one home was evacuated along Limecrest Road. Road closures were also reported in and around the Town of Newton because of the flooding. The runoff from the heavy rain that fell earlier in the day on the 28th also led to flooding along the Flat Brook that lasted into the 30th.</p> <p>The Flat Brook at Flatbrookville (Walpack Township) was above its six-foot flood stage from 640 p.m. on the 28th through 1204 p.m. on the 30th. It crested at 6.54 feet at 1115 p.m. on the 28th. Event precipitation totals included 4.16 inches in Andover Township and 3.83 inches in the Town of Newton. No property damages were reported.</p> |
| July 23, 2012 | N/A | N/A | Sandyston Township, Walpack Township | <p>A warm front that was moving through the state into New England helped trigger strong to locally severe thunderstorms in the northern half of New Jersey during the afternoon of the 23rd. Besides pockets of damaging winds, the severe thunderstorms were prolific hail producers.</p> <p>In Sussex County, the storms knocked down several trees in Sandyston Township and caused flash flooding of streams and poor drainage flooding on roadways. A lightning strike injured a 12-year-old camper and an 18-year-old counselor at Kittatinny Lake in Sandyston Township, when the bolt struck a tree and traveled into the foundation of their cabin in Stokes State Forest. Rainfall totals ranged from 2.5 inches in Sandyston Township to 3.54 inches in Walpack Township. No property damages were reported.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------------|-------------------------|--------------------|---|---|
| September 4, 2012 | N/A | N/A | Montague Township, Sandyston Township, Walpack Township, Wantage Township | Thunderstorms with torrential downpours associated with the remnants of Hurricane Isaac overnight on the 4th caused flash flooding of streams and poor drainage flooding in Montague, Sandyston, Walpack and Wantage Townships in western Sussex County. In Sandyston Township, several driveways were washed away. County Route 560 was closed for debris clean-up. Firefighters pumped water from basements on Bevans Road and County Route 560. Flooded roadways were reported in Montague Township. New Jersey State Route 23 was flooded and closed in Wantage Township. Event precipitation totals included 3.47 inches in Montague Township and 3.44 inches in Wantage Township. Doppler Radar storm total estimates reached 6 inches in parts of Sandyston and Walpack Townships. The County had approximately \$10,000 in property damage from this event. |
| August 9, 2013 | N/A | N/A | Walpack Township, Stillwater Township, Frankford Township | Showers and thunderstorms with torrential downpours brought two to six inches of rain to northwestern New Jersey. The heavy rains resulted in flash flooding of smaller streams and poor drainage flooding. In Sussex County, rainfall totals ranged from 2.5 inches in Walpack and Stillwater Townships to over five inches in Sandyston Township. The Papakating Creek at Pelletstown (Frankford Township) was above its four-foot flood stage from 737 a.m. on the 9th through 700 a.m. on the 10th. It crested at 5.10 feet at 1015 p.m. on the 9th. |
| April 30 – May 1, 2014 | N/A | N/A | Montague Township, Sandyston Township | A pair of thunderstorms with heavy rain caused flooding of smaller streams and poor drainage areas in and around Hainesville in Montague and Sandyston Townships. No property damages were reported. |
| July 3, 2014 | N/A | N/A | Montague Township | An ice jam on the Delaware River at Minisink Island was reported to be creating several feet of backwater in the vicinity of Old Mine Road in Montague Township. No property damages were reported. |
| July 26, 2015 | N/A | N/A | Montague | <p>A cold front over the Finger Lakes region of New York State helped trigger a cluster of showers and thunderstorms with very heavy rain that moved over northwest New Jersey mainly during the evening of the 26th. The heaviest rain fell over western parts of Warren County and especially in far northwest Sussex County. Doppler Radar storm total estimates exceeded 4 inches in the latter.</p> <p>A cluster of thunderstorms with torrential rain caused poor drainage and small creek flash flooding in the Shimers Brook Basin in Montague Township. Event precipitation totals included 4.74 inches in Montague. A mesonet site within Montague measured 2.57 inches of rain in 70 minutes.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|-------------------|-------------------------|--------------------|--------------------------------------|---|
| February 24, 2016 | N/A | N/A | Frankford Township, Walpack Township | A strong low-pressure system moving north through the Great Lakes region, combined with its associated warm front and cold front, copious amounts of moisture, and low level jet, produced strong to severe thunderstorms, heavy rain, flash flooding, and stream flooding in New Jersey late Wednesday afternoon and evening, February 24th, with stream flooding continuing into Thursday, February 25th. Thousands were without power for a period across the state, focused in South Jersey. Route 615 was closed due to flooding between Pompey Ridge Road and Flatbrook Bridge on the morning of 2/25. |
| October 2, 2018 | N/A | N/A | Town of Newton, Hampton Township | Thunderstorms brought locally heavy rain to northern New Jersey on the evening of October 2. Sections of US Route 206 and NJ Route 94 were closed in Newton and in Hampton Township due to flooding. |

Sources: FEMA 2015; NOAA-NCDC 2015; FEMA 2020; NOAA-NCDC 2020; NWS 2020; SPC 2020; NJOEM 2019

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

NOAA-NCDC National Oceanic Atmospheric Administration – National Climatic Data Center

FEMA Federal Emergency Management Administration

NWS National Weather Service

SPC Storm Prediction Center

NJ The State of New Jersey

N/A Not Applicable

GEOLOGICAL HAZARDS

Known geological hazard events that have impacted The State of New Jersey and Sussex County between 2008 and 2019 are identified in Table H-6. Many sources were researched for historical information regarding geological hazard events in Sussex County; therefore, Table H-6 may not include all geological hazard events that have impacted the County.

Table H-6. Geological Hazard Events in Sussex County Between 2008 and 2019

| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------|-------------------------|--------------------|--------------------|---|
| December 2010 | N/A | N/A | Sparta Township | A small landslide in development lot of new housing development is approximately 40 feet long by 20 feet deep. |
| March 13, 2010 | N/A | N/A | Ogdensburg Borough | A mudslide about 70 feet long and 40 feet wide forced a three-quarter mile section of Edison Avenue to be closed. The debris flow damaged the road and the guardrail on the side of the tracks and covered the railroad tracks. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|-------------------|-------------------------|--------------------|--|---|
| March 13, 2010 | N/A | N/A | Sparta Township | A mudslide about 40 feet deep and 40 feet wide occurred near the intersection of Route 517 and Station Road. A quarter mile section of Rt. 517 was closed for three days for cleanup and repairs. |
| August 2011 | N/A | N/A | Sandyston Township | Debris flow occurred along the Flat Brook probably during Tropical Storm Irene. |
| August 15, 2011 | N/A | N/A | Vernon Township | A massive landslide in Great Gorge Village occurred along Steamboat Drive near the Minerals resort and at ski slope due to the heavy rain in an area of underground pipeline work. |
| August 28, 2011 | N/A | N/A | Sparta Township, Frankford Township, Ogdensburg Township, Branchville Borough, Vernon Township | <p>The following debris flows occurred as a result of the heavy rain from Hurricane Irene. While the majority of these events caused localized damages, a few did not. Events are summarized by jurisdiction:</p> <ul style="list-style-type: none">• Sparta Township: Two debris flows (one large and one small mudslide) occurred on Holland Circle. Both led to damages, temporary road closures, and evacuations.• Frankford Township: One debris flow occurred along Owassa Road. This event did not lead to damages.• Ogdensburg Borough: A moderate sized debris flow occurred on a steep slope along Rt. 517, resulting in damages.• Branchville Borough: A large slump on a steep hill occurred above Culvers Creek.• Vernon Township: Multiple debris flows occurred in the Township, including:<ul style="list-style-type: none">• One on Lake Walkill Road near Owens Station Road, leading to temporary road closure.• One along Macpeek Road, leading to temporary road closure.• One small debris flow, no specific location noted.• A massive landslide in Great Gorge Village in an area of underground pipeline work.• One along Drew Mt. Road on a steep slope. No damages were recorded.• Two debris flows along Lake Walkill Rd., one of which occurred near the state line and led to a temporary road closure.• Five small debris flows along County Rt. 565 (Glenwood Rd.) between Babbtown Rd and Lake Pochung Rd.• One small debris flow along County Rt. 565 (Glenwood Rd.) near Lake Pochung Rd. |
| September 9, 2011 | N/A | N/A | Sparta Township | Debris flow along lower end of Holland Circle was triggered by heavy rain from Tropical Storm Lee. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------|-------------------------|--------------------|---------------------|---|
| 2014 | N/A | N/A | Stillwater Township | A small rockfall occurred along old Susquehanna and Western railway bed which is now a hiking trail. While discovered in 2014, it could have happened earlier. |
| January 13, 2015 | N/A | N/A | Town of Newton | A sinkhole and emergency construction on Route 206 forced a shutdown of northbound traffic in Newton. The sinkhole was first reported at 9:56 a.m. As of 1:10 p.m., northbound lanes were still closed. |
| March 2021 | N/A | N/A | Vernon Township | The Township of Vernon had a relatively small sinkhole form as a result of heavy rain, snow melt and lake run off at the National Winter Activity Center in March 2021. It was approximately 30" x 24" a 6' deep that connected to a spill way basin that ties into a stream. It was kept under watch and is being remediated with a dam replacement project. |

Sources: NJDEP 2012; NOAA-NCDC 2015; NJ.Com 2015; NJ State HMP 2014; NOAA-NCDC 2020

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

N/A Not Applicable

NOAA-NCDC National Oceanic Atmospheric Administration – National Climatic Data Center

NWS National Weather Service

NJ The State of New Jersey

NJDEP New Jersey Department of Environmental Protection

HAZARDOUS MATERIALS

Known hazardous material events that have impacted The State of New Jersey and Sussex County between 2015 and 2019 are identified in Table H-6. Many sources were researched for historical information regarding hazardous material events in Sussex County; therefore, Table H-6 may not include all hazardous material events that have impacted the County.

Table H-7. Hazardous Material Events in Sussex County Between 2015 and 2019

| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------|-------------------------|--------------------|-------------------|---|
| March 22, 2010 | N/A | N/A | Hamburg Township | A cargo tank motor vehicle experienced a hazardous materials incident on the highway in Hamburg, NJ. This was not classified as serious, and the total amount of estimated damages was \$0. |
| August 9, 2012 | N/A | N/A | Sparta Township | A cargo tank motor vehicle experienced a hazardous materials incident on the highway in Sparta, NJ. This was not classified as a serious incident, and the amount of estimated damages was \$5,000. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------|-------------------------|--------------------|-------------------|--|
| October 17, 2013 | N/A | N/A | Andover Borough | A cargo tank motor vehicle experienced a hazardous materials incident on the highway in Andover, NJ. This was classified as a serious incident, and the amount of estimated damages was \$0. |
| August 3, 2015 | N/A | N/A | Vernon Township | The Action Park was forced to close early after several people were made sick by fumes from the Roaming Springs section of the Park. The Sussex County HAZMAT team investigated, and several lifeguards were treated for eye and respiratory irritation. |
| 2015 | N/A | N/A | Countywide | In 2015, 11,374 pounds of chemicals were released on-site in Sussex County. |
| 2015 | N/A | N/A | Countywide | In 2015, Sussex County experienced 1 rail accident involving hazardous materials. |
| 2016 | N/A | N/A | Countywide | In 2016, 10,578 pounds of chemicals were released on-site in Sussex County. |
| 2017 | N/A | N/A | Countywide | In 2017, 8,853 pounds of chemicals were released on-site in Sussex County. |
| 2018 | N/A | N/A | Countywide | In 2018, 6,155 pounds of chemicals were released on-site in Sussex County. |
| 2019 | N/A | N/A | Countywide | In 2019, 261 pounds of chemicals were released on-site in Sussex County. |

Sources: NJ HMP 2019; EPA TRI Explorer 2020; PHMSA 2015

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

N/A Not Applicable

NJ The State of New Jersey

HMP Hazard Mitigation Plan

EPA Environmental Protection Agency

TRI Toxic Release Inventory

PHMSA Pipeline and Hazardous Materials Safety Administration

HURRICANE

Known hurricane events that have impacted The State of New Jersey and Sussex County between 2008 and 2019 are identified in Table H-8. Many sources were researched for historical information regarding hurricane events in Sussex County; therefore, Table H-8 may not include all hurricane events that have impacted the County.



Table H-8. Hurricane Events in Sussex County Between 2008 and 2019

| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|-------------------|-------------------------|--------------------|--|---|
| September 6, 2008 | N/A | N/A | Sussex Borough, Hardyston Township, Town of Newton, Wantage Township | <p>Heavy rain associated with Tropical Storm Hanna caused widespread heavy rain and poor drainage flooding, especially in the northern part of New Jersey. The runoff also caused some isolated flooding along some of the smaller streams and creeks in the area. Rain moved into the region around noon EDT, fell heavy at times during the late afternoon and early evening and ended during the late evening. Storm totals ranged from around 2 to around 5 inches with the highest amounts in northern New Jersey.</p> <p>In Sussex County, event precipitation totals included 4.44 inches in Sussex Borough, 3.98 inches in Hardyston, 2.85 inches in Newton Township and 2.35 inches in Wantage Township.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|--------------------|-------------------------|--------------------|--|---|
| August 26-30, 2011 | N/A | N/A | Branchville Borough, Ogdensburg Borough, Frankford Township, Hampton Township, Hardyston Township, Vernon Township, Town of Newton, Walpack Township, Sandyston Township, Stillwater Township, Montague Township | <p>Hurricane Irene moved north along the Atlantic Coast, making landfall near Cape Lookout, North Carolina, on August 27th. The hurricane moved back over open water before making landfall for a second time at Little Egg Inlet in New Jersey on August 28th. This was the first time since 1903 that a hurricane made landfall in New Jersey. Rain fell for an 18-hour period, with totals ranging from six to eight inches across New Jersey. Higher amounts were observed in southwestern, central, and northeastern New Jersey. Irene brought tropical storm force winds, destructive storm surge, and record-breaking freshwater inland flooding across northeast New Jersey. There were thousands of mandatory and voluntary evacuations along the coast and rivers from surge and freshwater flooding, and widespread power outages that lasted for up to two weeks. The Governor of New Jersey declared a state of emergency on August 25th.</p> <p>In Sussex County, flooding impacted Branchville and Ogdensburg boroughs, Frankford, Hampton, Hardyston, and Vernon townships, and the Town of Newton. These municipalities were the hardest hit in the County. Flooding forced the closure of over 100 roadways in the county including U.S. Route 206 as well as state and County Routes 94, 15, 23, 517 and 628. The Borough of Branchville was literally cut off after flooding occurred along the Dry Brook. About 100 people were evacuated within the Borough. The Flat Brook at Flatbrookville (Walpack Township) had major flooding and its second highest crest since Hurricane Diane in 1955. The brook was above its six foot flood stage from 810 a.m. on the 28th through 404 p.m. EDT on the 29th. It crested at 10.59 feet at 1215 a.m. on the 29th.</p> <p>Over 100 bridges in the County were damaged and nine bridges were lost (two in Vernon, one in Wantage, three in Frankford, two in Sandyston, and in Stillwater there were bridges down to one lane due to lost stream banks). In Vernon Township, eight families were cut off after another bridge washed out. In Montague, two culverts were lost.</p> <p>A few county facilities were damaged as a result of Hurricane Irene as well. The County record retention center flooded, the County-owned DPW garage in Vernon Township flooded and a tree fell on the County jail. Two regional shelters were open for residents – Sussex County VoTech High School and Hopatcong High School. There were utility outages across the County. Costs to the County included overtime for OEM, DPW, Engineering, Sheriff's Office, Prosecutors Office and the Health Department. The County had \$12.5 million in damages from Hurricane Irene.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|----------------------|-------------------------|--------------------|--|--|
| September 5-14, 2011 | N/A | N/A | Green Township, Andover Township, Sparta Township, Hardyston Township, Vernon Township, Franklin Township, Hopatcong Borough, Stillwater Township, Branchville Borough, Walpack Township | <p>The remnants of Tropical Storm Lee arrived in New Jersey on September 5, 2011, bringing heavy rains throughout the State. Parts of Trenton and other municipalities along the Delaware River were inundated. Hundreds of residents along the Passaic River and its tributaries had to evacuate. There were a total of 162 roads closed due to flooding throughout the State of New Jersey. Storm totals ranged from three to eight inches of rain. The heavy rain and flooding impacted crops, with farmers reporting up to 75% losses of pumpkin and tomato crops. The State had an estimated \$11.5 million in damages.</p> <p>The heavy rain caused widespread flooding and flash flooding of smaller streams in Sussex County as well as poor drainage flooding across eastern Sussex County from Green Township northeast through parts of Andover, Sparta, Hardyston and Vernon Townships. Many roadways were closed. Schools were closed on the 8th in Vernon and Sparta Townships. A few homes were flooded in Andover Township. Sections of New Jersey State Route 23 and 94 were closed in Franklin Township and Stockholm (Hardyston Township). There were road and culvert washouts in Hopatcong, Stillwater and Sparta. Areas that were impacted during Irene were also affected again from Lee.</p> <p>The Flat Brook flooded a few homes in southwest Sussex County. A flash flood along the Culver Creek in Branchville Borough led to a State of Emergency declaration after the creek tore away the Mill Street Bridge in the borough. Ten homes had over eight feet of water in them, the most severely damaged were at the end of Mill Street. Residents from about 50 homes evacuated, with residents from all but one home being able to return at Noon that day. The Flat Brook at Flatbrookville (Walpack Township) had moderate flooding and was above its 6 foot flood stage from 903 a.m. EDT on the 7th through 905 a.m. EDT on the 9th. It crested at 8.90 feet at 600 p.m. EDT on the 8th.</p> <p>The County opened two regional shelters – Sussex County VoTech and Hopatcong High School – both of which were still opened from Hurricane Irene. County-owned facilities experienced damage from wind; windows were damaged and shingles were blow-off the buildings. Costs to the County included overtime for OEM, DPW, Engineering, Sheriff's Office, Prosecutors Office, and the Health Department. Overall, the County approximately \$1 million in damages from this event.</p> |



| | | | | |
|-------------------------------------|-----|-----|---|--|
| October 26 – November 8, 2012 | N/A | N/A | Walpack Township, Vernon Township, Wantage Township, Hopatcong Borough, Montague Township, Sussex Borough | <p>Hurricane Sandy was the costliest natural disaster by far in the State of New Jersey. Record-breaking high tides and wave action combined with sustained winds as high as 60 to 70 mph with wind gusts as high as 80 to 90 mph to batter the State. Statewide, Sandy caused an estimated \$29.4 billion in damage, destroyed or significantly damaged 30,000 homes and businesses, affected 42,000 additional structures, and was responsible directly or indirectly for 38 deaths.</p> <p>Sussex County suffered relatively less damage than counties farther to the east, and the strongest winds occurred late in the evening on the 7th. The largest issue was fallen trees. The only township to report widespread damage was Walpack Township. Peak wind gusts in the County included 79 mph at High Point Monument (Montague Township), 75 mph at Sussex Borough, and 70 mph at Wantage Township. Representative snowfall included 3.0 inches in Highland Lakes (Vernon Township) and 2.1 inches in Wantage Township. Snow related traffic accidents were reported in Vernon Township and Hopatcong Borough. Widespread power outages impacted the entire County. Evacuations occurred in the County as well. There were road closures due to debris throughout the County. Private homes were destroyed due to wind, debris and downed trees.</p> <p>The County opened two regional shelters at Sussex County VoTech and Hopatcong High School and they remained open for up to three weeks. Costs to the County included overtime for OEM, DPW, Engineering, Sheriff's Office, Prosecutors Office and the Health Department. According to NOAA-NCDC storm events database, the County had approximately \$100 million in damages and losses from this event. Hurricane Sandy was the costliest natural disaster by far in the State of New Jersey. Record-breaking high tides and wave action combined with sustained winds as high as 60 to 70 mph with wind gusts as high as 80 to 90 mph to batter the State. Statewide, Sandy caused an estimated \$29.4 billion in damage, destroyed or significantly damaged 30,000 homes and businesses, affected 42,000 additional structures, and was responsible directly or indirectly for 38 deaths.</p> <p>Sussex County suffered relatively less damage than counties farther to the east, and the strongest winds occurred late in the evening on the 7th. The largest issue was fallen trees. The only township to report widespread damage was Walpack Township. Peak wind gusts in the County included 79 mph at High Point Monument (Montague Township), 75 mph at Sussex Borough, and 70 mph at Wantage Township. Representative snowfall included 3.0 inches in Highland Lakes (Vernon Township) and 2.1 inches in Wantage Township. Snow related traffic accidents were reported in Vernon Township and Hopatcong Borough. Widespread power outages impacted the entire County. According to NOAA-NCDC</p> |
|-------------------------------------|-----|-----|---|--|



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------|-------------------------|--------------------|-------------------|--|
| | | | | storm events database, the County had approximately \$100 million in damages and losses from this event. |

Sources: NCDC 2015; ONJSC Rutgers University 2013a; SPC 2015; FEMA 2015

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

N/A Not Applicable

ONJSC Office of the New Jersey State Climatologist

SPC Storm Prediction Center

FEMA Federal Emergency Management Administration

NJ The State of New Jersey

INFESTATION

Known infestation events that have impacted The State of New Jersey and Sussex County between 2015 and 2019 are identified in Table H-9. Many sources were researched for historical information regarding infestation events in Sussex County; therefore, Table H-9 may not include all infestation events that have impacted the County.

Table H-9. Infestation Events in Sussex County Between 2015 and 2019

| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------|-------------------------|--------------------|-------------------|---|
| 2017 | N/A | N.A | Countywide | Emerald Ash Borer was first identified in Sussex County in 2017 and has continued to impact additional municipalities in the last several years. |
| 2019 | N/A | N.A | Countywide | Recreational use of Lake Hopatcong was severely limited due to harmful algal blooms. Freeholder boards in Sussex and Sussex counties have agreed to allocate a total of \$50,000 in matching funds to support an application by the Lake Hopatcong Commission for a potential \$500,000 state grant to study and reduce harmful algal blooms (HABs) |

Sources: NJDEP 2021; Sussex County 2020; NJDEP 2020; Northjersey.com 2020

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

(2): Many invasive species have been in Sussex County for an extended period of time, including the Hemlock Woolly Adelgid, many species of mosquito, white-tailed deer, and Canada geese.

N/A Not Applicable

NJDEP New Jersey Department of Environmental Protection



NOR'EASTER

Known nor'easter events that have impacted The State of New Jersey and Sussex County between 2008 and 2019 are identified in Table H-10. Many sources were researched for historical information regarding nor'easter events in Sussex County; therefore, Table H-10 may not include all nor'easter events that have impacted the County.

Table H-10. Nor'easter Events in Sussex County Between 2008 and 2019

| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|----------------------|-------------------------|--------------------|-------------------|---|
| March 1-2, 2009 | N/A | N/A | Countywide | A winter storm impacted most of New Jersey bringing between six and 12 inches of snow across the region. This event was caused by a Nor'easter that moved east across the region. Many snow emergencies were declared in parts of the State. The combination of strong winds and heavy snow made travel difficult. Numerous schools, businesses and local and county officers were closed. Snowfall totals in Sussex County ranged from 10.6 inches in Hopatcong Borough to 6 inches in the Town of Newton. |
| October 15, 2009 | N/A | N/A | Countywide | A Nor'easter brought an early season measurable snow to the higher terrain of Northwest New Jersey from the afternoon of the 15th into the morning of the 16th. Accumulations on the higher terrain averaged one to four inches. Specific accumulations included 4.0 inches in Vernon, 2.7 inches in Wantage and 1.0 inch in Sparta. Because the ground was still warm, most of the accumulations occurred on non-paved surfaces, bridges, and overpasses as well as clinging to the trees and leaves. A few accidents were reported. Northeast winds averaged 10 to 20 mph. This was strong enough to remove some of the snow off the trees and power outages were generally isolated. |
| December 19-20, 2009 | N/A | N/A | Countywide | A Nor'easter was responsible for a major winter storm that impacted New Jersey. This event brought heavy snow across all of New Jersey, except for Sussex County which received lesser amounts of precipitation. The heaviest snow fell along and east of the Interstate 95 corridor. Snowfall totals averaged around three inches in Sussex County to 24 inches in central and southern New Jersey. In Sussex County, snowfall totals reached 3.9 inches in Sparta Township. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|-------------------|-------------------------|--------------------|---|--|
| March 13-16, 2010 | N/A | N/A | Sparta Township, Ogdensburg Borough, Walpack Township, Andover Township, Sussex Borough, Wantage Township | <p>A Nor'easter developed off the Delmarva peninsula which produced an extended period of heavy rainfall across the area as it tracked very slowly to the northeast. This caused widespread flooding across portions of northeast New Jersey. Wind gusts up to 60 mph were reported along the Delaware coast, with gusts of up to 50 mph reported along the southern coast of New Jersey. The storm also impacted inland portions of New Jersey, with four days of rain and major flooding in the Passaic and Raritan River Basins. Flooding was also reported throughout New Jersey. The four-day storm totals ranged from 2.5 inches to six inches with the highest amounts in the Raritan and Passaic Basins. Governor Christie declared a state of emergency. The State had over \$85 million in property damage from this event.</p> <p>The worst reported flooding in the county was along its eastern border. In Sparta Township, Lower Main Street was closed due to its undermining by flood waters. Edison Road in Ogdensburg was closed because of washouts. New York Susquehanna and Western Railroad suspended service because of the flooding. The Flat Brook at Flatbrookville was above its 6-foot flood stage from 727 a.m. EDT through 820 p.m. EDT on the 14th. It crested at 6.81 feet at 1230 p.m. EDT. Event precipitation totals were 3.89 inches in Andover, 2.94 inches in Sussex and 2.75 inches in Wantage.</p> |
| October 29, 2011 | DR-4048 | Yes | Countywide | <p>A late October winter storm dropped heavy snow across parts of central and all northwest New Jersey and caused widespread power outages due to many trees still having leaves on them. Sussex, Warren, Morris, Hunterdon, Somerset, and Middlesex Counties were identified as major federal disaster areas. Over 800,000 utility customers lost power. Some areas did not have power restored until November 4th. Governor Christie declared a state of emergency and urged people to stay off the roads. Many municipalities opened warming stations and shelters. About 25 major roadways were closed throughout the State. In addition to the snow and rain, there were strong northerly and northeasterly winds, ranging from 15 to 25 mph and gusting up to 35 mph in the impacted areas. These strong winds also contributed to the downed trees, electric lines and power outages. The 19.1-inch snowfall in Barry Lakes (Sussex County) established a new October snowfall record for the state of New Jersey and is higher than any November snowfall record.</p> <p>Snowfall totals in Sussex County included 19.1 inches in Barry Lakes, 15.5 inches in Wantage Township, and 8.3 inches in the Town of Newton.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|--------------------|-------------------------|--------------------|-------------------|---|
| November 7-8, 2012 | N/A | N/A | Countywide | <p>A strong Nor'easter caused high winds along the coast, heavy snow in east central New Jersey, ten-foot waves along the ocean front and minor tidal flooding along the ocean front with the overnight high tide on the 7th. It caused setbacks with restoration efforts caused by post tropical storm Sandy and forced some coastal area evacuations again. Elsewhere across the state, winds were lighter, but accumulating snows occurred in most areas. Snowfall averaged 1 to 5 inches in most of the state. The combination of heavy snow and wind brought down additional trees, poles, and wires and upwards of an additional 150,000 mainly Jersey Central Power and Light customers lost power.</p> <p>Snow related traffic accidents were reported in Vernon and Hopatcong in Sussex County. Representative snowfall included 3 inches in Vernon and Highland Lakes, and 2.1 inches in Wantage Township. Peak wind gusts included 50 mph at High Point and 46 mph in Wantage Township.</p> |
| March 7-8, 2013 | N/A | N/A | Countywide | <p>A departing Nor'easter and an upper low disturbance brought heavy snow to Sussex and Morris County and an accumulating snow through central New Jersey. Snowfall totals ranged from two to 10 inches. Snowfall totals in Sussex County ranged from 8.8 inches in Hardyston Township to 10.5 inches in Wantage Township and 11.8 inches in Highland Lakes (Vernon Township).</p> |
| November 26, 2014 | N/A | N/A | Countywide | <p>A winter storm struck the day before Thanksgiving, dropping heavy snow over parts of northwest New Jersey and caused power outages to approximately 23,000 customers and travel difficulties. Governor Christie declared a state of emergency and speed limits were reduced on all major roadways. The weight of the heavy, wet snow tore down tree limbs, trees, and power lines in the northwest portion of New Jersey.</p> <p>In Sussex County, Sussex Rural Electric Cooperative reported about 1,150 members without power at 10 a.m. EST on the 27th, with the greatest concentration in Scenic Lakes, Lake Wallkill, and Pleasant Valley Lake areas. In Hardyston Township, a destroying house fire was believed to have been started by a surge when power was restored. Representative snowfall (this included the sleet along the Interstate 95 corridor) included 11.5 inches in Highland Lakes (Vernon Township), 10.7 inches in Wantage Township, and 8.9 inches in Sussex Borough.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|---------------------|-------------------------|--------------------|-------------------|---|
| January 22-24, 2016 | DR-4264 | No | Countywide | <p>An impulse from the west coast traversed the midsection of the country, then developed into a low-pressure system as it tracked across the Gulf states before intensifying along the Carolina coast into a major nor'easter, producing record snowfall in parts of New Jersey on January 23rd. It then moved out to sea after passing by the mid-Atlantic coast early on January 24th.</p> <p>Snow began falling during the Friday afternoon commute on January 22nd, then continued, heavy at times, Friday night into early Sunday morning. Wind gusts up to 60 MPH produced blizzard conditions as visibilities dropped to one-quarter mile or less in spots. Representative snowfall totals include 16.0 inches in Stockholm (Sussex).</p> |
| January 24, 2017 | N/A | N/A | Countywide | Just over 2 inches of rain fell in association with the Nor'easter. |
| March 14, 2017 | N/A | N/A | Countywide | Low pressure systems across the Ohio Valley and Carolinas phased. This led to a rapidly developing storm which tracked just offshore. Wind and a foot of snow were reported across Sussex County. |
| March 2, 2018 | N/A | N/A | Countywide | A heavy, wet snow accumulated to a depth of over 16 inches in the higher elevations of the county, and around 6 inches or so in the valleys. Some snowfall totals include 16.5 inches in Branchville, 14.0 inches in Highland Lakes, 13.5 inches at High Point, 8 inches near Wantage, 7.0 inches in Stockholm, and 2.3 inches near Sussex. A wind gust of 48 MPH was reported at High Point Monument at 1125EST on the 2nd. Blowing and drifting snow made travel hazardous Friday afternoon and evening. Numerous power outages, some lasting over two weeks, were widespread throughout the county due to tree and wire damage. Warming centers were established around the county for affected residents. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|-------------------|-------------------------|--------------------|-------------------|--|
| March 7, 2018 | DR-4368 | No | Countywide | <p>Narrative A broad area of low pressure extending from the Ohio Valley to the Piedmont of South Carolina consolidated off the Virginia Capes during the early morning of March 7th. This new primary low moved northeast and gradually deepened as it passed east of the Delaware and New Jersey coasts on March 7th.</p> <p>The snow contained large amounts of liquid, making it heavy and wet. This resulted in downed trees, limbs, and wires, leading to numerous power outages across portions of New Jersey, especially where the heaviest snow was reported. Many customers were still without power from the previous storm when this storm struck. Governor Murphy estimated about 350,000 customers state-wide lost power as a result of this second storm.</p> <p>Although all portions of the county experienced significant snowfall from this event, the higher amounts occurred over the central and eastern portions of the county which were closer to the low-pressure system. Some reported snowfall totals include: 21.0 inches in Highland Lakes, 17.0 inches in Stockholm, 16.0 inches in Sparta, 15.5 inches in Hardyston Township, 15.0 inches in Vernon, 13.5 inches in Wantage, 12.7 inches in Montague, and 12.0 inches in Newton.</p> |
| March 21-22, 2018 | N/A | N/A | Countywide | <p>A complex area of low pressure over the middle Atlantic, which involved several individual centers, slowly consolidated off the Virginia Capes Tuesday morning, March 20th into Wednesday March 21st along a frontal boundary. This primary low, the fourth nor'easter of March, gradually moved northeast Wednesday night, to a position southeast of the 40 North/70 West Benchmark coordinates on Thursday morning.</p> <p>Precipitation began as a wet, heavy snow during the evening hours on March 20th. After a lull during the overnight hours, a drier snow began falling, heavy at times, during the afternoon and evening hours on March 21st. The heaviest snow from this event fell in the southern one-half of the county, with a sharp drop off in the far north. Some snowfall reports include: 10.0 inches in both Stockholm and Byram Township, 9.5 inches in Fredon, 8.5 inches in both Hardyston Township and Newton, 7.0 inches in Ogdensburg, 7.0 inches in Andover, Sparta, and Franklin, 2.5 inches in Vernon Valley, 1.3 inches in Sussex, 1.1 inches in Wantage, and 0.2 inches in Montague.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------|-------------------------|--------------------|-------------------|--|
| March 3-4, 2019 | N/A | N/A | Countywide | An offshore low-pressure system brought a period of heavy precipitation to the mid-Atlantic. A mix of rain, sleet, and snow was observed, with snow confined mainly to interior areas and sleet and rain more abundant near the coast. Snowfall totals inland approached 10, with snowfall rates exceeding one inch per hour for several hours. A sharp gradient in snowfall with a steep drop in snow totals was observed just west of the Interstate 95 corridor. A trained spotter in Highland Lakes reported 8.2 inches of snow. |

Sources: NOAA-NCDC Storm Database 2015; NWS 2015; FEMA 2015; NOAA NCEI 2020, NJ HMP 2019, SHELDUS

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

N/A Not Applicable

NOAA-NCDC National Oceanic Atmospheric Administration – National Climatic Data Center

NWS National Weather Service

FEMA Federal Emergency Management Administration

NJ The State of New Jersey

HMP Hazard Mitigation Plan

SHELDUS Spatial Hazard Events and Losses Database

SEVERE WEATHER

Known severe storm events that have impacted The State of New Jersey and Sussex County between 2008 and 2019 are identified in Table H-11. Many sources were researched for historical information regarding severe storm events in Sussex County; therefore, Table H-11 may not include all severe storm events that have impacted the County.

Table H-11. Severe Storm Events in Sussex County Between 2008 and 2019

| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|-------------------|-------------------------|--------------------|-------------------|--|
| February 11, 2008 | N/A | N/A | Countywide | Following the passage of an arctic front on the 10th, the coldest air mass of the season settled into New Jersey. On the morning of the 11th, lingering winds between two systems in surrounding regions, coupled with a very cold air mass, produced low wind chill readings during the morning of the 11th. Wind chill values were as low as 20°F below zero over the higher terrain of Sussex County. The morning low temperature was 1 degree below zero at High Point (Montague Township) and in the single numbers elsewhere in Sussex County. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|--------------------|-------------------------|--------------------|-------------------|---|
| June 7 – 10, 2008 | N/A | N/A | Countywide | The most oppressive heat wave of the meteorological summer affected New Jersey from June 7th through the 10th. The combination of high temperatures well into the 90s to around 100 and dew point temperatures in the 70s produced apparent temperatures or heat indices values as high as around 100°F in northern New Jersey and around 105°F in southern New Jersey. Highest temperatures in Sussex County included 96°F in Andover Township. |
| July 16 – 22, 2008 | N/A | N/A | Countywide | The longest heat wave of the summer affected New Jersey from July 16th through the 22nd. The heat wave ended in about the northern two thirds of the state on the 22nd as thunderstorms kept temperatures below 90°F. High temperatures were mainly in the lower to mid-90s throughout the heat wave. The hottest days occurred on the 18th, 19th or 20th. The combination of the temperatures and dew points produced apparent temperatures or heat indices of around 100°F. Temperatures ranged from 93°F to 98°F, with a high of 93°F in the Borough of Sussex. |
| October 28, 2008 | N/A | N/A | Countywide | Gusty winds of up to 66 mph occurred across New Jersey. The combination of the strong winds, heavy wet snow, and trees still with leaves caused widespread power outages in northwest New Jersey. In Sussex County, there were 443 weather related calls in Sparta Township alone. New Jersey State Route 15 was closed during the afternoon. Peak wind gusts in Sussex County included 52 mph at High Point (Montague Township). Overall, the County had approximately \$500,000 in property damage. |
| February 16, 2009 | N/A | N/A | Countywide | A large arctic high-pressure system moved toward the area during the 16th and 17th, bringing gusty winds and keeping maximum temperatures in the single digits across northwestern New Jersey. Some areas, mainly in the northern part of the state, where the wind was able to drop off considerably, dropped to well below zero. Low temperatures on the 16th included: -15°F at the Sussex Airport (Wantage Township), -12°F in Walpack Township, -1°F in Wantage Township, and -6°F at Andover Township. Low temperatures on the 17th included -15°F in the Borough of Sussex Borough, -12°F in Walpack Township, and -8°F in Andover Township. |
| February 12, 2009 | N/A | N/A | Countywide | Peak wind gusts of 50 to 60 mph impacted New Jersey, knocking down power lines, tree limbs and trees. About 86,000 homes and businesses were without power. The strongest winds and most damage was in central and northern New Jersey. In Sussex County, peak wind gusts included 69 mph at the High Point Monument (Montague Township). Damages to the County were approximately \$30,000. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------|-------------------------|--------------------|-------------------|---|
| July 28, 2009 | N/A | N/A | Countywide | Isolated severe thunderstorms developed during the afternoon of the 28th in northern New Jersey. Thunderstorm winds with estimated gusts of 64.4 mph knocked down a few trees and wires in Andover Township, where the roof of an apartment building was also damaged. Estimated gusts of 40mph were reported in Ogdensburg Borough, where a tree was knocked down onto the roof of a house during a thunderstorm. Overall, the County had approximately \$35,000 in property damage. |
| July 29, 2009 | N/A | N/A | Wantage Township | An EF2 tornado touched down in Wantage Township at about 2:48 p.m. on July 29. It was the first confirmed tornado in Sussex County since August 1990, the first tornado of F2 or EF2 strength ever in the county since records started in 1950 and the first tornado to reach EF2 or F2 strength in New Jersey since the Manalapan tornado of May 27, 2001. The tornado remained on the ground for 6.6 miles before it crossed the border into New York State. Its maximum width was about 100 yards, and its highest estimated wind speed was 120 mph. Approximately \$800,000 in property damage and \$200,000 in crop damage. |
| August 21, 2009 | N/A | N/A | Countywide | A couple of severe thunderstorms caused wind damage across Sussex County, hitting the southeast half the hardest. The combination of damaging winds and lightning caused about 12,000 homes and businesses to lose power. Twenty-one of the twenty-four municipalities within the county reported power outages. Trees were reported down in Branchville and Franklin boroughs, Fredon, Green, Walpack, and Stillwater townships, and the Town of Newton. Wires were also reported knocked down on U.S. Route 206 and New Jersey State Route 94 in the Town of Newton. Trees fell on vehicles in Newton, Franklin Borough and Green Township. In Green Township, a woman was trapped in her vehicle when live power lines came down on it. A deck was damaged in Franklin Borough and a boat was damaged in Stillwater Township. Power was not fully restored in the county until the 24th. In addition to the severe weather, two lifeguards were struck and injured by lightning at Crystal Springs in Vernon Township. They were thrown to the ground by the strike, were dazed, lost their hearing for a short while and had smoking feet. No wind related injuries were reported. \$50,000 in property damage was reported in Sussex County. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|-------------------|-------------------------|--------------------|-------------------|---|
| January 3, 2010 | N/A | N/A | Countywide | Strong and gusty west to northwest winds occurred for nearly twenty-four hours across New Jersey from the evening of the 2nd through the afternoon of the 3rd. Peak wind gusts measured around 70 mph in the higher terrain of Sussex County. The strong winds downed weak trees, tree limbs and power lines and resulted in widely scattered power outages. Peak wind gusts included 73 mph in Wantage Township, 68 mph at the High Point State Monument (Montague Township). Sussex County had an estimated \$10,000 in property damage. |
| July 5, 2010 | N/A | N/A | Countywide | The hottest weather of the summer season occurred on July 5th through the 7th throughout the state of New Jersey. Temperatures ranged from 90°F to 105°F. Highest temperatures included 101°F in Sussex Borough. |
| October 11, 2010 | N/A | N/A | Countywide | Strong to locally severe thunderstorms formed in central and northern New Jersey during the evening of the 11th. In Sussex County, lightning struck the electrical box in the front of a log cabin home in Hopatcong Borough and ignited a fire that engulfed the unoccupied dwelling. The fire was under control within an hour, but the interior of the cabin was gutted with extensive smoke and fire damage on both floors. The County reported an estimated \$100,000 in property damage. |
| December 1, 2010 | N/A | N/A | Countywide | Strong south winds moved across New Jersey during the late morning and early afternoon on December 1st. Enhanced wind gusts preceded a line of showers and isolated thunderstorms that moved in during the late morning and early afternoon. Peak wind gusts average 45 to 50 mph and knocked down weak tree limbs and wires and caused scattered power outages. The heavy rain made it easier for shallow rooted trees to be knocked over. About 34,000 homes and businesses lost power. Most power was restored by the 2nd. Peak wind gusts included 54 mph in Wantage Township. Sussex County had \$10,000 in property damage. |
| December 27, 2010 | N/A | N/A | Countywide | Strong to high winds that started during an afternoon winter storm on the 26th persisted into the evening of the 27th. Peak wind gusts were around 50 mph, except in the higher terrain of Sussex County where gusts reached into the 60s. The strong to high winds knocked down some weak tree limbs and power lines. The largest effect though was the considerable blowing and drifting of the snow the wind caused. This hampered plowing and clean-up operations after the snow ended throughout the day on the 27th. Many roadways and ramps remained closed. About 7,000 homes and businesses lost power. \$10,000 in property damage was reported in Sussex County. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|-------------------|-------------------------|--------------------|-------------------|--|
| January 24, 2011 | N/A | N/A | Countywide | An arctic high-pressure system brought in the coldest air mass of the season to New Jersey. Many places saw morning lows that were the coldest during that winter. Northwest winds produced wind chill factors below zero in most of the State. Sussex County experienced a wind chill of -15°F. Actual low temperatures in Sussex County included -17°F in Pelletstown Hamlet, and -11°F in Sussex Borough. |
| February 19, 2011 | N/A | N/A | Countywide | Strong to high west to northwest winds affected New Jersey from the evening of the 18th into the evening of the 19th. Peak wind gusts averaged around 55 mph. The winds tore down trees, tree limbs and wires and caused power outages. About 22,000 homes and businesses lost power, and some were without power until the evening of the 20th. Peak wind gusts included 58 mph in Wantage Township. Sussex County had \$10,000 in property damage. |
| July 3, 2011 | N/A | N/A | Countywide | A warm front acted as a focus for strong to severe thunderstorms during the early morning of the 3rd in northwestern New Jersey and during the late afternoon and early evening of the 3rd across central New Jersey. In Sussex County, penny size hail fell in Franklin Township and quarter size hail in Sparta Township. Thunderstorm winds knocked down numerous trees in Sparta Township on and around West Mountain Road, Grandview Terrace, and Sterling Hill Road. One property lost between fifteen and twenty trees and suffered roof damage to its home. About 150 homes in the County lost power. Power was fully restored by 3 p.m. that afternoon. The County reported a total of \$50,000 in property damage. |
| July 21, 2011 | N/A | N/A | Countywide | One of the most oppressive heat waves since July 1995. It caused two deaths and hundreds of heat-related injuries. Many locations had high temperatures that were more than 100°F. July 22 was the hottest, with heat index values of 110°F to 120°F. Many counties and municipalities opened cooling centers for its residents. Temperatures ranged from 100°F in Cumberland and Cape May Counties, to 106°F in Mercer County. In Sussex County, a high temperature of 101°F was reported in Andover Township. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------|-------------------------|--------------------|-------------------|---|
| July 29, 2011 | N/A | N/A | Countywide | <p>An approaching cold front helped trigger strong to severe thunderstorms across central and northern New Jersey during the early evening of the 29th. In Sussex County, a powerful and damaging microburst occurred in Vernon Township during the early evening of the 29th. Estimated maximum wind speeds were 90 mph. Wind damage began near Silver Fox Lane and moved southeast for about two miles and ended near the intersection of State Route 94 and Sand Hill Road. Most of the wind damage was seen in the roughly 100 downed trees, as well as downed wires. Several homes sustained roof damage from the combination of either trees falling on them, or the winds themselves. In the Tall Timbers Mobile Home Park in Sussex Borough, a number of trees also fell on vehicles and damaged mobile homes. One home on Edsall Drive suffered significant roof damage, and the family was subsequently sheltered at the Crystal Springs Resort. A few other families in the area had to leave their home because of wind damage. An amateur radio antenna on Edsall Drive was bent in half. In addition to Edsall Drive, tree wind damage was extensive on Black Walnut Mountain Road, Basswood Drive and Shebe Drive. About 2,000 Jersey Central Power and Light Customers lost power, 500 still did not have power restored on the afternoon of the 30th. The County had \$100,000 in property damage.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|--------------------|-------------------------|--------------------|--|---|
| August 26-30, 2011 | DR-4021 | Yes | Branchville Borough, Ogdensburg Borough, Frankford Township, Hampton Township, Hardyston Township, Vernon Township, Town of Newton, Walpack Township, Sandyston Township, Stillwater Township, Montague Township | <p>Hurricane Irene moved north along the Atlantic Coast, making landfall near Cape Lookout, North Carolina, on August 27th. The hurricane moved back over open water before making landfall for a second time at Little Egg Inlet in New Jersey on August 28th. This was the first time since 1903 that a hurricane made landfall in New Jersey. Rain fell for an 18-hour period, with totals ranging from six to eight inches across New Jersey. Higher amounts were observed in southwestern, central, and northeastern New Jersey. Irene brought tropical storm force winds, destructive storm surge, and record-breaking freshwater inland flooding across northeast New Jersey. There were thousands of mandatory and voluntary evacuations along the coast and rivers from surge and freshwater flooding, and widespread power outages that lasted for up to two weeks. The Governor of New Jersey declared a state of emergency on August 25th.</p> <p>In Sussex County, flooding impacted Branchville and Ogdensburg boroughs, Frankford, Hampton, Hardyston, and Vernon townships, and the Town of Newton. These municipalities were the hardest hit in the County. Flooding forced the closure of over 100 roadways in the county including U.S. Route 206 as well as state and County Routes 94, 15, 23, 517 and 628. The Borough of Branchville was literally cut off after flooding occurred along the Dry Brook. About 100 people were evacuated within the Borough. The Flat Brook at Flatbrookville (Walpack Township) had major flooding and its second highest crest since Hurricane Diane in 1955. The brook was above its six foot flood stage from 810 a.m. on the 28th through 404 p.m. EDT on the 29th. It crested at 10.59 feet at 1215 a.m. on the 29th.</p> <p>Over 100 bridges in the County were damaged and nine bridges were lost (two in Vernon, one in Wantage, three in Frankford, two in Sandyston, and in Stillwater there were bridges down to one lane due to lost stream banks). In Vernon Township, eight families were cut off after another bridge washed out. In Montague, two culverts were lost.</p> <p>A few county facilities were damaged as a result of Hurricane Irene as well. The County record retention center flooded, the County-owned DPW garage in Vernon Township flooded and a tree fell on the County jail. Two regional shelters were open for residents – Sussex County VoTech High School and Hopatcong High School. There were utility outages across the County. Costs to the County included overtime for OEM, DPW, Engineering, Sheriff's Office, Prosecutors Office and the Health Department. The County had \$12.5 million in damages from Hurricane Irene.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
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| September 5-14, 2011 | DR-4039 | Yes | Green Township, Andover Township, Sparta Township, Hardyston Township, Vernon Township, Franklin Township, Hopatcong Borough, Stillwater Township, Branchville Borough, Walpack Township | <p>The remnants of Tropical Storm Lee arrived in New Jersey on September 5, 2011, bringing heavy rains throughout the State. Parts of Trenton and other municipalities along the Delaware River were inundated. Hundreds of residents along the Passaic River and its tributaries had to evacuate. There were a total of 162 roads closed due to flooding throughout the State of New Jersey. Storm totals ranged from three to eight inches of rain. The heavy rain and flooding impacted crops, with farmers reporting up to 75% losses of pumpkin and tomato crops. The State had an estimated \$11.5 million in damages.</p> <p>The heavy rain caused widespread flooding and flash flooding of smaller streams in Sussex County as well as poor drainage flooding across eastern Sussex County from Green Township northeast through parts of Andover, Sparta, Hardyston and Vernon Townships. Many roadways were closed. Schools were closed on the 8th in Vernon and Sparta Townships. A few homes were flooded in Andover Township. Sections of New Jersey State Route 23 and 94 were closed in Franklin Township and Stockholm (Hardyston Township). There were road and culvert washouts in Hopatcong, Stillwater and Sparta. Areas that were impacted during Irene were also affected again from Lee.</p> <p>The Flat Brook flooded a few homes in southwest Sussex County. A flash flood along the Culver Creek in Branchville Borough led to a State of Emergency declaration after the creek tore away the Mill Street Bridge in the borough. Ten homes had over eight feet of water in them, the most severely damaged were at the end of Mill Street. Residents from about 50 homes evacuated, with residents from all but one home being able to return at Noon that day. The Flat Brook at Flatbrookville (Walpack Township) had moderate flooding and was above its 6 foot flood stage from 903 a.m. EDT on the 7th through 905 a.m. EDT on the 9th. It crested at 8.90 feet at 600 p.m. EDT on the 8th.</p> <p>The County opened two regional shelters – Sussex County VoTech and Hopatcong High School – both of which were still opened from Hurricane Irene. County-owned facilities experienced damage from wind; windows were damaged and shingles were blow-off the buildings. Costs to the County included overtime for OEM, DPW, Engineering, Sheriff's Office, Prosecutors Office, and the Health Department. Overall, the County approximately \$1 million in damages from this event.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
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| October 29, 2011 | DR-4048 | Yes | Countywide | <p>A late October winter storm dropped heavy snow across parts of central and all northwest New Jersey and caused widespread power outages due to many trees still having leaves on them. Sussex, Warren, Morris, Hunterdon, Somerset, and Middlesex Counties were identified as major federal disaster areas. Over 800,000 utility customers lost power. Some areas did not have power restored until November 4th. Governor Christie declared a state of emergency and urged people to stay off the roads. Many municipalities opened warming stations and shelters. About 25 major roadways were closed throughout the State. In addition to the snow and rain, there were strong northerly and northeasterly winds, ranging from 15 to 25 mph and gusting up to 35 mph in the impacted areas. These strong winds also contributed to the downed trees, electric lines, and power outages. The 19.1-inch snowfall in Barry Lakes (Sussex County) established a new October snowfall record for the state of New Jersey and is higher than any November snowfall record.</p> <p>Snowfall totals in Sussex County included 19.1 inches in Barry Lakes, 15.5 inches in Wantage Township, and 8.3 inches in the Town of Newton.</p> |
| February 25, 2012 | N/A | N/A | Countywide | <p>Strong winds downed weak trees, tree limbs and power lines and caused scattered outages in Sussex County. Peak wind gusts included 62 mph in Wantage Township. The County reported \$12,500 in property damage.</p> |
| March 1 – April 9, 2012 | N/A | N/A | Countywide | <p>Strong winds impacted Sussex County and knocked down some weak tree limbs and power lines and caused isolated outages. In addition to downing weak trees, tree limbs and wires, the strong winds enhanced the spread of wildfires due to the recent dry weather and low relative humidity levels. The string of events led Sussex County to be included in two USDA disaster designations, S3249 and S3251, (as a contiguous county). Sussex County reported nearly \$10,000 in wind damage from four wind events in this time.</p> <p>Peak wind gusts recorded in Sussex County were as follows: 47 mph at High Point (Montague Township) on March 3rd; 49 mph at High Point and 47 at Wantage Township on March 8th; 56 mph at High Point and 52 at Wantage Township on March 26th; and 48 mph at Wantage Township on April 9th.</p> |
| June 2, 2012 | N/A | N/A | Countywide | <p>Sussex County was included as a contiguous county in USDA disaster designation S3427 for drought and excessive heat.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
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| June 20 – 22, 2012 | N/A | N/A | Countywide | A three-day heat wave occurred throughout the entire State, bringing temperatures between 94°F and 99°F. In Sussex County, the heat caused some telephone pole and power line fires in Hopatcong Borough on the 21st. Highest temperatures included 95°F in Andover Township and Sussex Borough. The heat wave broke dramatically when a series of severe thunderstorms impacted New Jersey. |
| July 17-18, 2012 | N/A | N/A | Countywide | <p>An unseasonably hot and humid air mass affected New Jersey on the 17th and 18th, with high temperatures in the mid to upper 90s and heat indices near 100°F on the 17th and high temperatures around 100°F and heat indices between 105°F and 110°F on the 18th. Highest temperatures in Sussex County temperatures ranged from 100°F in Walpack Township to 97°F in Sussex Borough. The hot weather ended the afternoon of the 18th, as scattered strong to severe thunderstorms moved across northern New Jersey.</p> <p>Additionally, thunderstorms impacted the County by downing trees that blocked SR 23 south of SR 94, and SR 94 near North Church Road in Hamburg Borough. Outages were reported in Byram, Sparta, and Hardyston townships, Hamburg and Sussex boroughs, and the Town of Newton. Wind speeds of 60 mph were recorded in the Hamlet of Hardystownville, Andover Township, and Sayreville Borough, and 58 mph in Beaver Lake (Hardyston Township).</p> <p>Some roadway flooding also occurred. Nickel size hail was reported in Sussex Borough and Andover Township. The storms also brought lightning throughout Sussex County. Lightning struck a home on Havens Road in Wantage Township, causing fire damage to its roof. The Selective Insurance Company in Branchville Borough was evacuated after a lightning strike triggered a chemical fire suppression system – several employees were treated for chemical inhalation. Another strike ignited bales of hay inside of a barn on Wykertown Road in Frankford Township. Four fire companies battled the blaze that caused minimal damage.</p> <p>About 3,000 homes and businesses lost power throughout Sussex County. \$15,000 in property damage, and \$5,000 in crop damage was reported from the storms.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
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| July 23, 2012 | N/A | N/A | Countywide | <p>A warm front that was moving through the state into New England helped trigger strong to locally severe thunderstorms in the northern half of New Jersey during the afternoon of the 23rd. Besides pockets of damaging winds, the severe thunderstorms were prolific hail producers.</p> <p>In Sussex County, the storms knocked down several trees in Sandyston Township. A lightning strike injured a 12-year-old camper and an 18-year-old counselor at Kittatinny Lake in Sandyston Township, when the bolt struck a tree and traveled into the foundation of their cabin in Stokes State Forest. The storms dropped half dollar size hail in Sandyston Township; quarter size hail in Walpack Township, Middleville (Stillwater Township), and Myrtle Grove (Hampton Township); quarter size hail in Hainesville (Sandyston Township); and nickel size hail in Branchville Borough.</p> |



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| October 26 – November 8, 2012 | DR-4086 | Yes | Walpack Township, Vernon Township, Wantage Township, Hopatcong Borough, Montague Township, Sussex Borough | <p>Hurricane Sandy was the costliest natural disaster by far in the State of New Jersey. Record-breaking high tides and wave action combined with sustained winds as high as 60 to 70 mph with wind gusts as high as 80 to 90 mph to batter the State. Statewide, Sandy caused an estimated \$29.4 billion in damage, destroyed or significantly damaged 30,000 homes and businesses, affected 42,000 additional structures, and was responsible directly or indirectly for 38 deaths.</p> <p>Sussex County suffered relatively less damage than counties farther to the east, and the strongest winds occurred late in the evening on the 7th. The largest issue was fallen trees. The only township to report widespread damage was Walpack Township. Peak wind gusts in the County included 79 mph at High Point Monument (Montague Township), 75 mph at Sussex Borough, and 70 mph at Wantage Township. Representative snowfall included 3.0 inches in Highland Lakes (Vernon Township) and 2.1 inches in Wantage Township. Snow related traffic accidents were reported in Vernon Township and Hopatcong Borough. Widespread power outages impacted the entire County. Evacuations occurred in the County as well. There were road closures due to debris throughout the County. Private homes were destroyed due to wind, debris and downed trees.</p> <p>The County opened two regional shelters at Sussex County VoTech and Hopatcong High School and they remained open for up to three weeks. Costs to the County included overtime for OEM, DPW, Engineering, Sheriff's Office, Prosecutors Office and the Health Department. According to NOAA-NCDC storm events database, the County had approximately \$100 million in damages and losses from this event. Hurricane Sandy was the costliest natural disaster by far in the State of New Jersey. Record-breaking high tides and wave action combined with sustained winds as high as 60 to 70 mph with wind gusts as high as 80 to 90 mph to batter the State. Statewide, Sandy caused an estimated \$29.4 billion in damage, destroyed or significantly damaged 30,000 homes and businesses, affected 42,000 additional structures, and was responsible directly or indirectly for 38 deaths.</p> <p>Sussex County suffered relatively less damage than counties farther to the east, and the strongest winds occurred late in the evening on the 7th. The largest issue was fallen trees. The only township to report widespread damage was Walpack Township. Peak wind gusts in the County included 79 mph at High Point Monument (Montague Township), 75 mph at Sussex Borough, and 70 mph at Wantage Township. Representative snowfall included 3.0 inches in Highland Lakes (Vernon Township) and 2.1 inches in Wantage Township. Snow related traffic accidents were reported in Vernon Township and Hopatcong Borough. Widespread power outages impacted the entire County. According to NOAA-NCDC</p> |
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| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
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| | | | | storm events database, the County had approximately \$100 million in damages and losses from this event. |
| June 28 – Nov. 8, 2012 | N/A | N/A | Countywide | The combined effects of a series of severe weather events over four months led to Sussex County's designation as a primary county in USDA disaster designation S3487. In Sussex County during this period, NOAA-NCDC reported one day of excessive heat, nine days of hail, 18 days of high, strong, or thunderstorm wind, and two lightning incidents, leading to a total of over \$one million in property damages. \$67,984.64 in USDA indemnity payments went to Sussex County farmers for lost corn crops in 2012. |
| May 1, 2013 | N/A | N/A | Countywide | Sussex County was included as a contiguous county in USDA disaster designation S3593. USDA reported making \$32,371.30 in indemnity payments to Sussex County farmers for lost corn crops in 2013. |
| July 7 – 20, 2013 | N/A | N/A | Countywide | This was the 5th warmest July in New Jersey since records commenced in 1895. The average temperature for the month was 78.2°F. In Sussex County, the warmest temperatures occurred on the 7th, 15th, and 18th, with temperatures ranging from 93°F in Walpack Township on the 7th to 97°F in Andover Township on the 15th and the 18th. Numerous cooling centers were opened across the County. |
| September 12, 2013 | N/A | N/A | Countywide | A strong cold front helped trigger a line of strong to severe thunderstorms that moved through northern and central New Jersey during the early evening on the 12th. In Sussex County, downed trees and wires and blocked roadways were reported along and around Kennedy Road in Green Township and across SR 517 in Ogdensburg Borough. Several downed trees led to closure of Alpine and South Shore Trails in Sparta Township, where strong winds also tore siding off some homes. Wind speeds of 60 mph were recorded in Tranquility (Green Township) and Ogdensburg Borough, and 64 mph in Sparta Township. About 5,000 homes and businesses in Sussex County lost power. Power was not fully restored until later in the day on the 13th. Sussex County had roughly \$20,000 in property damage. |
| January 4-7, 2014 | N/A | N/A | Countywide | One of the harshest arctic outbreaks in years occurred in New Jersey in the first week of January. Low temperatures on the morning of the 4th included -10°F in Pelletstown Hamlet, -9°F in Sussex Borough. A strong cold front with gusty winds on the 6th saw wind speeds of 44 mph in Sussex Borough. Low temperatures on the 7th included zero in Sussex Borough, and the lowest wind chill factor that day was -20°F in Wantage Township. |



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| January 22, 2014 | N/A | N/A | Countywide | Strong northwest winds coupled with another arctic air mass to drop low temperatures on the morning of the 22nd to below zero lows in the northwest New Jersey. Lowest hourly wind chills included -14°F at Sussex Borough. Actual low temperatures included -5°F below zero in Wantage Township and -2°F in Andover Township. |
| March 12, 2014 | N/A | N/A | Countywide | The high winds in Sussex County led to the death of a 74-year-old man when an 80-foot-tall tree fell completely through his home on Maxim Drive in Hopatcong Borough on the afternoon of the 13th. The tree also damaged the neighboring home. Roofing debris on a kerosene heater started a small fire. A police officer rescued two dogs in the house and was injured extinguishing the fire. Sussex County reported \$100,000 in property damage. |
| July 2-3, 2014 | N/A | N/A | Countywide | <p>A hot start to July peaked on the 2nd in interior New Jersey with high temperatures in the lower to mid-90s and afternoon heat index values reaching 100 to 105 degrees. In Sussex County, highest temperatures included 93°F in Sussex Borough.</p> <p>The heat subsided as an approaching cold front then triggered a series of severe thunderstorms in the second half of the day on the 3rd. About 33,000 homes and businesses lost power throughout the state from the combination of wind damage and lightning strikes. A tree fell down into a house in Frankford Township. A lightning strike injured three people walking along Mackerley Road in Green Township. Another lightning strike and ensuing fire burned a barn to the ground in Frankford Township. The County had approximately \$60,000 in property damages and \$10,000 in crop damage over the two days.</p> |
| January 4, 2015 | N/A | N/A | Countywide | A strong cold frontal passage brought strong winds in its wake into New Jersey during the evening and overnight on the 4th. The strongest winds occurred in eastern New Jersey and over the higher terrain of northwest New Jersey. Peak gusts in those locations averaged 50 to 55 mph, while elsewhere most peak gusts were between 40 and 45 mph. The strong winds knocked down weak tree limbs, trees and wires and caused isolated power outages. Peak wind gusts included 54 mph in High Point (Sussex County). \$2K in property damage was reported. |
| January 7-8, 2015 | N/A | N/A | Countywide | Narrative The arrival of an arctic air mass brought one of the coldest mornings of the month of January to most of New Jersey. Morning low temperatures were mainly in the single numbers above zero. In addition, gusty northwest winds continued into the morning and lowest hourly wind chill factors reached around degrees below zero throughout the state. |



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| February 2, 2015 | N/A | N/A | Countywide | Strong, gusty northwest winds occurred in the wake of a departing and intensifying low pressure system during the late afternoon into the middle of the evening on the 2nd in New Jersey. Peak wind gusts average around 50 mph and knocked down weak trees, tree limbs and wires. Scattered power outages occurred. This was further exacerbated by snow and ice on tree limbs in the northwest part of the state. Peak winds included 56 mph in Wantage (Sussex County). \$7K in property damage was reported. |
| February 12-13 | N/A | N/A | Countywide | Strong gusty northwest winds occurred behind a secondary cold frontal passage in New Jersey during the evening and overnight on the 12th. Peak wind gusts averaged around 55 mph over the higher terrain of Sussex County. \$5K in property damage was reported. |
| February 15, 2015 | N/A | N/A | Countywide | The increasing pressure difference (gradient) between a rapidly intensifying low-pressure system offshore and an arctic high pressure system moving east from the Great Lakes caused strong to high damaging northwest winds to occur in New Jersey from the late evening of the 14th into the afternoon of the 15th. Strong wind gusts started late in the evening on the 14th, peaked during the morning of the 15th and continued into the afternoon of the 15th. The highest winds occurred in the southern half of the state and in the higher terrain of Sussex County. In these latter locations, peak wind gusts averaged around 60 mph. \$10K in property damage was reported. The combination of strong to high winds and an approaching arctic air mass-produced wind-chill factors of 10 to 15 degrees below zero during the first half of the day on the 15th in New Jersey. |
| February 19-20, 2015 | N/A | N/A | Countywide | The arrival of another arctic air mass brought some of the lowest wind chills as well as the lowest temperatures of the winter season to New Jersey on the 20th and 21st. As far as wind chill factors went, the first half of the day on the 20th was colder with wind chill factors as low as around 20 degrees below zero during the morning. Actual low temperatures were around zero. On the morning of the 21st, little, if any, wind was present as the arctic high-pressure system was nearby. Low temperatures in more rural inland areas were lower, many were below zero, some well below zero. But, because of the lack of wind, wind chill factors nearly matched the air temperatures and it felt relatively warmer on the morning of the 21st. |



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| February 24, 2015 | N/A | N/A | Countywide | The high-pressure system responsible for third and last arctic blast of the month of February arrived in New Jersey on the morning of the 24th. Unlike the two previous arctic outbreaks earlier this month, this one was not accompanied by strong winds during the first half of the day. Air and wind chill temperatures were nearly the same. The calm conditions and snow cover combined to give many locations in northwest New Jersey the coldest morning of the winter season and comparably cold to the 20th and 21st weather in the rest of the state. Actual low temperatures included 19 degrees below zero in Walpack (Sussex County) and 15 degrees below zero in Sussex (Sussex County). |
| April 4, 2015 | N/A | N/A | Countywide | Strong, gusty northwest winds circulating around an intensifying low-pressure system and approaching high pressure system had the greatest impact across northern New Jersey and coastal southern New Jersey during the second half of the morning into the afternoon on the 4th. Peak wind gusts in these areas reached between 45 mph and 50 mph and knocked down weak tree limbs and wires. In the rest of the southern half of the state, while still windy, most peak wind gusts were less than 40 mph. |
| May 16, 2015 | N/A | N/A | Wantage Township | Peak wind gusts included 48 mph in Wantage (Sussex County). |
| June 12, 2015 | N/A | N/A | Green Township, Fredon Township, Town of Newton | A lee side trough preceding a cold front combined with an unseasonably hot and humid air mass to trigger scattered strong to locally severe thunderstorms in northwest New Jersey during the late afternoon and early evening of the 12th. A severe thunderstorm knocked down trees and wires in Green Township. The same severe thunderstorm knocked down multiple trees in Fredon Township. A severe thunderstorm also knocked down trees and wires in Newton. |
| June 21, 2015 | N/A | N/A | Wantage Township | Scattered strong thunderstorms moved through western New Jersey during the afternoon and evening of the 21st. An isolated severe thunderstorm occurred in Sussex County. A severe thunderstorm tore down power lines in Wantage Township. |
| June 23, 2015 | N/A | N/A | Wantage Township, Veron Township | A severe thunderstorm knocked down a few trees along Central School Road in Wantage Township. A severe thunderstorm knocked down a few trees in Vernon Township. |



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|----------------------|-------------------------|--------------------|-------------------|---|
| July 19, 2015 | N/A | N/A | Countywide | Unseasonably hot and humid weather affected most of New Jersey on the 19th and 20th. High temperatures in most areas reached into the lower to mid-90s both days. The 19th was slightly hotter and more humid overall. The combination of heat and humidity brought afternoon heat index values as high as 100F to 105F on the 19th. These were some of the highest heat index values of the entire summer. A dissipating cold front on the 20th brought slightly drier air into the region during the afternoon of the 20th and heat index values peaked around 100F. A re-enforcing cold frontal passage on the 21st brought even cooler and drier air into the area and by the 22nd all high temperatures were less than 90 degrees in New Jersey. |
| January 4-5, 2016 | N/A | N/A | Countywide | Northwest winds that persisted into the morning of the 5th, combined with an arctic air mass - the coldest of the season so far - produced wind chill factors between minus 10 and minus 30 degrees below zero. The coldest wind chill factors were in the higher elevations where the wind was strongest and temperatures the lowest. The lowest hourly wind chill factor at High Point was minus 27 degrees, which occurred at 0310EST, and minus 15 degrees near Flatbrookville, which occurred at 0314EST. Actual morning low temperatures were in the above zero single numbers and included 4 degrees in Sussex, 5 degrees at Sussex Airport, and 6 degrees in Pelletstown. The unseasonably cold arctic air mass and low wind chill factors were caused by the strong northwest wind flow over 30 MPH produced by a deepening mid-level trough over the eastern part of the country, and an arctic high-pressure system moving east into the region. Cold temperatures were repeated the following night, but with less wind, wind chill factors were closer to the actual air temperatures. |
| February 13-14, 2016 | N/A | N/A | Countywide | Wind Chill values dropped to 25 degrees below zero at 0553EST at Sussex County Airport, with northwest wind gusts as high as 25 MPH. The actual air temperature at this time was 6 degrees below zero. The highest wind gust reported at this station was 30 MPH at 1353EST Saturday, February 13th. A wind chill value of 46 degrees below zero was reported at a Safetynet site at Highpoint at 0530EST. |
| February 24, 2016 | N/A | N/A | Wantage Township | A strong low-pressure system moving north through the Great Lakes region, combined with its associated warm front and cold front, copious amounts of moisture, and low-level jet, produced strong to severe thunderstorms, heavy rain, flash flooding, and stream flooding in New Jersey late Wednesday afternoon and evening, February 24th, with stream flooding continuing into Thursday, February 25th. Thousands were without power for a period across the state, focused in South Jersey. A 55 MPH thunderstorm wind gust was measured in Wantage. |



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| April 3, 2016 | N/A | N/A | Countywide | A strong cold front associated with a low-pressure system moving through New York State swept across the area during the late evening hours of April 2nd and early morning hours of April 3rd, accompanied by thunderstorms, very strong convectively driven winds, and small hail. As colder air behind this front drained south, precipitation changed to snow, with up to three inches falling in the higher elevations of northwest New Jersey and lesser amounts in isolated spots through most of New Jersey. The parent low pressure system then quickly intensified as it continued to move northeast away from the area. The gradient between this low-pressure system and incoming high pressure produced strong winds gusting over 60 MPH in some localities from late overnight through the morning hours of April 3rd. Numerous reports of downed trees and wires throughout the county due to high winds. |
| June 5, 2016 | N/A | N/A | Wantage Township, Fredon Township | A cold front moving into an unstable air mass over New Jersey set off numerous showers and thunderstorms during the late afternoon hours on the 5th. Lightning with these thunderstorms was somewhat limited, so straight-line winds and heavy downpours were the major threat as these storms moved through the area. Thousands of people lost power because of the storms. Many wind gusts from 60 to over 70 MPH were recorded across the region. The highest gust was in Gloucester TWP at 74 mph. Rainfall amounts across the northern parts of the state did surpass an inch with the highest total 1.58 inches in Wantage. Downed trees due to winds leading to road closures were reported in Wantage. Trees and branches were downed in Fredon. |
| July 25, 2016 | N/A | N/A | Five Points | A trough of low pressure led to the development of afternoon and evening showers and thunderstorms which became severe in spots and produced locally heavy rains. 40,000 were left without power across the state. Several trees downed due to thunderstorm winds in Five Points. |
| August 16, 2016 | N/A | N/A | Montague Township, Five Points | Trees, poles and wires were taken down due to thunderstorm winds in Montague, and Five Points. |



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| September 14, 2016 | N/A | N/A | Town of Newton, Hopatcong Borough, Sparta Township | A cluster of thunderstorms developed ahead of a cold front and moved across northern New Jersey during the late afternoon hours of the 14th. Some of the thunderstorms produced damaging winds. Trees were downed by thunderstorm wind gusts closing a few roads in Newton. Several trees were taken down due to thunderstorm winds in Cranberry Lake. One large tree fell onto and downed power lines. A 52 kt wind gust was recorded in Hopatcong. A 63 kt wind gust was reported in Lake Mohawk. Several trees taken down due to thunderstorm winds blocking access to the local marina. Two boats broke anchor as the attachment was torn off from thunderstorm winds. Several trees were taken down due to thunderstorm wind gusts in Sparta. |
| February 13, 2017 | N/A | N/A | Hopatcong Borough, Byram Township | High winds blew through the area after a cold frontal passage, enough to lead to downed trees and wires during the day of the 13th and from a severe squall line early on the 13th. Temperatures were also cold enough with the main low-pressure system along the front to produce a wintry mix across northern portions of the state. |
| February 25, 2017 | N/A | N/A | Branchville Borough | In terms of freezing rain across northern portions of the state, accumulations were generally light with 0.01 inches at the Sussex ASOS. Winds behind the front were also gusty. Several thousand power outages were reported with some lasting 24 hours in Sussex and Morris counties. Wires taken down due to wind throughout the county. A tree fell across Mason Drive and a pole was taken down in Hopatcong on Brooklyn Stanhope Road. A tree fell onto route 613 in Byram Twp. |
| March 2, 2017 | N/A | N/A | Countywide | An unseasonably warm, very moist, and unstable air mass, characterized by temperatures in the 70s and Dew Points in the upper 50s to lower 60s, was conducive to maintaining a line of thunderstorms along a pre-frontal trough, as they crossed the Appalachians and moved through portions of southern NJ. Although there was little in the way of lightning associated with these storms, pockets of significant wind damage occurred. A large tree fell onto a house and fence. |
| March 14, 2017 | N/A | N/A | Countywide | Low pressure systems across the Ohio Valley and Carolinas phased. This led to a rapidly developing storm which tracked just offshore. A wind gust of 51 kts was measured in Sussex County. |
| June 13, 2017 | N/A | N/A | Hamburg Township | A severe thunderstorm impacted Sussex County, NJ. This storm produced a 46-mph wind gust and nickel size hail. Lightning also downed a tree which landed on a house. Another tree was downed due to wind on highway 23. Hail lasted for roughly 5 minutes. Tree downed on highway 23 due to wind at the highway 94 intersection in Hamburg. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
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| August 2, 2017 | N/A | N/A | Fredon Township | A hot and humid airmass with weak boundaries led to slow moving strong to severe thunderstorms with damaging winds, hail, and flooding. Over 2,000 people lost power. Wires were down on Stillwater Road in Fredon. |
| October 24, 2017 | N/A | N/A | Pellettown | A strong low-pressure system over the Great Lakes and a departing high-pressure system to our east lead to a tight pressure gradient and a round of strong winds. Over 25,000 homes and businesses lost power. Several school districts had to close because of the power loss. A CWOP measured gust of 39 kts was reported just southeast of Pellettown. |
| January 4, 2018 | N/A | N/A | Countywide | An area of low pressure tracked up the east coast interacting with a cold front which led to rapid development of a winter storm across the state. This storm quickly moved out by the 5th. However, snowfall accumulations and gusty winds occurred with the storm. Blizzard conditions occurred along many coastal locations. Top wind gusts were generally around 40 mph across the state. Snow amounts were highest in southern and coastal New Jersey with over 6 inches, totals were only a few inches further northwest. A state of Emergency was declared during the height of the storm. Several hundred vehicles were stranded, and hundreds of thousands were without power at some point. Severe cold continued for the next week leading to many locations going to code blue operations and closing of the Cape May Lewes Ferry. |
| March 2, 2018 | N/A | N/A | Countywide | Numerous trees and power lines were knocked down from strong winds. Nearly 30 roads throughout the county were closed because of downed trees. As of 10 PM Saturday, March 3rd, 23,503 customers were still without power. Free water and ice was provided to affected residents. A wind gust of 48 MPH was reported by a NJWXNET weather station at High Point Monument at 1125EST on March 2nd. A 41-year-old man was killed on Friday evening at 1845EST when he came in contact with live wires on Lenape Avenue in Andover, NJ that had been knocked down by the strong winds. He was pronounced dead on the scene. |
| April 4, 2018 | N/A | N/A | Countywide | Low pressure developed over the Central Plains on April 3rd, deepening as it moved into the Saint Lawrence Valley on April 3rd and to Prince Edward Island on April 4th, due to a significant contrast in air masses with Continental Polar air to the north and Maritime Tropical air to the south. This led to a strong cold frontal passage across the region on April 4th. In the wake of this front, colder air moving into the area and a tight pressure gradient lead to widespread damaging west-northwest wind gusts in excess of 50 mph on April 4th. A mesonet site in High Point Monument recorded a wind gust of 58 mph at 4 PM on April 4th. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|-------------------|-------------------------|--------------------|--------------------------------------|---|
| July 1, 2018 | N/A | N/A | Countywide | Temperatures in the middle to upper 90s and dew points in the upper 60s to lower 70s led to excessive heat across portions of southeastern Pennsylvania. Heat indices reached 106 degrees at the Andover Airport AWOS on July 3rd. |
| October 2, 2018 | N/A | N/A | Branchville Borough | Supercellular severe thunderstorms caused 2 tornadoes, wind damage, and hail across the region all part of a record-breaking tornado outbreak across Pennsylvania. Cranberry Lake reported localized power outages and trees down. Branchville reported localized tree damage and power outages. |
| February 25, 2019 | N/A | N/A | Countywide | A departing very deep cyclone combined with strong high pressure to the west yielded a strong pressure gradient from the Plains eastward to the northern Mid-Atlantic and New England regions. High winds gusting 50-60 mph resulted in scattered power outages and trees down across the region. Some minor structural damage also occurred. |
| April 15, 2019 | N/A | N/A | Stillwater Township | A severe weather outbreak impacted much of the East Coast, causing widespread straight line wind damage and a few tornadoes. An approaching frontal system with strong wind fields moving into an unusually moist April air mass contributed to the formation of a well-organized line of severe convection. This line moved through the mid-Atlantic during the predawn hours of April 15. Several thunderstorm related damage reports were received. Multiple trees and power lines were reported down in Stillwater Twp. The |
| May 19, 2019 | N/A | N/A | Sandyston Township | A warm front moved through the mid-Atlantic on the morning of May 19. This set the stage for the warmest day of the year to that point for most of the region. The combination of daytime heating and a pre-frontal trough ahead of an approaching cold front led to thunderstorm development late in the day. Thunderstorms organized into a line which produced pockets of wind damage over eastern Pennsylvania and northern New Jersey. A brief tornado also occurred in Pennsylvania. With the loss of daytime heating, storms weakened as they moved to the northeast. A tree was reported down on Layton-Hainesville Rd. in Sandyston Twp. A tree was reported down on E Shore Rd. near Lake Owassa. |
| May 28, 2019 | N/A | N/A | Hopatcong Borough, Stanhope Township | Severe supercellular storms developed and moved into the region from the west during the mid to late afternoon hours. Storms produced large hail, damaging wind gusts, and 2 tornadoes. Tree reported down into a house on Helen Street in Hopatcong. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------|-------------------------|--------------------|---------------------------------------|---|
| June 29, 2019 | N/A | N/A | Countywide | A frontal boundary that had been stalled over the mid-Atlantic had lifted north of the region by the morning of June 29. Later that day and into the evening, the front once again approached, this time as a strong cold front, as low pressure tracked through New England and began to intensify offshore in the Gulf of Maine. The combination of strong frontal forcing and a warm, unstable environment ahead of the front led to widespread severe thunderstorms developing. Numerous reports of damaging wind, as well as some hail, were received in association with these storms. Numerous trees and telephone poles and wires were reported down in the Cranberry Lake area. A tree fell on US-206 north of I-80, closing all lanes in Brookwood. |
| July 17, 2019 | N/A | N/A | Hampton Township, Branchville Borough | The remnants of Hurricane Barry moved near and west of the mid-Atlantic on July 17, in tandem with a frontal system which was absorbing the former tropical cyclone. A hot air mass existed east of this system, and the tropical moisture associated with Barry combined with the heat to create an unstable environment primed for heavy rainfall and severe weather. Widespread convection developed, with several storms producing damaging wind. A tree was reported down in Hampton Twp. Tree blown down on N Shore Rd in the Cranberry Lake area. |
| July 20, 2019 | N/A | N/A | Branchville, Frankford Township | An excessively hot air mass was in place over the mid-Atlantic on July 20. While the air mass was hot, the environment was otherwise generally unfavorable for convection due to mid-level capping. However, some thunderstorms did develop where the cap was weaker, especially in New York but also as far south as northern New Jersey. These isolated cells produced localized wind damage. Several downed trees blocked CR-519 near Branchville. Numerous trees and power lines were downed in and near Frankford Twp. |
| July 21, 2019 | N/A | N/A | Andover Township, Hopatcong Borough | A slow-moving cold front was approaching a very hot air mass over the mid-Atlantic on July 21. Strong instability and high moisture levels were present ahead of the front. Relatively weak shear and some mid-level dry air were limiting factors, but the frontal forcing helped to trigger scattered thunderstorms, some of which became strong to severe and produced areas of wind damage. Downed trees and power lines were reported in the Andover and Hopatcong areas. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------|-------------------------|--------------------|----------------------------------|--|
| July 22, 2019 | N/A | N/A | Hopatcong Borough | A frontal boundary stalled over the mid-Atlantic on July 22. An approaching upper-level trough helped spur the development of a wave of low pressure along the front. A very favorable environment for convection and severe weather developed along and south of this boundary. Extremely high moisture content was present in the air mass, allowing moderate to strong instability to build during the heating of the day. The frontal boundary and developing low also helped to enhance both low level and deep layer shear to respectably strong values for midsummer. The result was a day of widespread severe weather. Discrete storms early in the afternoon gave way to a powerful mesoscale convective system in the evening which produced widespread damaging winds with considerable damage over a large area. Trees and powerlines were downed throughout Hopatcong. |
| August 8, 2019 | N/A | N/A | Town of Newton, Andover Township | Behind a cold front, an upper-level trough moved over the mid-Atlantic on August 8. Multiple shortwave impulses rotated through the broader trough over the day. The upper-level energy combined with daytime heating in an otherwise marginally favorable environment to produce scattered showers and thunderstorms. A few storms became strong to severe, producing gusty winds. Tree and wires downed on Swartwood Rd in Newton. Tree and wires downed on Crescent Dr in Andover. |
| October 31, 2019 | N/A | N/A | Hopatcong Borough | A severe weather outbreak impacted the mid-Atlantic from the evening of October 31 through the pre-dawn hours of November 1. A strong area of low pressure moved through the eastern Great Lakes on the 31st. Ahead of it, strong southerly flow advected an unseasonably warm and moist air mass into the mid-Atlantic. This generated enough instability, combined with extremely strong wind fields, to produce a low topped line of severe convection which tracked across the entire region. Widespread damaging wind occurred as the squall line moved through, along with a couple of short-lived embedded tornadoes. A photo in Hopatcong showed a large tree down on power lines. The report also indicated several additional trees down on power lines with multiple transformer fires in the area. A tree was downed on NJ-23 south of Beaver Lake Rd. |

Sources: FEMA 2015; NOAA-NCDC 2015; SPC 2015; ONJSC 2015; FEMA 2020; NOAA-NCDC 2020; NWS 2020; SPC 2020; NJOEM 2019; NHC 2020

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

N/A Not Applicable

FEMA Federal Emergency Management Administration

SPC Storm Prediction Center

ONJSC Office of the New Jersey State Climatologist

NOAA-NCDC National Oceanic Atmospheric Administration – National Climatic Data Center



NWS National Weather Service
NJOEM New Jersey Office of Emergency Management
NHC National Hurricane Center

SEVERE WINTER WEATHER

Known severe winter storm events that have impacted The State of New Jersey and Sussex County between 2008 and 2019 are identified in Table H-12. Many sources were researched for historical information regarding severe winter storm events in Sussex County; therefore, Table H-12 may not include all severe winter storm events that have impacted the County.

Table H-12. Severe Winter Storm Events in Sussex County Between 2008 and 2019

| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|----------------------|-------------------------|--------------------|-------------------|---|
| February 12-13, 2008 | N/A | N/A | Countywide | <p>A winter storm of snow, sleet and freezing rain affected northwest New Jersey and most of the Raritan River Basin. The wintry mix led to slippery road conditions which led to early dismissals of schools. The storm also led to power outages due to ice covered trees, limbs and wires which were knocked down. Approximately 45,000 homes and businesses were without power.</p> <p>In Sussex County, the wintry mix led to widespread problems. Twenty-one county roads had blockages due to downed trees and wires. Power outages were widespread, as JCP&L reported 30,000 customers in Sussex County lost power mainly in the Newton area and parts of Sparta Township. The Sussex Rural Electric Cooperative, which serves 12,000 members in the northern regions of the county, reported that the Highland Lakes and Barry Lakes sections of Vernon Township were the hardest hit. The County had to remove debris throughout the County as well. In the Town of Newton, a Department of Public Works truck sustained severe fire damage when live wires, weighted down by ice, fell on it on Overlook Road. The driver was uninjured. The Newton Memorial Hospital sustained leaks due to a build-up of snow and ice on the roof. Also in Newton, large trees were completely toppled over due to the ice build-up, with their root ball still attached. In Franklin Borough, trees were downed on Sterling Street. In Sparta Township, ice covered trees toppled over into some roads, even blocking some. Snow and sleet accumulations included 4.0 inches in Wantage Township and 3.5 inches in Hopatcong Borough. The county sustained \$150,000 in damages from the storm.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|----------------------|-------------------------|--------------------|-------------------|---|
| December 10, 2008 | N/A | N/A | Countywide | Up to one inch of ice accrued on exposed surfaces and knocked down numerous tree limbs, trees, and power lines. Hardest hit was the Highland Lakes region of Vernon Township, but ice damage also affected areas of Sandyston, Sparta, Walpack, Wantage, and Montague Townships. Ice damage started at elevations greater than 1,000 feet. |
| February 22-23, 2010 | N/A | N/A | Countywide | A protracted winter storm dropped a wintry mix of snow, sleet, and freezing rain from in northwest New Jersey and affected Sussex County the most. Representative snowfall included 11.0 inches in Wantage Township, 8.7 inches in Sussex borough, 8.0 inches in Beemerville (Wantage Township), and 6.6 inches in Sparta and Vernon Townships. |
| January 26-27, 2011 | N/A | N/A | Countywide | A protracted winter storm affected nearly all of New Jersey from the early morning of the 26th into the early morning of the 27th. Snow and sleet accumulations reached 12 to 18 inches in southwest New Jersey and the Passaic and Raritan Basins with lesser amounts elsewhere. The continued onslaught of winter weather was causing numerous municipalities to exhaust their snow removal budgets. The heavy snow also took its toll on plows as many needed to be repaired after this event. The one-two punch hit central and southwest New Jersey the hardest. Many municipalities declared snow emergencies. In Sussex County, over 20 vehicles drove off roadways, the most in Sparta Township. Representative snowfall included 8.9 inches in Sparta Township and 6.9 inches in the Town of Newton. |
| February 1-2, 2011 | N/A | N/A | Countywide | A winter storm dropped several inches of sleet and snow on Sussex County and northwest New Jersey, including a long period of freezing rain that produced ice accretions of approximately a half inch. The ice accretions took down weak trees, tree limbs, and power lines. Approximately 36,000 homes and businesses were without power. Many schools and businesses were closed due to this event. In Sussex County, numerous vehicles skidded off roadways. In Sparta, an ambulance and postal truck collided, but no injuries occurred. Representative snow and sleet accumulations included 5.2 inches in Wantage Township and 3.5 inches in Fredon Township. Overall, the County had overtime costs for snow and debris removal. |
| March 23-24, 2011 | N/A | N/A | Countywide | Snow accumulations averaged two to 10 inches in northwestern New Jersey and one to four inches in the Raritan Basin. A band of heavier snow that fell across southern Sussex County, Warren County, and western Morris County accounted for the highest snowfall totals. Ice accretions averaged a tenth of an inch or less. Representative snowfall included 8.8 inches in Andover Township, 8.0 inches in Fredon Township, and 4.3 inches in Wantage Township. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|----------------------|-------------------------|--------------------|-------------------|---|
| October 29, 2011 | DR-4048 | Yes | Countywide | <p>A late October winter storm dropped heavy snow across parts of central and all northwest New Jersey and caused widespread power outages due to many trees still having leaves on them. Sussex, Warren, Morris, Hunterdon, Somerset, and Middlesex Counties were identified as major federal disaster areas. Over 800,000 utility customers lost power. Some areas did not have power restored until November 4th. Governor Christie declared a state of emergency and urged people to stay off the roads. Many municipalities opened warming stations and shelters. About 25 major roadways were closed throughout the State. In addition to the snow and rain, there were strong northerly and northeasterly winds, ranging from 15 to 25 mph and gusting up to 35 mph in the impacted areas. These strong winds also contributed to the downed trees, electric lines and power outages. The 19.1-inch snowfall in Barry Lakes (Sussex County) established a new October snowfall record for the state of New Jersey and is higher than any November snowfall record.</p> <p>Snowfall totals in Sussex County included 19.1 inches in Barry Lakes, 15.5 inches in Wantage Township, and 8.3 inches in the Town of Newton.</p> |
| December 26-27, 2012 | N/A | N/A | Countywide | <p>An intense low-pressure system brought a winter storm to Sussex County and a wintry mix in the rest of northwestern New Jersey. A combination of snow, sleet, and freezing rain occurred. Snowfall averaged one to four inches, except around six inches in Sussex County. Ice accumulations averaged one tenth of an inch.</p> <p>Sussex County hit the hardest by the storm. In Sparta alone there were twenty reported accidents. In Frankford Township, a mail truck drove through a guard rail on U.S. Route 206. The driver was uninjured. Representative snowfall included 7.2 inches in Highland Lakes (Vernon Township), 6.0 inches in Wantage Township, 5.9 inches in Hardyston Township, 5.5 inches in Montague Township, 5.2 inches in Vernon Township, and 5.0 inches in Sparta Township.</p> |
| February 8-9, 2013 | N/A | N/A | Countywide | <p>A winter storm caused scattered power outages reported as result of the gusty winds in Sussex County. Peak wind speeds included 53 mph in Wantage Township, 51 mph at the High Point Monument in Montague Township. Total snowfall accumulations included 14.1 inches in Vernon Township.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|-------------------|-------------------------|--------------------|-------------------|---|
| March 7-8, 2013 | N/A | N/A | Countywide | The combination of wraparound moisture from the departing Nor'easter and a new upper low disturbance brought heavy snow to Sussex and Morris Counties and an accumulating snow through central New Jersey from the late afternoon on March 7th through March 8th. The snow impacted the morning commute and travel on the 8th and caused about 1,500 homes and businesses to lose power in northwest New Jersey. Representative snowfall included 11.8 inches in Highland Lakes (Vernon Township), 10.5 inches in Wantage Township, and 8.8 inches in Hardyston Township. |
| February 5, 2014 | N/A | N/A | Countywide | <p>A major winter storm brought heavy snow and sleet to northwest New Jersey and a wintry mix which included a significant accumulation of ice to the central third of New Jersey. Snowfall reached one foot in Sussex County and ice accumulations were as high as half an inch. The snow that was still on the trees from the just concluded winter storm was a major contributing factor to the power outages. The weight of the snow, then sleet and freezing rain on limbs all collaborated to cause more tree damage than would have occurred if trees were bare at the start of the event. It was the worst ice related outages in the Public Service Electric and Gas's service area since 1999. Governor Chris Christie declared a State of Emergency and all New Jersey State offices were closed on the 5th for all non-essential workers. Except in the southeast part of the state, schools were closed. Rutgers University was closed also. New Jersey State Police responded statewide to about 170 accidents and around 180 calls for assistance from disabled motorists.</p> <p>Representative snowfall and sleet accumulations included 11.0 inches in Wantage and Montague Townships and 8.0 inches in Highland Lakes (Vernon Township).</p> |
| February 13, 2014 | N/A | N/A | Countywide | A winter storm dropped heavy snow and sleet as well as some freezing rain across most of New Jersey, except for the immediate coast. Snowfall and sleet totals average 10 to 20 inches from around the Interstate 95 corridor northwestward with the highest amounts in Warren and Sussex Counties. Governor Chris Christie declared a state of emergency and New Jersey State Offices were closed and non-essential personnel did not have to report to work. Representative snowfall included 22.8 inches in Montague Township, 19.2 inches in Highland Lakes (Vernon Township), and 17.2 inches in Wantage Township. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|-------------------|-------------------------|--------------------|-------------------|---|
| November 26, 2014 | N/A | N/A | Countywide | <p>A winter storm struck the day before Thanksgiving, dropping heavy snow over parts of northwest New Jersey and caused power outages to approximately 23,000 customers and travel difficulties. Governor Christie declared a state of emergency and speed limits were reduced on all major roadways. The weight of the heavy, wet snow tore down tree limbs, trees and power lines in the northwest portion of New Jersey.</p> <p>In Sussex County, Sussex Rural Electric Cooperative reported about 1,150 members without power at 10 a.m. EST on the 27th, with the greatest concentration in Scenic Lakes, Lake Wallkill and Pleasant Valley Lake areas. In Hardyston Township, a destroying house fire was believed to have been started by a surge when power was restored. Representative snowfall (this included the sleet along the Interstate 95 corridor) included 11.5 inches in Highland Lakes (Vernon Township), 10.7 inches in Wantage Township, 8.9 inches in Sussex Borough.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------|-------------------------|--------------------|-------------------|--|
| January 24, 2015 | N/A | N/A | Countywide | <p>A winter storm dropped heavy snow in Northwest New Jersey and a mixture of snow, sleet and freezing rain in the central and southwest part of New Jersey on the evening of the 23rd into the morning of the 24th. Overall less wintry precipitation (a faster switch to rain) occurred progressively farther to the south and southeast in the state. Snowfall averaged 5 to 9 inches in northwest New Jersey; 2 to 5 inches in central New Jersey and less than two inches across southwest New Jersey. No snow fell in southeast New Jersey. Ice accumulations were generally around a trace. The snow caused traveling difficulties as well as postponement of social activities on the 24th. There were over 100 reported accidents in the state. The snow and accidents caused about 2,000 homes and businesses to lose power. New Jersey Transit cross-honored all commuting tickets. The onshore flow from the winter storm also caused minor tidal flooding in southern New Jersey during the morning high tide cycle on the 24th. Precipitation started as snow on the evening of the 23rd from southwest New Jersey northward between 9 p.m. EST and Midnight EST. In Northwest New Jersey, the snow fell at its heaviest during the pre-dawn hours on the 24th and ended between 8 a.m. EST and 10 a.m. EST on the 24th. In the Raritan Valley, snow also fell at its heaviest during the pre-dawn hours on the 24th, but then changed to freezing rain and sleet between 4 a.m. EST and 6 a.m. EST on the 24th. Precipitation in some areas changed to plain rain before ending later that morning. In the central third of New Jersey, a change to rain (with some sleet at the transition time) worked its way to the northwest from coastal areas and occurred between 1 a.m. EST and 5 a.m. EST on the 24th and remained rain until it ended around 8 a.m. EST on the 24th. Throughout the state, about 20 high schools postponed SAT testing. Representative snowfall included 9.0 inches in Highland Lakes (Sussex County).</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|---------------------|-------------------------|--------------------|-------------------|---|
| February 1-2, 2015 | N/A | N/A | Countywide | <p>A winter storm brought a heavy mixture of snow, some sleet and freezing rain to the Raritan Valley and northwest New Jersey with less of a wintry impact to the rest of central and southwest New Jersey on the first into the second. The storm greatly impacted the morning commute on the 2nd in the northwest part of the state.</p> <p>Precipitation started as snow throughout the northern half and southwest part of New Jersey during the evening of the 1st. Precipitation fell as rain in the southeast part of the state throughout the event. In southwest New Jersey, the snow transitioned briefly to sleet and then rain early on the 2nd. The rain briefly changed to snow before ending in the mid afternoon on the 2nd. In the Raritan Valley and in Mercer and Monmouth Counties, precipitation transitioned to rain during the early morning on the 2nd and then changed back to freezing rain, then sleet and ultimately snow during the second half of the morning and early afternoon. The snow ended during the mid afternoon on the 2nd. In northwest New Jersey including the Passaic Basin, the snow transitioned to a sleet and/or freezing rain mixture during the morning of the 2nd, then changed back to snow by early afternoon and ended during the middle of the afternoon on the 2nd.</p> <p>Speed restrictions were in place on most major roadways in central and northern New Jersey on the 2nd. Many schools in northwest New Jersey were closed on the 2nd. Representative snowfall included 8.0 inches in Montague (Sussex County).</p> |
| January 22-24, 2016 | DR-4264 | No | Countywide | <p>An impulse from the west coast traversed the midsection of the country, then developed into a low pressure system as it tracked across the Gulf states before intensifying along the Carolina coast into a major nor'easter, producing record snowfall in parts of New Jersey on January 23rd. It then moved out to sea after passing by the mid-Atlantic coast early on January 24th.</p> <p>Snow began falling during the Friday afternoon commute on January 22nd, then continued, heavy at times, Friday night into early Sunday morning. Wind gusts up to 60 MPH produced blizzard conditions as visibilities dropped to one-quarter mile or less in spots. Representative snowfall totals include 16.0 inches in Stockholm (Sussex).</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|-------------------|-------------------------|--------------------|-------------------|--|
| November 20, 2016 | N/A | N/A | Countywide | <p>An area of low pressure near James Bay Canada lead to a strong cold frontal passage across the middle Atlantic Saturday evening November 19. Northwesterly winds increased substantially immediately following the cold frontal passage, with several reports of gusts generally in the 45 to 55 mph range over New Jersey. These strong wind gusts persisted around 48 hours, through Monday November 21. The High Point, NJ mesonet site recorded a peak wind gust of 60 mph at 14:40EST on November 21.</p> <p>Following the cold frontal passage Saturday evening November 19, low pressure developed over New England, and provided a sufficiently cold and moist air mass to produce the seasons first significant snowfall. Snow overspread portions of the middle Atlantic late Saturday evening November 19, shortly after the cold frontal passage. By 01:00EST Sunday November 20, some of the higher terrain of northern New Jersey received around two inches of snowfall. The highest amount as of this time was 2.0 inches in Highland Lakes, New Jersey.</p> <p>The snow continued to fall into Sunday morning November 20. Around 08:00EST, amounts up to around 6 inches were observed across the higher terrain of Sussex county New Jersey.</p> |
| February 9, 2017 | N/A | N/A | Countywide | <p>A strong cold front moved through the region with a temperature drop from the 50's and 60's all the way down close to freezing. Low pressure developed along the front with precipitation northwest of the boundary. The precipitation changed to snow across most of the state. Northern locations had all snow with higher totals. Further south the precipitation was mainly rain for an extended period resulting in much lower accumulations. Gusty winds also occurred as the low departed the region. Some higher snowfall amounts include 11.1 inches in Highland Lakes, 10.3 inches in Wantage, 10.0 inches in Vernon, and 9.0 inches in Stockholm.</p> |
| March 14, 2017 | N/A | N/A | Countywide | <p>Low pressure systems across the Ohio Valley and Carolinas phased. This led to a rapidly developing storm which tracked just offshore. Wind and a foot of snow were reported across Sussex County.</p> |
| January 17, 2018 | N/A | N/A | Countywide | <p>Several inches of snow fell across the northern portions of the state. Snowfall averaged around 6 inches of snow in Sussex county. Further south, across most of Northern Jersey totals ranged from 3-5 inches with totals closer to an inch in southern portions of the state. Several area schools closed due to the storm. A few hundred people also lost power in Sussex county. Snowfall averaged around 6 inches in the county.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|-------------------|-------------------------|--------------------|-------------------|---|
| March 2, 2018 | N/A | N/A | Countywide | A heavy, wet snow accumulated to a depth of over 16 inches in the higher elevations of the county, and around 6 inches or so in the valleys. Some snowfall totals include 16.5 inches in Branchville, 14.0 inches in Highland Lakes, 13.5 inches at High Point, 8 inches near Wantage, 7.0 inches in Stockholm, and 2.3 inches near Sussex. A wind gust of 48 MPH was reported at High Point Monument at 1125EST on the 2nd. Blowing and drifting snow made travel hazardous Friday afternoon and evening. Numerous power outages, some lasting over two weeks, were widespread throughout the county due to tree and wire damage. Warming centers were established around the county for affected residents. |
| March 7, 2018 | DR-4368 | No | Countywide | <p>Narrative A broad area of low pressure extending from the Ohio Valley to the Piedmont of South Carolina consolidated off the Virginia Capes during the early morning of March 7th. This new primary low moved northeast and gradually deepened as it passed east of the Delaware and New Jersey coasts on March 7th. The snow contained large amounts of liquid, making it heavy and wet. This resulted in downed trees, limbs, and wires, leading to numerous power outages across portions of New Jersey, especially where the heaviest snow was reported. Many customers were still without power from the previous storm when this storm struck. Governor Murphy estimated about 350,000 customers state-wide lost power as a result of this second storm.</p> <p>Although all portions of the county experienced significant snowfall from this event, the higher amounts occurred over the central and eastern portions of the county which were closer to the low pressure system. Some reported snowfall totals include: 21.0 inches in Highland Lakes, 17.0 inches in Stockholm, 16.0 inches in Sparta, 15.5 inches in Hardyston Township, 15.0 inches in Vernon, 13.5 inches in Wantage, 12.7 inches in Montague, and 12.0 inches in Newton.</p> |
| March 21-22, 2018 | N/A | N/A | Countywide | A complex area of low pressure over the middle Atlantic, which involved several individual centers, slowly consolidated off the Virginia Capes Tuesday morning, March 20th into Wednesday March 21st along a frontal boundary. This primary low, the fourth nor'easter of March, gradually moved northeast Wednesday night, to a position southeast of the 40 North/70 West Benchmark coordinates on Thursday morning. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|----------------------|-------------------------|--------------------|-------------------|--|
| April 2, 2018 | N/A | N/A | Countywide | Precipitation began as a wet, heavy snow during the evening hours on March 20th. After a lull during the overnight hours, a drier snow began falling, heavy at times, during the afternoon and evening hours on March 21st. The heaviest snow from this event fell in the southern one-half of the county, with a sharp drop off in the far north. Some snowfall reports include: 10.0 inches in both Stockholm and Byram Township, 9.5 inches in Fredon, 8.5 inches in both Hardyston Township and Newton, 7.0 inches in Ogdensburg, 7.0 inches in Andover, Sparta, and Franklin, 2.5 inches in Vernon Valley, 1.3 inches in Sussex, 1.1 inches in Wantage, and 0.2 inches in Montague. |
| November 15-16, 2018 | N/A | N/A | Countywide | Early season winter storm. Additional trace amounts of snow were reported in Cape May County. Totals ranged from 12.6 in Montague to 6.5 in Sparta Township. |
| February 12-13, 2019 | N/A | N/A | Countywide | This event was the second part of a multi-day storm that impacted the region with light snow changing to a wintry mix and then to rain. Snow and ice totals were less across Delmarva than other locations farther north and west. A trained spotter reported 3.0 of snow in Lebanon. 0.04 of ice was reported at the Sussex County Airport. |
| March 3-4, 2019 | N/A | N/A | Countywide | An offshore low pressure system brought a period of heavy precipitation to the mid-Atlantic. A mix of rain, sleet, and snow was observed, with snow confined mainly to interior areas and sleet and rain more abundant near the coast. Snowfall totals inland approached 10, with snowfall rates exceeding one inch per hour for several hours. A sharp gradient in snowfall with a steep drop in snow totals was observed just west of the Interstate 95 corridor. A trained spotter in Highland Lakes reported 8.2 inches of snow. |
| December 1-3, 2019 | N/A | N/A | Countywide | A complex, long duration winter storm impacted parts of the mid-Atlantic over the first three days of December. Impacts from the storm came mainly in two phases. Initially, weakening low pressure moved into the Midwest and Great Lakes region on December 1, bringing a widespread area of overrunning precipitation to the mid-Atlantic. Cold air in place ahead of the precipitation led to heavy mixed precipitation in interior areas, with most though not all areas eventually seeing a gradual change to rain. On December 2nd, developing secondary low pressure brought additional precipitation to the region, which took the form of rain changing to snow. The rapidly strengthening secondary low finally pulled away from the area during the early hours of December 3rd. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|----------------------|-------------------------|--------------------|-------------------|--|
| December 16-17, 2019 | N/A | N/A | Countywide | A heavy mix of snow, sleet, and freezing rain occurred. The highest snowfall report was 14.3 inches in Highland Lakes, with a widespread 8 to 12 inches of snow throughout the county. Up to a third of an inch of glaze ice also fell. The Sussex Airport ASOS (KFWN) measured 0.32 inches of glaze ice. Widespread power outages occurred with a number of downed trees and wires, including the KFWN ASOS which failed late in the storm's duration due to loss of power. |

Sources: NOAA NCDC 2015; FEMA 2015; NWS 2015; NOAA-NCDC 2020; NJOEM 2019; NWS 2020; FEMA 2020

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

N/A Not Applicable

NOAA-NCDC National Oceanic Atmospheric Administration – National Climatic Data Center

NWS National Weather Service

NJOEM New Jersey Office of Emergency Management

WILDFIRE

Known wildfire events that have impacted The State of New Jersey and Sussex County between 2008 and 2019 are identified in Table H-13. Many sources were researched for historical information regarding wildfire events in Sussex County; therefore, Table H-13 may not include all wildfire events that have impacted the County.

Table H-13. Wildfire Events in Sussex County Between 2008 and 2019

| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------|-------------------------|--------------------|-------------------|---|
| March 23, 2009 | N/A | N/A | Wantage Township | A series of brush fires occurred across New Jersey on the 23rd. Most were in the northern part of the state as the combination of strong north winds, low humidity levels and a very dry March made it easy for fires to spread rapidly. The peak wind gusts on the 23rd at both Philadelphia and Newark Liberty International Airports were 38 mph. In Sussex County, a brush fire affected just over ten acres near a residential community in Wantage Township. The wildfire was in a grass field adjacent to houses. Forest Fire volunteers managed to protect the homes. |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|------------------|-------------------------|--------------------|--------------------|--|
| April 7, 2010 | N/A | N/A | Frankford Township | <p>Unseasonably warm and dry weather coupled with gusty southwest winds made it easy for wildfires to spread in New Jersey on the 7th. Two large wildfires occurred in Burlington and Sussex Counties.</p> <p>In Sussex County, a wildfire occurred at the intersection of County Route 521 and Katey Lane in Frankford Township. The fire was located in a very remote area near Culver's Gap west of Lake Owassa. The fire was reported at 421 p.m. By early that evening, the fire continued to grow with an estimated 40 acres consumed. An extreme smoke condition existed. A precautionary evacuation of Kittatinny Lake Community took place. Two firefighters were treated for minor non-life-threatening injuries. The Salvation Army supplied a water canteen for fire fighters at the scene. No forced evacuations and no danger to any structures occurred. The fire was contained the next day.</p> |
| March 26, 2012 | N/A | N/A | Hopatcong Borough | <p>The combination of strong winds, low humidity levels and an unseasonably dry start to 2012 led to several wildfires throughout New Jersey on the 26th. Through March 27th, there were 315 wildfires that consumed 254 acres throughout New Jersey. By comparison to date in 2011 there were only 167 wildfires that consumed 176 acres. March 2012 was not only the warmest (49.7°F statewide average), but also the 10th driest March on record since 1895. The statewide average precipitation total of 1.97 inches was only forty-six percent of normal and the driest March since 2006 in New Jersey.</p> <p>In Hopatcong Borough (Sussex County), a brush fire occurred during the evening of the 26th on Stevens Trail.</p> |
| April 6, 2012 | N/A | N/A | Vernon Township | <p>There was a wildfire on the 6th in Sussex County in Vernon Township at Wawayanda State Park. The Pinwheel Fire was a brush fire that was brought under control by the late morning of the 6th. New Jersey Forest Fire Services (also used helicopters) and Department of Environmental Protection firefighters battled the blaze. The steep terrain and gusty winds caused difficulty for the firefighters. There was no impact to properties or roadways.</p> |



| Date(s) of Event | FEMA Declaration Number | County Designated? | Location Impacted | Losses / Impacts |
|-------------------|-------------------------|--------------------|-------------------|---|
| April 8, 2012 | N/A | N/A | Vernon Township | Two separate wildfires occurred in Wawayanda State Park near the Appalachian Trail on the 8th in Sussex County. One burned about 10 acres, the second about five acres. The Appalachian Trail in Wawayanda between New Jersey State Route 94 and Barrett Road in Vernon Township was closed due to the wildfire in vicinity of Pinwheel's Vista. Other smaller wildfires were reported in New Jersey in Warren, Morris, Hunterdon, Middlesex Ocean, and Cape May Counties. Both fires were contained by that evening. Gusty northwest winds on the 8th (with many peak gusts near 40 mph) helped spread the fires more rapidly. There were 57 reported wildfires in New Jersey on the weekend of the 7th and 8th. |
| April 6, 2014 | N/A | N/A | Vernon Township | A few smaller wildfires occurred in Sussex County from the 6th into the night of the 7th. The largest was a 75-acre wildfire on a mountain ridge behind an A&P Supermarket on County Route 515 in Vernon Township. Forty firefighters battled the blaze and water from Highland Lake was used to extinguish it. Smaller brush fires charred nine acres along U.S. Route 206 in Byram Township. Other brush fires occurred along State Route 15 in Sparta Township and Twin Oaks Road in Stillwater Township. |
| April 21-22, 2014 | N/A | N/A | Vernon Township | A brush fire began in Vernon Township, about 6:30 p.m. By the following morning, it had spread to cover about 100 acres. Local fire departments from Vernon and Highland Lakes responded to the event. No injuries were reported, and the fire was not close enough to residences or structures to require any evacuations. |
| May 12, 2015 | N/A | N/A | Montague Twp | A wildfire destroyed a home on Doremus Lane in Montague Township in Sussex County on the 12th. The wildfire started shortly after 530 p.m. EDT on the 12th. In addition to the home being destroyed, the wildfire consumed more than 6 acres before it was brought under control shortly after 8 p.m. EDT on the 12th. May 12th was an unseasonably warm and windy day which made it easy for wildfires to spread more rapidly. The peak wind gust at Wantage was 40 mph and the minimum relative humidity was 22 percent. No serious injuries were reported. |

Sources: NOAA-NCDC 2014; FEMA 2014; NJFFS 2015; NJ.Com 2015; FEMA 2020; NOAA-NCEI 2020; NJOEM 2019

Note (1): Monetary figures within this table were U.S. Dollar (USD) figures calculated during or within the approximate time of the event. If such an event would occur in the present day, monetary losses would be considerably higher in USDs as a result of increased U.S. Inflation Rates.

N/A Not Applicable

FEMA Federal Emergency Management Administration

NJFFS New Jersey Forestry Fire Service

NOAA-NCDC National Oceanic Atmospheric Administration – National Climatic Data Center

NJ The State of New Jersey

NJOEM New Jersey Office of Emergency Management