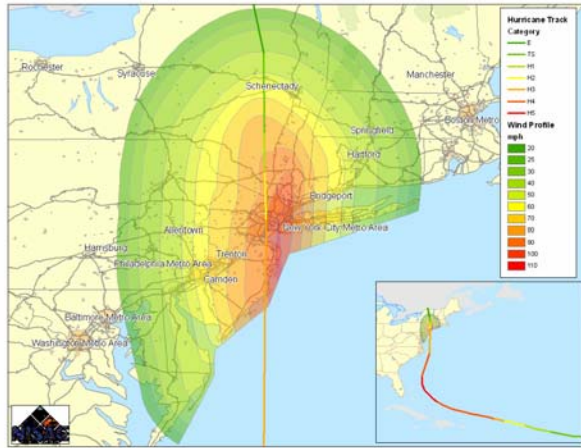




Office of Infrastructure Protection

New York City Area Hurricane Analysis Summary



Storm Characteristics

- Category 3
- Maximum sustained winds > 110 mph
- Estimated storm surge of 19 feet
- Landfall: Southern NJ
- Major cities most impacted: New York, NY and Newark, NJ

| Population | | |
|---|---|----------------|
| Population within Potential Surge Zones (depth of water estimated in residential areas) | > 10 feet | 1 M |
| | > 5 feet | 1.8 M |
| | In any surge | 2.8 M |
| Population Impacted by Potential Power Outages (widespread power outages expected in NYC area, NJ; localized outages expected in parts of upstate NY, CT, MA, PA, DE) Times to restoration are after damage assessment | Affected | > 14 M |
| | 10 days | 80% restored |
| | 15 days | Fully restored |
| Estimated Economic Impacts | | |
| Direct costs for business interruptions | \$10-15 billion | |
| Total costs for business interruptions | \$29-42 billion | |
| Facilities / Issues of Interest | | |
| Population (large population in areas of projected flooding and power outage) | <ul style="list-style-type: none"> • Many residential areas are likely to see surge • Many residents rely on public transportation, which may be limited and/or flooded | |
| Expected Major Airport Closures (strong potential for flooding, surge inundation) | <ul style="list-style-type: none"> • JFK Int'l; Jamaica, NY • La Guardia Int'l; Flushing, NY • Impacts could hamper the importation of food/water and supplies for restoration | |
| Commodity Transportation (precautionary measures limit damage) | <ul style="list-style-type: none"> • Port of New York and New Jersey: third largest port complex in US | |
| Mass Transportation (potential for flooding of subway tunnels) | <ul style="list-style-type: none"> • NYC subway system | |
| Major Wastewater Treatment Facilities (impacted by storm surge) | <ul style="list-style-type: none"> • Significant number of facilities in Nassau and Suffolk counties will experience projected power outages > than 4 days | |

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Impacts by Infrastructure Sector

| Infrastructure | Level | Impacts | -Low | -Medium | -High |
|---------------------------|-------|--|------|---------|-------|
| Ag: Production | | <ul style="list-style-type: none"> Impacts may be locally or regionally significant | | | |
| Ag: Food Distribution | | <ul style="list-style-type: none"> Potential for impacts due to the long-term power outage, potential degradation in transportation capacity and high-density population in the impacted areas | | | |
| Banks & Finance | | <ul style="list-style-type: none"> No long-term impacts expected due to backup systems | | | |
| Chemical: Plants | | <ul style="list-style-type: none"> Minor impacts expected | | | |
| Commercial Facilities | | <ul style="list-style-type: none"> Impacts may be locally or regionally significant | | | |
| Dams | | <ul style="list-style-type: none"> Slow-moving storm will result in heavy rainfall and potential overtopping of some dams Expect water to be released from dams in preparation for heavy rainfall Consequences of dam failure catastrophic, but low risk of failure Kensico Dam currently undergoing restoration | | | |
| Defense Industrial Base | | <ul style="list-style-type: none"> Impacts expected, but the specifics are unknown | | | |
| Emergency Services | | <ul style="list-style-type: none"> Emergency response delays expected due to transportation, electrical power, and telecommunications disruptions Communications disruptions could impact 911 service | | | |
| Energy: Electric Power | | <ul style="list-style-type: none"> Widespread power outages expected in NY, NJ, – potential for >34,000,000 people to experience power outages Localized outages expected in neighboring states 80% restoration expected within 10 days Full restoration may take 15 days | | | |
| Energy: Natural Gas | | <ul style="list-style-type: none"> No major impacts expected for natural gas pipelines or LNG sites | | | |
| Energy: Petroleum | | <ul style="list-style-type: none"> Petroleum capacity within the total affected area as a % of national capacity: <ul style="list-style-type: none"> Crude Oil Processing capacity: 9 % Gasoline Production capacity: 10 % | | | |
| Government Facilities | | <ul style="list-style-type: none"> Impacts may be locally or regionally significant | | | |
| Information Technology | | <ul style="list-style-type: none"> Impacts may be locally or regionally significant | | | |
| National Monuments | | <ul style="list-style-type: none"> Impacts may be locally or regionally significant | | | |
| Nuclear Facilities | | <ul style="list-style-type: none"> With the potential shutdown of area nuclear power plants due to the storm, a significant percentage of power generation in the region may be lost Only the Indian Point plants are close to the potential surge zone | | | |
| Postal & Shipping | | <ul style="list-style-type: none"> Expect delays due to transportation impacts | | | |
| Hospitals & Nursing Homes | | <ul style="list-style-type: none"> Evacuations and potential closure of some facilities in impacted area will increase demand on neighboring regional facilities | | | |
| Telecomm: Wireline | | <ul style="list-style-type: none"> Expect damage to telecommunications infrastructure (poles and overhead lines) Restoration of full service may take weeks | | | |
| Telecomm: Wireless | | <ul style="list-style-type: none"> Not analyzed | | | |
| Transport: Road/Rail | | <ul style="list-style-type: none"> Ground transportation impacts due to flooding and debris | | | |
| Transport: Airports | | <ul style="list-style-type: none"> Flooding of runways at JFK and LaGuardia Int'l; potential impacts at Newark Liberty Int'l Air traffic will be offloaded to other regional airports; for three impact airports, most, but not all additional demand will be met Expect delays and cancellations nationally | | | |
| Transport: Seaports | | <ul style="list-style-type: none"> Expect damage or disruption at several ports and marine facilities having commercial and/or military importance | | | |
| Water: Drinking Water | | <ul style="list-style-type: none"> 446 potable water treatment plants could experience power outages lasting > 4 days Likely need for boil orders and/or bringing water into the area Loss of water supply could impact fire fighting capabilities | | | |
| Water: Wastewater | | <ul style="list-style-type: none"> 600 wastewater treatment plants (with combined daily flows >1462 MGD) are predicted to have power outages exceeding 4 days, exhausting standard backup generation fuel capacity | | | |

