



5.4.11 Hazardous Materials

This section presents a profile and vulnerability assessment of the hazardous material (HazMat) hazard.

5.4.11.1 Hazard Profile

This section provides profile information including description, location, extent, previous occurrences and losses, and probability of future occurrences.

Hazard Description

HazMat are substances considered severely harmful to human health and the environment, as defined by the United States Environmental Protection Agency (US EPA) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (Superfund Law). Many are commonly used substances that are harmless in their normal uses, but quite dangerous if released. The Superfund law designates more than 800 substances as hazardous and identifies many more as potentially hazardous due to their characteristics and circumstances of their release (US EPA 2013).

Superfund's definition of a hazardous substance includes the following:

- Any element, compound, mixture, solution, or substance designated as hazardous under section 102 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).
- Any hazardous substance designated under section 311(b)(2)(a) of the Clean Water Act (CWA), or any toxic pollutant listed under section 307(a) of the CWA. More than 400 substances are designated as either hazardous or toxic under the CWA.
- Any hazardous waste having the characteristics identified or listed under section 3001 of the Resource Conservation and Recovery Act (RCRA).
- Any hazardous air pollutant listed under section 112 of the Clean Air Act (CAA), as amended. More than 200 substances are listed as hazardous air pollutants under the CAA.
- Any imminently hazardous chemical substance or mixture regarding which the US EPA Administrator has "taken action" under section 7 of the Toxic Substances Control Act (TSCA) (US EPA 2013).

Numerous facilities throughout Monroe County use and store HazMat as defined by US EPA. Many products containing HazMat are used and stored in homes, and these products are shipped daily on highways, railroads, waterways, and pipelines. If released or misused, HazMat can cause death, serious injury, long-lasting health effects, and damage to structures and other properties, as well as to the environment.

Transportation of HazMat on highways involves tanker trucks or trailers, which are responsible for the greatest number of hazardous substance release incidents. Within Monroe County are approximately 4,648 miles of county highways and 540 bridges (Monroe County 2015). These roads cross rivers and streams at many points; hazardous substance spills on roads could pollute watersheds that serve as domestic water supplies for areas within Monroe County and other parts of the State. Hazardous substance releases also could occur along rail lines, as collisions and derailments of train cars can result in large spills.

Pipelines transport hazardous liquids and flammable substances such as natural gas and petroleum. If these pipes are corroded, hazardous substances releases could occur when the pipes are damaged during excavation, incorrect operation, or by other forces. When HazMat are transported by aircraft or by watercraft, crashes, spills of materials, or fires on these vessels can pose hazards.



Nuclear power generating stations, research reactors, or other stationary sources of radioactivity present the threat of release of radiological material. This type of event could threaten a large, multi-jurisdictional area, and result in property damage, contamination of farm and water supplies, and economic damage.

Location

The following information pertains to locations of hazardous substance incidents.

Hazardous Materials Fixed Site

Many years ago, numerous wastes were dumped on the ground and in rivers, or left out in the open. As a result, thousands of uncontrolled or abandoned contaminated sites were created. These sites included abandoned warehouses, manufacturing facilities, processing plants, and landfills. In response to concerns regarding health and environmental risks, Congress established the Superfund program in 1980 to clean up these sites. The Superfund program is administered by US EPA in cooperation with individual states. In New York State, the Department of Environmental Conservation (NYSDEC) Inactive Hazardous Waste Disposal Site Program oversees the Superfund program (NYSDEC 2014).

Federal regulations, including CERCLA and the Superfund Amendments and Reauthorization Act (SARA), require maintenance and (minimally) annual revision of a National Priorities List (NPL) of the worst hazardous waste sites throughout the United States (NYSDEC 2014).

Fixed-site facilities that use, manufacture, or store HazMat in Monroe County pose risk and must comply with Title III of the federal SARA. SARA was signed into law on October 17, 1986. It is a federal law that applies nationwide. This law is linked to 42 *U.S. Code* Chapter 116 – Emergency Planning and Community Right-To-Know (EPCRA). SARA requires the governor of each state to establish a State Emergency Response Commission (SERC). New York’s SERC was established by Executive Law, Article 2-B in 1978. The signing of this legislation also established the Disaster Preparedness Commission in 1978. SARA also requires establishment of emergency planning districts by SERC, and specifies that these districts can be existing political subdivisions. The function of the emergency planning district is to facilitate preparation and implementation of emergency plans.

More than 300 fixed facilities use or store HazMat in Monroe County. For security purposes, they are not mapped in this profile.

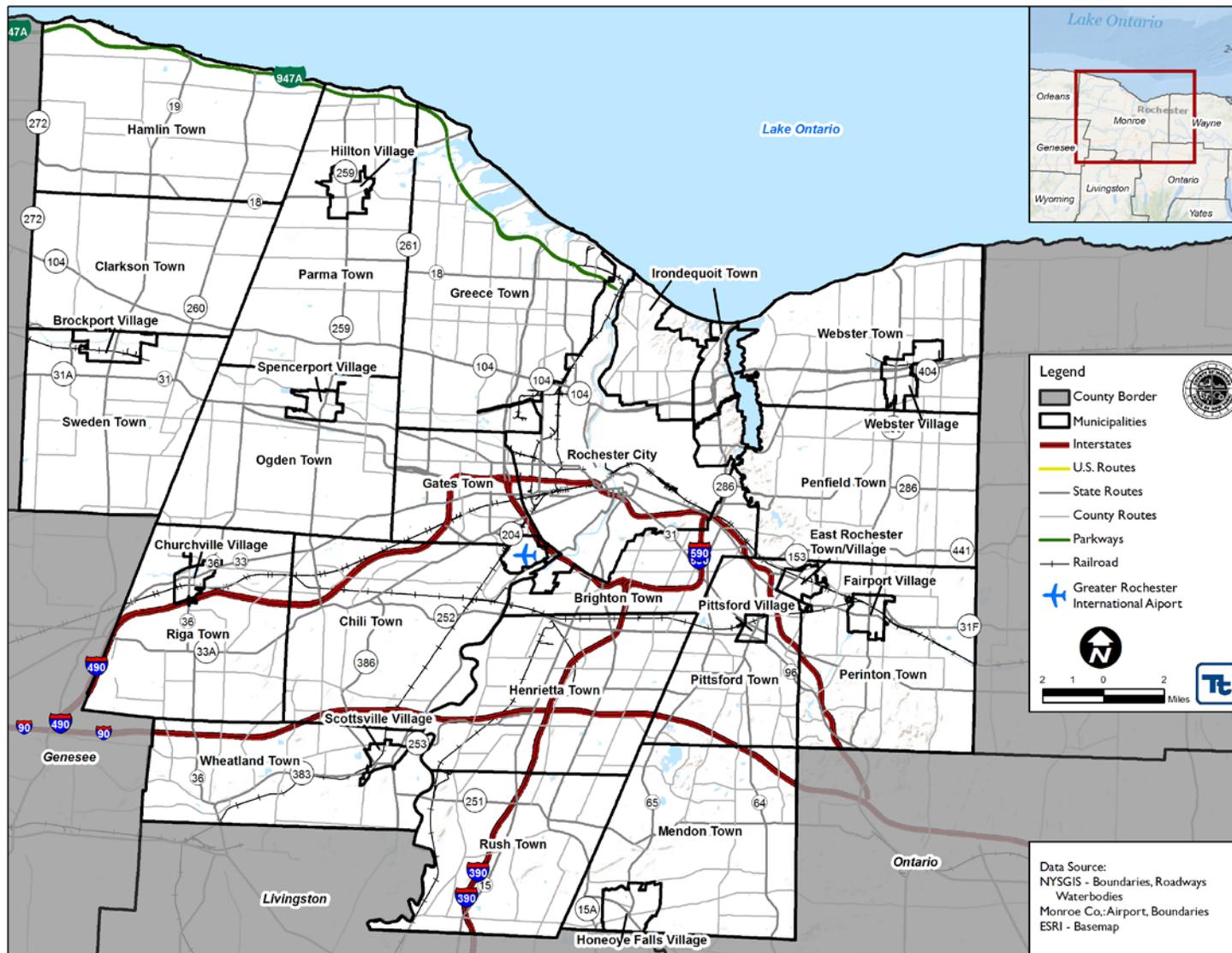
Hazardous Materials In-Transit

Incidents involving HazMat in transit can occur anywhere in Monroe County. Transportation corridors within Monroe County that carry HazMat include highways, railroads, air/flight paths, pipelines, and navigable waterways. Major highways are more likely to be settings for this type of hazard because of interstate and local commercial transport of HazMat. Transport vehicles do not typically travel through residential areas unless en route to destinations such as a gasoline service station or storage facility.

Major transportation routes through Monroe County include Interstate Routes 90, 490, 590, 390, and 531 (see Figure 5.4.11-1 below); and navigable waterways including the Erie Canal and Lake Ontario. Potential for a spill also exists on routes used for industry/business purposes. Section 4 discusses roadways in the County.



Figure 5.4.11-1. Major Transportation Routes and Railways in Monroe County



Source: Monroe County 2015

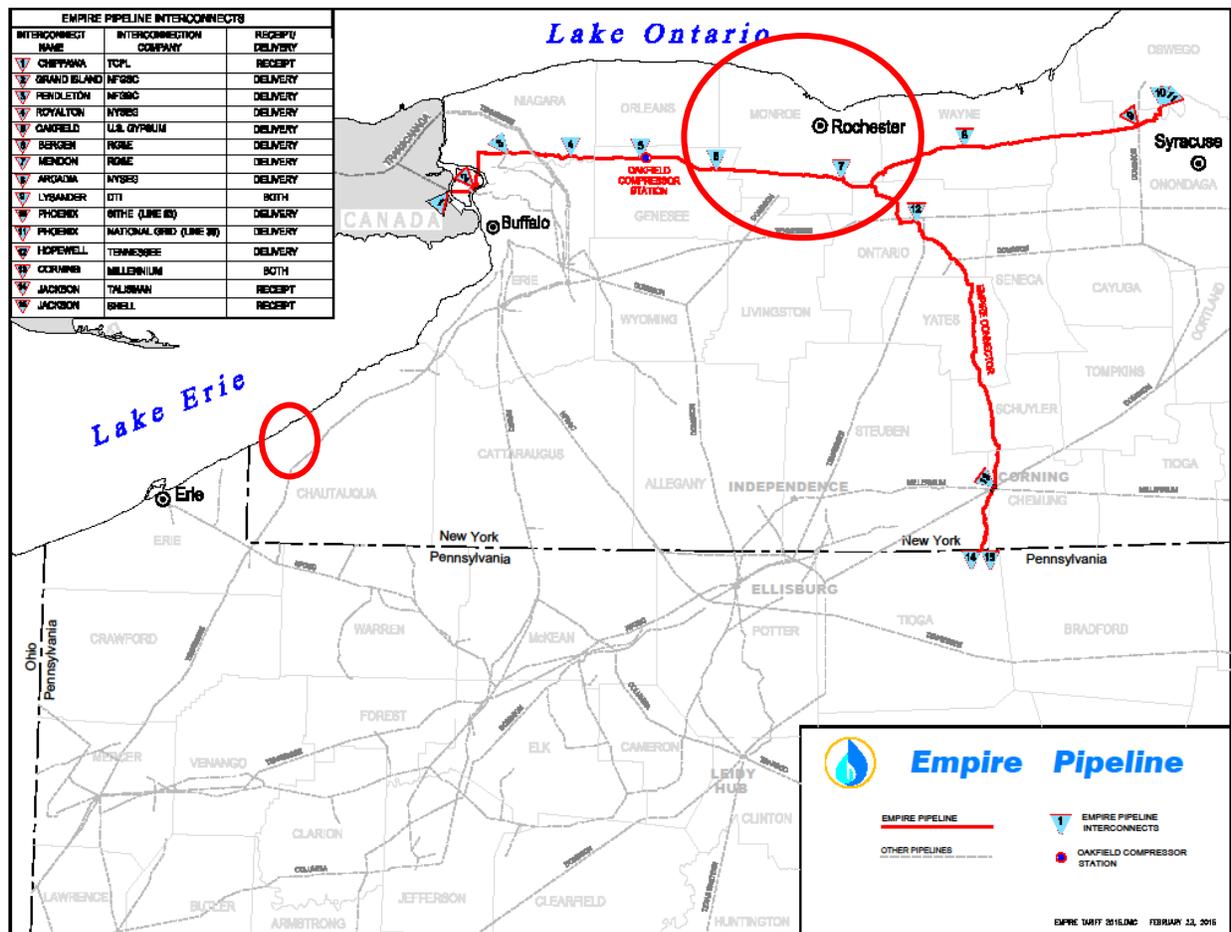




HazMat incidents may occur along railways in Monroe County. Rail lines that may carry HazMat include the CSX (railroad) east-west corridor, and Rochester & Southern (railroad) north-south corridor. The New York Department of Transportation (NYDOT) has a vital interest in preserving and improving the rail freight part of its transportation network. Rail shipments allow cost-effective movement of goods and thus decrease stress on the State’s highway system. Major commodities shipped by rail include petrochemicals (including plastic pellets), construction materials, food products, raw materials, and finished goods for manufacturers. Rail cars carrying HazMat are of concern because an accident or release could pose a public safety hazard to the community. Figure 5.4.11-1 above shows railways that run throughout Monroe County.

HazMat can also be transported via underground petroleum and gas (natural and propane) pipelines across the State. New York has an extensive network of natural gas and petroleum pipelines, at least one of which passes through Monroe County. Figure 5.4.11-2 shows extents and locations of pipelines throughout western New York State and Pennsylvania, with Monroe County’s general area indicated by the red oval.

Figure 5.4.11-2. National Fuel Empire Pipeline Map



Source: National Fuel 2015

Radiological

The threat of a radiological event at a fixed facility is always a possibility because of proximity of the Ginna Nuclear Power Station in Wayne County to the northeastern border of Monroe County. For commercial reactors, areas of risk from exposure to radiation releases are designated as (1) within the Plume Exposure Emergency





Planning Zone (EPZ) of such sites (within a 10-mile radius of a site) for direct exposure, or (2) within the Ingestion Pathway Emergency Planning Zone (within a 50-mile radius of a nuclear site) for exposure via the food chain. A credible worst-case event of a radioactive release from a fixed site could affect a large region around the nuclear power site.

The federal EPZ and its 10-mile radius overlay portions of the towns of Webster and Penfield, and the Village of Webster. The 10-mile EPZ is sectorized into Emergency Response Planning Areas (ERPA) for Emergency Management purposes. In coordination with New York State, and as tested by the Federal Emergency Management Agency (FEMA), Monroe and Wayne County plans address public alerting and notification, emergency response, special need populations, evacuation routes, detection and monitoring, decontamination, and public health among other topics. The Monroe County Radiological Emergency Preparedness Plan and community Public Safety providers are annually tested on their readiness and response.

Substantial safety features and security measures are in place at the Ginna Nuclear Power Station.

Extent

The extent of a hazardous substance release depends on whether it is from a fixed or mobile source, size of the impacted area, toxicity and properties of the substance, duration of the release, and environmental conditions (for example, wind and precipitation, terrain, etc.).

Hazardous substance releases can contaminate air, water, and soils, possibly resulting in death and/or injuries. Dispersion can occur rapidly when the hazardous substance is transported by water and wind. While often accidental, releases can occur as a result of human carelessness, intentional acts, or natural hazards. When caused by natural hazards, these incidents are known as secondary events. HazMat can include toxic chemicals, radioactive substances, infectious substances, and hazardous wastes. Such releases can affect nearby populations and contaminate critical or sensitive environmental areas.

Severity or impact of a hazardous substance release, whether accidental or intentional, depends on several potentially mitigating or exacerbating circumstances. Mitigation involves precautionary measures taken in advance to reduce the impact of a release on the surrounding environment. For example, primary and secondary containment or shielding by implementation of sheltering-in-place protects people and property from the harmful effects of a hazardous substance release. Exacerbating conditions, characteristics that can enhance or magnify the effects of a hazardous substance release, include the following:

- Weather conditions, which affect how the hazard occurs and develops
- Micro-meteorological effects of buildings and terrain, which alter dispersion of HazMat in compliance with applicable codes (such as building or fire codes)
- Maintenance failures (such as fire protection and containment features), which can substantially increase damage to a facility and to surrounding buildings.

As discussed earlier, severity of an incident depends not only on the circumstances described above, but also on the type of substance released and the distance from the incident and related response time of emergency response teams. Areas closest to a release are generally at greatest risk; however, depending on the agent, a release can travel great distances or remain present in the environment for a long period of time (e.g., centuries to millennia).

According to the 2010 Monroe County HazMat Response Plan, there are two main classifications of HazMat incidents. A “Level 0” incident is not likely to adversely impact or threaten life, health, property or the environment; control of the incident is within the capabilities of resources available to the local response jurisdictions. A “Level 1” incident may adversely impact or threaten life, health, property or the environment



within an area immediately surrounding the point of release or potential release; control of the incident is within the capabilities of the resources locally available to responders in Monroe County.

Four classes of Emergency Action Levels have been established by the Nuclear Regulatory Commission (NRC) and incorporated into all Radiological Emergency Preparedness planning. Each class requires a different degree of response by the state, counties, and Rochester Gas and Electric (RG&E). The four classes are:

- Notification of an Unusual Event (NUE) (the lowest classification) – A small problem has occurred. No radiation leak is expected. Federal, state, and county officials will be told right away.
- Alert – A small problem has occurred, and small amounts of radiation could leak inside the station. This will not affect you. Federal, state, and county officials will stand by.
- Site Area Emergency (SAE) – This is a more serious problem. Small amounts of radiation could leak from the station. If necessary, state and county officials will act to assure public safety. Area sirens may be sounded. Detailed information may be broadcast over the radio or television.
- General Emergency – This is the most serious classification. Radiation could leak outside the station and off site. The sirens will sound. EAS radio and/or television stations will provide incident reports and updates. State and county officials will act to assure public safety (RG&E, 2003 Calendar, p. 2).

The north-central region of Monroe County is closest to the Ginna facility, and some areas fall within the prescribed 10-mile EPZ or evacuation area. Additionally, all Monroe County jurisdictions are within the 50-mile ingestion exposure pathway, and could receive deposits of radioactive particles on crops, bodies of water, and ground surfaces, rendering local agricultural harvest unusable for consumption by either humans or livestock.

Previous Occurrences and Losses

Historical information regarding previous occurrences and losses associated with hazardous substance incidents throughout Monroe County came from many sources. Given the many sources reviewed for the purpose of this HMP, information regarding loss from and impact of many events could vary depending on the source. Notably, monetary amounts cited in this HMP are based only on the available information identified during research for this HMP.

Between 1954 and 2014, the State of New York was included in two FEMA-declared emergencies (EM) related to hazardous substance incidents. Typically, EMs cover a wide region of an included state, and therefore could impact many counties within that state. However, not all counties in New York State were included in the two EMs cited above. Importantly, Monroe County was not included in either EM (FEMA 2015).

The U.S. Department of Transportation (USDOT) Pipeline and HazMat Safety Administration (PHMSA) provides an incident report database with information on incidents throughout the United States. The data are from HazMat incident reports. According to this database, between 2010 and 2015, 130 incidents occurred in Monroe County (128 highway and 2 air), releasing nearly 90,000 gas cubic feet, 600 liquid gallons, and 30 solid pounds (lbs) of HazMat (PHMSA 2015). HazMat incidents on site or in transit occur frequently across the State and in Monroe County. These incidents are typically small, localized events. Monroe County Office of Emergency Management reported 437 HazMat incidents between January 10, 2010, and June 31, 2015. Of those incidents, 85 required responses by the County HazMat Team – other events were not severe enough to warrant a Team response and were handled by the fire department or other agency (Monroe County 2015).

The NYSDEC Spill Incidents Database lists 2062 spill incidents throughout the County from January 1, 2010, through August 2, 2015 (NYSDEC 2015). US EPA maintains records of amounts of chemicals released at facilities each year through its Toxic Release Inventory (TRI) Program. In 2013, 630 TRI facilities in Monroe County collectively contributed to 2,310,606 lbs of on- and off-site disposals or other releases (US EPA 2015).



Monroe County’s map of industrial/business sites that file Tier II Reports in compliance with SARA Title III is not included for security purposes.

Table 5.4.11-1 overviews reported Level 0 and Level 1 incidents as reported by Monroe County between 1992 and 2015, and Table 5.4.11-2 describes significant HazMat incidents in Monroe County from 2010 to 2015, the time period for which sufficient data were available. For events prior to 2010, please refer to the 2011 Monroe County HMP.

Table 5.4.11-1. Reported Level 0 and Level 1 Hazardous Materials Incidents from 1992-2015

Level	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
0	N/A	N/A	N/A	N/A	N/A	N/A	25	30	19	34	23	38
1	6	4	8	4	6	6	9	9	5	6	1	6

Level	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
0	19	32	36	29	31	32	59	70	87	79	62-67*	35-40*
1	4	2	8	1	5	3	10	4	3	8	5-10*	5-10*

Source: Monroe County 2015

* Some events were classified as SARA III, but not otherwise assigned an incident level.

N/A Not Available



Table 5.4.11-2. Hazardous Materials Incidents in Monroe County, 2010 to 2015

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
March 18, 2015	Fuel spill	N/A	No	Egypt firefighters responded to a reported motor vehicle accident in the Town of Pittsford on Palmyra Rd. Command requested a Level 1 HAZ MAT for 15 diesel fuel leaking along with another chemical. Firefighters secured the scene and turned it over to the police. Fifteen gallons of diesel fuel was spilled. No other damages and/or losses were reported for the County.
February 13, 2015	Chemical Spill	N/A	No	A 55-gallon poly drum of a water treatment chemical fell through the wood skid on which it had been staged during delivery at Winston Place in the Town of Henrietta. The broken skid resulted in a puncture in the bottom side of the drum and total release of the product to the floor of the trailer and the asphalt parking lot on which the trailer was parked. The cold weather froze the product in the trailer and the asphalt. The released material was shoveled up and collected by use of absorbents. The damaged drum was placed in an overpack. The recovered material was collected and taken for disposal. A total of \$3,500 in damages was reported.
January 16, 2015	Fuel Spill	N/A	No	City of Rochester firefighters responded this afternoon to a reported fuel oil spill on Sylvester St. Engine 16 reported spillage of two 5-gallon buckets of oil inside the house and outside as well. Engine 16 declared a Level 0 HAZ MAT, which brought Engine 17, Rescue 11, and HAZ MAT 1 & 2. Battalion 1 assumed command and declared a Level 1 HAZ MAT. Thirty gallons of #2 fuel oil was spilled. No other damages and/or losses were reported for the County.
October 1, 2014	Chemical Spill	N/A	No	Kodak firefighters along with City of Rochester firefighters responded this afternoon to a reported leak from a 55-gallon drum of acetic anhydride. Command declared a Level 1 HAZ MAT. Firefighters contained the spill and secured the scene. No other damages and/or losses were reported for the County.
October 1, 2014	Fuel Spill and Fire	N/A	No	Rochester firefighters responded to a report of a fire in the yard of the Ben Weitsman Recycling company on Steel St. in the City of Rochester. Engine 3 went on location to find gasoline and other flammable liquids on fire next to a building. Battalion 2 assumed command and declared a working fire. Command requested Engine 10 to assist with water support and the HAZ MAT team. Command reported that 800-900 gallons of fuel was burning, and 250 gallons had spilled. No other damages and/or losses were reported for the County.
June 17, 2014	Chemical Spill	N/A	No	Employees at a transit storage facility at 335 McKee Road, City of Rochester were using a cargo tank vehicle to remove kerosene from a frack tank. Product from an earlier bulk tank spill that was mixed with water was being drawn into this tank wagon from a transmix tank when, during the recovery process, the Victaulic coupling underneath the tank wagon failed, and approximately 20 gallons of product spilled to the concrete/asphalt pad on which the truck was parked.



Section 5.4.11: Risk Assessment – Hazardous Materials

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
June 11, 2014	Unknown Product Spill	N/A	No	Roughly 20 gallons of material was released on the floor of a truck, and about 2 gallons was released on the side of the road in the City of Rochester. The damage to the tote occurred due to sudden braking from a near miss motor vehicle accident. A total of \$3,500 in damages was reported.
May 8, 2014	Diesel Fuel Spill	N/A	No	City of Rochester firefighters responded to a report of a diesel fuel spill at the scene of a motor vehicle accident on State Route 490 and the Freddie Sue Bridge. Command requested a Level 1 HAZ MAT to assist with the cleanup and to stop the leak. Somewhere between 40 and 85 gallons of diesel fuel was spilled onto the pavement and into the sewer. No other damages and/or losses were reported for the County.
February 25, 2014	Hazardous Substance Spill	N/A	No	SARA IIINO – 5000 gallons of a hazardous substance was reportedly spilled at the Eastman Kodak Company at 1669 Lake Avenue in the City of Rochester, contaminating soils and groundwater. No other damages and/or losses were reported for the County.
January 3, 2014	Hazardous Substance Spill	N/A	No	SARA IIINO – 800 gallons of an unknown HazMat was reportedly spilled at the Eastman Kodak Plant at 480 Maplewood Drive in the City of Rochester, contaminating soils on site. The spill was the result of an equipment failure. No other damages and/or losses were reported for the County.
December 5, 2013	Unknown Product Spill	N/A	No	During the loading process of a transport tank trailer at the Buckeye south loading rack in the City of Rochester, the driver hooked up to a 1,000-gallon compartment and programed the equipment to load 2,000 gallons. The overflow system on the cargo tank failed to immediately stop the flow of product, resulting in 30-150 gallons of gasoline released onto impervious surface. The spilled product was contained within the loading rack containment area and cleaned up. No other damages and/or losses were reported for the County.
October 18, 2013	Train Derailment	N/A	No	7 rail cars carrying soybeans derailed and overturned in the Town of Perinton. No injuries or property damages were reported, but the event reaffirmed hazard potential for a HazMat spill in the area.
August 15, 2013	Chemical Fumes	N/A	No	City of Rochester firefighters responded to a report of a person with trouble breathing on University Ave. Engine 17 went on location and declared a Level 0 HAZ MAT for a city worker overcome by fumes. Command requested a Level 1 HAZ MAT for a city worker overcome by an unknown chemical. Firefighters secured the leak and turned over the scene. No other damages and/or losses were reported for the County.
May 21, 2013	Chemical Fumes	N/A	No	The Town of Henrietta Fire Department responded with a Level 1 HAZ MAT team to an apartment at 80 Colony Manor Drive on the RIT campus in the City of Rochester. The investigation was tied to a student who had become ill and was later treated at Strong Memorial Hospital. No other injuries related to the incident occurred, and the complex was not evacuated.





Section 5.4.11: Risk Assessment – Hazardous Materials

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
May 15, 2013	Dichlorosaline Leak	N/A	No	Town of Henrietta firefighters responded in the morning to a gas alarm at Building 17 on the RIT campus in the City of Rochester. 6C62 requested a Level 0 HAZ MAT response. Car 826 requested a Level 1 HAZ MAT response for an unknown hazard in the building. HAZ MAT team members made entry and secured the leak. No other damages and/or losses were reported for the County.
April 10, 2013	Ammonia Leak	N/A	No	Ridge Road firefighters responded this evening to a report of smoke from the front of the building on Lexington Ave in the Town of Greece. Command requested a Level 1 HAZ MAT for a 55-gallon drum of Chlorine Dioxide / Ammonia leaking. The Monroe County HAZ MAT team secured the leak, and the cause of the fire was investigated. No other damages and/or losses were reported for the County.
March 7, 2013	Chlorine Leak	N/A	No	Henrietta firefighters responded to a report of a chlorine leak at RIT Building 17, the Micro Electronics Building, in the Town of Henrietta. The company assumed command and declared a Level 0 HAZ MAT. After an investigation of the chlorine leak, the assignment was upgraded to a Level 1 HAZ MAT, which brought the Monroe County HAZ MAT team to the scene. Firefighters secured the scene and turned the incident back over to RIT. No other damages and/or losses were reported for the County.
December 6, 2012	Grease Spill	N/A	No	Spillage of 250 gallons of cooking grease occurred at Applebee's at Route 205 and Route 31 in the Town of Perinton. No other damages and/or losses were reported for the County.
March 14, 2012	Diesel Fuel Spill	N/A	No	Spillage of 110 gallons by Cavalier Trucking occurred on 225 Buell Road in the Town of Gates. No other damages and/or losses were reported for the County.
January 4, 2012	Transform Oil Spill	N/A	No	Spillage of 25,000 gallons of transform oil occurred in the Town of Henrietta at the Rochester Gas and Electric substation on Lehigh St. No other damages and/or losses were reported for the County.
December 29, 2011	Nitric Acid Spill	N/A	No	SARA III – Between 500 and 1700 gallons of nitric acid was released at the Rochester Silverworks, 128 Ridgeview Ct., in the City of Rochester. The incident was the result of equipment failure, and the released materials affected soil and impervious surfaces. No other damages and/or losses were reported for the County.
May 20, 2011	Paint Spill	N/A	No	Release of 320 gallons of paint onto a trailer occurred at 15 Commercial Drive in the Town of Henrietta due to improper handling of the tote. An emergency response team was dispatched to handle cleanup at a cost of \$2,500. All product was absorbed with oil dry, placed into a salvage drum, and handled according to local, state, and federal regulations.
July 8, 2011	Chemical Product Spill	N/A	No	Spillage of 1300 gallons of driveway sealer occurred near the intersection of Route 204 and Route 490 in the Town of Gates. No other damages and/or losses were reported for the County.





Section 5.4.11: Risk Assessment – Hazardous Materials

Date(s) of Event	Event Type	FEMA Declaration Number	County Designated?	Losses / Impacts
December 23, 2010	Diesel Fuel Spill	N/A	No	A commercial vehicle accident at 900 Jefferson Road in the Town of Henrietta caused a Superior Trucking vehicle to spill 125 gallons of diesel fuel onto the impervious surface and into sewers along the road. No other damages and/or losses were reported for the County.
October 12, 2010	Diesel Fuel Spill	N/A	No	Spillage of 142 gallons of diesel fuel occurred at the CSX rail yard at 419 Atlantic Ave in the City of Rochester. No other damages and/or losses were reported for the County.
September 27, 2010	Chlorine Dioxide Spill	N/A	No	Spillage of 150 gallons of chlorine dioxide occurred at the University of Rochester Central Utilities Plant on 390 Elmwood Ave in the City of Rochester. No other damages and/or losses were reported for the County.
September 22, 2010	Diesel Fuel Spill	N/A	No	Spillage of 200 gallons of diesel fuel occurred at Route 390 and Route 590 in the Town of Brighton. No other damages and/or losses were reported for the County.
August 26, 2010	Hydrogen Gas Spill/Explosion	N/A	No	An explosion occurred at Monroe County Fuel Farm on 1157 Scottsville Rd. in the City of Rochester when a transfer hose connecting a tube trailer to a customer supply system ruptured and released gaseous hydrogen that ignited explosively. The contents of the trailer, estimated at 90,000 GCF, were consumed in the ensuing fire that was allowed to burn off the hydrogen remaining in the trailer. Total costs of damages (material loss, carrier damage, and property damage), response, and remediation cleanup were estimated at \$311,000.
May 26, 2010	Poisonous Material Leak	N/A	No	A leaky drum released poisonous material at the Bridge Terminal Transport Facility at 145 Colfax Street in the City of Rochester. An employee discovered free product leaking from an intermodal container. Cleanup crews discovered one leaking 600-pound metal drum. Approximately 20 pounds of free product was released. Marcor Environmental recovered the free liquid and overpacked the leaking drum. No other damages and/or losses were reported for the County.
May 14, 2010	Oil Spill	N/A	No	Leakage of 100 gallons of waste motor oil occurred at the Pallet Express facility at 1069 Lyell Ave. in the City of Rochester. Emergency responders were dispatched to the scene. No other damages and/or losses were reported for the County.

Source: *Monroe County 2015; Monroe County Fire Wire 2015; NYS DEC 2015; PHMSA 2015; U.S. EPA 2015*
 HAZ MAT or HazMat Hazardous Materials
 GCF Gas Cubic Feet





Probability of Future Occurrences

Predicting future hazardous substance incidents in Monroe County is difficult. These can occur at anytime and anywhere in the County. Incidents can occur suddenly without any warning or develop slowly. Small spills, both fixed site and in transit, occur throughout the year, and probability of occurrences of these events is high. Risk of a major incident within a given year is small.

In Section 5.3, the identified hazards of concern within Monroe County were ranked. Probability of occurrence, or likelihood of an event, is one parameter used for hazard rankings. Based on historical records and input from the Planning Committee, probability of occurrence of HazMat spills within the County is considered “frequent” (likely to occur within 25 years, as presented in Table 5.3-3).

The County is expected to continue to undergo direct and indirect impacts of hazardous substance incidents annually that may induce secondary hazards such as infrastructure deterioration or failure, potential decreases in water quality and supply, and transportation delays, accidents, and inconveniences.

Climate Change Impacts

Because hazardous substance incidents are non-natural incidents, climate change does not affect these incidents.

5.4.11.2 Vulnerability Assessment

To understand risk, a community must evaluate what assets are exposed or vulnerable within the identified hazard area. Regarding the HazMat hazard, all of Monroe County has been identified as the hazard area. Therefore, all assets within the County (population, structures, critical facilities, and lifelines), as described in the County Profile (Section 4), are vulnerable to HazMat. The following factors are addressed in subsequent text that evaluates and estimates potential impacts of the HazMat hazard on Monroe County:

- Overview of vulnerability
- Data and methodology used for the evaluation
- Impacts on: (1) life, health, and safety of residents; (2) general building stock; (3) critical facilities; (4) economy; and (5) future growth and development
- Effect of climate change on vulnerability
- Change of vulnerability as compared to that presented in the 2011 Monroe County Hazard Mitigation Plan
- Further data acquisitions that will increase understanding of this hazard over time.

Overview of Vulnerability

Overall, it is difficult to quantify potential losses from HazMat incidents due to the many variables and human elements. Human safety and welfare can be compromised as a result of negative health effects of poisoning or exposure to toxic substances, fires, or explosions.

Effects from a radiological incident at a fixed facility would vary depending on the product released (type of radiation), amount of radiation released, current weather conditions, and time of day. The priority following an incident at any facility within the State of New York is life and safety of all individuals within the area impacted. Secondary to health and safety would be effects on critical infrastructure, environment, property, and the economy.



Data and Methodology

Data regarding this hazard were obtained from Monroe County and the Planning Committee.

Impacts on Life, Health, and Safety

The biennial US EPA Hazardous Waste Report conveys data regarding generation, management, and minimization of hazardous waste. This report provides detailed data on generation of hazardous waste from large-quantity generators, and data on waste management practices at treatment, storage, and disposal facilities. The 2011 report lists five facilities in Monroe County.

Superfund is a program administered by the US EPA to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. Data from the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database indicates that no Superfund sites are present in Monroe County (US EPA 2015).

Depending on the type and quantity of chemicals released and weather conditions, an incident can affect larger areas that cross jurisdictional boundaries. When HazMat are released into the air or water, or on land, they may contaminate the environment and pose greater danger to human health. The general population may be exposed to a HazMat release through inhalation, ingestion, or dermal exposure. Exposure may be either acute or chronic, depending upon the nature of the substance and extent of release and contamination. HazMat incidents can lead to injury, illnesses, and/or death of involved persons and those living within the impacted areas.

Locations of these different HazMat and wastes sites in Monroe County render the entire County vulnerable to these hazards. Populations particularly vulnerable to effects of HazMat incidents are along major transportation routes, because significant quantities of chemicals are transported along these major thoroughfares.

Impacts on General Building Stock

Potential losses of general building stock caused by a HazMat incident are difficult to quantify. Extent of damage to the general building stock depends on the scale of the incident. Potential losses may include inaccessibility, loss of service, contamination, and/or potential structural and content losses if an explosion occurs.

Impacts on Critical Facilities

Potential losses of critical facilities caused by a HazMat incident are difficult to quantify. Potential losses may include inaccessibility, loss of service, contamination, and/or potential structural and content losses if an explosion occurs. Refer to Section 4 (County Profile), which summarizes the number and type of critical facilities in Monroe County.

Impacts on Economy

If a significant HazMat incident occurs, not only would life, safety, and building stock be at risk, but the economy of Monroe County would be affected as well. A significant incident within an urban area may force businesses to close for an extended period of time because of contamination or direct damage caused by an explosion, if one occurred. Exact impacts on the economy are difficult to predict, given the uncertainty of sizes and scopes of incidents.

HazMat incidents can lead to closures of major transportation routes in Monroe County. Closures of waterways, railroads, airports, and highways as a result of these incidents can hinder delivery of goods and services. Potential impacts may be local, regional, or statewide, depending on the magnitude of the event and the extent of disruptions to services.



Radiological contamination of agriculture, livestock, and production can lead to loss of commerce with other regions of the State, country, and even the world. Recently, many countries halted imports of products from Japan for fear of contamination following the tsunami-related nuclear incident at the Fukushima Power Plant. This loss in revenue compounded losses that Japan and its region were already encountering following the initial disaster.

Future Growth and Development

As discussed in Sections 4 and 9, areas targeted for future growth and development have been identified across Monroe County. Any areas of growth could be impacted by HazMat incidents because the entire County is exposed and vulnerable. An increase in development and population can increase likelihood of a hazardous substance incident. Future migration to larger jurisdictions may also increase likelihood of an incident. In this regard, refer to the specific areas of development indicated in tabular form and/or on the hazard maps included in the jurisdictional annexes in Volume II, Section 9 of this plan.

Effect of Climate Change on Vulnerability

Because a hazardous substance incident is a human-caused hazard, no climate change impacts are directly associated with the hazard. With that noted, climate change may indirectly cause a greater likelihood of a HazMat incident. For instance, if climate change leads to a significant increase in temperature, roads are more likely to buckle and warp, storage facilities and containment may be affected, and severe storm frequency may increase, swelling rivers and creeks and impacting the bridges and culverts over which HazMat are transported. In addition, climate change may lead to increased energy costs and storage expenses to ensure HazMat are kept, if necessary, in controlled climates.

Change of Vulnerability

Overall, the County's vulnerability has not changed, and exposure and vulnerability of the entire County to HazMat incidents will continue.

Additional Data and Next Steps

For the Plan Update, any additional information regarding localized concerns and past impacts will be collected and analyzed. These data will be developed to support future revisions to the plan. Mitigation efforts could include extensions of existing New York, Monroe County, and local efforts.