



5.4.10 Hazardous Materials Release

The following section provides the hazard profile (hazard description, location, extent, previous occurrences and losses, probability of future occurrences, and impact of climate change) and vulnerability assessment for the hazardous materials hazard in Warren County.

5.4.10.1 Profile

Hazard Description

Hazardous materials are substances that are considered severely harmful to human health and the environment, as defined by the United States Environmental Protection Agency (USEPA) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (Superfund Law). Many are commonly used substances which are harmless in their normal uses, but are 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 the circumstances of their release (USEPA 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 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. There are over 400 substances 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.
- Any hazardous air pollutant listed under section 112 of the Clean Air Act, as amended. There are over 200 substances listed as hazardous air pollutants under the Clean Air Act (CAA).
- Any imminently hazardous chemical substance or mixture which the EPA Administrator has "taken action under" section 7 of the Toxic Substances Control Act (USEPA 2015).

If released or misused, hazardous substances can cause death, serious injury, long-lasting health effects, and damage to structures and other properties, as well as the environment. Many products containing hazardous substances are used and stored in homes and these products are shipped daily on highways, railroads, waterways, and pipelines.

Transportation of hazardous substances on highways involves tanker trucks or trailers, which are responsible for the greatest number of hazard substance release incidents. The highway system in Warren County comprises over 1,248 miles of roads maintained by New York Department of Transportation (NYSDOT), the County and its towns and villages (NYSDOT 2015). Some of these roads are used to transport hazardous substances; if an incident were to occur, the surrounding areas may be impacted.

Warren County's hazardous materials response capabilities include the expertise of the Warren County HAZMAT Type 3 Team, an industrial HAZMAT Team and the resources of 23 fire departments (capable of DECON), 3 law enforcement agencies and 13 EMS agencies. Further, hazardous materials planning and response activities are supported by private-sector organizations, numerous professional organizations, public safety training programs, the Adirondack Regional HAZMAT Consortium and specialized response teams at the state and federal levels (County Hazardous Materials Response Plan 2015).



Location

A hazardous material incident can occur anywhere in the County. This includes a fixed site that may or may not be subject to the planning requirements of SARA Title III or during transportation. An incident in a neighboring county may also pose a threat to Warren County. Warren County has numerous fixed facilities at the southern end of the County and transportation systems are located throughout the County. Any part of Warren County may be subject to airborne material during a release of a hazardous material (County Hazardous Materials Response Plan 2015). The following provides information regarding the location of hazardous substance incidents.

Hazardous Substances Fixed Site

For the purpose of this plan update, Warren County indicated their main concern for fixed sites were those that filed Tier II forms. In addition to incidents occurring at the fixed sites, impacts of natural hazards on these facilities can cause major incidents with severe secondary impacts on the population and the environment.

Authorized by Title III of the Superfund Amendments and Reauthorization Act (SARA), the Emergency Planning & Community Right-to-Know Act (EPCRA) was enacted by Congress as the national legislation on community safety. This law is designed to help local communities protect public health, safety, and the environment from chemical hazards (USEPA 2015). Under Section 312 of the EPCRA, facilities that use or store a hazardous chemical above a threshold quantity must annually submit their chemical inventory to off-site officials each year (Tier II form). The inventory information must be submitted to the fire department having jurisdiction over the facility, the respective county local emergency planning committee (LEPC), and the state emergency response commission (SERC) (NYSDHSES 2012). In Warren County, for the 2015 reporting year, 38 facilities filed Tier II forms, with a majority of the facilities being located in Glens Falls and Queensbury.



Figure 5.4.10-1. Tier II Facilities in Warren County



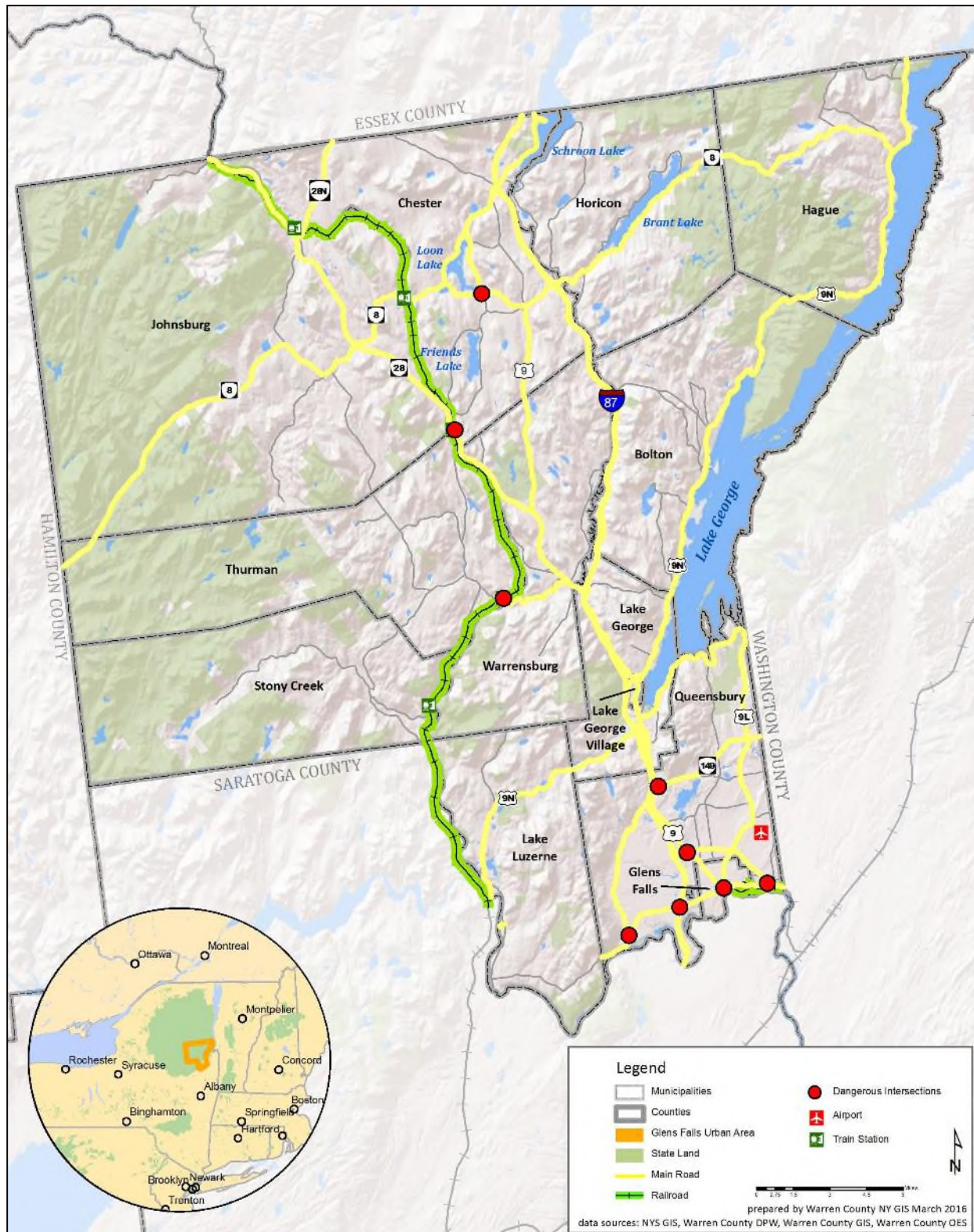


Hazardous Substances In-Transit

Incidents involving hazardous substances in transit can occur anywhere in Warren County. The main concerns in the County include highways (including the New York State Northway), railroads (east-west and north-south), and air (non-towered). These transportation systems are located throughout the County and an incident could occur anywhere. Figure 5.4.10-2 shows the major transportation routes in Warren County.



Figure 5.4.10-2. Major Transportation Routes in Warren County



Source: Warren County GIS 2016





Extent

The extent (or severity) of a hazardous material release relates primarily to its impact on human health and safety and on the threat to the environment. As for hazardous material incidents through transportation, the severity is similar to that of a fixed-site incident. Threat to human health and safety includes: poisoning of water or food sources and/or supply; presence of toxic fumes or explosive conditions; damage to personal property; need for the evacuation of people; and interference with public or commercial transportation. Threats to the environment include: injury or loss of animals or plants or habitats that are of economic or ecological importance such as commercial, recreation, or subsistence fisheries or livestock; impact to recreational areas such as public beaches; and impact to ecological reserves, forests, parks, archaeological and cultural sites.

In Warren County, there is a system used for classifying hazardous material incidents and referred to as levels of magnitude and express the impact of a hazardous materials incident upon the community.

- Level 0 - A hazardous materials incident that is not likely to adversely impact or threaten life, health, property or the environment; where control of the incident is within the capabilities of resources available to the local response jurisdictions.
- Level 1 - A hazardous materials incident that may adversely impact or threaten life, health, property or the environment within an area immediately surrounding the point of release or potential release; where control of the incident is within the capabilities of the resources locally available to responders in Warren County.
- Level 2 - A hazardous materials incident that may adversely impact or threaten life, health, property or the environment beyond the point of release; may be across municipal jurisdictions; where control of the incident is within the capabilities of the resources based within Warren County.
- Level 3 - A hazardous materials incident that adversely impacts or threatens life, health, property or the environment in a large geographic area. Additional resources are required to supplement those available within Warren County (Warren County Hazardous Materials Response Plan 2015).

Previous Occurrences and Losses

Many sources were researched to identify hazardous materials incidents that have occurred in Warren County. However, not all events that occurred in the County were identified due to the extent of documentation and the fact that not all sources were readily available and researched. Loss and impact information could vary depending on the source. Therefore, the accuracy of monetary figures discussed is based only on the available information identified during research for this HMP Update.

Between 1954 and 2016, New York State has been included in two FEMA emergency (EM) declarations related to chemical waste. Warren County was not included in either declaration. For this 2016 Plan Update, known hazardous materials incidents that have impacted Warren County between 2007 and 2015 are identified in Table 5.4.10-1. According to the NYSDEC Spill Incident Database, between 2007 and 2015, there have been 1,149 spill incidents reported to the NYSDEC. These incidents include records of chemical and petroleum spills. Due to the extent of events, these were not included in the table below. For additional information regarding these events, refer to: <http://www.dec.ny.gov/cfm/external/derexternal/index.cfm?pageid=2>



Table 5.4.10-1. Hazardous Materials Incidents in Warren County, 2007 to 2015

Dates of Event	Event Type	FEMA Declaration Number (if applicable)	County Designated?	Losses / Impacts
April 3, 2007	Hazardous Materials Incident	N/A	N/A	Warren County responded to an incident in Hudson Falls (Washington County). According to the County, the spill was a pesticide and there were no injuries or fatalities associated with this event.
August 5, 2008	Hazardous Materials Incident	N/A	N/A	There was a chemical spill in the parking lot of the Town of Chester municipal building and resulted in a massive response from local emergency personnel. Two five-gallon contains of zinc phosphate were spilled in the parking lot as they were being delivered to the town by a tractor trailer. The chemical was going to be used in the Pottersville Water District to prevent copper pipes from corroding. The Spill Response Team of the state Department of Environmental Conservation, state Health Department officials, the North Warren Emergency Squad and other fire companies also responded to wash away the chemical and clean up the spill. Emergency personnel remained at the scene for over four hours. There were no injuries or fatalities associated with this event.
November 11, 2008	Chemical Spill	N/A	N/A	In Glens Falls, a large refrigeration unit was brought to the Geer Street junkyard and it was not drained properly. When two employees of the junkyard began to dismantle the unit, they were sprayed with sulfur dioxide and hospitalized.
December 7, 2008	Chemical Spill	N/A	N/A	Route 17 and Route 17M in Chester, near exit 127, were closed when a tanker truck carrying muriatic acid began to leak. The leak began after the axel of the truck began to burn and resulted in a chemical leakage. Residents in the area of the spill were evacuated and a full hazmat condition was declared. There were no injuries or fatalities associated with this event.

Sources: North American Hazmat Situations and Deployments Map 2016; Input from Warren County Planning Committee



Probability of Future Occurrences

Predicting future hazardous substance incidents in Warren County is difficult. They can occur at anytime and anywhere in the County. Incidents can be sudden without any warning or slowly develop. Small spills, both fixed site and in-transit, occur throughout the year and the probability for these events are high. The risk of major incidents in a given year is rare. It is estimated that the County will continue to experience direct and indirect impacts of hazardous substance incidents annually that may induce secondary hazards such as infrastructure deterioration or failure, water quality and supply concerns, and transportation delays, accidents and inconveniences.

In order to determine the probability of future occurrences of hazardous materials events, data from the NYSDEC Spill Incident Database was used to calculate the recurrence interval and the average annual number of events in Warren County. The table below shows these statistics, as well as the annual average number of events and the estimated percent chance of an incident occurring in a given year (NYSDEC 2016).

Table 5.4.10-2. Probability of Future Occurrence of Hazardous Materials Events, 2007 – 2015

Hazard Type	Number of Occurrences Between 2007 – 2015	Rate of Occurrence	Recurrence Interval (in years)	Probability of event Occurring in Any Given Year	% Chance of Occurring in Any Given Year
Hazardous Materials (chemical and petroleum)	1,149	17.68	0.06	1	100

Source: NYSDEC 2016

In Section 5.3, the identified hazards of concern for Warren County were ranked. The probability of occurrence, or likelihood of the event, is one parameter used for hazard rankings. Based on historical records and input from the Planning Committee, the probability of occurrence for the release of hazardous substances in the County is considered ‘frequent’ (likely to occur within 25 years, as presented in Table 5.3-3).

Climate Change Impacts

Hazardous substance incidents are non-natural incidents; therefore, there are no implications for impacts from climate change.



5.4.10.2 Vulnerability Assessment

To understand risk, a community must evaluate what assets are exposed or vulnerable in the identified hazard area. For the hazardous substances hazard, all of Warren County is exposed to the hazard. Therefore, all assets in the County (population, structures, critical facilities and lifelines), as described in the County Profile (Section 4), are exposed and potentially vulnerable to the release of hazardous substances. The following text evaluates and estimates the potential impact of the hazardous substances hazard on the County including:

- Overview of vulnerability
- Data and methodology used for the evaluation
- Impact 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
- Further data collections that will assist understanding this hazard over time

Overview of Vulnerability

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

Data and Methodology

For this hazard, data was obtained from the USEPA and NYSDEC.

Impact on Life, Health and Safety

Depending on the type and quantity of chemicals released and the weather conditions, an incident can affect larger areas that cross jurisdictional boundaries. When hazardous substances are released in the air, water or on land they may contaminate the environment and pose greater danger to human health. The general population may be exposed to a hazardous substances release through inhalation, ingestion, absorption, injection or dermal exposure. Exposure may be either acute or chronic, depending upon the nature of the substance and extent of release and contamination.

Due to the location of these different hazardous substance and waste sites in Warren County, the entire County is considered vulnerable to this hazard. Those particularly vulnerable to the effects of hazardous substances incidents are populations located along major transportation routes because of the quantities of chemicals transported on these major thoroughfares. Potential losses from hazardous substances incidences include human health and life and property resources. These types of incidents can lead to injury, illnesses, and/or death from both the involved persons and those living in the impacted areas.

Impact on General Building Stock

Potential losses to the general building stock caused by a hazardous substances incident is difficult to quantify. The degree of damages 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.

Impact on Critical Facilities

Potential losses to critical facilities caused by a hazardous substances incident is also 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 Warren County.

Impact on Economy

If a significant hazardous substances incident occurred, not only would life, safety, and building stock be at risk, but the economy of Warren County may be impacted as well. A significant incident in an urban area or popular tourist 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. The exact impact on the economy is difficult to determine, given the uncertain nature of the size and scope of incidents.

Hazardous substances incidents have the potential to lead to major transportation route closures in Warren County. The closure of waterways, railroads, airports, and highways as a result of these incidents has the potential to impact the ability to deliver goods and services efficiently. Potential impacts may be local, regional, or statewide, depending on the magnitude of the event and the level of services disruptions.

Future Growth and Development

As discussed in Sections 4 and 9, areas targeted for future growth and development have been identified across Warren County. Any areas of growth could be potentially impacted by hazardous substances incidents because the entire County is exposed and vulnerable. An increase in development and population has the ability to increase the likelihood of a hazardous substance incident. Future migration to larger jurisdictions may also increase the likelihood of an incident. Please 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

A hazardous substance incident is a human-caused hazard; therefore, no climate change impacts are associated with the hazard.

Additional Data and Next Steps

For the Plan Update, any additional information regarding localized concerns and past impacts will be collected and analyzed. This data will be developed to support future revisions to the plan. Mitigation efforts could include building on existing New York State, Warren County, and local efforts.