# 5.4.4 Hazardous Materials

This section provides a hazard profile (description, location, extent, previous occurrences and losses, probability of future occurrences, and impact of climate change) and vulnerability assessment of the hazardous materials (hazmat) hazard for the Livingston County Hazard Mitigation Plan (HMP).

## 5.4.4.1 Hazard Profile

This section provides information regarding the description, extent, location, previous occurrences and losses, climate change projections and the probability of future occurrences for the hazardous materials hazard.

### Hazard Description

Hazardous substances include materials and wastes that are considered severely harmful to human health and the environment, as defined by the U.S. Environmental Protection Agency (EPA) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (also known as Superfund). Many hazardous materials are commonly-used substances, which are harmless in their normal uses, but are quite dangerous if released. EPA designates more than 800 substances as hazardous and identifies many more as potentially hazardous due to their characteristics and the circumstances of their release (EPA 2021).

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. 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 that the EPA Administrator has "taken action" under Section 7 of the Toxic Substances Control Act (TSCA) (EPA 2020).

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. For the purpose of this HMP update, hazardous substance incidents occurring at fixed sites and those that occur during transport will be discussed in this profile.

#### Hazardous Substances at Fixed Sites

A fixed-site hazardous substance (materials and waste) incident is the uncontrolled release of materials from a fixed site, capable of posing a risk to health, safety, and property as determined by RCRA. It is possible to identify and prepare for a fixed-site incident because federal and state laws require those facilities to notify state and local authorities about what is being used or produced at the site. Hazardous materials at fixed sites are regulated by the EPA.

The EPA chooses to specifically list substances as hazardous and extremely hazardous, rather than providing objective definitions. Hazardous substances, as listed, are generally materials that, if released into the environment, tend to persist for long periods and pose long-term health hazards for living organisms. Extremely hazardous substances, while also generally toxic materials, represent acute health hazards that, when released, are immediately dangerous to the lives of humans and animals and cause serious damage to the environment. When facilities contain these materials in quantities at or above the threshold planning quantity (TPQ), they must submit "Tier II" information to appropriate state and/or local agencies to facilitate emergency planning.

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. This could be a concern to Livingston County because the Robert Emmett Ginna Nuclear Power Plant's 50-mile Ingestion Exposure Pathway Emergency Planning Zone (EPZ) encompasses much of Livingston County, threatening the water and food supply in the county.

### Hazardous Substances in Transit

A hazardous materials transportation incident is any event resulting in uncontrolled release of materials during transport that can pose a risk to health, safety, and property as defined by the U.S. Department of Transportation (DOT) Materials Transport regulations. Transportation incidents are difficult to prepare for because there is little, if any, notice about what materials could be involved should an accident happen. Hazardous materials transportation incidents can occur anywhere within the United States. Transportation of hazardous materials on highways involves tanker trucks or trailers, and these are responsible for the greatest number of hazardous substance release incidents. Potential also exists for hazardous substance releases to occur along rail lines, as collisions and derailments of train cars can result in large spills. Hazardous materials in transit are regulated by the DOT.

DOT regulations define hazardous materials as a substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and has designated as hazardous under Section 5103 of Federal Hazardous Materials Transportation Law (49 U.S.C. 5103). The term includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (Title 49 of the *Code of Federal* Regulations [CFR] 172.101), and materials that meet the defining criteria for hazard classes and divisions. When a substance meets the DOT definition of a hazardous material, it must be transported in accordance with safety regulations, which provide guidelines for appropriate packaging, communication of hazards, and proper shipping controls.

In Livingston County, approximately 240.9 miles of county roads are present (New York State Department of Transportation [NYSDOT] 2021). These roads cross rivers and streams; hazardous substance spills on roads could pollute watersheds that serve as domestic water supplies for areas within Livingston 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.

## Location

Hazardous materials are widely stored and transported throughout Livingston County. An event involving hazardous materials can occur anywhere; however, they usually occur along major highways and railways (in-transit) or at facilities that store and/or use hazardous materials (fixed site).

## Hazardous Materials at Fixed Sites

Many years ago, numerous wastes were dumped on the ground, in rivers, or left out in the open at various locations throughout the United States. 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 EPA in cooperation with individual states.

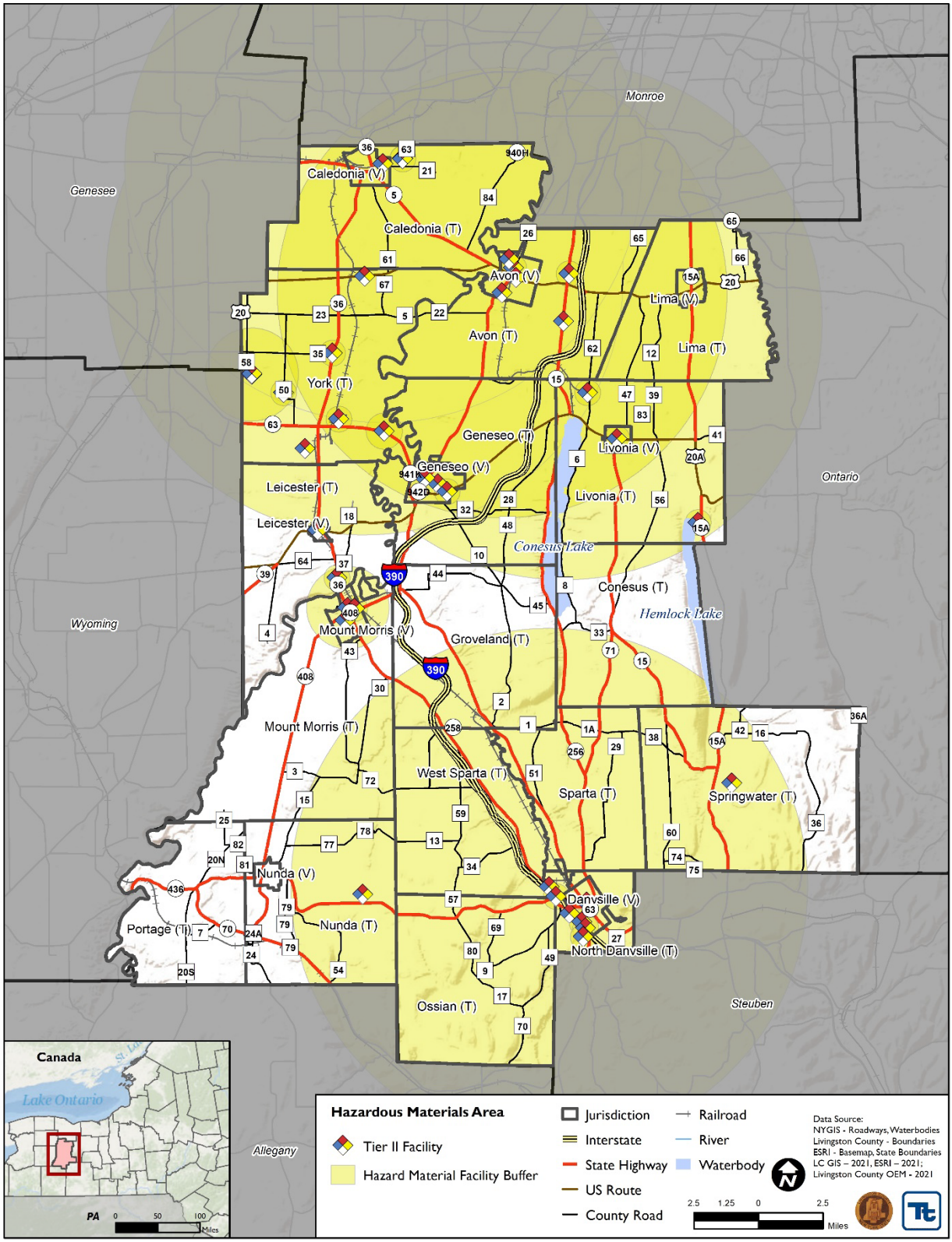
Federal regulations, including CERCLA and Superfund Amendments and Reauthorization Act (SARA), required that a National Priorities List (NPL) of sites throughout the United States be maintained and revised at least annually. The NPL contains a list of sites of national priority with known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the EPA in determining which sites warrant further investigation. As of the date of this plan, there are no NPL (Superfund) sites in Livingston County (EPA 2021).

The Emergency Planning and Community Right-to-Know Act (EPCRA) was passed by Congress in 1986 (Title III of SARA). EPCRA establishes requirements for federal, state and local governments, Indian tribes, and industry regarding emergency planning and "Community Right-to-Know" reporting on hazardous and toxic chemicals. The Community Right-to-Know provisions help increase the public's knowledge and provide access to information on chemicals at individual facilities, their uses, and releases into the environment. States and communities, working with facilities, can use the information to improve chemical safety and protect public health and the environment. There are four key provisions to EPCRA, which are described below.

- *Emergency planning* – Local governments are required to prepare chemical emergency response plans and to review those plans at least annually. State governments are required to oversee and coordinate local planning efforts. Facilities that maintain extremely hazardous substances (EHS) on site in quantities greater than corresponding threshold planning quantities (TPQ) must also cooperate in preparing emergency plans.
- *Emergency release notification* – Facilities must immediately report accidental releases of EHS and any other hazardous substances, as defined under CERCLA. Any release of these substances in quantities greater than their corresponding reportable quantities must be reported to state and local officials.
- *Hazardous chemical storage reporting requirements* – Facilities handling or storing any hazardous chemicals, as defined under the Occupational Safety and Health Administration (OSHA), must submit Material Safety Data Sheets (MSDS), or Safety Date Sheets (SDS), to state and local officials and fire departments. Facilities must also submit an inventory form for these chemicals to state and local officials and local fire departments.
- *Toxic chemical release inventory (TRI)* – Facilities must complete and submit a toxic chemical release inventory form (Form R) each year. Form R must be submitted for each TRI chemical manufactured or otherwise used above the applicable threshold quantities.

As part of the requirements for hazardous chemical storage reporting, facilities must annually submit an Emergency and Hazardous Chemical Inventory Form to the local emergency planning committee, the State Emergency Response Commission (SERC), and the local fire department. Facilities provide either a Tier I or Tier II inventory form; however, most states require Tier II inventory forms. The forms need to be submitted on or before March 1 each year, providing information on chemicals present at the facility in the previous year. Figure 5.4.4-1 shows the areas vulnerable to a hazardous materials release from a fixed facility.

**Figure 5.4.4-1. Selected Buffer from Tier II Hazardous Materials Facilities in Livingston County**



SARA requires the governor of each state to establish a 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.

Livingston County has 42 fixed facilities that store or use hazardous materials and that fall under Tier II reporting requirements. For security purposes, they are not mapped in this profile.

EPA also requires these facilities to be registered with their Facility Registry Service (FRS). The FRS is a national database organized by facility industrial classification and geographic location. Livingston County reports 1,438 facilities to the FRS (EPA 2021).

Additionally, EPA identifies four facilities under the Toxic Release Inventory (TRI). These facilities are required to annually report how much of each chemical is recycled, combusted for energy recovery, treated for destruction, and disposed of or otherwise released on and off site. In 2019 (most recent data available), the TRI facilities in Livingston County reported a total of 2,483 pounds (lbs.) of on-site and off-site disposal or other releases, with the following breakdown:

- Total On-Site: 1,383 lbs.
- Total Off-Site: 1,100 lbs.

The majority of chemicals released into the air in Livingston County (as recorded in 2019) includes Zinc compounds (64.8 percent) and ammonia (20.3 percent).

### Hazardous Materials In-Transit

Incidents involving hazardous materials in transit can occur anywhere in Livingston County. Transportation corridors within Livingston County that carry hazardous materials 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 hazardous materials. Transport vehicles do not typically travel through residential areas unless they are en-route to destinations such as gasoline service stations or storage facilities.

Hazardous substance releases in navigable waterways are not a significant concern for Livingston County; per U.S. Coast Guard (USCG) determinations, there are no navigable waterways within the county (USCG 2021).

Major transportation routes through Livingston County include a framework of State Routes (S.R.) and one US Highway including S.R.-5, 15, 36, 39, 63 and US Highways 20 and 20A. Interstate 390 runs north to south through the center of the county. The potential for a spill also exists on routes used for industrial and business purposes. Section 4 of this HMP discusses roadways in the county.

Hazardous material incidents may occur along railways in Livingston County. Rail lines that may carry hazardous materials include the Norfolk Southern, and two short lines: Rochester & Southern Railroad and the Livonia Avon and Lakeville Railroad. Railways pose a risk for the Village of Avon, Village of Caledonia, and the hamlet of Lakeville.

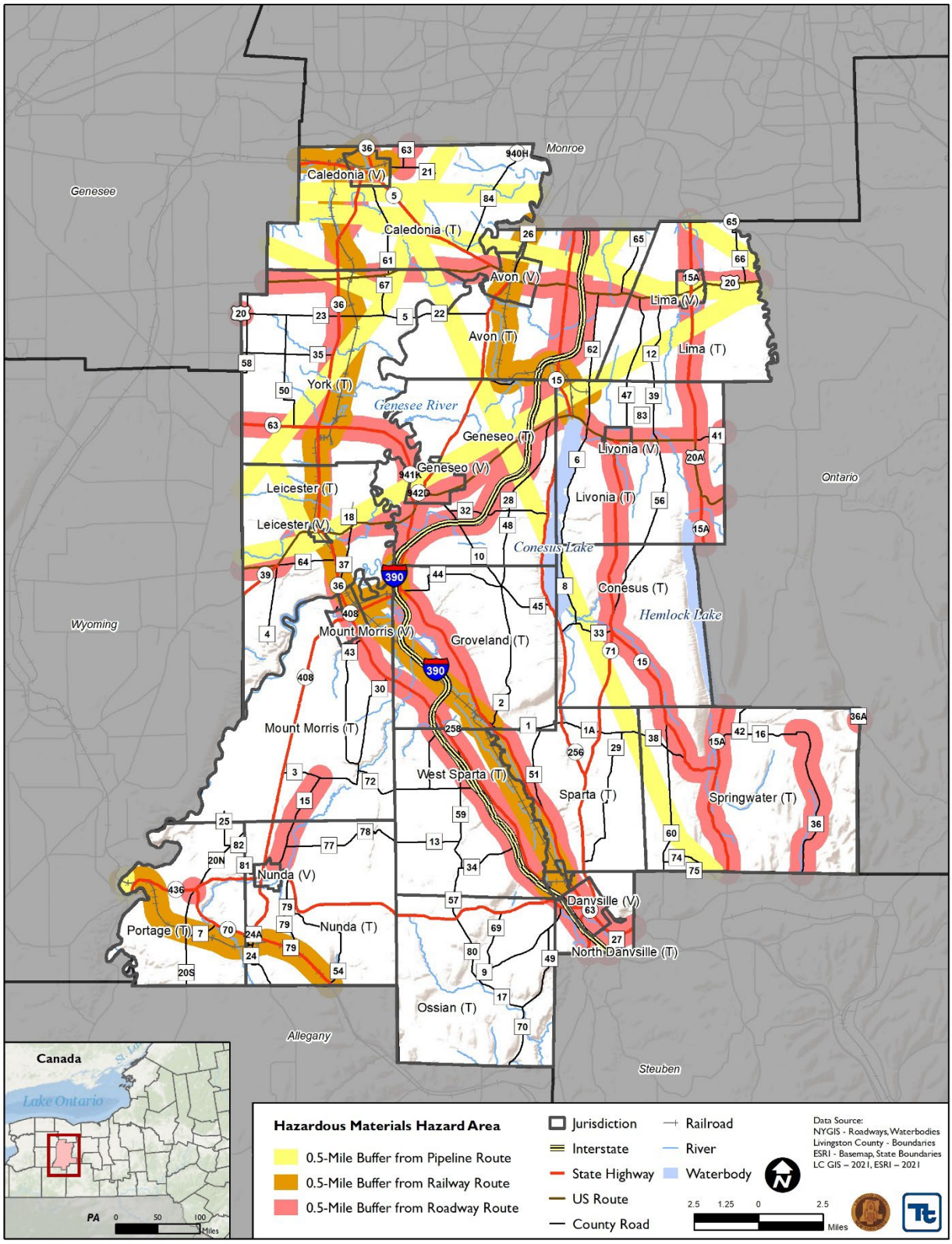
NYSDOT has a vital interest in preserving and improving the rail freight part of its transportation network. Rail shipments allow cost-effective movement of goods and thus decrease stress on the state's highway system. Major commodities shipped by rail include petrochemicals (including plastic pellets), construction materials, food

products, raw materials, and finished goods for manufacturers. An accident involving a rail car carrying hazardous materials could pose a public safety hazard to the community.

Hazardous materials can also be transported via underground petroleum and gas (natural and propane) pipelines across the state. New York State has an extensive network of natural gas and petroleum pipelines, some of which pass through Livingston County.

Figure 5.4.4-2 shows the areas vulnerable to a release of hazardous materials in transit, from pipelines, railways, and major roadways.

**Figure 5.4.4-2. Half Mile Buffer from Gas Transmission/Hazardous Liquid Pipelines, Major Roadways and Rail Lines Within Livingston County**



## Extent

The extent of a hazardous substance release depends on (1) whether the substance is released from a fixed or mobile source, (2) the size of the impacted area, (3) the toxicity and properties of the substance, (4) the duration of the release, and (5) environmental conditions (for example, wind and precipitation, terrain, etc.).

Hazardous substance releases can contaminate air, water, and soils, possibly resulting in death 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. Hazardous releases caused by natural hazards are known as secondary events. Hazardous materials can include toxic chemicals, radioactive substances, infectious substances, and hazardous wastes. Such releases can affect nearby populations and contaminate critical or sensitive environmental areas.

The 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 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 the ways in which the hazard occurs and develops
- Micro-meteorological effects of buildings and terrain, which alter dispersion of hazardous materials
- Maintenance failures (such as fire protection and containment features), which can substantially increase damage to a facility and to surrounding buildings

The 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 substance, a release can travel great distances or remain present in the environment for a long period of time (for example, centuries to millennia).

The warning time for a hazardous materials incident can be sudden, without any warning, such an explosion, or may slowly develop such as a leaking container. Facilities that store extremely hazardous substances are required to notify local officials when an incident occurs. Local emergency responders and emergency management officials would determine whether they need to evacuate the public or to advise to shelter in place. Similar to on-site hazardous substances incidents, the amount of warning time for incidents associated with hazardous substances in transit varies based on the nature and scope of the incident. If an explosion did not occur immediately following an accident, there may be time to warn adjacent neighborhoods and enough time to facilitate appropriate protective actions.

## Previous Occurrences and Losses

Hazardous materials incidents, both on site or in transit, occur frequently across the state and in Livingston County. These incidents are typically small, localized events.

The Federal Railroad Administration (FRA) Office of Safety Analysis provides an incident report database with information on railroad incidents throughout the United States. According to this database, 18 incidents occurred in Livingston County between 2015 and 2021 (FRA 2021).

For this 2022 HMP update, known hazardous substances incidents that have impacted Livingston County between 2015 and 2021 are identified in Table 5.4.4-1. Between 1954 and 2019, New York State was included in one FEMA EM related to a hazardous substance incident. On August 7, 1978, and May 21, 1980, emergency declarations (EM-3066 and EM-3080) for New York State were issued related to the Love Canal incident. Livingston County was not included in this declaration (FEMA 2021).

It should be noted that not all events that have occurred in Livingston County are included in Table 5.4.4-1 because of the extent of documentation, and the fact that not all sources may have been identified or 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.

**Table 5.4.4-1. Hazardous Materials Incidents in Livingston County, 2015 to 2021**

| Date(s) of Event | Event Type | FEMA Declaration Number | County Designated? | Losses / Impacts |
|---|---|---|---|---|
| September 24, 2015 | Small spill of Liquid hazmat | N/A | N/A | None reported |
| December 16, 2015 | Liquid hazmat spill | N/A | N/A | Release of 60 gallons of chemicals |
| May 4, 2020 | Liquid Hazmat release | N/A | N/A | Release of 3 gallons liquid chemicals |

*Sources: New York State Department of Environmental Conservation ( NYSDEC) 2020; Pipeline and Hazardous Materials Safety Administration (PHMSA) 2021; FRA 2021; FEMA 2021*
*FEMA Federal Emergency Management Agency N/A Not applicable*

## Probability of Future Occurrences

Predicting future hazardous substance incidents in Livingston County is difficult. These can occur at any time and any location in the county. Incidents can occur suddenly, without any warning, or develop slowly. Small spills, at both fixed sites and in transit, occur throughout the year, and the probability of occurrences of these events is high. Risk of a major incident within a given year is small. 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. Therefore, the likelihood of a hazardous materials incident in the county is considered "frequent" (100 percent chance of happening in a given year), as presented in Table 5.3-1.

## Climate Change Impacts

Non-natural incidents, such as hazardous substance incidents, are not typically considered vulnerable to climate change; however, that assessment not completely accurate. Climate change and its impact on hazardous materials sites, particularly waste sites, is a growing concern. According to the National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (NCEI) State Climate Summaries for New York State, the mean annual temperature has increased approximately 2 ºF.

ClimAID: The Integrated Assessment for Effective Climate Change in New York State (ClimAID) was undertaken to provide decision-makers with information on the state's vulnerability to climate change and to facilitate the development of adaptation strategies informed by both local experience and scientific knowledge (New York State Energy Research and Development Authority [NYSERDA] 2011). Each region in New York State, as defined by ClimAID, has attributes that will be affected by climate change. Livingston County is part of Region 1, Western New York and the Great Lakes Plain. In Region 1, temperatures are estimated to increase

by 4.3 to 6.3 ºF by the 2050s, and 5.7 to 9.6 ºF by the 2080s (baseline of 47.7 ºF, middle range projection). Precipitation totals will increase between 4 and 10 percent by the 2050s and 6 to 13 percent by the 2080s (baseline of 34.0 inches, middle-range projection).

As temperatures change, excessive heat on aging structures and/or infrastructure may be adversely affected. Excessive heat on structures or containers containing hazardous materials may alter the material properties.

In addition, hazardous substances stored at fixed locations in the floodplain may experience an increase in flood events due to the project changes in increased precipitation events; magnitude and frequency. Hazardous waste sites near rivers are tentatively at highest risk because extreme storms and higher water levels could release pollution into the environment. Many of these sites were built in locations believed to be removed from potential contamination or exposure-increasing factors. However, development, floodplain boundary change, and an increase in extreme events from climate change are increasing the possibility that water may reach hazardous material and waste sites.

### 5.4.4.2 Vulnerability Assessment

To understand risk, a community must evaluate the assets exposed and vulnerable in the identified hazard area. A spatial analysis was conducted using various lengths of buffer radii around hazardous material facilities, pipelines, and transportation networks. If a hazardous material incident occurred in or on the facility, pipeline, or transportation network, these buffers would represent the toxin or radiation release area. For the purposes of the assessment, an asset (population, structures, critical facilities, and lifelines) is considered exposed and potentially vulnerable to the hazmat hazard if it is located within these hazardous material buffer areas. The analysis looked at four different hazardous material areas:

1. Half mile from a major highway including the following roadways: Interstate I-390 and Routes 20, 20A, 36, 63, 15, and 15A
2. Half mile from a rail line
3. Half mile from a pipeline
4. Selected buffer from Tier II hazardous material facilities

Effects from a radiological incident at a fixed facility would vary, depending on the product released, amount of product 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.

#### Impacts on Life, Health, and Safety

Depending on the type and quantity of chemicals released and weather conditions, an incident can affect larger areas that cross jurisdictional boundaries. When hazardous materials are released into 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 materials release through inhalation, ingestion, or dermal exposure. Exposure may be either acute or chronic, depending on the nature of the substance and extent of release and contamination. Hazardous material incidents can lead to injury, illnesses, and/or death of involved persons and those living within the impacted areas.

Due to the varied location of different hazardous substances and waste sites in Livingston County, the entire County is considered vulnerable to this hazard. Those particularly vulnerable include 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.

Table 5.4.4-2 summarizes the estimated population located within a half mile of major roadways, rail lines, and pipelines and within selected buffers from Tier II hazardous materials facilities. Overall, most people are at risk to a hazardous material incident occurring from a Tier II hazardous materials facility. More than half the jurisdictions in Livingston County have a population 100-percent located within the Tier II hazardous material facility hazard area.

### Table 5.4.4-2. Population Exposed to Hazardous Material Buffer Areas

| Jurisdiction | Total Population (American Community Survey 2015-2019) | Estimated Population Located Within 1/2 Mile of Hazardous Materials Roadway Routes* | | Estimated Population Located Within 1/2 Mile of Hazardous Materials Railway Routes | | Estimated Population Located Within 1/2 Mile of Hazardous Materials Pipelines | | Estimated Population Located Within Selected Buffer from Hazardous Materials Tier II Facilities | |
|---|---|---|---|---|---|---|---|---|---|
| | | Number of People | Percent of Total | Number of People | Percent of Total | Number of People | Percent of Total | Number of People | Percent of Total |
| Avon (T) | 3,637 | 2,077 | 57.1% | 599 | 16.5% | 278 | 7.7% | 3,637 | 100.0% |
| Avon (V) | 3,260 | 2,252 | 69.1% | 2,898 | 88.9% | 41 | 1.3% | 3,260 | 100.0% |
| Caledonia (T) | 2,060 | 688 | 33.4% | 462 | 22.4% | 1,066 | 51.7% | 2,060 | 100.0% |
| Caledonia (V) | 2,078 | 1,946 | 93.7% | 1,554 | 74.8% | 278 | 13.4% | 2,078 | 100.0% |
| Conesus (T) | 2,325 | 631 | 27.1% | 0 | 0.0% | 666 | 28.7% | 1,229 | 52.8% |
| Dansville (V) | 4,586 | 4,424 | 96.5% | 0 | 0.0% | 0 | 0.0% | 4,586 | 100.0% |
| Geneseo (T) | 2,540 | 1,010 | 39.7% | 52 | 2.1% | 689 | 27.1% | 2,512 | 98.9% |
| Geneseo (V) | 8,095 | 6,305 | 77.9% | 0 | 0.0% | 3,517 | 43.4% | 8,095 | 100.0% |
| Groveland (T) | 3,241 | 773 | 23.8% | 432 | 13.3% | 0 | 0.0% | 1,762 | 54.4% |
| Leicester (T) | 1,798 | 1,389 | 77.2% | 791 | 44.0% | 629 | 35.0% | 875 | 48.6% |
| Leicester (V) | 518 | 518 | 100.0% | 518 | 100.0% | 499 | 96.3% | 131 | 25.3% |
| Lima (T) | 1,833 | 747 | 40.8% | 0 | 0.0% | 694 | 37.9% | 1,833 | 100.0% |
| Lima (V) | 2,278 | 2,278 | 100.0% | 0 | 0.0% | 1,621 | 71.2% | 2,278 | 100.0% |
| Livonia (T) | 6,231 | 2,894 | 46.5% | 747 | 12.0% | 220 | 3.5% | 6,224 | 99.9% |
| Livonia (V) | 1,353 | 1,353 | 100.0% | 0 | 0.0% | 0 | 0.0% | 1,353 | 100.0% |
| Mount Morris (T) | 1,340 | 210 | 15.6% | 8 | 0.6% | 0 | 0.0% | 588 | 43.9% |
| Mount Morris (V) | 2,931 | 2,672 | 91.2% | 1,409 | 48.1% | 0 | 0.0% | 2,931 | 100.0% |
| North Dansville (T) | 696 | 532 | 76.4% | 156 | 22.4% | 0 | 0.0% | 696 | 100.0% |
| Nunda (T) | 1,716 | 124 | 7.3% | 337 | 19.6% | 0 | 0.0% | 793 | 46.2% |
| Nunda (V) | 1,211 | 325 | 26.9% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| Ossian (T) | 701 | 8 | 1.1% | 0 | 0.0% | 0 | 0.0% | 701 | 100.0% |
| Portage (T) | 837 | 45 | 5.4% | 276 | 32.9% | 3 | 0.4% | 0 | 0.0% |
| Sparta (T) | 1,591 | 210 | 13.2% | 94 | 5.9% | 92 | 5.8% | 1,591 | 100.0% |
| Springwater (T) | 2,233 | 970 | 43.5% | 0 | 0.0% | 207 | 9.3% | 1,731 | 77.5% |
| West Sparta (T) | 1,229 | 406 | 33.0% | 55 | 4.5% | 0 | 0.0% | 1,229 | 100.0% |
| York (T) | 3,273 | 2,123 | 64.9% | 938 | 28.7% | 740 | 22.6% | 3,273 | 100.0% |
| **Livingston County (Total)** | **63,591** | **36,911** | **58.0%** | **11,326** | **17.8%** | **11,242** | **17.7%** | **55,444** | **87.2%** |

*Source: American Community Survey 2019; Livingston County GIS 2021; Livingston County OEM 2021*
*Notes: % = Percent; T = Town; V = Village*
**Roadway routes include Interstate I-390 and Routes 20, 20A, 36, 63, 15, and 15A*

## Impacts on General Building Stock

Potential losses to the general building stock caused by a hazardous substance releases, whether in transit or at fixed sites, is difficult to quantify. The degree of damages 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. To estimate the buildings located in the hazardous materials hazard area, specified hazardous material buffer areas were overlaid upon the structures located in the County. Refer to Table 5.4.4-3 and Table 5.4.4-4 for a summary of the buildings and total replacement cost value located within half a mile from roadways, rail lines, and pipelines, and located within a specified buffer of Tier II hazardous materials facilities.

**Table 5.4.4-3. Total Number of Buildings and Replacement Cost Value Located in Designated Hazardous Materials Hazard Areas**

| Jurisdiction | Total Number of Buildings | Total Replacement Cost Value (RCV) | Estimated Building Stock Located Within 1/2 Mile of Hazardous Materials Roadway Routes* | | | | Estimated Building Stock Located Within 1/2 Mile of Hazardous Materials Railway Routes | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number of Buildings Within the Hazardous Materials Hazard Area | Percent of Total | Total Replacement Cost Value of Buildings Located Within the Hazardous Materials Hazard Area | Percent of Total | Number of Buildings Within the Hazardous Materials Hazard Area | Percent of Total | Total Replacement Cost Value of Buildings Located Within the Hazardous Materials Hazard Area | Percent of Total |
| Avon (T) | 2,149 | $1,324,846,766 | 1,203 | 56.0% | $788,780,162 | 59.5% | 376 | 17.5% | $260,418,742 | 19.7% |
| Avon (V) | 1,245 | $1,365,771,007 | 872 | 70.0% | $824,962,820 | 60.4% | 1,087 | 87.3% | $1,117,138,582 | 81.8% |
| Caledonia (T) | 1,362 | $792,755,652 | 424 | 31.1% | $187,771,281 | 23.7% | 273 | 20.0% | $185,554,949 | 23.4% |
| Caledonia (V) | 979 | $735,609,120 | 917 | 93.7% | $682,943,278 | 92.8% | 765 | 78.1% | $647,482,174 | 88.0% |
| Conesus (T) | 1,774 | $625,005,723 | 498 | 28.1% | $192,991,433 | 30.9% | 0 | 0.0% | $0 | 0.0% |
| Dansville (V) | 1,950 | $1,341,807,175 | 1,884 | 96.6% | $1,306,386,009 | 97.4% | 4 | 0.2% | $10,731,703 | 0.8% |
| Geneseo (T) | 1,753 | $1,161,720,041 | 694 | 39.6% | $559,251,485 | 48.1% | 40 | 2.3% | $36,655,776 | 3.2% |
| Geneseo (V) | 1,329 | $1,570,704,963 | 1,066 | 80.2% | $1,317,452,360 | 83.9% | 0 | 0.0% | $0 | 0.0% |
| Groveland (T) | 1,330 | $1,203,662,583 | 448 | 33.7% | $642,313,152 | 53.4% | 141 | 10.6% | $94,772,376 | 7.9% |
| Leicester (T) | 1,214 | $715,987,145 | 825 | 68.0% | $432,946,293 | 60.5% | 468 | 38.6% | $260,854,698 | 36.4% |
| Leicester (V) | 240 | $142,879,953 | 240 | 100.0% | $142,879,953 | 100.0% | 240 | 100.0% | $142,879,953 | 100.0% |
| Lima (T) | 1,436 | $859,636,929 | 598 | 41.6% | $420,605,237 | 48.9% | 0 | 0.0% | $0 | 0.0% |
| Lima (V) | 777 | $452,768,112 | 777 | 100.0% | $452,768,112 | 100.0% | 0 | 0.0% | $0 | 0.0% |
| Livonia (T) | 3,888 | $1,866,897,181 | 1,864 | 47.9% | $1,068,446,613 | 57.2% | 522 | 13.4% | $312,381,340 | 16.7% |
| Livonia (V) | 569 | $371,319,429 | 568 | 99.8% | $368,376,518 | 99.2% | 0 | 0.0% | $0 | 0.0% |
| Mount Morris (T) | 1,115 | $646,574,328 | 181 | 16.2% | $197,190,473 | 30.5% | 40 | 3.6% | $83,093,664 | 12.9% |
| Mount Morris (V) | 1,337 | $785,505,655 | 1,225 | 91.6% | $745,981,751 | 95.0% | 687 | 51.4% | $487,538,785 | 62.1% |
| North Dansville (T) | 607 | $497,159,183 | 486 | 80.1% | $449,004,142 | 90.3% | 179 | 29.5% | $293,737,731 | 59.1% |
| Nunda (T) | 1,354 | $544,934,442 | 89 | 6.6% | $28,981,446 | 5.3% | 264 | 19.5% | $110,346,221 | 20.2% |
| Nunda (V) | 641 | $392,488,596 | 155 | 24.2% | $53,803,242 | 13.7% | 0 | 0.0% | $0 | 0.0% |
| Ossian (T) | 817 | $488,703,931 | 8 | 1.0% | $4,350,817 | 0.9% | 0 | 0.0% | $0 | 0.0% |
| Portage (T) | 620 | $338,465,763 | 33 | 5.3% | $25,149,287 | 7.4% | 206 | 33.2% | $152,543,680 | 45.1% |
| Sparta (T) | 1,151 | $449,674,840 | 165 | 14.3% | $70,461,914 | 15.7% | 66 | 5.7% | $24,856,642 | 5.5% |
| Springwater (T) | 1,822 | $702,256,303 | 788 | 43.2% | $347,600,171 | 49.5% | 0 | 0.0% | $0 | 0.0% |
| West Sparta (T) | 1,010 | $423,213,015 | 356 | 35.2% | $181,641,447 | 42.9% | 60 | 5.9% | $57,129,112 | 13.5% |
| York (T) | 2,183 | $1,677,949,006 | 1,296 | 59.4% | $820,001,343 | 48.9% | 585 | 26.8% | $449,510,417 | 26.8% |
| **Livingston County (Total)** | **34,652** | **$21,478,296,842** | **17,660** | **51.0%** | **$12,313,040,739** | **57.3%** | **6,003** | **17.3%** | **$4,727,626,547** | **22.0%** |

*Source: RS Means 2021; Livingston County GIS 2021; Livingston County OEM 2021*
*Notes: % = Percent; T = Town; V = Village*
**Roadway routes include Interstate I-390 and Routes 20, 20A, 36, 63, 15, and 15A*

**Table 5.4.4-4. Total Number of Buildings and Replacement Cost Value Located in Designated Hazardous Materials Hazard Areas**

| Jurisdiction | Total Number of Buildings | Total Replacement Cost Value (RCV) | Estimated Building Stock Located Within 1/2 Mile of Hazardous Materials Pipelines | | | | Estimated Building Stock Located Within Selected Buffer from Hazardous Materials Tier II Facilities | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Number of Buildings Within the Hazardous Materials Hazard Area | Percent of Total | Total Replacement Cost Value of Buildings Located Within the Hazardous Materials Hazard Area | Percent of Total | Number of Buildings Within the Hazardous Materials Hazard Area | Percent of Total | Total Replacement Cost Value of Buildings Located Within the Hazardous Materials Hazard Area | Percent of Total |
| Avon (T) | 2,149 | $1,324,846,766 | 162 | 7.5% | $85,589,288 | 6.5% | 2,149 | 100.0% | $1,324,846,766 | 100.0% |
| Avon (V) | 1,245 | $1,365,771,007 | 20 | 1.6% | $107,555,027 | 7.9% | 1,245 | 100.0% | $1,365,771,007 | 100.0% |
| Caledonia (T) | 1,362 | $792,755,652 | 618 | 45.4% | $316,918,113 | 40.0% | 1,362 | 100.0% | $792,755,652 | 100.0% |
| Caledonia (V) | 979 | $735,609,120 | 115 | 11.7% | $49,497,215 | 6.7% | 979 | 100.0% | $735,609,120 | 100.0% |
| Conesus (T) | 1,774 | $625,005,723 | 510 | 28.7% | $155,023,450 | 24.8% | 937 | 52.8% | $313,703,177 | 50.2% |
| Dansville (V) | 1,950 | $1,341,807,175 | 0 | 0.0% | $0 | 0.0% | 1,950 | 100.0% | $1,341,807,175 | 100.0% |
| Geneseo (T) | 1,753 | $1,161,720,041 | 483 | 27.6% | $261,674,676 | 22.5% | 1,730 | 98.7% | $1,139,194,993 | 98.1% |
| Geneseo (V) | 1,329 | $1,570,704,963 | 586 | 44.1% | $825,302,700 | 52.5% | 1,329 | 100.0% | $1,570,704,963 | 100.0% |
| Groveland (T) | 1,330 | $1,203,662,583 | 0 | 0.0% | $0 | 0.0% | 786 | 59.1% | $786,658,523 | 65.4% |
| Leicester (T) | 1,214 | $715,987,145 | 376 | 31.0% | $190,730,556 | 26.6% | 566 | 46.6% | $370,432,032 | 51.7% |
| Leicester (V) | 240 | $142,879,953 | 232 | 96.7% | $140,609,948 | 98.4% | 69 | 28.8% | $43,066,744 | 30.1% |
| Lima (T) | 1,436 | $859,636,929 | 528 | 36.8% | $366,442,995 | 42.6% | 1,436 | 100.0% | $859,636,929 | 100.0% |
| Lima (V) | 777 | $452,768,112 | 553 | 71.2% | $314,344,271 | 69.4% | 777 | 100.0% | $452,768,112 | 100.0% |
| Livonia (T) | 3,888 | $1,866,897,181 | 155 | 4.0% | $103,110,678 | 5.5% | 3,884 | 99.9% | $1,865,671,520 | 99.9% |
| Livonia (V) | 569 | $371,319,429 | 0 | 0.0% | $0 | 0.0% | 569 | 100.0% | $371,319,429 | 100.0% |
| Mount Morris (T) | 1,115 | $646,574,328 | 0 | 0.0% | $0 | 0.0% | 498 | 44.7% | $337,045,655 | 52.1% |
| Mount Morris (V) | 1,337 | $785,505,655 | 0 | 0.0% | $0 | 0.0% | 1,337 | 100.0% | $785,505,655 | 100.0% |
| North Dansville (T) | 607 | $497,159,183 | 0 | 0.0% | $0 | 0.0% | 607 | 100.0% | $497,159,183 | 100.0% |
| Nunda (T) | 1,354 | $544,934,442 | 0 | 0.0% | $0 | 0.0% | 614 | 45.3% | $203,422,931 | 37.3% |
| Nunda (V) | 641 | $392,488,596 | 0 | 0.0% | $0 | 0.0% | 0 | 0.0% | $0 | 0.0% |
| Ossian (T) | 817 | $488,703,931 | 0 | 0.0% | $0 | 0.0% | 817 | 100.0% | $488,703,931 | 100.0% |
| Portage (T) | 620 | $338,465,763 | 2 | 0.3% | $738,369 | 0.2% | 0 | 0.0% | $0 | 0.0% |
| Sparta (T) | 1,151 | $449,674,840 | 60 | 5.2% | $16,954,597 | 3.8% | 1,151 | 100.0% | $449,674,840 | 100.0% |
| Springwater (T) | 1,822 | $702,256,303 | 169 | 9.3% | $61,990,187 | 8.8% | 1,431 | 78.5% | $572,462,983 | 81.5% |
| West Sparta (T) | 1,010 | $423,213,015 | 0 | 0.0% | $0 | 0.0% | 1,010 | 100.0% | $423,213,015 | 100.0% |
| York (T) | 2,183 | $1,677,949,006 | 483 | 22.1% | $259,940,726 | 15.5% | 2,183 | 100.0% | $1,677,949,006 | 100.0% |
| **Livingston County (Total)** | **34,652** | **$21,478,296,842** | **5,052** | **14.6%** | **$3,256,422,798** | **15.2%** | **29,416** | **84.9%** | **$18,769,083,342** | **87.4%** |

*Source: RS Means 2021; Livingston County GIS 2021; Livingston County OEM 2021*
*Notes: % = Percent; T = Town; V = Village*

## Impacts on Critical Facilities and Lifelines

Potential losses of critical facilities caused by a hazardous material 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. The closure of waterways, railroads, airports and highways as a result of a hazardous substance incident 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 level of service disruptions.

Table 5.4.4-5 through Table 5.4.4-8 summarize the number of critical facilities and lifelines built within the hazardous materials hazard areas by jurisdiction. Appendix F summarizes the distribution of critical facilities by critical facility type located in the hazardous material hazard areas by jurisdiction. The majority of the critical facilities located in the hazardous materials hazard areas are considered safety and security lifelines for the county (refer to Table 5.4.4-9).

### Table 5.4.4-5. Number of Critical Facilities and Lifelines Located Within Half Mile of Hazardous Materials Roadway Routes

| Jurisdiction | Total Number of Critical Facilities | Total Number of Lifelines | Number of Critical Facilities and Lifeline Facilities Located Within 1/2 Mile of Hazardous Material Roadway Routes* | | | |
|---|---|---|---|---|---|---|
| | | | Critical Facilities | Percent of Total Critical Facilities | Lifelines | Percent of Total Lifelines |
| Avon (T) | 51 | 46 | 36 | 70.6% | 32 | 69.6% |
| Avon (V) | 36 | 27 | 28 | 77.8% | 23 | 85.2% |
| Caledonia (T) | 19 | 16 | 5 | 26.3% | 5 | 31.3% |
| Caledonia (V) | 28 | 25 | 28 | 100.0% | 25 | 100.0% |
| Conesus (T) | 26 | 26 | 13 | 50.0% | 13 | 50.0% |
| Dansville (V) | 46 | 37 | 44 | 95.7% | 35 | 94.6% |
| Geneseo (T) | 48 | 45 | 34 | 70.8% | 31 | 68.9% |
| Geneseo (V) | 46 | 39 | 32 | 69.6% | 26 | 66.7% |
| Groveland (T) | 63 | 59 | 43 | 68.3% | 39 | 66.1% |
| Leicester (T) | 26 | 26 | 18 | 69.2% | 18 | 69.2% |
| Leicester (V) | 13 | 13 | 13 | 100.0% | 13 | 100.0% |
| Lima (T) | 16 | 14 | 9 | 56.3% | 7 | 50.0% |
| Lima (V) | 21 | 19 | 21 | 100.0% | 19 | 100.0% |
| Livonia (T) | 70 | 65 | 46 | 65.7% | 43 | 66.2% |
| Livonia (V) | 16 | 12 | 15 | 93.8% | 12 | 100.0% |
| Mount Morris (T) | 30 | 29 | 18 | 60.0% | 17 | 58.6% |
| Mount Morris (V) | 28 | 24 | 28 | 100.0% | 24 | 100.0% |
| North Dansville (T) | 35 | 31 | 30 | 85.7% | 26 | 83.9% |
| Nunda (T) | 25 | 25 | 3 | 12.0% | 3 | 12.0% |
| Nunda (V) | 23 | 20 | 2 | 8.7% | 2 | 10.0% |
| Ossian (T) | 20 | 20 | 0 | 0.0% | 0 | 0.0% |
| Portage (T) | 23 | 22 | 2 | 8.7% | 2 | 9.1% |
| Sparta (T) | 18 | 18 | 4 | 22.2% | 4 | 22.2% |
| Springwater (T) | 27 | 26 | 16 | 59.3% | 15 | 57.7% |
| West Sparta (T) | 25 | 25 | 15 | 60.0% | 15 | 60.0% |
| York (T) | 58 | 54 | 35 | 60.3% | 33 | 61.1% |
| **Livingston County (Total)** | **837** | **763** | **538** | **64.3%** | **482** | **63.2%** |

*Source: RS Means 2021; Livingston County GIS 2021; Livingston County OEM 2021*
*Notes: % = Percent; T = Town; V = Village*
** Interstate I-390 and Routes 20, 20A, 36, 63, 15, and 15A*

### Table 5.4.4-6. Number of Critical Facilities and Lifelines Located Within Half Mile of Hazardous Materials Railway Routes

| Jurisdiction | Total Number of Critical Facilities | Total Number of Lifelines | Number of Critical Facilities and Lifeline Facilities Located Within 1/2 Mile of Hazardous Material Railway Routes | | | |
|---|---|---|---|---|---|---|
| | | | Critical Facilities | Percent of Total Critical Facilities | Lifelines | Percent of Total Lifelines |
| Avon (T) | 51 | 46 | 23 | 45.1% | 21 | 45.7% |
| Avon (V) | 36 | 27 | 27 | 75.0% | 19 | 70.4% |
| Caledonia (T) | 19 | 16 | 2 | 10.5% | 1 | 6.3% |
| Caledonia (V) | 28 | 25 | 28 | 100.0% | 25 | 100.0% |
| Conesus (T) | 26 | 26 | 0 | 0.0% | 0 | 0.0% |
| Dansville (V) | 46 | 37 | 1 | 2.2% | 1 | 2.7% |
| Geneseo (T) | 48 | 45 | 0 | 0.0% | 0 | 0.0% |
| Geneseo (V) | 46 | 39 | 0 | 0.0% | 0 | 0.0% |
| Groveland (T) | 63 | 59 | 21 | 33.3% | 20 | 33.9% |
| Leicester (T) | 26 | 26 | 9 | 34.6% | 9 | 34.6% |
| Leicester (V) | 13 | 13 | 13 | 100.0% | 13 | 100.0% |
| Lima (T) | 16 | 14 | 0 | 0.0% | 0 | 0.0% |
| Lima (V) | 21 | 19 | 0 | 0.0% | 0 | 0.0% |
| Livonia (T) | 70 | 65 | 20 | 28.6% | 17 | 26.2% |
| Livonia (V) | 16 | 12 | 0 | 0.0% | 0 | 0.0% |
| Mount Morris (T) | 30 | 29 | 7 | 23.3% | 7 | 24.1% |
| Mount Morris (V) | 28 | 24 | 19 | 67.9% | 15 | 62.5% |
| North Dansville (T) | 35 | 31 | 12 | 34.3% | 9 | 29.0% |
| Nunda (T) | 25 | 25 | 4 | 16.0% | 4 | 16.0% |
| Nunda (V) | 23 | 20 | 0 | 0.0% | 0 | 0.0% |
| Ossian (T) | 20 | 20 | 0 | 0.0% | 0 | 0.0% |
| Portage (T) | 23 | 22 | 9 | 39.1% | 9 | 40.9% |
| Sparta (T) | 18 | 18 | 3 | 16.7% | 3 | 16.7% |
| Springwater (T) | 27 | 26 | 0 | 0.0% | 0 | 0.0% |
| West Sparta (T) | 25 | 25 | 3 | 12.0% | 3 | 12.0% |
| York (T) | 58 | 54 | 21 | 36.2% | 21 | 38.9% |
| **Livingston County (Total)** | **837** | **763** | **222** | **26.5%** | **197** | **25.8%** |

*Source: RS Means 2021; Livingston County GIS 2021; Livingston County OEM 2021*
*Notes: % = Percent; T = Town; V = Village*

### Table 5.4.4-7. Number of Critical Facilities and Lifelines Located Within Half Mile of Hazardous Materials Pipelines Routes

| Jurisdiction | Total Number of Critical Facilities | Total Number of Lifelines | Number of Critical Facilities and Lifeline Facilities Located Within 1/2 Mile of Hazardous Materials Pipelines | | | |
|---|---|---|---|---|---|---|
| | | | Critical Facilities | Percent of Total Critical Facilities | Lifelines | Percent of Total Lifelines |
| Avon (T) | 51 | 46 | 3 | 5.9% | 3 | 6.5% |
| Avon (V) | 36 | 27 | 2 | 5.6% | 0 | 0.0% |
| Caledonia (T) | 19 | 16 | 6 | 31.6% | 6 | 37.5% |
| Caledonia (V) | 28 | 25 | 0 | 0.0% | 0 | 0.0% |
| Conesus (T) | 26 | 26 | 7 | 26.9% | 7 | 26.9% |
| Dansville (V) | 46 | 37 | 0 | 0.0% | 0 | 0.0% |
| Geneseo (T) | 48 | 45 | 10 | 20.8% | 10 | 22.2% |
| Geneseo (V) | 46 | 39 | 24 | 52.2% | 20 | 51.3% |
| Groveland (T) | 63 | 59 | 0 | 0.0% | 0 | 0.0% |

| Jurisdiction | Total Number of Critical Facilities | Total Number of Lifelines | Number of Critical Facilities and Lifeline Facilities Located Within 1/2 Mile of Hazardous Materials Pipelines | | | |
|---|---|---|---|---|---|---|
| | | | Critical Facilities | Percent of Total Critical Facilities | Lifelines | Percent of Total Lifelines |
| Leicester (T) | 26 | 26 | 8 | 30.8% | 8 | 30.8% |
| Leicester (V) | 13 | 13 | 13 | 100.0% | 13 | 100.0% |
| Lima (T) | 16 | 14 | 4 | 25.0% | 4 | 28.6% |
| Lima (V) | 21 | 19 | 19 | 90.5% | 18 | 94.7% |
| Livonia (T) | 70 | 65 | 7 | 10.0% | 5 | 7.7% |
| Livonia (V) | 16 | 12 | 0 | 0.0% | 0 | 0.0% |
| Mount Morris (T) | 30 | 29 | 0 | 0.0% | 0 | 0.0% |
| Mount Morris (V) | 28 | 24 | 0 | 0.0% | 0 | 0.0% |
| North Dansville (T) | 35 | 31 | 0 | 0.0% | 0 | 0.0% |
| Nunda (T) | 25 | 25 | 0 | 0.0% | 0 | 0.0% |
| Nunda (V) | 23 | 20 | 0 | 0.0% | 0 | 0.0% |
| Ossian (T) | 20 | 20 | 0 | 0.0% | 0 | 0.0% |
| Portage (T) | 23 | 22 | 0 | 0.0% | 0 | 0.0% |
| Sparta (T) | 18 | 18 | 0 | 0.0% | 0 | 0.0% |
| Springwater (T) | 27 | 26 | 1 | 3.7% | 1 | 3.8% |
| West Sparta (T) | 25 | 25 | 0 | 0.0% | 0 | 0.0% |
| York (T) | 58 | 54 | 8 | 13.8% | 8 | 14.8% |
| **Livingston County (Total)** | **837** | **763** | **112** | **13.4%** | **103** | **13.5%** |

*Source: RS Means 2021; Livingston County GIS 2021; Livingston County OEM 2021*
*Notes: % = Percent; T = Town; V = Village*

### Table 5.4.4-8. Number of Critical Facilities and Lifelines Located Within Selected Buffer of Tier II Hazardous Materials Facilities

| Jurisdiction | Total Number of Critical Facilities | Total Number of Lifelines | Number of Critical Facilities and Lifeline Facilities Located Within Selected Buffer of Hazardous Material Tier II Facilities | | | |
|---|---|---|---|---|---|---|
| | | | Critical Facilities | Percent of Total Critical Facilities | Lifelines | Percent of Total Lifelines |
| Avon (T) | 51 | 46 | 51 | 100.0% | 46 | 100.0% |
| Avon (V) | 36 | 27 | 36 | 100.0% | 27 | 100.0% |
| Caledonia (T) | 19 | 16 | 19 | 100.0% | 16 | 100.0% |
| Caledonia (V) | 28 | 25 | 28 | 100.0% | 25 | 100.0% |
| Conesus (T) | 26 | 26 | 8 | 30.8% | 8 | 30.8% |
| Dansville (V) | 46 | 37 | 46 | 100.0% | 37 | 100.0% |
| Geneseo (T) | 48 | 45 | 47 | 97.9% | 44 | 97.8% |
| Geneseo (V) | 46 | 39 | 46 | 100.0% | 39 | 100.0% |
| Groveland (T) | 63 | 59 | 38 | 60.3% | 37 | 62.7% |
| Leicester (T) | 26 | 26 | 19 | 73.1% | 19 | 73.1% |
| Leicester (V) | 13 | 13 | 5 | 38.5% | 5 | 38.5% |
| Lima (T) | 16 | 14 | 16 | 100.0% | 14 | 100.0% |
| Lima (V) | 21 | 19 | 21 | 100.0% | 19 | 100.0% |
| Livonia (T) | 70 | 65 | 70 | 100.0% | 65 | 100.0% |
| Livonia (V) | 16 | 12 | 16 | 100.0% | 12 | 100.0% |
| Mount Morris (T) | 30 | 29 | 25 | 83.3% | 24 | 82.8% |
| Mount Morris (V) | 28 | 24 | 28 | 100.0% | 24 | 100.0% |
| North Dansville (T) | 35 | 31 | 35 | 100.0% | 31 | 100.0% |
| Nunda (T) | 25 | 25 | 9 | 36.0% | 9 | 36.0% |
| Nunda (V) | 23 | 20 | 0 | 0.0% | 0 | 0.0% |
| Ossian (T) | 20 | 20 | 20 | 100.0% | 20 | 100.0% |
| Portage (T) | 23 | 22 | 0 | 0.0% | 0 | 0.0% |

| Jurisdiction | Total Number of Critical Facilities | Total Number of Lifelines | Number of Critical Facilities and Lifeline Facilities Located Within Selected Buffer of Hazardous Material Tier II Facilities | | | |
|---|---|---|---|---|---|---|
| | | | Critical Facilities | Percent of Total Critical Facilities | Lifelines | Percent of Total Lifelines |
| Sparta (T) | 18 | 18 | 18 | 100.0% | 18 | 100.0% |
| Springwater (T) | 27 | 26 | 25 | 92.6% | 24 | 92.3% |
| West Sparta (T) | 25 | 25 | 25 | 100.0% | 25 | 100.0% |
| York (T) | 58 | 54 | 58 | 100.0% | 54 | 100.0% |
| **Livingston County (Total)** | **837** | **763** | **709** | **84.7%** | **642** | **84.1%** |

*Source: RS Means 2021; Livingston County GIS 2021; Livingston County OEM 2021*
*Notes: % = Percent; T = Town; V = Village*

**Table 5.4.4-9. Number of Lifelines Categorized by FEMA Lifeline Category Located in the Designated Hazardous Materials Hazard Areas**

| FEMA Lifeline Category | Number of Lifelines | Number of Lifelines Located within 1/2 Mile of Hazardous Materials Roadway Routes* | Number of Lifelines Located Within 1/2 Mile of Hazardous Materials Railway Routes | Number of Lifelines Located Within 1/2 Mile of Hazardous Materials Pipelines | Number of Lifelines Located Within Selected Buffer from Hazardous Materials Facilities Tier II Facilities |
|---|---|---|---|---|---|
| Communications | 72 | 26 | 7 | 13 | 69 |
| Energy | 18 | 13 | 5 | 5 | 13 |
| Food, Water, Shelter | 100 | 56 | 20 | 20 | 82 |
| Hazardous Materials | 50 | 34 | 25 | 4 | 49 |
| Health and Medical | 36 | 32 | 7 | 5 | 32 |
| Safety and Security | 269 | 179 | 69 | 39 | 221 |
| Transportation | 218 | 142 | 64 | 17 | 176 |
| **Livingston County (Total)** | **763** | **482** | **197** | **103** | **642** |

*Source: RS Means 2021; Livingston County GIS 2021; Livingston County OEM 2021; FEMA 2021*
*Notes: * Interstate I-390 and Routes 20, 20A, 36, 63, 15, and 15A*

## Impact on the Economy

If a significant hazardous substances incident occurred, not only would life, safety, and building stock be at risk, but the economy of Livingston County may be impacted as well. A significant incident in 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. Estimating impacts on the economy is difficult to determine, given the uncertain nature of the size and scope of incidents.

Hazardous substance incidents have the potential to lead to major transportation route closures in Livingston County. According to the County, roadways that are considered major transit routes for hazardous materials include Interstate I-390 and Routes 20, 20A, 36, 63, 15, and 15A. The closure of railroads, airports, and highways as a result of hazard material release incidents has the potential to impact the ability to deliver goods and services. Potential impacts may be local, regional, or statewide, depending on the magnitude of the event and the level of services disruptions.

## Impact on the Environment

Hazardous wastes that are released into the environment can be harmful to species and their habitat. Wastes that get into waterways will be disruptive and sometimes deadly to aquatic species. Consequentially, wastes that get into waterways can also contaminate drinking water supplies. Hazardous wastes can also leach into soils and travel with wind, which not only impacts the localized habitat, but can create issues for surrounding

communities. Strict disposal regulations have been defined by organizations like the EPA to ensure that the environment and community is protected from these types of events (EPA 2020).

## Cascading Impacts to Other Hazards

Hazardous substance events can cause utility failure and transportation disruption. If a spill or other release occurred, water quality and supply could decrease. Transportation networks could experience disruption and accidents.

### Future Changes That May Impact Vulnerability

Understanding future changes that impact vulnerability in the County can assist in planning for future development and ensuring that appropriate mitigation, planning, and preparedness measures are in place. The county considered the following factors to examine potential conditions that may affect hazard vulnerability:

- Potential or projected development.
- Projected changes in population.
- Other identified conditions as relevant and appropriate, including the impacts of climate change.

### Projected Development

As discussed and illustrated in Section 4 (County Profile), areas targeted for future growth and development have been identified across the county. Development near the transit routes for hazardous materials and facilities will increase the county's overall risk. Therefore, the County should take precautions with the location of new development and the development's proximity to hazardous material facilities and transit routes. The county may also want to consider implementing designs into the new development that enables improved evacuation or protection from residual impacts from the hazardous materials. Refer to Section 4 (County Profile) for more information about the County's anticipated and recent new development plans.

### Projected Changes in Population

According to the 2019 American Community Survey 5-year population estimates, the population of the County has decreased by approximately 3-percent since 2010. Although population is decreasing, persons that move into hazardous material exposure areas are at greater risk to be impacted if there is a spill or toxin release.

### Climate Change

As temperatures change, excessive heat on containers that contain hazardous materials may alter the material properties. In addition, hazardous substances stored at fixed locations in the floodplain may experience an increase in flood events due to the project changes in increased precipitation events; magnitude and frequency

## Change of Vulnerability Since the 2015 HMP

Overall, the County's vulnerability has not changed, and the entire County will continue to be exposed and vulnerable to hazardous substance incidents.