

## Chapter 7

### *Risk Assessment*

#### **PURPOSE**

The purpose of the risk assessment is to:

- Inventory critical facilities and community assets in Wayne County;
- Assess the vulnerability of the critical facilities and community assets to the high priority hazards identified in the hazard analysis;
- Estimate potential losses in a hazard event; and
- Assess future vulnerability based on development trends.

#### **METHODOLOGY**

##### **A. Develop Criteria**

The planning committee requested criteria that could be used to develop a consistent list of critical facilities and community assets. Using the FEMA How-To Guide *Understanding Your Risks* and the DRAFT Ontario County Multi-Jurisdictional all-Hazard Mitigation Plan, a set of criteria were developed by G/FLRPC. The criteria were reviewed and approved by the planning committee, and used to develop the list of vulnerable facilities.

##### **Criteria for Inventory of Critical Facilities and Community Assets**

**Critical Facilities** are facilities important to the community. They include essential facilities, transportation systems, lifeline utility systems, high potential loss facilities, and hazardous materials facilities.

*Essential Facilities* are essential to the health and welfare of the whole population and are especially important following hazard events. The potential consequences of losing them are so great that they should be carefully inventoried. Vulnerability is based on the service they provide rather than just their physical aspects; therefore, not only their structural integrity and content value should be considered, but also the effects of interrupting their functions. Essential facilities include hospitals and other medical facilities, police and fire stations, emergency operations centers and evacuation shelters, and schools.

*Transportation Systems* include airways – airports, airstrips, and heliports; highways – bridges, tunnels, roadbeds, overpasses, and transfer centers; railways – trackage, tunnels, bridges, rail yards, and depots; waterways – canals, locks, seaports, ferries, harbors, drydocks, and piers.

*Lifeline Utility Systems* such as potable water, wastewater, oil, natural gas, electric power, and communication systems. This includes such facilities as electrical sub stations, water treatment facilities, telephone central offices, and wastewater facilities.

*High Potential Loss Facilities* are facilities that would have a high loss associated with them, such as nuclear power plants, dams and military installations.

*Hazardous Material Facilities* include facilities housing industrial/hazardous materials, such as corrosives, explosives, flammable materials, radioactive materials, and toxins.

**Community Assets** are other community elements that might be vulnerable to particular types of hazards, and could present a different type of loss than a critical facility. Community assets include vulnerable populations, economic elements, historic and cultural resource areas, natural resource and recreation areas, high density development areas, and facilities providing important services.

*Vulnerable Populations* are people, such as non-English speakers or the elderly, who may require special response assistance or special medical care after a disaster. Locations identified may include senior citizen complexes, group homes or mobile home parks. Also included in this category are groups of properties that are vulnerable to certain hazards, such as FEMA flood zones.

*Economic Elements* are major employers and financial centers in the county that could affect the local or regional economy if significantly disrupted. Major employers are those with 50 employees or more, and may even be located outside the county, while still employing a significant number of county residents.

*Historic and Cultural Resource Areas* are historic properties and cultural facilities that are identified and protected on the State and National Register of Historic Places, as well as those identified by the Planning Committee as significant to local history and culture.

*Natural Resource and Recreation Areas* include major natural resource and recreational areas that are considered unique or valuable to the community. Possible resources include major waterbodies, streams, wetlands, parks, forested areas, and large areas potentially susceptible to wildfires.

*High Density Development Areas* are areas of high-density residential or commercial development that, if damaged, could result in high death tolls and injury rates.

*Facilities Providing Important Services* are facilities that provide important services, such as government buildings, banks and certain commercial establishments, such as grocery stores, hardware stores and gas stations.

## **B. Inventory Critical Facilities and Community Assets**

The Wayne County Emergency Management Office provided a list of vulnerable facilities that had been identified in a recent Weapons of Mass Destruction assessment. The planning committee used the WMD assessment as a starting point to develop a list of facilities to consider in the all-hazard mitigation planning process. The committee reviewed the WMD list, determined which facilities fit the criteria, and started a new list.

The planning committee also received a worksheet to fill out regarding additional facilities that fit the criteria. These new suggestions were added to the list of critical facilities and community assets. The growing list of critical facilities and community assets was reviewed in each municipal meeting, where each municipal committee added a number of additional facilities and addresses to the list. During interviews with county agency representatives, each individual was asked to review, comment on and add to the list, as well. The final list, following all of this input, was reviewed by the planning committee.

Several lists of facilities and addresses were sought and obtained by G/FLRPC staff: fire stations, police stations, ambulance locations, post offices, migrant labor camps, developmentally disabled service facilities, day care facilities, adult care facilities, and county facilities, among others. This data was compared with the developing list of critical facilities and community assets, and all new information was added to make the list more complete. Careful attention was paid to make sure there were no duplicate facilities.

## Wayne County Multi-Jurisdictional All-Hazard Mitigation Plan

In addition to stakeholder input and lists of facilities, G/FLRPC also used data from the New York State Office of Real Property Services. Additional facilities were identified using the Real Property classification codes. The following list exhibits the classification codes that were selected for each facility type to augment the master list.

### **Essential Facilities**

- 612 Schools
- 641 Hospitals
- 651 Highway Garage

### **Transportation Systems - None**

### **Lifeline Utility Systems**

- 830 Communication
- 831 Telephone Facility
- 861 Electric and Gas
- 866 Telephone
- 871 Electric and Gas Facilities
- 872 Electric Substation

### **High Potential Loss Facilities - None**

### **Hazardous Material Facilities**

- 441 Gas Storage and/or Distribution
- 710 Manufacturing and Processing

### **Vulnerable Populations**

- 271 Multiple Mobile Homes
- 416 Mobile Home Parks
- 633 Homes for the Aged

### **Economic Elements**

- 710 Manufacturing and Processing

### **Historic and Cultural Resource Areas - None**

### **Natural Resource and Cultural Resource Areas**

- 582 Camping Facilities/Parks
- 590 Parks
- 961 State Owned Public Parks, Recreation Areas and Other Multiple Uses
- 962 County Owned Public Parks and Recreation Areas
- 963 City/Town/Village Public Parks and Recreation Areas

### **High Density Development Areas - None**

### **Facilities Providing Important Services**

- 432 Service and Gas Stations
- 460 Banks and Office Buildings
- 461 Standard Bank/Single Occupant
- 462 Drive-in Branch Bank
- 463 Bank Complex with Office Building
- 650 Government

## **C. Assess Vulnerability of Critical Facilities and Community Assets**

The hazard analysis identified the hazard types to be analyzed, and the inventory identified critical facilities and community assets. To assess vulnerability of each facility and asset, G/FLRPC used a computer model to overlay the assets and facilities with the hazard risk areas. This model was developed using GIS, Access and Excel software. The following tables list the extents considered in assessing vulnerability. It is important to note that all Wayne County residents and properties are equally vulnerable to certain types of hazards, including: Ice Storm, Winter Storm, Severe Storm, Tornado, Earthquake, Fire, Extreme Temperatures, Utility Failure and Epidemic.

**Table 7.1: Hazard Concerns and Extents for Wayne County**

<b>Hazard Type</b>	<b>Extent</b>
Severe Storms	Entire county
Hazmat (In Transit)/ Includes Oil Spill	Railroads, State & County roads, Lake Ontario, Erie Canal. See Map 15, <i>Transportation Accident Potential</i>
Transportation Accident	All airports, airstrips, railroads and roads are vulnerable. See Map 15, <i>Transportation Accident Potential</i>
Terrorism	High Potential Loss Facilities, Critical Infrastructure, Agricultural Operations, Lyons (county seat)
Ice Storm	Entire county
Hazmat (Fixed Site)/Includes Oil Spill	Industrial and Manufacturing Properties, Hazardous Materials facilities, Gas Storage Facilities, Gas/Service Stations. See Map 11, <i>Potential Hazard Zones</i>
Severe Winter Storm	Entire county
Wildfire	Forested areas within the county (areas with 50+ acres). See Map 4, <i>County Land Cover</i>
Flood/Includes Ice Jam	100 year flood zones, dams
Fire	All structures are vulnerable. Dense main streets found in the hamlets and villages are more vulnerable due to building density. Large industrial facilities are also more vulnerable and would have a greater impact on the community and emergency response. See Map 16, <i>High Density Development Areas</i>
Utility Failure	Entire county
Explosion	RE Ginna Nuclear Plant, Industrial and Manufacturing Properties, Hazardous Materials facilities, Gas Storage Facilities, Gas/Service Stations. See Map 11, <i>Potential Hazard Zones</i>
Water Supply Contamination	Lifeline Utilities (pump stations), source water supplies, groundwater, Lake Ontario, WCW&SA Facilities, Municipal Facilities. See Map 14, <i>Water Resources</i> and Map 17, <i>Water and Sewer Facilities</i>

**Table 7.2: Municipal Hazard Concerns and Extents**

<b>Hazard</b>	<b>Municipalities</b>	<b>Extent</b>
Landslide	Town of Sodus, Village of Sodus Point	Areas with slopes greater than 25%. Areas adjacent to Lake Ontario. See Map 13, <i>Steep Slopes</i>
Radiological (Fixed)	Towns of Ontario, Walworth, Williamson and Marion	10 miles from RE Ginna Nuclear Plant. See Map 12, <i>Designated Ginna Buffer Zone</i>
Air Contamination	Towns of Marion, Newark, Williamson, and Walworth	1 mile from Industrial Facilities, 10 miles from RE Ginna Nuclear Plant. See Map 11, <i>Potential Hazard Zones</i>
Structural Collapse	Village of Red Creek, Town and Village of Palmyra	Vulnerable properties are older or poorly maintained structures.
Fuel Shortage	Village of Red Creek, Town and Village of Wolcott	Red Creek and Wolcott, but could affect entire county.
Dam Failure	Village of Red Creek	Community Assets, Critical Facilities located below Red Creek dam.
Blight	Town of Macedon	Agricultural Fields. See Map 4, <i>County Land Cover</i>

Wayne County Multi-Jurisdictional All-Hazard Mitigation Plan

Table 7.3 identifies the Wayne County municipalities that currently participate in the National Flood Insurance Program (NFIP). The NFIP, established in 1968, is a Federal program that enables property owners in member communities to purchase flood insurance. This insurance is only made available to municipalities that adopt and enforce a floodplain management ordinance. The fundamental goal of NFIP floodplain management requirements is to reduce the threat to lives and the potential for property damage in flood-prone areas.

Each municipality that participates in the NFIP typically has a Flood Insurance Rate Map (FIRM) that maps out flood hazard areas in the municipality. The flood zones used by the Wayne County All-Hazard Mitigation Plan to determine the vulnerability of Critical Facilities and Community Assets to flooding are the areas identified by the FIRMs as Zone A areas, which are defined as “Areas of 100-year flood.” The vulnerability of specific facilities to flooding was determined by using a GIS model to compare the flood zones with the locations of the Critical Facilities and Community Assets.

As the table indicates, twenty-three of Wayne County’s twenty-four municipalities currently participate in the NFIP. One municipality, the Village of Sodus, is not a member of the NFIP and does not have a FIRM.

**Table 7.3: Wayne County National Flood Insurance Program (NFIP) Membership**

<b>Municipality:</b>	<b>NFIP Member?</b>	<b>Date of Current Effective Flood Insurance Rate Map (FIRM)</b>
Arcadia, Town	Yes	11/02/77
Butler, Town	Yes	07/09/82
Clyde, Village	Yes	12/18/84
Galen, Town	Yes	05/16/83
Huron, Town	Yes	01/19/96
Lyons, Town	Yes	09/07/79
Lyons, Village	Yes	03/16/83
Macedon, Town	Yes	01/05/84
Macedon, Village	Yes	09/30/83
Marion, Town	Yes	07/01/88
Newark, Village	Yes	06/30/76
Ontario, Town	Yes	06/01/78
Palmyra, Town	Yes	03/01/78
Palmyra, Village	Yes	07/15/88
Red Creek, Village	Yes	04/08/83
Rose, Town	Yes	03/08/84
Savannah, Town	Yes	08/06/82
Sodus, Town	Yes	06/02/92
Sodus, Village	No	N/A
Sodus Point, Village	Yes	11/02/77
Walworth, Town	Yes	03/16/83
Williamson, Town	Yes	10/17/78
Wolcott, Town	Yes	06/02/92
Wolcott, Village	Yes	07/06/84

Source: Federal Emergency Management Agency (FEMA), Community Status Book Report. Report Level: County

**D. Estimate Potential Losses**

The Genesee/Finger Lakes Regional Planning Council estimated potential losses using the New York State Office of Real Property Tax Service property assessments. Using the assessed value listed in the 2004 data, each critical facility and community asset was calculated at a 25%, 50% and 75% loss. These estimates do not consider functional or content loss. In addition, when reviewing the estimated losses methodology, the planning committee noted that the assessed value in Wayne County is very low, and requested that an alternate method be considered. Many of the buildings in the county could not be rebuilt for the assessed value, particularly the historic structures. A method was sought where replacement or reconstruction value, rather than assessed value, could be used. Unfortunately, a method or multiplier to do so was not found nor could be used.

For security and privacy reasons, the full Estimated Potential Loss Report is not included in this document. A summary report is provided to show the process and format of the findings.

**RESULTS****A. Critical Facilities and Community Assets**

The multiple steps involved in developing an inventory of critical facilities and community assets yielded the following total numbers for each municipality.

**Table 7.4: Critical Facilities in Wayne County By Municipality**

<b>Municipality</b>	<b>Essential Facilities</b>	<b>Lifeline Utility Systems</b>	<b>Transportation Systems</b>	<b>High Potential Loss Facilities</b>	<b>Hazardous Material Facilities</b>	<b>Grand Total</b>
Arcadia, Town	2	4	6	0	3	15
Butler, Town	5	6	5	0	4	20
Clyde, Village	7	8	2	0	6	23
Galen, Town	1	1	2	0	3	7
Huron, Town	2	5	2	0	4	13
Lyons, Town	1	7	3	0	6	17
Lyons, Village	11	6	3	0	3	23
Macedon, Town	8	13	8	0	2	31
Macedon, Village	4	2	2	0	0	8
Marion, Town	8	6	2	0	1	17
Newark, Village	19	8	2	0	2	31
Ontario, Town	9	11	4	1	1	26
Palmyra, Town	3	4	6	0	4	17
Palmyra, Village	6	8	2	0	1	17
Red Creek, Village	5	4	1	1	0	11
Rose, Town	6	5	5	0	1	17
Savannah, Town	4	11	4	0	5	24
Sodus Point, Village	5	2	1	0	0	8
Sodus, Town	8	14	4	0	6	32
Sodus, Village	5	5	2	0	2	14
Walworth, Town	7	7	2	0	2	18
Williamson, Town	13	12	6	0	3	34
Wolcott, Town	3	3	3	0	3	12
Wolcott, Village	8	4	2	0	3	17
<b>Total Facilities</b>	<b>150</b>	<b>156</b>	<b>79</b>	<b>2</b>	<b>65</b>	<b>452</b>

**Table 7.5: Community Assets in Wayne County By Municipality**

<b>Municipality</b>	<b>Vulnerable Populations</b>	<b>Natural Resource &amp; Recreation Areas</b>	<b>Historic &amp; Cultural Resource Areas</b>	<b>Economic Elements</b>	<b>Facilities Providing Important Services</b>	<b>Grand Total</b>
Arcadia, Town	6	2	1	3	2	14
Butler, Town	7	1	1	0	2	11
Clyde, Village	15	3	4	7	6	35
Galen, Town	4	0	0	1	1	6
Huron, Town	8	5	3	2	0	18
Lyons, Town	14	6	2	2	3	27
Lyons, Village	15	9	4	8	23	59
Macedon, Town	26	2	3	20	7	58
Macedon, Village	3	2	0	4	1	10
Marion, Town	29	1	0	10	12	52
Newark, Village	57	9	3	19	19	107
Ontario, Town	26	5	2	16	8	57
Palmyra, Town	14	4	1	2	0	21
Palmyra, Village	17	6	8	3	6	40
Red Creek, Village	6	0	0	3	3	12
Rose, Town	20	4	7	6	5	42
Savannah, Town	21	4	7	3	6	41
Sodus Point, Village	1	12	0	0	2	15
Sodus, Town	67	4	4	8	8	91
Sodus, Village	4	0	0	10	3	17
Walworth, Town	13	5	2	1	7	28
Williamson, Town	50	6	5	10	14	85
Wolcott, Town	32	2	0	4	0	38
Wolcott, Village	8	0	0	7	6	21
<b>Total Facilities</b>	<b>463</b>	<b>92</b>	<b>57</b>	<b>149</b>	<b>144</b>	<b>905</b>

**B. Vulnerability Assessment**

The following tables provide an overview of the total number of assets and facilities affected by each hazard. Please note that some of the facilities suggested by planning committee and municipal committee members did not have good addresses, and could not be used in the computer model. These facilities are included in the total numbers of community assets and critical facilities, which are listed earlier in this section in Tables 7.4 and 7.5. These facilities could not be analyzed in the vulnerability assessment.

**Table 7.6: Critical Facilities: Vulnerability to Flooding**

<b>Municipality</b>	<b>Essential Facilities</b>	<b>Lifeline Utility Systems</b>	<b>Transportation Systems</b>	<b>High Potential Loss Facilities</b>	<b>Hazardous Material Facilities</b>	<b>Grand Total</b>
Arcadia, Town					1	1
Butler, Town						
Clyde, Village	3	1				4
Galen, Town						
Huron, Town	1				1	2

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Lyons, Town						
Lyons, Village	3	1			1	5
Macedon, Town						
Macedon, Village		1				1
Marion, Town	3	1	1			5
Newark, Village					1	1
Ontario, Town		5				5
Palmyra, Town		1	1			2
Palmyra, Village	1				1	2
Red Creek, Village						
Rose, Town						
Savannah, Town						
Sodus Point, Village						
Sodus, Town	2				1	3
Sodus, Village						
Walworth, Town		2			1	3
Williamson, Town		3				3
Wolcott, Town						
Wolcott, Village						
<b>Total Facilities</b>	<b>13</b>	<b>15</b>	<b>2</b>		<b>7</b>	<b>37</b>

**Table 7.7: Community Assets: Vulnerability to Flooding**

<b>Municipality</b>	<b>Vulnerable Populations</b>	<b>Natural Resource &amp; Recreation Areas</b>	<b>Historic &amp; Cultural Resource Areas</b>	<b>Economic Elements</b>	<b>Facilities Providing Important Services</b>	<b>Grand Total</b>
Arcadia, Town		1			2	3
Butler, Town						
Clyde, Village	2					2
Galen, Town					1	1
Huron, Town		2				2
Lyons, Town	2	1	1			4
Lyons, Village		1		2	3	6
Macedon, Town	3		1	1		5
Macedon, Village		1		3	1	5
Marion, Town				5	1	6
Newark, Village	2	1			1	4
Ontario, Town	4	2	1	2	2	11
Palmyra, Town	2	1				3
Palmyra, Village						
Red Creek, Village	3			1	3	7
Rose, Town	1					1
Savannah, Town		1	1	1		3
Sodus Point, Village		9				9
Sodus, Town	11	4		2		17
Sodus, Village	11	4	0	2	0	17
Walworth, Town	1	2			1	4
Williamson, Town	1		2			3
Wolcott, Town	2	1				3
Wolcott, Village	1					1
<b>Total Facilities</b>	<b>46</b>	<b>31</b>	<b>6</b>	<b>19</b>	<b>15</b>	<b>117</b>

**Table 7.8: Critical Facilities: Vulnerability to Hazardous Materials (Fixed), Air Contamination & Explosion**

<b>Municipality</b>	<b>Essential Facilities</b>	<b>Lifeline Utility Systems</b>	<b>Transportation Systems</b>	<b>High Potential Loss Facilities</b>	<b>Hazardous Material Facilities</b>	<b>Grand Total</b>
Arcadia, Town	1	2			2	5
Butler, Town	1				4	5
Clyde, Village	7	5			6	18
Galen, Town	1				3	4
Huron, Town	2	3			2	7
Lyons, Town	1	2			5	8
Lyons, Village	10	3	1		3	17
Macedon, Town	5	7	1		2	15
Macedon, Village		2				2
Marion, Town	6	5	1		1	13
Newark, Village	18	8			2	28
Ontario, Town	8	5	1		1	15
Palmyra, Town	1	3	2		4	10
Palmyra, Village	6	7			1	14
Red Creek, Village	5	3				8
Rose, Town	4	2	1		1	8
Savannah, Town	4	7			5	16
Sodus Point, Village	5	2				7
Sodus, Town	7	11	1		6	25
Sodus, Village	5					5
Walworth, Town	6	3			2	11
Williamson, Town	13	8	2		3	26
Wolcott, Town	1	2			3	6
Wolcott, Village	8	4			3	15
<b>Total Facilities</b>	<b>125</b>	<b>94</b>	<b>10</b>	<b>0</b>	<b>59</b>	<b>288</b>

**Table 7.9: Community Assets: Vulnerability to Hazardous Materials (Fixed), Air Contamination & Explosion**

<b>Municipality</b>	<b>Vulnerable Populations</b>	<b>Natural Resource &amp; Recreation Areas</b>	<b>Historic &amp; Cultural Resource Areas</b>	<b>Economic Elements</b>	<b>Facilities Providing Important Services</b>	<b>Grand Total</b>
Arcadia, Town	4	1	1	3	2	11
Butler, Town	2				1	3
Clyde, Village	12	3	3	6	6	30
Galen, Town	1			1	1	3
Huron, Town	5		2	2		9
Lyons, Town	10	3	1	2	3	19
Lyons, Village	13	6	3	8	23	53
Macedon, Town	13	1	3	20	4	41
Macedon, Village	3	1		4	1	9
Marion, Town	10			10	12	32
Newark, Village	47	5	3	19	18	92

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Ontario, Town	19	1	1	16	8	45
Palmyra, Town	11	3	1	2		17
Palmyra, Village	16	5	8	3	5	37
Red Creek, Village	6			3	2	11
Rose, Town	8	1	2	6	1	18
Savannah, Town	12	1	6	3	6	28
Sodus Point, Village	1	12			2	15
Sodus, Town	35	2	4	8	8	57
Sodus, Village	4			10	4	18
Walworth, Town	6	4		1	7	18
Williamson, Town	27	3	4	10	12	56
Wolcott, Town	23	1		4		28
Wolcott, Village	7			7	6	20
<b>Total Facilities</b>	<b>295</b>	<b>53</b>	<b>42</b>	<b>148</b>	<b>132</b>	<b>670</b>

**Table 7.10: Critical Facilities: Vulnerability to a Fixed Site Radiological Incident at Ginna Nuclear Facility**

<b>Municipality</b>	<b>Essential Facilities</b>	<b>Lifeline Utility Systems</b>	<b>Transportation Systems</b>	<b>High Potential Loss Facilities</b>	<b>Hazardous Material Facilities</b>	<b>Grand Total</b>
Arcadia, Town						
Butler, Town						
Clyde, Village						
Galen, Town						
Huron, Town						
Lyons, Town						
Lyons, Village						
Macedon, Town						
Macedon, Village						
Marion, Town	4	2	1		1	8
Newark, Village						
Ontario, Town	9	12	2	1	1	25
Palmyra, Town						
Palmyra, Village						
Red Creek, Village						
Rose, Town	1					1
Savannah, Town						
Sodus Point, Village						
Sodus, Town			1			1
Sodus, Village						
Walworth, Town	4	4			2	10
Williamson, Town	13	12	3		3	31
Wolcott, Town						
Wolcott, Village	17	16	3		5	41
<b>Total Facilities</b>	<b>34</b>	<b>32</b>	<b>6</b>	<b>1</b>	<b>10</b>	<b>82</b>

**Table 7.11: Community Assets: Vulnerability to a Fixed Site Radiological Incident at Ginna Nuclear Facility**

<b>Municipality</b>	<b>Vulnerable Populations</b>	<b>Natural Resource &amp; Recreation Areas</b>	<b>Historic &amp; Cultural Resource Areas</b>	<b>Economic Elements</b>	<b>Facilities Providing Important Services</b>	<b>Grand Total</b>
Arcadia, Town						
Butler, Town						
Clyde, Village						
Galen, Town						
Huron, Town						
Lyons, Town						
Lyons, Village						
Macedon, Town	2					2
Macedon, Village						
Marion, Town	7			2	7	16
Newark, Village						
Ontario, Town	26	5	2	16	8	57
Palmyra, Town						
Palmyra, Village						
Red Creek, Village						
Rose, Town	1					1
Savannah, Town						
Sodus Point, Village						
Sodus, Town	4					4
Sodus, Village						
Walworth, Town	4	1			3	8
Williamson, Town	42	5	4	10	10	71
Wolcott, Town						
Wolcott, Village						
<b>Total Facilities</b>	<b>86</b>	<b>11</b>	<b>6</b>	<b>28</b>	<b>28</b>	<b>159</b>

**Table 7.12: Critical Facilities: Vulnerability to Hazardous Materials (In Transit) Incident**

<b>Municipality</b>	<b>Essential Facilities</b>	<b>Lifeline Utility Systems</b>	<b>Transportation Systems</b>	<b>High Potential Loss Facilities</b>	<b>Hazardous Material Facilities</b>	<b>Grand Total</b>
Arcadia, Town	1				1	2
Butler, Town	1	1			2	4
Clyde, Village	3	3			3	9
Galen, Town					3	3
Huron, Town		1				1
Lyons, Town	1				1	2
Lyons, Village	2	1	1		1	5
Macedon, Town	2	2			1	5
Macedon, Village	1	1				2
Marion, Town	2				1	3
Newark, Village	7	1			1	9

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Ontario, Town	3	8		1	1	13
Palmyra, Town	1				3	4
Palmyra, Village	3	3				6
Red Creek, Village	4					4
Rose, Town	2	1				3
Savannah, Town	2	4				6
Sodus Point, Village	2					2
Sodus, Town	2	3	1		4	10
Sodus, Village						
Walworth, Town		3			1	4
Williamson, Town	7	3	2		1	13
Wolcott, Town	1				1	2
Wolcott, Village						
<b>Total Facilities</b>	<b>47</b>	<b>35</b>	<b>4</b>	<b>1</b>	<b>25</b>	<b>112</b>

**Table 7.13: Community Assets: Vulnerability to Hazardous Materials (In Transit) Incident**

<b>Municipality</b>	<b>Vulnerable Populations</b>	<b>Natural Resource &amp; Recreation Areas</b>	<b>Historic &amp; Cultural Resource Areas</b>	<b>Economic Elements</b>	<b>Facilities Providing Important Services</b>	<b>Grand Total</b>
Arcadia, Town	1				2	3
Butler, Town	2				2	4
Clyde, Village	4	1	2	2	5	14
Galen, Town				1	1	2
Huron, Town						
Lyons, Town	5	1	1		1	8
Lyons, Village	2	1		2	9	14
Macedon, Town	5		2	2	3	12
Macedon, Village	2			3	1	6
Marion, Town	4			3	9	16
Newark, Village	5	2	1	3	15	26
Ontario, Town	8	2		2	5	17
Palmyra, Town	2	1	1	1		5
Palmyra, Village	8	1	5	2	5	21
Red Creek, Village	4			2	1	7
Rose, Town	3		4	1	1	9
Savannah, Town	8	1	6	1	5	21
Sodus Point, Village		5			2	7
Sodus, Town	17			4	3	24
Sodus, Village				1	2	3
Walworth, Town	3	2		1	3	9
Williamson, Town	7	1	2	3	6	19
Wolcott, Town	6					6
Wolcott, Village						
<b>Total Facilities</b>	<b>96</b>	<b>18</b>	<b>24</b>	<b>34</b>	<b>81</b>	<b>253</b>

**Table 7.14: Critical Facilities: Vulnerability to Terrorism**

<b>Municipality</b>	<b>Essential Facilities</b>	<b>Lifeline Utility Systems</b>	<b>Transportation Systems</b>	<b>High Potential Loss Facilities</b>	<b>Hazardous Material Facilities</b>	<b>Grand Total</b>
Arcadia, Town		4				4
Butler, Town		6				6
Clyde, Village		8				8
Galen, Town		1				1
Huron, Town		5				5
Lyons, Town		7				7
Lyons, Village					2	2
Macedon, Town		13				13
Macedon, Village		2				2
Marion, Town		6				6
Newark, Village		8				8
Ontario, Town		11		1		12
Palmyra, Town		4				4
Palmyra, Village		8				8
Red Creek, Village		4		1		5
Rose, Town		5				5
Savannah, Town		11				11
Sodus Point, Village		2				2
Sodus, Town		14				14
Sodus, Village		5				5
Walworth, Town		7			1	8
Williamson, Town		12				12
Wolcott, Town		3				3
Wolcott, Village		4				4
<b>Total Facilities</b>		<b>150</b>		<b>2</b>	<b>3</b>	<b>155</b>

**C. Estimated Losses**

Thus far, the Wayne County All-Hazard Mitigation Plan has profiled hazard events, inventoried critical facilities and community assets, and determined the vulnerability of the assets to the various hazard types. This section of the plan focuses on estimating financial losses from the vulnerable hazard events. The estimated level of damage from each hazard for the entire hazard area is based on historical evidence, and on the current assessed value. For privacy and security reasons, a full report of losses could not be provided. Instead, the following summary tables are included to provide a general understanding of value and potential loss.

These tables are in a draft form, with data from 970 facilities included. Some 200 facilities lack complete address information, making the process of retrieving an assessed value from the Office of Real Property Tax Services impossible. The other 300 are being matched to accurate data regarding assessed value, and will be included in the final draft. Thus, approximately 500 facilities spread over

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all municipalities and all facility types are not yet included in this draft, but will be included in the final draft. A review of the criteria used to classify Wayne County facilities precedes the table.

**Summary of Criteria for Critical Facilities and Community Assets**

- Essential Facilities (*i.e. hospitals, police/fire stations, schools, evacuation shelters*)
- Transportation Systems (*i.e. airports, highways, railways, waterways, bridges, tunnels*)
- Lifeline Utility Systems (*i.e. facilities for potable water, wastewater, oil, gas, electric*)
- High Potential Loss Facilities (*i.e. nuclear power plants, dams, military installations*)
- Hazardous Material Facilities (*i.e. facilities housing industrial or hazardous materials*)
- Vulnerable Populations (*i.e. senior citizen complexes, group homes, or mobile home parks*)
- Economic Elements (*i.e. major employers and financial centers*)
- Historic and Cultural Resource Areas (*i.e. historic properties, cultural facilities*)
- Natural Resource and Recreation Areas (*i.e. water bodies, wetlands, parks, forests*)
- High Density Development Areas (*i.e. high density residential or commercial areas*)
- Facilities Providing Important Services (*i.e. gov't buildings, grocery stores, gas stations*)

**Table 7.15: Estimated Loss Summary Tables, By Municipality and Facility Type**

	Facility Type	Total Value	75% Loss	50% Loss	25% Loss
<b>Arcadia</b>					
	Economic Element	\$315,000.00	\$236,250.00	\$157,500.00	\$78,750.00
	Essential Facility	\$489,500.00	\$367,125.00	\$244,750.00	\$122,375.00
	Hazardous Materials	\$93,300.00	\$69,975.00	\$46,650.00	\$23,325.00
	Historic/Cultural Resource	\$21,400.00	\$16,050.00	\$10,700.00	\$5,350.00
	Important Services	\$165,700.00	\$124,275.00	\$82,850.00	\$41,425.00
	Lifeline Utility System	\$2,695,500.00	\$2,021,625.00	\$1,347,750.00	\$673,875.00
	Natural Resource & Recreation Area	\$28,500.00	\$21,375.00	\$14,250.00	\$7,125.00
	Transportation System	\$20,000,000.00	\$15,000,000.00	\$10,000,000.00	\$5,000,000.00
	Vulnerable Population	\$2,267,400.00	\$1,700,550.00	\$1,133,700.00	\$566,850.00

<b>Butler</b>					
	Essential Facility	\$6,044,400.00	\$4,533,300.00	\$3,022,200.00	\$1,511,100.00
	Hazardous Materials	\$523,100.00	\$392,325.00	\$261,550.00	\$130,775.00
	Important Services	\$432,700.00	\$324,525.00	\$216,350.00	\$108,175.00
	Lifeline Utility System	\$1,715,836.00	\$1,286,877.00	\$857,918.00	\$428,959.00
	Vulnerable Population	\$38,901,600.00	\$29,176,200.00	\$19,450,800.00	\$9,725,400.00

<b>Clyde</b>					
	Economic Element	\$2,334,800.00	\$1,751,100.00	\$1,167,400.00	\$583,700.00
	Essential Facility	\$5,342,300.00	\$4,006,725.00	\$2,671,150.00	\$1,335,575.00
	Hazardous Materials	\$639,900.00	\$479,925.00	\$319,950.00	\$159,975.00
	Historic/Cultural Resource	\$298,000.00	\$223,500.00	\$149,000.00	\$74,500.00
	Important Services	\$1,766,200.00	\$1,324,650.00	\$883,100.00	\$441,550.00
	Lifeline Utility System	\$391,800.00	\$293,850.00	\$195,900.00	\$97,950.00
	Natural Resource & Recreation Area	\$18,500.00	\$13,875.00	\$9,250.00	\$4,625.00
	Vulnerable Population	\$1,085,600.00	\$814,200.00	\$542,800.00	\$271,400.00

<b>Galen</b>					
	Economic Element	\$72,000.00	\$54,000.00	\$36,000.00	\$18,000.00

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	Essential Facility	\$28,900.00	\$21,675.00	\$14,450.00	\$7,225.00
	Hazardous Materials	\$337,500.00	\$253,125.00	\$168,750.00	\$84,375.00
	Important Service	\$98,500.00	\$73,875.00	\$49,250.00	\$24,625.00
	Lifeline Utility System	\$364,125.00	\$273,093.75	\$182,062.50	\$91,031.25
	Natural Resource & Recreation Area	\$57,800.00	\$43,350.00	\$28,900.00	\$14,450.00

Huron					
	Economic Element	\$1,965,400.00	\$1,474,050.00	\$982,700.00	\$491,350.00
	Essential Facility	\$727,300.00	\$545,475.00	\$363,650.00	\$181,825.00
	Historic/Cultural Resource	\$28,500.00	\$21,375.00	\$14,250.00	\$7,125.00
	Important Services	\$228,300.00	\$171,225.00	\$114,150.00	\$57,075.00
	Lifeline Utility System	\$762,596.00	\$571,947.00	\$381,298.00	\$190,649.00
	Natural Resource & Recreation Area	\$451,900.00	\$338,925.00	\$225,950.00	\$112,975.00
	Vulnerable Population	\$365,100.00	\$273,825.00	\$182,550.00	\$91,275.00

Lyons (Town and Village)					
	Economic Element	\$4,032,100.00	\$3,024,075.00	\$2,016,050.00	\$1,008,025.00
	Essential Facility	\$9,340,700.00	\$7,005,525.00	\$4,670,350.00	\$2,335,175.00
	Hazardous Materials	\$7,733,600.00	\$5,800,200.00	\$3,866,800.00	\$1,933,400.00
	Important Services	\$39,847,900.00	\$29,885,925.00	\$19,923,950.00	\$9,961,975.00
	Lifeline Utility System	\$1,048,092.00	\$786,069.00	\$524,046.00	\$262,023.00
	Natural Resource & Recreation Area	\$898,700.00	\$674,025.00	\$449,350.00	\$224,675.00
	Transportation System	\$20,000.00	\$15,000.00	\$10,000.00	\$5,000.00
	Vulnerable Population	\$2,531,600.00	\$1,898,700.00	\$1,265,800.00	\$632,900.00

Macedon (Town and Village)					
	Economic Element	\$42,684,500.00	\$32,013,375.00	\$21,342,250.00	\$10,671,125.00
	Essential Facility	\$36,224,400.00	\$27,168,300.00	\$18,112,200.00	\$9,056,100.00
	Hazardous Materials	\$305,800.00	\$229,350.00	\$152,900.00	\$76,450.00
	Historic/Cultural Resource	\$205,600.00	\$154,200.00	\$102,800.00	\$51,400.00
	Important Services	\$2,595,600.00	\$1,946,700.00	\$1,297,800.00	\$648,900.00
	Lifeline Utility System	\$7,187,046.00	\$5,390,284.50	\$3,593,523.00	\$1,796,761.50
	Transportation System	\$3,693,400.00	\$2,770,050.00	\$1,846,700.00	\$923,350.00
	Vulnerable Population	\$17,039,873.00	\$12,779,904.75	\$8,519,936.50	\$4,259,968.25

Marion					
	Economic Element	\$5,390,000.00	\$4,042,500.00	\$2,695,000.00	\$1,347,500.00
	Essential Facility	\$13,596,000.00	\$10,197,000.00	\$6,798,000.00	\$3,399,000.00
	Hazardous Materials	\$131,000.00	\$98,250.00	\$65,500.00	\$32,750.00
	Important Services	\$1,912,200.00	\$1,434,150.00	\$956,100.00	\$478,050.00
	Lifeline Utility System	\$102,865.00	\$77,148.75	\$51,432.50	\$25,716.25
	Transportation System	\$92,000.00	\$69,000.00	\$46,000.00	\$23,000.00
	Vulnerable Population	\$6,297,800.00	\$4,723,350.00	\$3,148,900.00	\$1,574,450.00

Newark					
	Economic Element	\$13,605,000.00	\$10,203,750.00	\$6,802,500.00	\$3,401,250.00
	Essential Facility	\$4,228,400.00	\$3,171,300.00	\$2,114,200.00	\$1,057,100.00
	Hazardous Materials	\$158,800.00	\$119,100.00	\$79,400.00	\$39,700.00
	Historic/Cultural Resource	\$135,000.00	\$101,250.00	\$67,500.00	\$33,750.00
	Important Services	\$7,252,700.00	\$5,439,525.00	\$3,626,350.00	\$1,813,175.00
	Lifeline Utility System	\$1,488,400.00	\$1,116,300.00	\$744,200.00	\$372,100.00

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	Natural Resource & Recreation Area	\$1,057,200.00	\$792,900.00	\$528,600.00	\$264,300.00
	Vulnerable Population	\$35,344,400.00	\$26,508,300.00	\$17,672,200.00	\$8,836,100.00

Ontario					
	Economic Element	\$10,210,400.00	\$7,657,800.00	\$5,105,200.00	\$2,552,600.00
	Essential Facility	\$17,508,600.00	\$13,131,450.00	\$8,754,300.00	\$4,377,150.00
	Hazardous Materials	\$322,300.00	\$241,725.00	\$161,150.00	\$80,575.00
	Historic/Cultural Resource	\$183,000.00	\$137,250.00	\$91,500.00	\$45,750.00
	Important Services	\$1,780,300.00	\$1,335,225.00	\$890,150.00	\$445,075.00
	Lifeline Utility System	\$20,739,127.00	\$15,554,345.25	\$10,369,563.50	\$5,184,781.75
	Natural Resource & Recreation Area	\$734,500.00	\$550,875.00	\$367,250.00	\$183,625.00
	Vulnerable Population	\$15,927,720.00	\$11,945,790.00	\$7,963,860.00	\$3,981,930.00

Palmyra (Town and Village)					
	Economic Element	\$6,635,200.00	\$4,976,400.00	\$3,317,600.00	\$1,658,800.00
	Essential Facility	\$22,100,800.00	\$16,575,600.00	\$11,050,400.00	\$5,525,200.00
	Hazardous Materials	\$939,700.00	\$704,775.00	\$469,850.00	\$234,925.00
	Historic/Cultural Resource	\$4,555,700.00	\$3,416,775.00	\$2,277,850.00	\$1,138,925.00
	Important Services	\$771,100.00	\$578,325.00	\$385,550.00	\$192,775.00
	Lifeline Utility System	\$9,296,750.00	\$6,972,562.50	\$4,648,375.00	\$2,324,187.50
	Natural Resource & Recreation Area	\$2,472,100.00	\$1,854,075.00	\$1,236,050.00	\$618,025.00
	Vulnerable Population	\$6,818,900.00	\$5,114,175.00	\$3,409,450.00	\$1,704,725.00

Red Creek					
	Economic Element	\$1,433,100.00	\$1,074,825.00	\$716,550.00	\$358,275.00
	Essential Facility	\$220,800.00	\$165,600.00	\$110,400.00	\$55,200.00
	Important Services	\$335,400.00	\$251,550.00	\$167,700.00	\$83,850.00
	Lifeline Utility System	\$169,634.00	\$127,225.50	\$84,817.00	\$42,408.50
	Vulnerable Population	\$602,100.00	\$451,575.00	\$301,050.00	\$150,525.00

Rose					
	Economic Element	\$5,284,700.00	\$3,963,525.00	\$2,642,350.00	\$1,321,175.00
	Essential Facility	\$8,483,600.00	\$6,362,700.00	\$4,241,800.00	\$2,120,900.00
	Hazardous Materials	\$825,000.00	\$618,750.00	\$412,500.00	\$206,250.00
	Historic/Cultural Resource	\$421,800.00	\$316,350.00	\$210,900.00	\$105,450.00
	Important Services	\$218,000.00	\$163,500.00	\$109,000.00	\$54,500.00
	Lifeline Utility System	\$33,519.00	\$25,139.25	\$16,759.50	\$8,379.75
	Natural Resource & Recreation Area	\$217,300.00	\$162,975.00	\$108,650.00	\$54,325.00
	Transportation System	\$160,100.00	\$120,075.00	\$80,050.00	\$40,025.00
	Vulnerable Population	\$2,275,700.00	\$1,706,775.00	\$1,137,850.00	\$568,925.00

Savannah					
	Economic Element	\$165,000.00	\$123,750.00	\$82,500.00	\$41,250.00
	Essential Facility	\$1,899,800.00	\$1,424,850.00	\$949,900.00	\$474,950.00
	Hazardous Materials	\$813,124.00	\$609,843.00	\$406,562.00	\$203,281.00
	Historic/Cultural Resource	\$173,800.00	\$130,350.00	\$86,900.00	\$43,450.00
	Important Services	\$542,500.00	\$406,875.00	\$271,250.00	\$135,625.00
	Lifeline Utility System	\$261,620.00	\$196,215.00	\$130,810.00	\$65,405.00
	Natural Resource & Recreation Area	\$500.00	\$375.00	\$250.00	\$125.00
	Vulnerable Population	\$473,100.00	\$354,825.00	\$236,550.00	\$118,275.00

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<b>Sodus (Town and Village)</b>					
	Economic Element	\$5,291,300.00	\$3,968,475.00	\$2,645,650.00	\$1,322,825.00
	Essential Facility	\$9,915,500.00	\$7,436,625.00	\$4,957,750.00	\$2,478,875.00
	Hazardous Materials	\$3,658,300.00	\$2,743,725.00	\$1,829,150.00	\$914,575.00
	Historic/Cultural Resource	\$89,700.00	\$67,275.00	\$44,850.00	\$22,425.00
	Important Services	\$3,114,200.00	\$2,335,650.00	\$1,557,100.00	\$778,550.00
	Lifeline Utility System	\$4,289,607.00	\$3,217,205.25	\$2,144,803.50	\$1,072,401.75
	Natural Resource & Recreation Area	\$842,200.00	\$631,650.00	\$421,100.00	\$210,550.00
	Vulnerable Population	\$14,840,000.00	\$11,130,000.00	\$7,420,000.00	\$3,710,000.00

<b>Sodus Point</b>					
	Essential Facility	\$206,000.00	\$154,500.00	\$103,000.00	\$51,500.00
	Important Services	\$224,000.00	\$168,000.00	\$112,000.00	\$56,000.00
	Lifeline Utility System	\$50,288.00	\$37,716.00	\$25,144.00	\$12,572.00
	Natural Resource & Recreation Area	\$2,676,600.00	\$2,007,450.00	\$1,338,300.00	\$669,150.00
	Vulnerable Population	\$608,500.00	\$456,375.00	\$304,250.00	\$152,125.00

<b>Walworth</b>					
	Economic Element	\$192,500.00	\$144,375.00	\$96,250.00	\$48,125.00
	Essential Facility	\$13,904,500.00	\$10,428,375.00	\$6,952,250.00	\$3,476,125.00
	Hazardous Materials	\$508,400.00	\$381,300.00	\$254,200.00	\$127,100.00
	Historic/Cultural Resource	\$80,000.00	\$60,000.00	\$40,000.00	\$20,000.00
	Important Services	\$1,148,300.00	\$861,225.00	\$574,150.00	\$287,075.00
	Lifeline Utility System	\$3,102,432.00	\$2,326,824.00	\$1,551,216.00	\$775,608.00
	Natural Resource & Recreation Area	\$6,677,800.00	\$5,008,350.00	\$3,338,900.00	\$1,669,450.00
	Vulnerable Population	\$2,523,100.00	\$1,892,325.00	\$1,261,550.00	\$630,775.00

<b>Williamson</b>					
	Economic Element	\$1,139,600.00	\$854,700.00	\$569,800.00	\$284,900.00
	Essential Facility	\$21,389,700.00	\$16,042,275.00	\$10,694,850.00	\$5,347,425.00
	Hazardous Materials	\$13,243,800.00	\$9,932,850.00	\$6,621,900.00	\$3,310,950.00
	Historic/Cultural Resource	\$463,900.00	\$347,925.00	\$231,950.00	\$115,975.00
	Important Services	\$1,278,000.00	\$958,500.00	\$639,000.00	\$319,500.00
	Lifeline Utility System	\$1,078,804.00	\$809,103.00	\$539,402.00	\$269,701.00
	Natural Resource & Recreation Area	\$701,600.00	\$526,200.00	\$350,800.00	\$175,400.00
	Transportation System	\$292,800.00	\$219,600.00	\$146,400.00	\$73,200.00
	Vulnerable Population	\$10,055,500.00	\$7,541,625.00	\$5,027,750.00	\$2,513,875.00

<b>Wolcott (Town and Village)</b>					
	Economic Element	\$6,239,800.00	\$4,679,850.00	\$3,119,900.00	\$1,559,950.00
	Essential Facility	\$18,254,400.00	\$13,690,800.00	\$9,127,200.00	\$4,563,600.00
	Hazardous Materials	\$3,420,700.00	\$2,565,525.00	\$1,710,350.00	\$855,175.00
	Important Services	\$1,568,800.00	\$1,176,600.00	\$784,400.00	\$392,200.00
	Lifeline Utility System	\$1,314,800.00	\$986,100.00	\$657,400.00	\$328,700.00
	Natural Resource & Recreation Area	\$905,800.00	\$679,350.00	\$452,900.00	\$226,450.00
	Vulnerable Population	\$6,752,300.00	\$5,064,225.00	\$3,376,150.00	\$1,688,075.00

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