

9.33 CITY OF SYRACUSE

This section presents the jurisdictional annex for the City of Syracuse.

A.) HAZARD MITIGATION PLAN POINT OF CONTACT

| Primary Point of Contact | Alternate Point of Contact |
|---|--|
| John M. Antczak, Safety Manager 101 N. Beech Street, Syracuse, NY 13210 Phone: 315-473-2609 ext.239 E-mail: JAntczak@ci.syracuse.ny.us | Robert W. Bratt, Deputy Fire Chief 312 State Fair Drive, Syracuse, NY 13210 (315) 473-3277 rbratt@ci.syracuse.ny.us |

B.) CITY PROFILE

Population

139,079 (estimated 2007 U.S. Census)

Location

The City of Syracuse is located on the south edge of Onondaga Lake in Onondaga County. This city is the fifth largest city in Central New York State and is the county seat of Onondaga County. It is bordered by the Town of Salina to the north, the Town of Geddes to the northwest, the Village of Solvay to the west, the Town of Onondaga to the south and the Town of DeWitt and Village of East Syracuse to the east. The city has functioned as a major crossroads over the last two centuries, first between the Erie Canal and its branch canals, then of the railway network. Syracuse is located by the intersection of Interstates 90 and 81, and its airport is the largest in the region. Syracuse is home to Syracuse University, a major research university, as well as several smaller colleges and professional schools. The city stands at the northeast corner of the Finger Lakes Region. The City has many neighborhoods which were originally various villages that joined the city over the years. Although the central part of Syracuse is flat, many of its neighborhoods are located on small hills such as University Hill and Tipperary Hill. Land to the north of Syracuse is generally flat while land to the south is hilly. Onondaga Creek, a waterway that runs through downtown, flows northward through the city. The City of Syracuse maintains over 170 parks, fields, and recreation areas, totaling over 1,000 acres.

According to the U.S. Census Bureau, the city has a total area of 25.6 square miles (66.4 km²), with 25.1 square miles (65.0 km²) of it land and 0.6 square miles of it (2.15-percent) water.

Climate

Onondaga County generally experiences seasonable weather patterns characteristic of the northeastern U.S. Cyclonic systems and cold air masses affect the County's weather, making winters cold with snow. During the summer and parts of spring and autumn, temperatures rise during the daytime and fall rapidly after sunset. Summer temperatures typically range from about 76°F to 81°F (Fahrenheit). Winter high temperatures are usually in the middle to upper 30°F, with minimum temperatures of 14°F expected. Overall, the average high temperature for the County is approximately 57°F and the average low temperature is approximately 37°F. Snow accumulates to an average depth of 121 inches each year.

Syracuse is known for its snowfall. Boasting 115.6 inches on average, the Syracuse metro area receives more snow on average than any other large city in the U.S. The high snowfall is a result of the fact that



the city receives both lake effect and nor'easter snow. Snow most often falls in small (about one to three inches), almost daily, amounts over a period of several days. Larger snowfalls do occur occasionally and even more so in the northern suburbs. Syracuse's hottest month is historically July, with an average high temperature of 82 °F, while its coldest month is historically January, with an average high temperature of 31 °F. The Record high of 102 °F was recorded on July 9, 1936 and record lows of -26 °F were recorded on January 26, 1966 and February 18, 1979.

Brief History

Before Syracuse was known as Syracuse, it was called Bogardus Corners because the first building in the area was an inn owned by Mr. Bogardus. The inn was sold to Mr. Cossit, and the name of the area was changed to Cossit's Corners. The community was growing and wanted a post office and a new name. John Wilkinson, the man who was to become the Village of Syracuse's first postmaster, suggested the name "Syracuse". He had read about a city in Sicily called "Siracusa" that sounded a lot like Cossit's Corners. So Cossit's Corners became Syracuse, and Syracuse became a village, just in time for opening of the Erie Canal.

Syracuse's low, swampy land was ideal for canal construction. The Erie Canal opened in 1825 and quickly established Syracuse's dominance over nearby settlements, including the Village of Salina. As a result of the boom of the early canal years, the villages of Salina and Syracuse merged to become the City of Syracuse in 1848. Syracuse's first mayor was Harvey Baldwin. Syracuse's nickname is the "salt city." Some people say that Syracuse was a city that salt built. But in reality, the city was built because of the Erie Canal, which continued to run through the heart of the city until the mid- 1920's.

The present appearance of Syracuse was shaped in the years after the Civil War, a time when salt manufacturing began to decline. But Syracuse's many businesses and diversified industries assured the city's continued economic prosperity. Candle makers, beer brewers, steel producers and manufacturers of furniture, caskets, bicycles and cars helped the city to flourish. All sorts of goods were made in Syracuse (including gears, typewriters, electrical devices, shoes, glass and china) by companies who took advantage of Syracuse's good transportation system, its central location and its ready, skilled labor force.

Governing Body Format

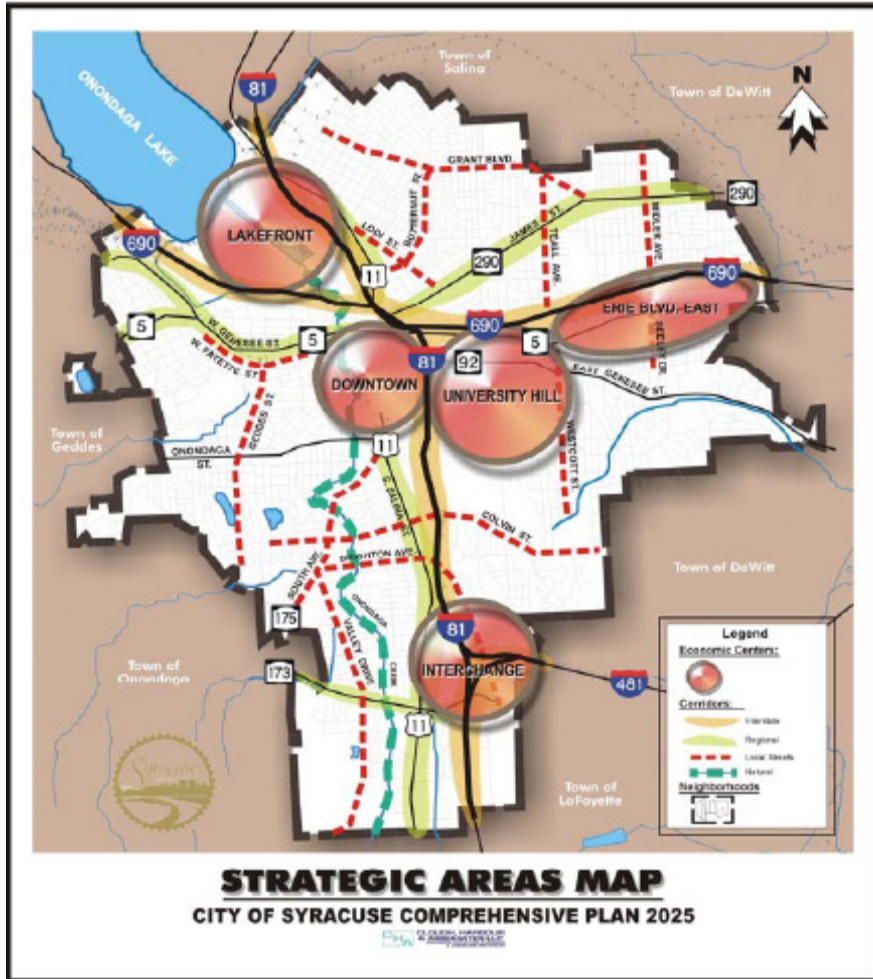
The city is headed by an elected mayor who is limited to two four-year terms. The legislative branch of Syracuse is the Syracuse Common Council. The Onondaga County Supreme and County Court is the trial court of general jurisdiction for Syracuse. It is also the administrative court for the Fifth District of the New York State Unified Court System.

Growth/Development Trends

According to the City of Syracuse Comprehensive Plan 2025 (January, 2005), the City owns approximately 27 acres of land along Onondaga Creek that it plans to develop as a citywide waterside promenade and catalyst for future economic development. There are several distinct commercial areas or areas where commercial growth is encouraged. The Downtown, Lakefront, and University Hill Areas hold the greatest concentration of current and potential development, and have been referred to as Syracuse's Commercial Crescent. The area of the southern edge of the City near Interstates 81 and 481 presents an additional land area marketable for new development (City of Syracuse, 2005).

Five strategic economic areas that support distinct economic development opportunities were identified during the comprehensive planning process. These areas include the Lakefront Area, Downtown,

University Hill, Erie Boulevard (east of State Street) and the area surrounding the Route 81 and 481 Interchange (see map below) (City of Syracuse, 2005).



Source: Map from the City of Syracuse Comprehensive Plan 2025 (January, 2005)

According to the Syracuse-Onondaga County Planning Agency, as of 2009, the City of Syracuse will be either in the process of completing or will be in the process of planning to build one residential subdivision, Resub Bulk 548 Ackerman with 5 lots. The location is provided in the hazard area map at the end of this annex.

C.) NATURAL HAZARD EVENT HISTORY SPECIFIC TO THE CITY

| Type of Event | FEMA Disaster # (if applicable) | Date | Preliminary Damage Assessment |
|---|------------------------------------|-----------------|---|
| Tornado | Not applicable | December, 1889 | Buildings destroyed; one fatality and three injuries; thousands in citywide damages |
| Flood | Not applicable | December, 1901 | Evacuations and heavy property damage |
| Flood | Not applicable | June, 1922 | \$800,000 (citywide) |
| Snowstorm / Extreme Cold | Not applicable | February, 1961 | \$80,000 (countywide) |
| Flood | Not applicable | June, 1968 | 250 homes inundates in Claramont Park |
| Flood | Not applicable | July, 1970 | \$250,000 (countywide) |
| Snowstorm | Not applicable | March, 1971 | \$806,000 (countywide) |
| Snowstorm / Extreme cold | Not applicable | February, 1972 | \$803,000 (countywide) |
| Flood (Tropical Storm Agnes) | DR-338 | June, 1972 | \$1,600,000 (countywide) |
| Flood | Not applicable | March, 1973 | \$200,000 (countywide) |
| Snowstorm | Not applicable | December, 1973 | \$83,000 (countywide) |
| Severe Storms and Flooding | DR-447 | July, 1974 | \$7,200,000 (countywide); over 1,000 citywide evacuations |
| Severe Storms, Heavy Rain, Landslides, Flooding | DR-487 | September, 1975 | \$6,300,000 (countywide) |
| Flood | Not applicable | April, 1976 | \$313,000 (countywide) |
| Blizzard | Not applicable | January, 1977 | \$2,100,000 (countywide) |
| Flood | Not applicable | October, 1981 | \$833,000 (countywide) |
| Snowstorm / Extreme Cold | Not applicable | January, 1982 | \$5,000 (countywide) |
| Tornado (F3) | Not applicable | May, 1983 | \$2,500,000 (countywide) |
| Snowstorm | Not applicable | February, 1984 | \$156,000 (countywide) |
| Tornado (F1) | Not applicable | July, 1986 | \$250,000 (countywide) |
| Blizzard and Extreme Cold | EM-3107 | March, 1993 | \$455,000 (countywide) |
| Snowstorm | Not applicable | April, 1993 | \$100,000 (countywide) |
| Thunderstorm / Wind | Not applicable | May, 1993 | \$50,000 (citywide) |
| Thunderstorm / Winds | Not applicable | August, 1993 | \$600,000 (countywide) |
| Tornado (F0) | Not applicable | August, 1993 | \$500,000 (citywide) |
| Snowstorm | Not applicable | November, 1995 | \$2,500 (countywide) |
| Severe Storm and Flooding | DR-1095 | January, 1996 | \$7,600,000 (countywide) |
| Extreme Cold | Not applicable | February, 1996 | Not available |
| Flood | Not applicable | November, 1996 | \$100,000 (countywide) |
| Snowstorm | Not applicable | December, 1997 | City officials declared a State of Emergency |
| Thunderstorm / Wind | Not applicable | May, 1998 | One fatality in Syracuse; downed |

SECTION 9.33: CITY OF SYRACUSE

| Type of Event | FEMA Disaster # (if applicable) | Date | Preliminary Damage Assessment |
|---|------------------------------------|--------------------------------|--|
| | | | trees and power lines |
| Thunderstorm / Hail / Tornado | Not applicable | May, 1998 | \$200,000 (countywide) |
| Thunderstorm / Winds | Not applicable | August, 1998 | \$200,000 (countywide) |
| Severe Storm | DR-1244 | September, 1998 | \$90,000,000, 3 fatalities, 7 injuries (countywide) |
| Thunderstorm / Winds | Not applicable | July, 1999 | \$750,000 (countywide); 11 injuries at the "Taste of Syracuse" festival in Syracuse |
| Severe Storms | DR-1335 | May/September, 2000 | Road closures |
| Snowstorms | Not applicable | December, 2002 / January, 2003 | \$353,000 (countywide) |
| Flood | Not applicable | June, 2002 | \$2,000,000 (countywide) |
| Flood | Not applicable | June, 2002 | \$20,000 (citywide); street and basement flooding; sump pumps in Hotel Syracuse were inundated |
| Lightning | | June, 2002 | \$20,000 (citywide) |
| Snowstorm (President's Day Storm) | Not applicable | February, 2003 | \$153,000 (countywide) |
| Ice Storm | DR-1467 | April, 2003 | \$2,900,000 (countywide) |
| Severe Storm / Flooding / Lightning | Not applicable | May, 2004 | Police headquarters and a vacant house were struck by lightning |
| Severe Storms and Flooding | DR-1564 | August / September 2004 | \$2,000,000 (countywide) |
| Severe Storm and Flooding | Not applicable | April, 2005 | \$100,000 (countywide) |
| Flood | Not applicable | July, 2005 | \$500,000 (countywide) |
| Lightning Storm | Not applicable | July, 2005 | Power outages; heavy flooding |
| Severe Storms and Flooding | Not applicable | June/July, 2006 | \$29,000 (countywide) |
| Lake Effect Snowstorm / Extreme Cold | Not applicable | February, 2007 | \$3,000,000 (countywide) |
| Snowstorm / Wind | Not applicable | March, 2007 | 26-car pile up on Onondaga Lake Parkway |
| Severe Storms and Inland and Coastal Flooding | Not applicable | April, 2007 | Power outages; downed trees; flight cancellations |
| Flood | Not applicable | December, 2007 | Road closures; evacuations; basements flooded |

Number of FEMA Identified Repetitive Flood Loss Properties: 2

Number of FEMA Identified Severe Repetitive Flood Loss Properties: 0

Source: FEMA Region II, 2009

Note: Repetitive loss and severe repetitive loss data as of February 2009



D.) NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

| Rank # | Hazard type | Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard ^{a,c} | Probability of Occurrence | Risk Ranking Score (Probability x Impact) | Hazard Ranking ^b |
|--------|---------------------|---|---------------------------|---|-----------------------------|
| 3 | Earthquake | \$362,208,384 ^{c,e} | Rare | 16 | Low |
| 2 | Flood | \$926,156,000 ^{c,e} | Frequent | 36 | Medium |
| 4 | Ground Failure | Not available ^f | Rare | 6 | Low |
| 1 | Severe Storm | \$0 ^{c,d,g} | Frequent | 48 | High |
| 1 | Severe Winter Storm | \$680,919,400 ^{c,d} | Frequent | 48 | High |

- a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
- b. High = Total hazard priority risk ranking score of 40 and above
Medium = Total hazard priority risk ranking of 20 to 39
Low = Total hazard risk ranking below 20
- c. The valuation of general building stock and loss estimates determined in Onondaga County were based on the default general building stock database provided in HAZUS-MH MR3 (RSMeans 2006).
- d. Severe storm and severe winter storm hazard 500-year MRP loss estimate is structural value only; does not include the value of contents. For severe winter storm, the loss estimate is 5% of total general building stock value.
- e. Loss estimates for both structure and contents (500-year MRP for the flood hazard and 2,500-year MRP for the earthquake hazard).
- f. Approximately 22% of the City's general building stock is located within the landslide hazard area.
- g. Potential losses for severe storm are underestimated by HAZUS.

E.) CAPABILITY ASSESSMENT

This section identifies the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community classification.

E.1) Legal and Regulatory Capability

| Regulatory Tools (Codes, Ordinances., Plans) | Local Authority (Y or N) | Prohibitions (State or Federal) (Y or N) | Higher Jurisdictional Authority (Y or N) | State Mandated (Y or N) | Code Citation (Section, Paragraph, Page Number, date of adoption) |
|--|-----------------------------|--|---|-------------------------------|---|
| 1) Building Code | Y | N | Y | N | NYS Building Code - 1959 |
| 2) Zoning Ordinance | Y | N | N | N | |
| 3) Subdivision Ordinance | Y | N | N | N | 3 Mile Limit Subdivision Review |
| 4) NFIP Flood Damage Prevention Ordinance | Y | Y | Y | Y | General Ordinance # 28-1988 |
| 5) Growth Management | N | N | N | N | |
| 6) Floodplain Management / Basin Plan | Y | Y | Y | N | General Ordinance # 28-1988 |
| 7) Stormwater Management Plan/Ordinance | Y | N | Y | Y | General Ordinance # 53-2007 General Ordinance # 13-1995 |
| 8) Comprehensive Plan / Master Plan/ General Plan | Y | N | N | N | Comprehensive Plan |
| 9) Capital Improvements Plan | Y | N | N | N | |
| 10) Site Plan Review Requirements | Y | Y | Y | N | General Ordinance #13-1995 General Ordinance # |
| 11) Open Space Plan | N | | | | |
| 12) Economic Development Plan | N | N | N | N | |
| 13) Emergency Response Plan | Y | N | Y | Y | Under Review / Development |
| 14) Post Disaster Recovery Plan | N | | | | |
| 15) Post Disaster Recovery Ordinance | N | N | N | N | |
| 16) Real Estate Disclosure req. | | N | N | N | |
| 17) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)] | N | | | | |

E.2) Administrative and Technical Capability

| Staff/ Personnel Resources | Available (Y or N) | Department/ Agency/Position |
|--|--------------------|--|
| 1) Planner(s) or Engineer(s) with knowledge of land development and land management practices | Y | Zoning Administration |
| 2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure | Y | Public Buildings Division, Construction Inspectors, Economic Development, Brownfield Coordinator, Education Specialist |
| 3) Planners or engineers with an understanding of natural hazards | Y | Community Development Neighborhood Planning Division |
| 4) NFIP Floodplain Administrator | Y | Carlo R. Basta, Administrative Analyst |
| 5) Surveyor(s) | Y | GIS Specialists |
| 6) Personnel skilled or trained in "GIS" applications | N | |
| 7) Scientist familiar with natural hazards in the City of Syracuse. | N | |
| 8) Emergency Manager | N | |
| 9) Grant Writer(s) | Y | Department of Research, Grant Procurement Specialists, Community Development Grant Managing Unit |
| 10) Staff with expertise or training in benefit/cost analysis | Y | Department of Finance |

E.3) Fiscal Capability

| Financial Resources | Accessible or Eligible to use (Yes/No/Don't know) |
|--|---|
| 1) Community development Block Grants (CDBG) | Yes |
| 2) Capital Improvements Project Funding | Yes |
| 3) Authority to Levy Taxes for specific purposes | No |
| 4) User fees for water, sewer, gas or electric service | Yes (Water, Sewer) |
| 5) Impact Fees for homebuyers or developers of new development/homes | No |
| 6) Incur debt through general obligation bonds | Yes |
| 7) Incur debt through special tax bonds | No |
| 8) Incur debt through private activity bonds | No |
| 9) Withhold public expenditures in hazard-prone areas | No |
| 10) State mitigation grant programs (e.g. NYSDEC, NYCDEP) | No |
| 11) Other | No |

E.4) Community Classifications

| Program | Classification | Date Classified |
|--|----------------|-----------------|
| Community Rating System (CRS) | 9 (current) | 10/1/1993 |
| Building Code Effectiveness Grading Schedule (BCEGS) | NP | N/A |
| Public Protection | NP | N/A |
| Storm Ready | NP | NP |
| Firewise | NP | NP |

N/A = Not applicable. NP = Not participating. - = Unavailable.

The classifications listed above relate to the community's effectiveness in providing services that may impact its vulnerability to the natural hazards identified. These classifications can be viewed as a gauge of the community's capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class one (1) being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule
- The ISO Mitigation online ISO's Public Protection website at <http://www.isomitigation.com/ppc/0000/ppc0001.html>
- The National Weather Service Storm Ready website at <http://www.weather.gov/stormready/howto.htm>
- The National Firewise Communities website at <http://firewise.org/>

E.) PROPOSED HAZARD MITIGATION INITIATIVES

| Initiative # | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals / Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Time-line |
|--------------|--|--|---------------------|--|--|----------------|--|------------------|
| CSY-1a | Where appropriate, support retrofitting of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Identify facilities that are viable candidates for retrofitting based on cost-effectiveness versus relocation. Where retrofitting is determined to be a viable option, consider implementation of that action based on available funding. | Existing | Flood, Severe Storm | 1-1, 1-2, 1-6; 2-5, 2-6; 3-2, 3-5, 6-1 | Municipality (likely through NFIP Floodplain Administrator) | High | FEMA Mitigation Grant Programs and local match | Long-term |
| CSY-1b | Where appropriate, support purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Identify facilities that are viable candidates for relocation based on cost-effectiveness versus retrofitting. Where relocation is determined to be a viable option, consider implementation of that action based on available funding. | Existing | Flood, Severe Storm | 1-1, 1-2, 1-6; 2-5, 2-6; 3-2, 3-5; 6-1 | Municipality (likely through NFIP Floodplain Administrator) | High | FEMA Mitigation Grant Programs and local match | Long-term |
| CSY-2 | Consider participation in incentive-based programs such as CRS. | New & Existing | Flood | 1-1, 1-3, 1-7; Goal 2 – All Objectives | Municipality (likely through NFIP Floodplain Administrator) | Low - Medium | Local Budget | Long-term DOF |
| CSY-3 | Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0 | New & Existing | All Hazards | All Goals and Objectives | Municipality (through mitigation planning point of contacts) | Low | Local Budget, possibly FEMA Mitigation | Ongoing |

| Initiative # | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals / Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Time-line |
|--------------|---|--|----------------------|---------------------------------------|---|----------------|----------------------------------|------------|
| | | | | | | | Grant Funding for 5-year update | |
| CSY-4 | Strive to maintain compliance with, and good-standing in the National Flood Insurance program. | New & Existing | Flood | 2-4; 3-5, 3-6 | Municipality (likely through NFIP Floodplain Administrator) | Low | Local Budget | Ongoing |
| CSY-5 | Continue to develop, enhance, and implement existing emergency plans. | New & Existing | All Hazards | 1-4; 5-5; Goal 6 – All Objectives | Municipal Emergency Manager with support from County OEM and SEMO | Low - Medium | Local Budget | Ongoing |
| CSY-6 | Create/enhance/ maintain mutual aid agreements with neighboring communities. | New & Existing | All Hazards | 3-3; 5-2, 5-3, 5-5, 5-6; 6-5, 6-6 | Local Emergency Management, DPW and Roads | Low - Medium | Local Budget | Ongoing |
| CSY-7 | Support County-wide initiatives identified in Section 9.1 of the County Annex. | New & Existing | All Hazards | All Goals and Objectives | Local departments (as applicable for specific initiative) | Low - Medium | Local Budget | Ongoing |
| CSY-8 | Support/Participate in the Stream Team program offered by the Onondaga County SWCD, to assist in the removal of debris, log jams, etc. in flood vulnerable stream sections. | N/A | Flood, Severe Storms | 1-3, 1-7; 2-3; 4-1,4-4; 5-1, 5-2, 5-3 | County, OCSWCD (Mark Burger) | Medium | Local Budget | Short-term |
| CSY-9 | As identified in the 2006 Beartrap-Ley Creek Drainage District Study, the confluence of the Ley Creek North and South Branches, and the nearby Sanders Creek 'bottleneck' from Townline Road to the confluence with Ley Creek – North Branch and Ley Creek – South Branch. Support a detailed survey within the area to allow | N/A | Flood, Severe Storms | 1-3; 4-1, 4-2 | OC Dept of Water Environment Protection; Beartrap-Ley Creek Drainage District | Medium | FEMA HMA; OC and/or local budget | DOF |

| Initiative # | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals / Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Time-line |
|--------------|---|--|----------------------|------------------------|--|---|--|--------------|
| | for a more precise determination of the limits of flooding impacts because the Beartrap-Ley Creek Drainage Study (2006) was based on 10-foot contours and the inundation mapping created may be conservative. The Ley Creek Main stem flows through the City of Syracuse and the Towns of Salina and Dewitt. | | | | | | | |
| CSY-10 | As identified in the 2006 Beartrap-Ley Creek Drainage District Study, continue existing Beartrap-Ley Creek District channel maintenance and inspection programs within Ley Creek – Main Stem to ensure that debris does not accumulate in the watercourse. Continue to support this action. The Ley Creek Main stem flows through the City of Syracuse and the Towns of Salina and Dewitt. | New & Existing | Flood, Severe Storms | 1-2, 1-6; 4-1, 4-2 | OC Dept of Water Environment Protection; Beartrap-Ley Creek Drainage District | Low to Medium | County/ District/ Local Budgets | Ongoing |
| CSY-11 | The Beartrap-Ley Creek Drainage District is flat and heavily urbanized making the lowest areas extremely vulnerable to rain-event flooding that approach or exceed 5-year storms. Conduct /support a more detailed topographic study in the identified critical areas in the 2006 Beartrap-Ley Creek Drainage District Study to determine which individual properties are most at risk to assist with determining mitigation actions. | N/A | Flood, Severe Storms | 1-2, 1-3; 5-1 | OC Dept of Water Environment Protection; Beartrap-Ley Creek Drainage District; Village | Low-Medium | FEMA HMA; District/Cou nty/Local budgets | DOF |
| CSY-12 | Investigate the feasibility of “daylighting” feeder streams to Onondaga Creek (e.g. Harbor Brook, Kimber Brook) to return these streams to a more natural condition, increasing | N/A | Flood, Severe Storms | 1-6, 4-1, 5-1, 5-2 | City of Syracuse Departments of Public Works | Medium (feasibility investigation) , High (implementati | TBD | Longterm DOF |

SECTION 9.33: CITY OF SYRACUSE

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|---|---|--|----------------------|------------------------------|-------------|----------------|---|--------------|--------|------|----|-----------|--------|---------------|---------------|---------------|------|------|------------------|---------------|-----------------|----------------|-----|----------------|--------------|---------------|------------------|-----|------------|-----------|-----------|-------------|-----|--------------|----------------|---------------|------|------|-----------------|------------------|-----------------|------|-----|---------------|--------------|-----------------|------------------|-----|
| | their capacity particularly during high water and storm events. Implement feasible “daylighting” projects as funding becomes available. | | | | | on) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CSY-13 | Repair/rehabilitate deficient combined sewers (sewer sections identified below) to increase capacity and reduce associated flooding, and reduce risk of overwhelming treatment systems. | Existing | Flood, Severe Storms | 1-2, 1-6; 3-2, 3-4; 4-2; 6-5 | City DPW | High | City Budgets with grant funding as applicable | Longterm DOF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Street</th> <th>From</th> <th>To</th> <th>Yr. Built</th> <th>Length</th> </tr> </thead> <tbody> <tr> <td>College Place</td> <td>Euclid Avenue</td> <td>College Place</td> <td>1896</td> <td>1136</td> </tr> <tr> <td>University Place</td> <td>Walnut Avenue</td> <td>Comstock Avenue</td> <td>1895/98 (1969)</td> <td>790</td> </tr> <tr> <td>North Townsend</td> <td>James Street</td> <td>Burnet Avenue</td> <td>New Construction</td> <td>550</td> </tr> <tr> <td>East Adams</td> <td>700 Block</td> <td>800 Block</td> <td>1822 (1984)</td> <td>970</td> </tr> <tr> <td>Belle Avenue</td> <td>Midland Avenue</td> <td>Salina Street</td> <td>1927</td> <td>1447</td> </tr> <tr> <td>Schiller Avenue</td> <td>Wadsworth Street</td> <td>Highland Street</td> <td>1901</td> <td>714</td> </tr> <tr> <td>Almond Street</td> <td>Adams Street</td> <td>Harrison Street</td> <td>New Construction</td> <td>600</td> </tr> </tbody> </table> | | | | | | | | | Street | From | To | Yr. Built | Length | College Place | Euclid Avenue | College Place | 1896 | 1136 | University Place | Walnut Avenue | Comstock Avenue | 1895/98 (1969) | 790 | North Townsend | James Street | Burnet Avenue | New Construction | 550 | East Adams | 700 Block | 800 Block | 1822 (1984) | 970 | Belle Avenue | Midland Avenue | Salina Street | 1927 | 1447 | Schiller Avenue | Wadsworth Street | Highland Street | 1901 | 714 | Almond Street | Adams Street | Harrison Street | New Construction | 600 |
| Street | From | To | Yr. Built | Length | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| College Place | Euclid Avenue | College Place | 1896 | 1136 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| University Place | Walnut Avenue | Comstock Avenue | 1895/98 (1969) | 790 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| North Townsend | James Street | Burnet Avenue | New Construction | 550 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| East Adams | 700 Block | 800 Block | 1822 (1984) | 970 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Belle Avenue | Midland Avenue | Salina Street | 1927 | 1447 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Schiller Avenue | Wadsworth Street | Highland Street | 1901 | 714 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Almond Street | Adams Street | Harrison Street | New Construction | 600 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CSY-14 | Repair channel linings in Onondaga Creek through the City. | Existing | Flood, Severe Storms | 1-2, 1-6; 3-2; 4-1 | City DPW | High | City Budgets with grant funding as applicable | Longterm DOF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CSY-15 | Conduct dredging/cleaning of Onondaga Creek through the City to regain capacity and reduce flooding. | Existing | Flood, Severe Storms | 1-2, 1-6; 3-2; 4-1 | City DPW | High | City Budgets with grant funding as applicable | Longterm DOF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CSY-16 | Conduct repairs to the bank of Onondaga Creek through the City (stabilization, retaining wall repairs, brush clearing). | Existing | Flood, Severe Storms | 1-2, 1-6; 3-2; 4-1 | City DPW | High | City Budgets with grant funding as applicable | Longterm DOF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CSY-17 | Repair culverts (approx. 40, varying in length from 50'-350') on the following creeks, which due to their age are in varying states of deterioration: | Existing | Flood, Severe Storms | 1-2, 1-6; 3-2, 3-4; 4-1 | City DPW | High | City Budgets with grant funding as | Longterm DOF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



| Initiative # | Mitigation Initiative | Applies to New and/or Existing Structures* | Hazard(s) Mitigated | Goals / Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Time-line |
|--------------|---|--|----------------------|-------------------------|------------------|----------------|---|--------------|
| | Hopper Brook, Furnace Brook, Spring Brook and Cold Brook | | | | | | | |
| CSY-18 | Conduct dredging/cleaning of Hopper Brook, Furnace Brook, Spring Brook and Cold Brook to regain capacity and reduce flooding. | Existing | Flood, Severe Storms | 1-2, 1-6; 3-2; 4-1, 4-2 | City DPW | Medium | City Budgets with grant funding as applicable | Longterm DOF |
| CSY-19 | Conduct scour/bank repair at seven pedestrian bridges over Onondaga Creek in the City. | Existing | Flood, Severe Storms | 1-2, 1-6; 3-2, 3-4; 4-1 | City Engineering | Low | City Budgets with grant funding as applicable | Longterm DOF |
| CSY-20 | Conduct regular cleaning of catch-basins throughout the city (approx. 11,300) to maintain stormwater management capacity. | Existing | Flood, Severe Storms | 1-2, 1-6; 3-2, 3-4; 4-1 | City DPW | Medium | City Budgets with grant funding as applicable | Longterm DOF |

Notes: DOF = Depending on Funding. FEMA = Federal Emergency Management Agency. Long = 5 years or greater. N/A = Not applicable. Short = 1 to 5 years. TBD = To be determined.

*Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure?

G.) ANALYSIS OF MITIGATION ACTIONS

This table summarizes the participant's mitigation actions by hazard of concern and the six mitigation types to illustrate that the City has selected a comprehensive range of actions/projects.

| Hazard of Concern | Mitigation Type | | | | | |
|--|--|---|--|--|-----------------------------------|------------------------------|
| | 1. Prevention | 2. Property Protection | 3. Public Education and Awareness | 4. Natural Resource Protection | 5. Emergency Services | 6. Structural Projects |
| Earthquake | CSY-3, CSY-7 | CSY-3, CSY-7 | CSY-3, CSY-7 | CSY-3, CSY-7 | CSY-3, CSY-5, CSY-6, CSY-7 | CSY-3, CSY-7 |
| Flooding (riverine, flash, coastal and urban flooding) | CSY-2, CSY-3, CSY-4, CSY-7, CSY-8, CSY-9, CSY-11, CSY-12 | CSY-1a and b, CSY-2, CSY-3, CSY-4, CSY-7, CSY-13 through CSY-18 | CSY-1a and b, CSY-2, CSY-3, CSY-4, CSY-7 | CSY-3, CSY-7, CSY-8, CSY-10, CSY-12, CSY-13 through CSY-18 | CSY-2, CSY-3, CSY-5, CSY-6, CSY-7 | CSY-3, CSY-7, CSY-13, CSY-16 |
| Ground Failure | CSY-3, CSY-7 | CSY-3, CSY-7 | CSY-3, CSY-7 | CSY-3, CSY-7 | CSY-3, CSY-5, CSY-6, CSY-7 | CSY-3, CSY-7 |
| Severe Storms (windstorms, thunderstorms, hail, lightning and tornados) | CSY-2, CSY-3, CSY-4, CSY-7, CSY-8, CSY-9, CSY-11, CSY-12 | CSY-1a and b, CSY-2, CSY-3, CSY-4, CSY-7, CSY-13 through CSY-18 | CSY-1a and b, CSY-2, CSY-3, CSY-4, CSY-7 | CSY-3, CSY-7, CSY-8, CSY-10, CSY-12, CSY-13 through CSY-18 | CSY-2, CSY-3, CSY-5, CSY-6, CSY-7 | CSY-3, CSY-7, CSY-13, CSY-16 |
| Severe Winter Storm (heavy snow, blizzards, ice storms) | CSY-3, CSY-7 | CSY-3, CSY-7 | CSY-3, CSY-7 | CSY-3, CSY-7 | CSY-3, CSY-5, CSY-6, CSY-7 | CSY-3, CSY-7 |

Notes:

- 1. Prevention:** Government, administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
- 2. Property Protection:** Actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
- 3. Public Education and Awareness:** Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and school-age and adult education programs.
- 4. Natural Resource Protection:** Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- 5. Emergency Services:** Actions that protect people and property, during and immediately following, a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.
- 6. Structural Projects:** Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

H.) PRIORITIZATION OF MITIGATION INITIATIVES

| Initiative # | # of Objectives met | Benefits | Costs | Do Benefits equal or exceed Costs? (Yes or No) | Is project Grant eligible? (Yes or No) | Can Project be funded under existing programs/budgets? (Yes or No) | Priority (High, Med., Low) |
|--------------|---------------------|----------|-------|---|---|---|-------------------------------|
| CSY-1a | 8 | H | H | Y | Y | N | M-H* |
| CSY-1b | 8 | H | H | Y | Y | N | M-H* |
| CSY-2 | 9 | M | L | Y | N | Y | H |
| CSY-3 | 38 | M | M | Y | N (Yes for 5 year update) | Y | H |
| CSY-4 | 3 | H | L | Y | N | Y | H |
| CSY-5 | 8 | M | L | Y | N | Y | H |
| CSY-6 | 7 | M | L | Y | N | Y | H |
| CSY-7 | 38 | M-H | L-M | Y | Dependant on specific initiative | Dependant on specific initiative | M-H (dependant) |
| CSY-8 | 8 | H | L - H | Y | Y | Dependant on specific initiative | M |
| CSY-9 | 3 | M | L-M | Y | Y | N | M |
| CSY-10 | 4 | M | M | Y | N | Y | H |
| CSY-11 | 3 | M | L-M | Y | Y | Local Match Dependant on specific initiative | M |
| CSY-12 | 4 | M-H | M-H | Y | TBD | N | L-M |
| CSY-13 | 6 | M-H | H | Y | TBD (not HMA) | TBD | L-M |
| CSY-14 | 4 | M-H | H | Y | TBD (not HMA) | TBD | L-M |
| CSY-15 | 4 | M-H | H | Y | TBD (not HMA) | TBD | L-M |
| CSY-16 | 4 | M-H | H | Y | TBD (not HMA) | TBD | L-M |
| CSY-17 | 5 | M-H | H | Y | TBD (not HMA) | TBD | L-M |

| Initiative # | # of Objectives met | Benefits | Costs | Do Benefits equal or exceed Costs? (Yes or No) | Is project Grant eligible? (Yes or No) | Can Project be funded under existing programs/budgets? (Yes or No) | Priority (High, Med., Low) |
|--------------|---------------------|----------|-------|---|---|---|-------------------------------|
| CSY-18 | 5 | M-H | H | Y | TBD (not HMA) | TBD | L-M |
| CSY-19 | 5 | M-H | H | Y | TBD (not HMA) | TBD | L-M |
| CSY-20 | 5 | M-H | H | Y | TBD (not HMA) | TBD | L-M |

Notes: H = High. L = Low. M = Medium. N = No. N/A = Not applicable. Y = Yes.

* This initiative has a “Medium” priority based on the prioritization scheme used in this planning process (implementation dependent on grant funding), however it is recognized that addressing repetitive and severe repetitive loss properties is considered a high priority by FEMA and SEMO (as expressed in the State HMP), and thus shall be considered a “High” priority for all participants in this planning process.

Explanation of Priorities

- **High Priority** - A project that meets multiple objectives (i.e., multiple hazards), benefits exceeds cost, has funding secured or is an on-going project and project meets eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation Grant Program (PDM) programs. High priority projects can be completed in the short term (1 to 5 years).
- **Medium Priority** - A project that meets goals and objectives, benefits exceeds costs, funding has not been secured but project is grant eligible under, HMGP, PDM or other grant programs. Project can be completed in the short term, once funding is completed. Medium priority projects will become high priority projects once funding is secured.
- **Low Priority** - Any project that will mitigate the risk of a hazard, benefits do not exceed the costs or are difficult to quantify, funding has not been secured and project is not eligible for HMGP or PDM grant funding, and time line for completion is considered long term (1 to 10 years). Low priority projects may be eligible other sources of grant funding from other programs. A low priority project could become a high priority project once funding is secured as long as it could be completed in the short term.

Prioritization of initiatives was based on above definitions: Yes

Prioritization of initiatives was based on parameters other than stated above: Not applicable.

I.) FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

None at this time.

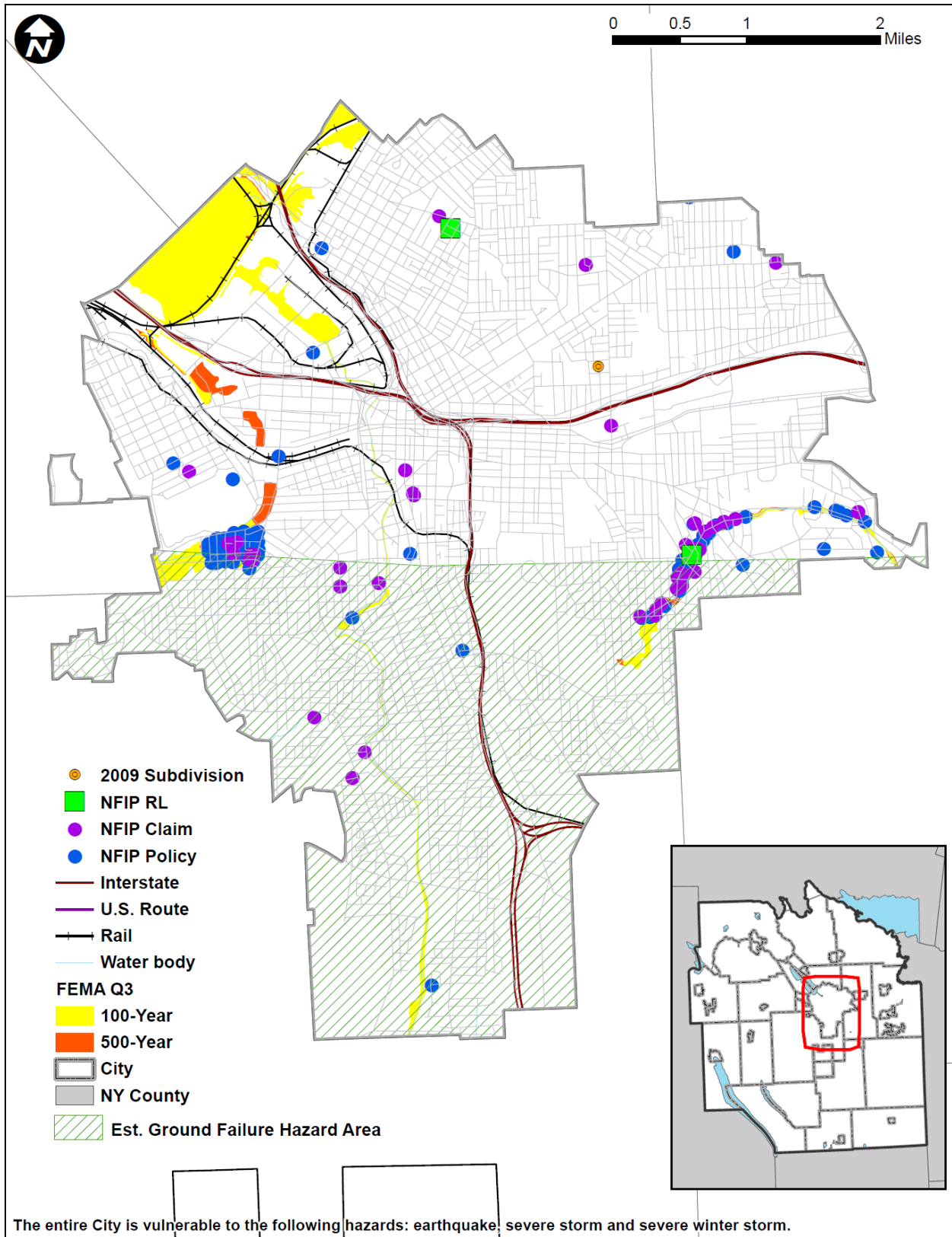
J.) HAZARD AREA EXTENT AND LOCATION



A hazard area extent and location map has been generated and is provided below for the City of Syracuse to illustrate the probable areas impacted within the City. This map is based on the best available data at the time of the preparation of this Plan, and is considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the City of Syracuse has significant exposure. The County maps are provided in the hazard profiles within Section 5.4, Volume I of this Plan.

K.) ADDITIONAL COMMENTS

No additional comments at this time.



Sources: FEMA Q3; FEMA Region II, 2008; HAZUS-MH MR3; NYSDPC, 2008; Syracuse-Onondaga Planning Agency, 2009
 Notes: Est. = Estimated; NFIP = National Flood Insurance Program; RL = Repetitive Loss

The entire municipality is vulnerable to the following hazards: earthquake, severe storm, and severe winter storm.