

# City of Rochester

## ALL HAZARD MITIGATION PLAN



**April 2017**

**City of Rochester Emergency Management  
Rochester-Olmsted Planning Department**



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# 1 Introduction

# 1 Introduction

Local government is charged with the protection of the health, safety, and welfare of their residents and visitors. Hazard mitigation reduces disaster impacts by proactively reducing or eliminating long-term risk to life and property from weather, geologic, and human threats. Events such as tornadoes, hazardous chemical spills, and terrorist attacks may result in the loss of life, property, infrastructure, and income. The ability of a community to prepare, respond, mitigate, and recover when confronted by these threats, however, may mean the difference between long-term devastation and systemic resilience.

Statewide, disasters occurring between 2000 and 2016 cost nearly \$334 million in Federal Emergency Management Agency (FEMA) public assistance, largely attributable to severe summer storms and flooding. Data for Public Assistance funding is only available at the County level. There have been three disaster declarations involving Olmsted County in recent years as documented on the following table. Some level of funding from each of these disaster declarations was used by the City of Rochester.

## FEMA Public Assistance Events | Olmsted County, MN

*Source: MN Homeland Security and Emergency Management, dates reflect incident period*

Declaration #	Date	Event	MN Public Assistance	Olmsted County Public Assistance
DR – 1717	8/18/07 - 8/31/07	Floods	\$39,751,469.09	\$1,537,601.00
DR – 1921	6/17/10 - 6/26/10	Severe Storms, Tornadoes, and Flooding	\$17,728,370.51	\$97,072.17
DR – 1941	9/22/10 – 10/14/10	Severe Storms and Flooding	\$33,453,783.46	\$686,809.50

While mitigation strategies and efforts cannot eliminate all threats and hazards, the City of Rochester endeavors to limit their potential physical, economic, and social impacts as much as possible. Preparation is the key to Rochester’s ability to respond to and rebound from adverse situations. With the assistance of technical experts and community stakeholders, the purpose of this plan is to identify and analyze those hazards most likely to impact the city of Rochester, assess the community’s ability to respond to these events, and develop strategies to mitigate their impact.

## 1.1 Legal Authority and Guidance

At the direction of the Rochester Common Council, this All Hazard Mitigation Plan (AHMP) was prepared in compliance with Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (Stafford Act), 42 U.S.C. 5165, as amended by Section 104 of the Disaster Mitigation Act of 2000 (DMA 2000). Mitigation planning requirements for local planning efforts are codified in the Code of Federal Regulations (CFR) Title 44, Section 201.6 (44 CFR §201.6).

Under 44 CFR §201.6, local governments must have a FEMA approved local mitigation plan in order to apply for and/or receive hazard mitigation project grants for the following programs:

- Hazard Mitigation Grant Program (HMGP)
- Pre-Disaster Mitigation (PDM)
- Flood Mitigation Assistance (FMA)
- Severe Repetitive Loss (SRL)

## 1.2 Geographic Scope

Rochester's city limits constitute the jurisdictional boundary for this plan. The physical size of the city, however, continues to grow. Rochester's Urban Service Area (USA), therefore, will constitute the planning area for this document. The USA includes the area currently within Rochester's city limits as well as those areas planned for incorporation into Rochester within the next 25 years (see Figure 1-1). Taking this approach will allow this plan to consider physical and demographic characteristics of areas that may be added to the city's jurisdictional limits during the life of this plan.

## 1.3 Relationship to Existing Plans

The All Hazard Mitigation Plan is not a stand-alone document. It is meant to work in conjunction with numerous other plans that impact Rochester's physical and functional landscape.

### 1.3.1 Emergency Operations Plan

The City of Rochester developed the Emergency Operations Plan (EOP) to ensure that all of the City's emergency management functions are coordinated to the maximum extent practicable with the comparable functions of the federal government, state and local governments, and private agencies. The EOP describes the City of Rochester's authority and approach to disaster and emergency situations, encompassing early disaster response activation as well as long-term community recovery. Tasks and responsibility for emergency and disaster functions are assigned to the agencies best suited to perform them.

Rochester's AHMP provides a foundation for the EOP by identifying threats and hazards. Planners use these hazards to develop exercise scenarios that in turn provide responders and support agencies with realistic settings for disaster preparedness. The AHMP can reduce hazard risks and impacts through such means as structural controls and protection measures, mitigation programs and regulations, public awareness and education, and development and improvement of various types of warning systems.

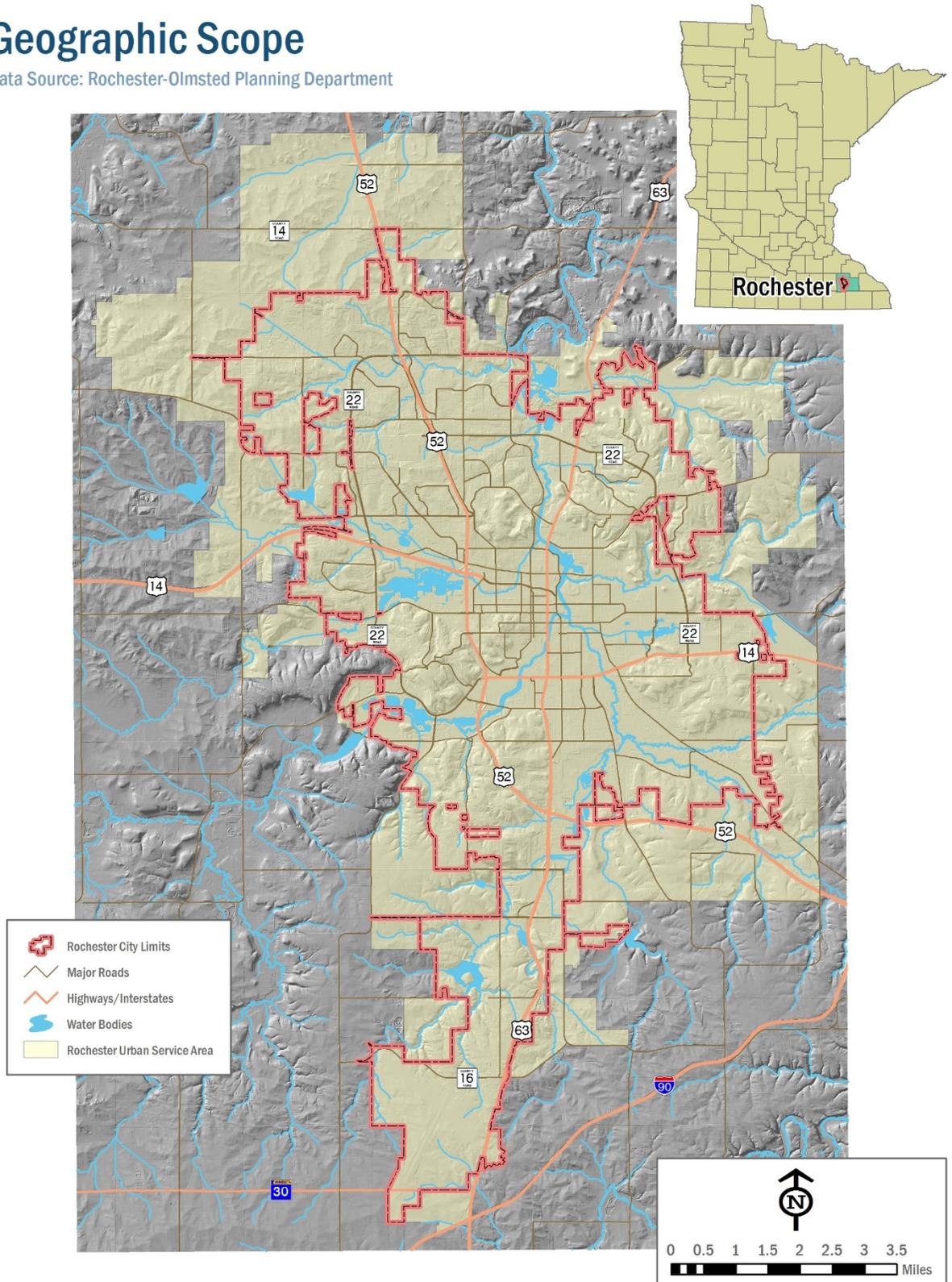
### 1.3.2 Rochester Comprehensive Plan

The Rochester Common Council adopted the AHMP as part of the city's Comprehensive Plan. As such, other components of the Comprehensive Plan, such as the land use and transportation plans, have been

FIGURE 1-1: GEOGRAPHIC SCOPE OF THE ROCHESTER AHMP

# Geographic Scope

Data Source: Rochester-Olmsted Planning Department



considered in the development of the AHMP and its strategies. Likewise, the AHMP will be considered when the other Comprehensive Plan components are updated and implemented.

### 1.3.3 Rochester Capital Improvement Plan

Mitigation strategies adopted by this plan, as appropriate, will be included in Rochester's Capital Improvement Plans in order to fund their implementation. The Capital Improvements Plan is updated on an annual basis and reviewed by all City departments.

### 1.3.4 Threat and Hazard Identification and Risk Assessment (THIRA)

The City of Rochester developed the first THIRA in 2012 and published an updated and revised version in 2013. The 2013 THIRA serves to identify and assess risks in the National Preparedness System—specifically how eight “worst most probable” scenarios would tax the individual capabilities of the Rochester community.

Rochester's All Hazard Mitigation Plan referenced the 2013 THIRA for information pertaining to hazards that could impact the City. This information informed the Risk Assessment and supported the development of specific action strategies necessary to reduce risk.

## 1.4 Planning Process

For several years, by means of a joint powers agreement, Olmsted County Homeland Security and Emergency Management was responsible for the creation of the Emergency Operations Plan for the City of Rochester. In December 2009, the Olmsted County Board of Commissioners adopted the area's first All Hazard Mitigation Plan, with a geographic scope of all unincorporated areas, townships, and cities within the county. Rochester's Common Council also adopted this document, which currently serves as the official mitigation plan for the city.

On October 1, 2010, the City of Rochester formally ended the Joint Powers Agreement for Emergency Management with Olmsted County and adopted Ordinance 14A, thereby establishing emergency management functions, including leadership and staffing. By the end of 2011, the Common Council formally opted out of the Olmsted County EOP and began to solely enforce the Rochester EOP. The City of Rochester's Threat Hazard Identification and Risk Assessment (THIRA) received State approval on April 2, 2013.

The City of Rochester is committed to creating a well-rounded emergency management program, and the AHMP represents a significant step in this process. The City applied for State Hazard Mitigation Grant funding in April 2013 to help with the expenses of creating the AHMP. A State of Minnesota grant contract was signed by both parties in September 2013, thereby beginning the process of creating the first AHMP focused solely on Rochester's unique needs.

### 1.4.1 Whole Community Approach

Climatic and demographic changes occurring in the Rochester area necessitate a “Whole Community” approach to hazard planning if we want to improve our resiliency in the face of disaster. The efficacy of

emergency management will be heightened by understanding and meeting the needs of the **whole** community, engaging and empowering all residents, and strengthening existing practices that work well on a daily basis.

To get this process started, the Core Planning Team asked the following questions:

- How can we better understand the needs of our community?
- What partnerships do we need to forge in order to understand these needs?
- How can we more effectively engage those members of the community who have not typically participated in public meetings and committees?
- How do we generate interest in disaster preparedness among these groups and work with them to develop mitigation strategies that will build upon what already works within their communities to better serve their needs?
- How can the whole community and emergency management support each other?
- How can these partnerships and networks be maintained?

## 1.4.2 Planning Teams

The Planning Team was organized into three groups, based on the amount of participation expected of them. The complete list of planning team members, including jurisdictions and positions, is found in Section 6.1 of this document.

### Core Planning Team

The City of Rochester charged Rochester’s Emergency Management Department and the Analysis, Planning, and Policy Division of the Rochester-Olmsted Planning Department (ROPD) with coordinating the development of Rochester’s first AHMP. These two agencies have expertise in understanding the local threats, hazards, and risks that may potentially impact the City of Rochester and possess the resources and skills necessary to develop and assess the strategies needed for their mitigation. These agencies are also responsible for many of the activities and resources needed to create this plan.

### Plan Development Team

The Plan Development Team was primarily composed of representatives from those agencies that work most closely with the functions of emergency management implementation. These agencies included:

- Rochester Building Safety
- Rochester City Administration
- Rochester Fire Department
- Rochester International Airport
- Rochester Parks and Recreation
- Rochester Police Department
- Rochester Public Utilities
- Rochester Public Works
- ROPD – GIS and Current Planning Divisions
- Olmsted County Community Services

- Olmsted County Emergency Management
- Olmsted County Public Health Services
- Olmsted County Public Works
- Minnesota Department of Transportation
- Minnesota HSEM

The Plan Development Team was charged with providing community asset and capabilities data, assessing those mitigation strategies and action items involving their departments, and evaluating the integrity of the plan as a whole. Because these agencies have the responsibility and expertise for implementing mitigation actions, they were actively involved in the planning process at all stages. Much of this communication and work was conducted via email and one-on-one meetings due to scheduling difficulties in convening such a large group.

**Plan Validation Team**

The Plan Validation Team consisted of those stakeholders whose responsibility was to inform the Core Planning Team on a specific topic or provide input from a variety of points of view in the community. Unlike the Plan Development Team, they were not involved in all stages of the planning process. Most communication was conducted electronically in order to maximize participation. The agencies participating in the Plan Validation Team included:

- Council on Black Minnesotans
- Minnesota Department of Natural Resources
- Southern Minnesota Deaf and Hard of Hearing Services
- Federal Bureau of Investigation
- IBM
- Interfaith Hospitality Network
- Mayo Civic Center
- Mayo Clinic
- Minnesota Department of Health
- Minnesota Energy Resources
- Minnesota Geological Survey
- Minnesota Board of Soil and Water Resources
- Minnesota National Guard
- Minnesota Pollution Control Agency
- NAMI Southeast Minnesota
- National Federation of the Blind
- NWS – La Crosse
- Olmsted County Administration
- Olmsted County Environmental Resources
- Olmsted County Parks
- Olmsted County Property Records and Licensing
- Olmsted County Sheriff’s Department
- Olmsted Medical Center
- RNeighbors
- Rochester Area Builders
- Rochester Chamber of Commerce
- Rochester City Clerk
- Rochester City Council
- Rochester City Finance

- Rochester Community and Technical College
- Rochester Convention and Visitors Bureau
- Rochester Downtown Alliance
- Rochester Human Resources
- Rochester Information Systems Department
- Rochester City Attorney's Office
- Rochester Olmsted Council of Governments
- Rochester Planning and Zoning Commission
- Rochester Public Library
- Rochester Public Schools
- Rochester Senior Center
- Salvation Army
- SE Minnesota Chapter of the American Red Cross
- South East Minnesota Center for Independent Living (SEMCIL)
- The ARC Southeastern Minnesota
- United Way of Olmsted County
- University of Minnesota-Rochester

## Consultants

Consultant teams were brought on board to assist the Core Planning Team with technical assessments and community engagement as follows:

- **CEMA** | Identify hazards, assess community capabilities and vulnerabilities, understand significant risks, conduct cost-benefit reviews, develop implementation strategies
- **Inclusion Solutions** | Facilitate outreach with Rochester's Access and Functional Needs community
- **ECHO Minnesota** | Facilitate outreach with Rochester's largest Limited English Proficiency communities

## Local Leadership

The Rochester City Council received periodic updates during the AHMP draft process, primarily at their Committee of the Whole meetings. These sessions included an introduction to hazard mitigation planning, reviews of the focused outreach efforts and a discussion of the draft plan document and submittal process. The City Council approved the submittal of the draft plan to the State of Minnesota and FEMA on April 17, 2017.

### 1.4.3 Focused Outreach

Rochester's population is growing and diversifying, adding residents and visitors that have not traditionally sat at the public participation table. In order to maximize limited resources, the Core Planning Team decided to focus outreach efforts on what may be our two most vulnerable communities: those speaking limited to no English and people with access and functional needs. By understanding the needs of those most at risk in times of emergency, it is hoped that the whole community can be better served. Methodology and findings from this focused outreach are found in Section 7 of this plan document and are addressed in the plan's mitigation strategies.

### Limited English Proficiency Community

Clear, concise communication is critical during a crisis, and the ability to dispatch information to those who do not readily understand English poses a great challenge to emergency management staff. Nearly 12 percent of Rochester's 2010 population was born outside of the USA, compared to 7 percent in the state as a whole. Within nearly 7,000 Rochester households, a language other than English is spoken. Rochester's largest immigrant groups are Hispanic/Latinos, Somalis, and Cambodians; members of these communities assisted Rochester staff in these outreach efforts.

The City of Rochester engaged the expertise of ECHO Minnesota to devise a strategy that would

- elicit the impressions from members of the local cultural communities on current emergency communication,
- identify mitigation and preparedness concerns particular to these communities,
- ask participants for ideas on how to improve planning and messaging to limited English speakers, and
- establish the basis for long-term relationships with Rochester's cultural communities that would improve future planning efforts.

ECHO conducted one-on-one key informant interviews and facilitated meetings and focus groups with the Core Planning Team and immigrant community members.

### Access and Functional Needs Community

According to the US Census Bureau, approximately 20 percent of a typical community has a disability. Age, ability to communicate, and access to transportation may also create a need for additional response assistance during an emergency. In addition to those residents with access and functional needs, Rochester also must serve the many Mayo Clinic patients seeking treatment for illness, injury, and disability.

Inclusion Solutions was contracted by the City of Rochester to

- identify the Functional Needs Support Services (FNSS) population and key organizations/people to include in the planning process,
- lead and facilitate introductory meetings with the goal of supporting communication in perpetuity, and
- report on key findings and processes for the AHMP.

Inclusion Solutions and the Core Planning Team met with seven different access and functional needs groups to discuss emergency preparedness, alerts, and response: mental illness/mental health, developmental disabilities, blind, deaf and hard of hearing, physical disabilities, seniors, and the recovery community.

### 1.4.4 Other Public Engagement

In April 2016, members of the Core Planning Team were invited to participate in a panel discussion hosted by Minnesota Public Radio (MPR). “The Impact of Climate Change on Public Health” brought together experts on health impacts, infectious disease, climatology, emergency management, and planning to discuss this relationship and potential health outcomes. Recorded at Mayo Civic Center in front of a sold out crowd, this program was broadcast statewide and made available to the public for online streaming.

The draft planning process culminated in a series of public informational sessions and hearings at the Rochester City Planning and Zoning Commission and the Rochester City Council. Commentary shared through these sessions was recorded and incorporated into the plan document as appropriate.

### 1.4.5 Key Activities Timeline

Detailed reports for the focused outreach efforts are located in Section 6 of the plan document. Agendas and minutes for other community engagement efforts are found in Section 7. Team leaders for each of the activities below are noted in italics.

<b>October 2013</b>	Planning process begins, introductory presentation at Rochester City Council Committee of the Whole meeting ( <i>Core Planning Team</i> )
<b>February 2014</b>	Begin preparations for focused community outreach ( <i>Core Planning Team</i> )
<b>March 2014</b>	Planning Teams identified ( <i>Core Planning Team</i> )
<b>March 2014</b>	Capability assessment form sent to Plan Development Team ( <i>Core Planning Team</i> )
<b>May 2014</b>	Meetings and tours with access and functional needs groups, presentation of findings to City Council ( <i>Core Planning Team, Inclusion Solutions</i> )
<b>May 2014</b>	First meeting with community cultural groups ( <i>Core Planning Team, ECHO Minnesota</i> )
<b>June 2014</b>	Key informant interviews with members of community cultural groups ( <i>ECHO Minnesota</i> )
<b>July and August 2014</b>	Focus group meetings with community cultural groups ( <i>ECHO Minnesota</i> )
<b>October 2014</b>	Report findings back to community cultural groups for verification, correction, and discussion ( <i>Core Planning Team, ECHO Minnesota</i> )
<b>October 2014 - February 2015</b>	Risk Assessment Surveys developed and sent to Plan Development Team and Plan Validation Team ( <i>Core Planning Team, CEMA</i> )
<b>February 2015</b>	Risk Assessment Surveys analyzed ( <i>CEMA</i> )

<b>February 2015</b>	Risk validation meeting and consensus building with Planning Teams <i>(Core Planning Team)</i>
<b>June 2015</b>	City Council presentation on results of focused outreach efforts with the Limited English Speaking community <i>(Core Planning Team, ECHO Minnesota)</i>
<b>April 2016</b>	“The Impact of Climate Change on Public Health” – participation on a Minnesota Public Radio panel discussion to discuss impacts of climate change on emergency management planning. This was broadcast state-wide and put on MPR’s streaming site. <i>(Rochester Emergency Management Director, ROPD Principal Planner)</i>
<b>September 2016 – March 2017</b>	Meetings with Plan Development Team members to formulate mitigation action strategies affecting their departments. <i>(Core Team Hazard Mitigation Specialist)</i>
<b>January 2017 – March 2017</b>	Meetings with Plan Development Team members to review and finalize community capabilities related to their department. <i>(CEMA)</i>
<b>January 2017 – March 2017</b>	Cost Benefit Review surveys completed by Plan Development Team members. <i>(CEMA)</i>
<b>March 2017</b>	Public informational sessions on the final plan draft at the City Planning and Zoning Commission (televised), Rochester Committee on Urban Design & Environment (CUDE), and City Council’s Committee of the Whole (COW) meetings. The local press was in attendance at the COW meeting. The plan was sent to all Plan Development and Plan Validation Team members and placed on the City’s website for public review. <i>(Core Planning Team, CEMA)</i>
<b>Late March 2017</b>	Public hearing at the City Planning and Zoning Commission to review AHMP draft for submittal to the State of Minnesota and FEMA. This hearing was televised. <i>(Core Planning Team, CEMA)</i>
<b>March/April 2017</b>	Incorporated public commentary into draft plan document
<b>April 2017</b>	Public hearing at the Rochester City Council to approve draft AHMP for submittal to the State of Minnesota and FEMA. This hearing was televised. <i>(Core Planning Team)</i>
<b>April 2017 - TBD</b>	State of Minnesota review period <i>(Minnesota HSEM)</i>
<b>TBD</b>	Federal review period <i>(FEMA)</i>
<b>TBD</b>	Final draft AHMP updated based on State of Minnesota and FEMA recommendations <i>(ROPD Principal Planner)</i>
<b>TBD</b>	Final AHMP approval by Rochester City Council, forwarded to FEMA <i>(Core Planning Team)</i>





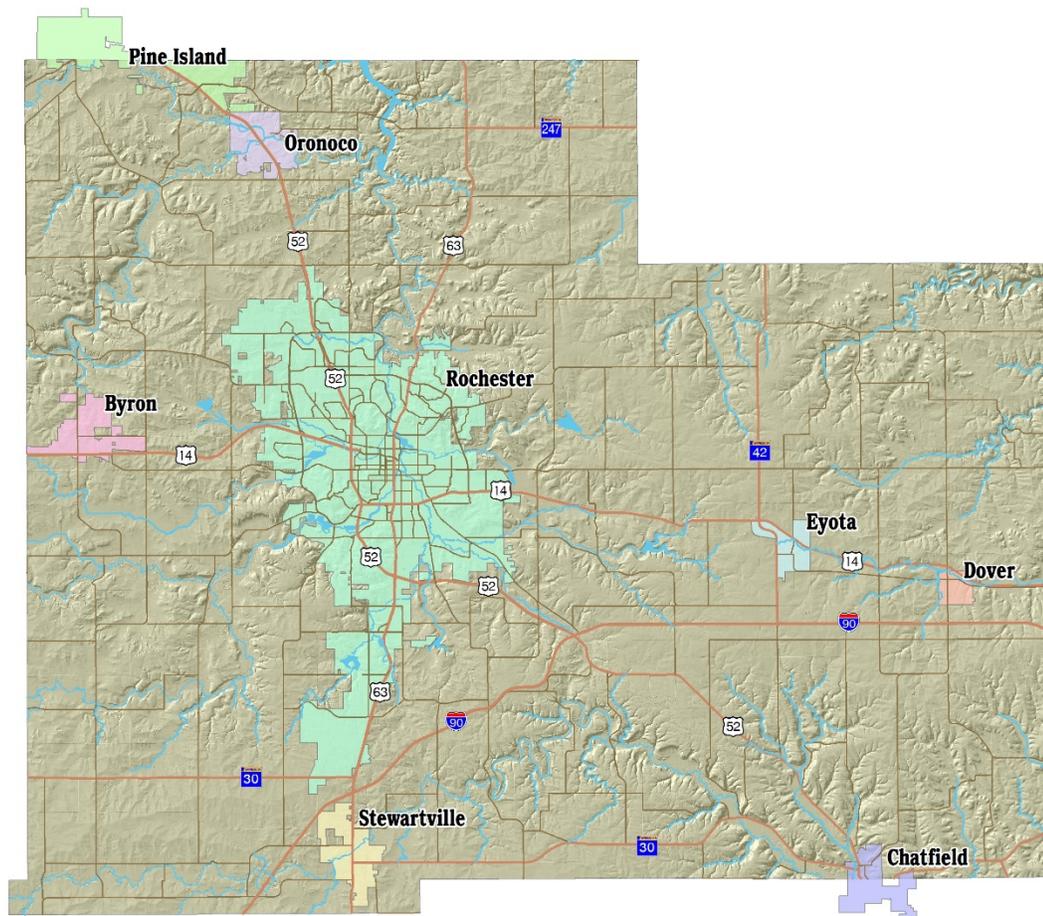
## 2 City Profile

## 2. City Profile

### 2.1 General City Overview

Rochester is located in the heart of southeastern Minnesota's Olmsted County (Figure 2-1). Rochester is a growing community, both in terms of land area and population. As the state's third largest city, Rochester's 55.2 square mile municipal limits house an estimated 112,225 residents (US Census Bureau, 2015). As the home of the Mayo Clinic, as well as a large IBM business complex, approximately 51,000 workers commute into the city on a daily basis.

FIGURE 2- 1: OLMSTED COUNTY MUNICIPALITIES



### 2.2 Rochester's History

For thousands of years, native peoples inhabited the area that would become Minnesota. In the past few hundred years, those most frequently dwelling in this area were the Dakota/Sioux, Ojibway, and Winnebago peoples. For almost 200 years after the French explorers arrived here in 1660, notably

Father Louis Hennepin and Pierre Le Sueur, few non-natives had seen the rolling plains and deep valleys of what would become southeastern Minnesota. Under a treaty with the US Government in 1853, the Dakota/Sioux relinquished the area, including the Rochester area, to the Territory of Minnesota.

Rochester developed as a stop along the Dubuque Trail, a stagecoach line spanning the distance from St. Paul to Dubuque, Iowa. Located at a crossroads near the Zumbro River, travelers would stop in this area to camp and water their animals. On July 12, 1854, George Head and his family laid claim to land that is now part of Rochester's central business district. It was there that they built a log cabin known as Head's Tavern. Head named the city after his hometown of Rochester, New York. In 1855, the territorial legislature created Olmsted County, named after David Olmsted, first mayor of St. Paul. Rochester was declared the county seat and incorporated as a city on August 5, 1858. Drawn to the area by its cheap and fertile farmland, other settlers headed to Rochester and, within six years of Head's arrival, the town's population had grown to 1,424 residents.

In 1863, Dr. William Worrall Mayo arrived in Rochester to become the examining surgeon of federal draftees during the Civil War. He stayed in Rochester and took up life as a country doctor. On August 12,



1883, a tornado ripped through Rochester, killing 24 people, injuring 100, and destroying 150 buildings. The Sisters of Saint Francis, Dr. Mayo, and his sons, William and Charles, came to the aid of the injured. Sister Mary Alfred Moe, a Franciscan sister teaching in Rochester, was convinced by the experience that Rochester needed a permanent medical facility to serve the needs of area residents. She and her fellow Sisters offered to build the hospital if Dr. W.W. Mayo and his sons would staff the facility. Mayo agreed, and in 1889, St. Marys

Hospital opened with 27 beds. Other doctors came to practice with the Mayos, and the medical team developed scientific laboratories to test and refine their medical knowledge. Their efforts would set in motion the development of what has become one of the world's top medical centers.

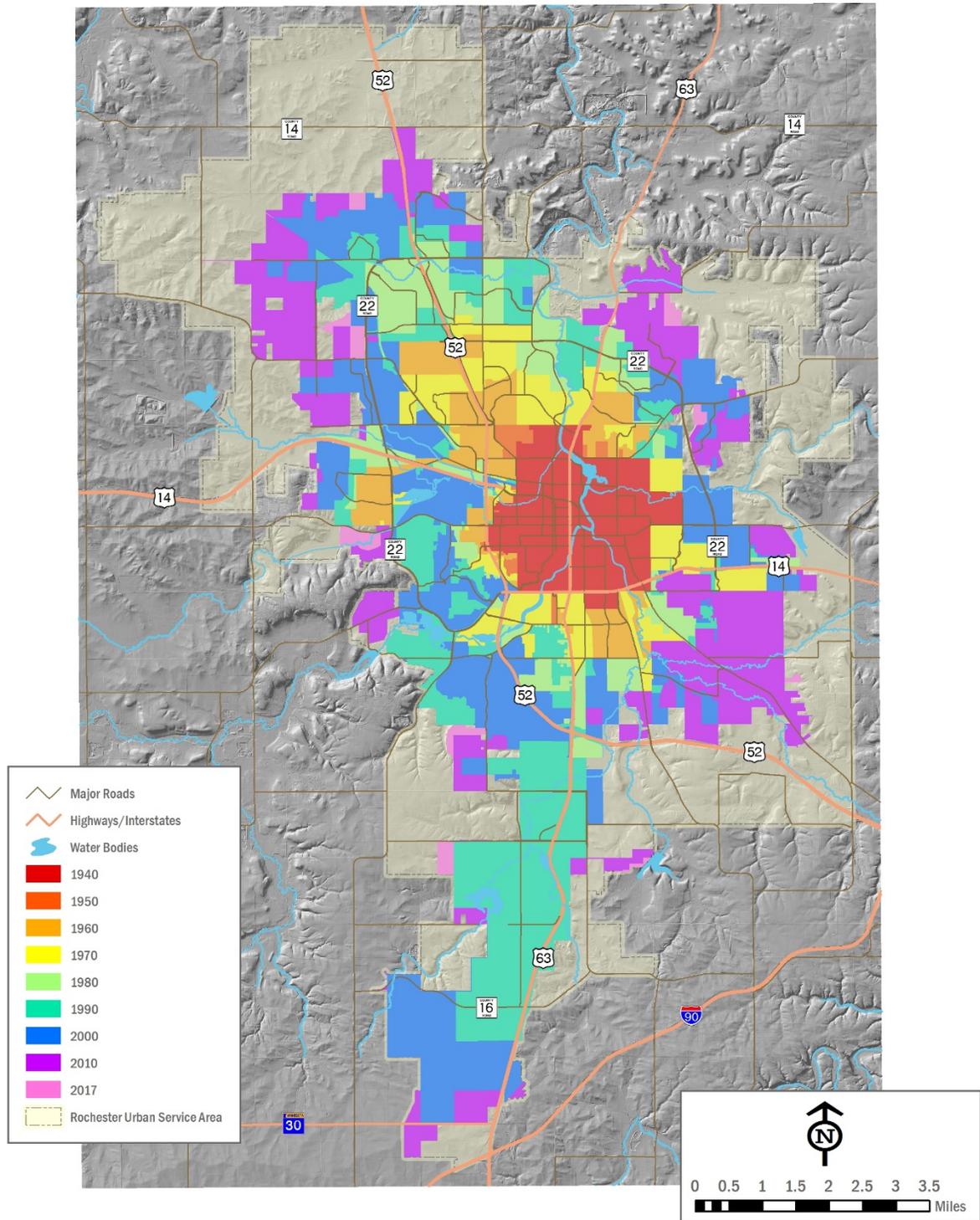
In February 1956, IBM announced plans to establish new manufacturing, engineering, and educational facilities on a 397-acre site on the edge of Rochester. IBM Rochester began with 174 employees and had 1,800 employees by the 1958 opening of the main "blue" building. By the late 1970s, approximately 6,000 people worked at the facility. While Rochester IBM's employment capacity has declined in recent years, its establishment bolstered Rochester's reputation as a center for innovation.

The Rochester area has continued to grow, based on a strong agricultural, medical, technical, and hospitality economy (Figure 2-2), and is expected to see significant growth over the next 25 years. Rochester is unlike any other city in the country. We are a city of only 112,000 people, yet, as home of the world-renowned Mayo Clinic, Rochester is a global center of innovation and technology. The city hosts over 3 million visitors every year, 2/3 of whom are seeking medical treatment. Rochester has a high employment rate, with a high concentration of jobs in the downtown. We must account for these unique characteristics when addressing emergency management planning for our community.

FIGURE 2- 2: GROWTH PATTERNS

# Rochester's Historic Growth Patterns

Data Source: Rochester-Olmsted Planning Department



## 2.3 The People

### 2.3.1 Resident Population and Demographics

Rochester has had a long history of steady population growth, and that trend is expected to continue for at least the next 25 years (Table 2-1). As of 2015, just over 112,000 people call Rochester home. This number is expected to reach roughly 126,000 by 2020 and 165,000 by 2040. Rochester’s share of Olmsted County residents will continue to increase.

TABLE 2-1: HISTORIC POPULATION AND FUTURE PROJECTIONS

	City of Rochester	Rochester % Change	Olmsted County	Olmsted County % Change	Rochester Share of County
1900	6,843	-	23,119	-	29.6%
1910	7,844	14.6%	22,397	-3.1%	35.0%
1920	13,722	74.9%	29,014	29.5%	47.3%
1930	20,621	50.3%	35,426	22.1%	58.2%
1950	29,885	44.9%	48,228	36.1%	62.0%
1960	40,663	36.1%	65,532	35.9%	62.1%
1970	53,766	32.2%	84,104	28.3%	63.9%
1980	57,890	7.7%	92,006	9.4%	62.9%
1990	71,590	23.7%	106,470	15.7%	67.2%
2000	85,806	19.9%	124,277	16.7%	69.0%
2010	106,769	24.4%	144,248	16.1%	74.0%
2020	125,776	17.8%	167,500	16.1%	75.1%
2030	148,046	17.7%	194,900	16.4%	76.0%
2040	164,633	11.2%	215,870	10.8%	76.3%

The population will become increasingly diverse, as foreign immigrants, people of color, lower income wage earners, and elderly make up an increasing share of this city’s residents. The number of Rochester seniors, for example, is expected to double by 2040. Sixty percent of our population growth since 2000 has been persons of color or Hispanics. Approximately 17% of our residents speak a language other than English at home; Rochester Public Schools reports that over 80 languages are spoken by families within the school district. Of those residents under age 65, 6.5% have a disability. In times of crisis, a community’s ability to aid its most vulnerable members - the very young and the elderly, those with physical and cognitive limitations, and those with a low proficiency for speaking English - should serve as an indicator of its ability to serve its entire population.

### 2.3.2 Visitors

Approximately 50,000 people visit Rochester each day. Employees, medical patients, and business travelers comprise the vast majority of this group. Rochester also hosts many conventions and amateur sporting events throughout the year. A significant portion of these visitors travel here from outside the state, region, and country. Some are unfamiliar with the city and its weather, facilities, and language; many are ill or dealing with physical limitations.

## 2.4 The Economy

As the regional employment center for southeast Minnesota, Rochester has an employment base of approximately 110,000 jobs. Rochester is conveniently located to the Twin Cities (~80 miles), and serves as an economic, transportation, and cultural hub for smaller cities in southeastern Minnesota including Faribault, Owatonna, Albert Lea, Austin, and Winona (all located within 50 miles of Rochester).

Rochester is within three hours driving distance from Madison, Wisconsin and Des Moines, Iowa, and other Midwestern cities such as Omaha, Milwaukee, and Chicago are within an hour's flight to Rochester International Airport. Thus, Rochester is a convenient destination not only for a significant number of commuters from outside Rochester's metropolitan area, but also for patients, business travelers, and other visitors from the Upper Midwest.

The Mayo Clinic and the health care industry have a significant influence on Rochester's economy. In 2013, the health care and social assistance sector employed 40% of the individuals working in Rochester and 38% of all employed Rochester residents. The health care and social assistance sector will continue to be the dominant economic driver in Rochester, with the most pronounced employment growth projected through 2040. The number of jobs in that sector is projected to increase from around 36,000 in 2011 to more than 60,000 in 2040, an increase of 67%. Olmsted Medical Center and the Federal Medical Center are also major employers in these sectors.

While health care is a powerful economic force in Rochester, it is not the only business in town. Retail, manufacturing, hospitality, and education together accounted for approximately 19,000 jobs in 2011. The retail and public administration employment sectors are projected to experience significant growth and become the second and third largest by 2040. These two sectors added together will account for around 30,000 jobs—less than half the number of health care sector jobs but still a significant number of jobs that will need to be filled. Major employers in these sectors include Rochester Public Schools, Olmsted County, and the City of Rochester. Manufacturing and hospitality/food service are projected to be the fourth and fifth largest employment sectors by 2040. Major employers in these sectors include IBM, Spectrum Communications, Crenlo, Reichel, and Kahler Hotels.

Destination Medical Center (DMC) is a major economic development initiative that will increase and accelerate the demand for private development and public infrastructure. Over the next 20 years, the target of the DMC is to grow the employment base by some 35,000-45,000 jobs and to more than double the number of visits to the city, and particularly the downtown core, by Mayo Clinic patients and companions, business travelers, and convention and event attendees. Many of the visitors and future residents drawn to this premier medical center will have special needs due to age, illness, and disabilities. As Rochester plans the facilities and services needed to attract and retain visitors and residents, the community must strive to ensure it remains accessible and welcoming to all.

Rochester is an affluent city that enjoys relatively high incomes and features a poverty rate that is stable and well below the national poverty rate. The percentage of families earning more than \$75,000 annually grew to over 50% of the families in Rochester, while the percentage of families earning more than \$100,000 annually increased to 35% of Rochester households, the largest percentage of any income category in the City. Rochester's median family income is higher than the State of Minnesota average, and ranks well above other cities in Greater Minnesota. Income inequality, however, is a

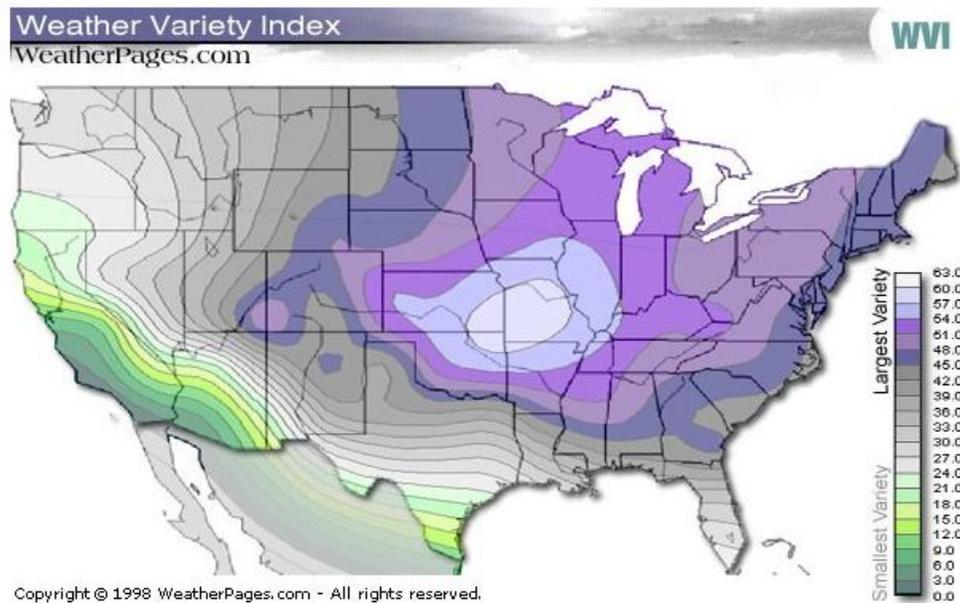
growing problem in Rochester. Employment trends indicate that the lower-paying retail/hospitality employment sector will grow, along with the number of senior households and others with fixed incomes.

## 2.5 The Climate

The Rochester area has a “continental” climate; that is, due to its distance from the oceans’ climate moderating effects, the area’s seasonal temperature variation is quite large. Winters are long and cold, summers are warm and humid. Normal 30-year (1981-2010) average temperatures range from 14.8 degrees in January to 70.5 degrees in July. Weatherpages.com ranked Rochester third highest in weather

variability out of 277 cities. Severe thunderstorms, potential tornadoes, damaging hail, winter storms, and extreme cold and heat are routine in this part of the country.

The impacts of climate change will increase these extreme weather events.



In 2015, the Minnesota Department of Health published *Minnesota Climate and Health Profile Report 2015: An Assessment of Climate Change Impacts on the Health & Well-Being of Minnesotans*. This report notes that changes are happening in Minnesota’s climate that are resulting in serious health and well-being consequences. Air pollution, extreme heat, flooding, drought, and ecosystem threats were considered to be the most relevant hazards to Minnesotans, resulting in such direct health impacts as cardiovascular and pulmonary disease, asthma, allergies, waterborne disease, and vector-borne disease. Infrastructure failures, strain on essential services, and fiscal strains were also identified as likely results.

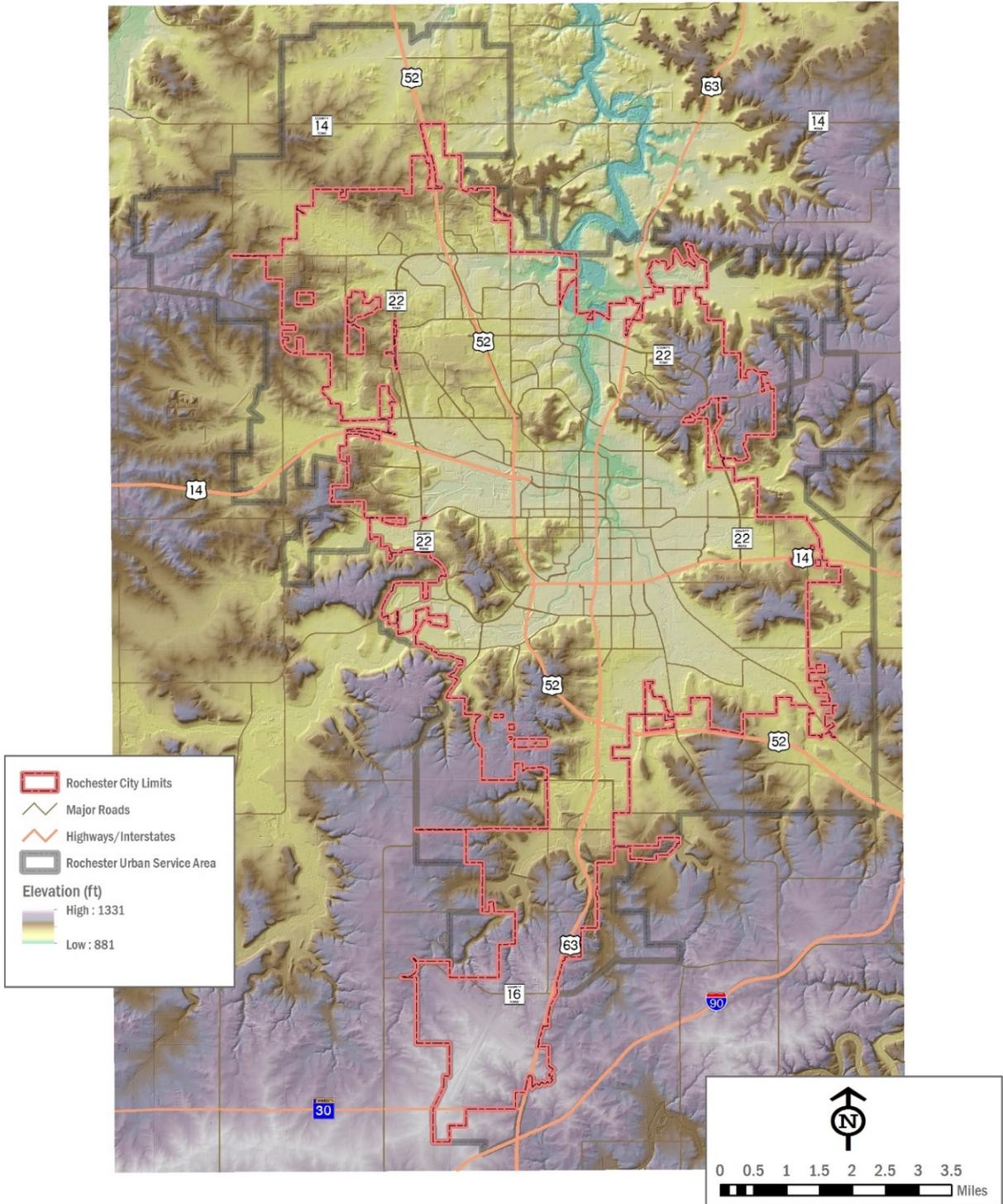
## 2.6 The Land

The city of Rochester is located in the Zumbro River valley. A dendritic drainage system, variable terrain, and absence of natural lakes characterize Rochester’s landscape. Elevations in Rochester’s Urban Service Area range from 881’ MSL in the river valleys to 1324’ MSL in the far south (Figure 2-3).

FIGURE 2- 3: TOPOGRAPHY

# Topography

Data Source: State of Minnesota LiDAR



## 2.6.1 Geology

The Minnesota Geologic Survey (MGS) created a geologic atlas for Olmsted County in 1988 in order to describe the area's geology, hydrogeology, and sensitivity to pollutants. This dataset provides critical information to technicians, planners, emergency responders, and decision-makers in evaluating the impacts of surface activities on the health of the area's health and environment and assessing appropriate responses to hazardous events. Various studies by the MGS and the Minnesota Department of Natural Resources (MnDNR) have served to update some of this data. The MGS has recently embarked on a comprehensive update of this vital planning tool.

The bedrock units that underlay the Rochester area (Figure 2-5) form a sequence of "aquifers", geologic formations that contain and conduct groundwater. These aquifers are hydrologically separated by confining layers of low permeability that keep surface pollutants from contaminating deeper formations. Mildly acidic groundwater is slowly dissolving the carbonate bedrock that lies underneath this portion of Southeast Minnesota, producing distinctive groundwater conditions and landforms known as "karst". These formations are the major reservoirs that hold this region's water supply. Karst aquifers are highly

susceptible to groundwater contamination because solution-enlarged fractures and sinkholes form conduits that funnel water and contaminants from the surface into the groundwater system, and interconnected cavities allow the water to disperse rapidly over considerable distances (Figure 2-4).

Most of the Rochester area has just a thin coating of soils over the bedrock surface, providing little filtration capacity and natural protection from surface pollutants to the aquifers below (Figure 2-6). The combination of karst geology with shallow depth

to bedrock affects the rate at which water moves downward from the land surface to the groundwater supplies. Generally, the closer to the land surface that the water table occurs, the greater is the geologic sensitivity to contamination. However, when karst enters the equation, fluids can easily cascade through caverns and solution-enlarged fractures. As a result, surface pollutants can reach the first encountered bedrock through most of Rochester in a matter of hours to a few years (Figure 2-7).

FIGURE 2- 4: SURFACE AND GROUNDWATER INTERACTION IN KARST AREAS

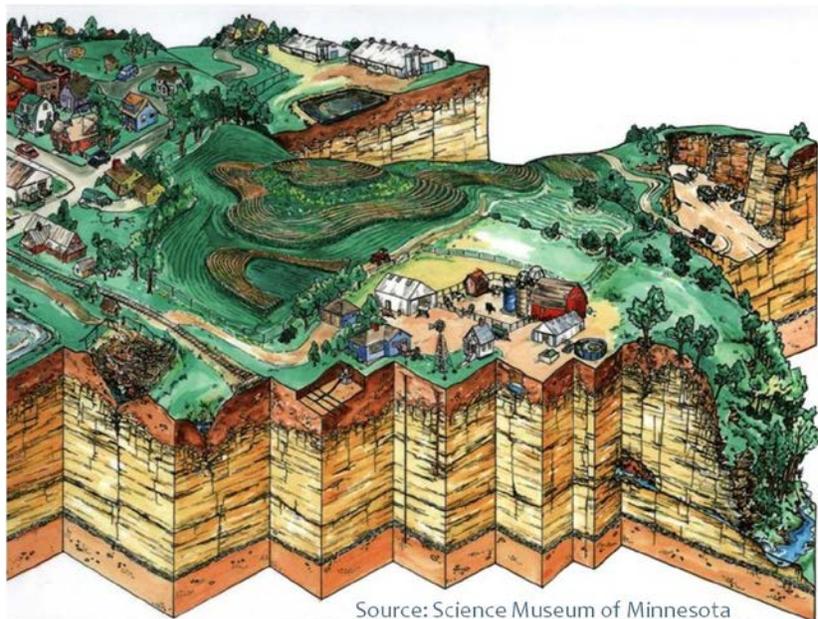


FIGURE 2- 5: BEDROCK GEOLOGY

# Bedrock Geology

Data Source: Minnesota Geological Survey

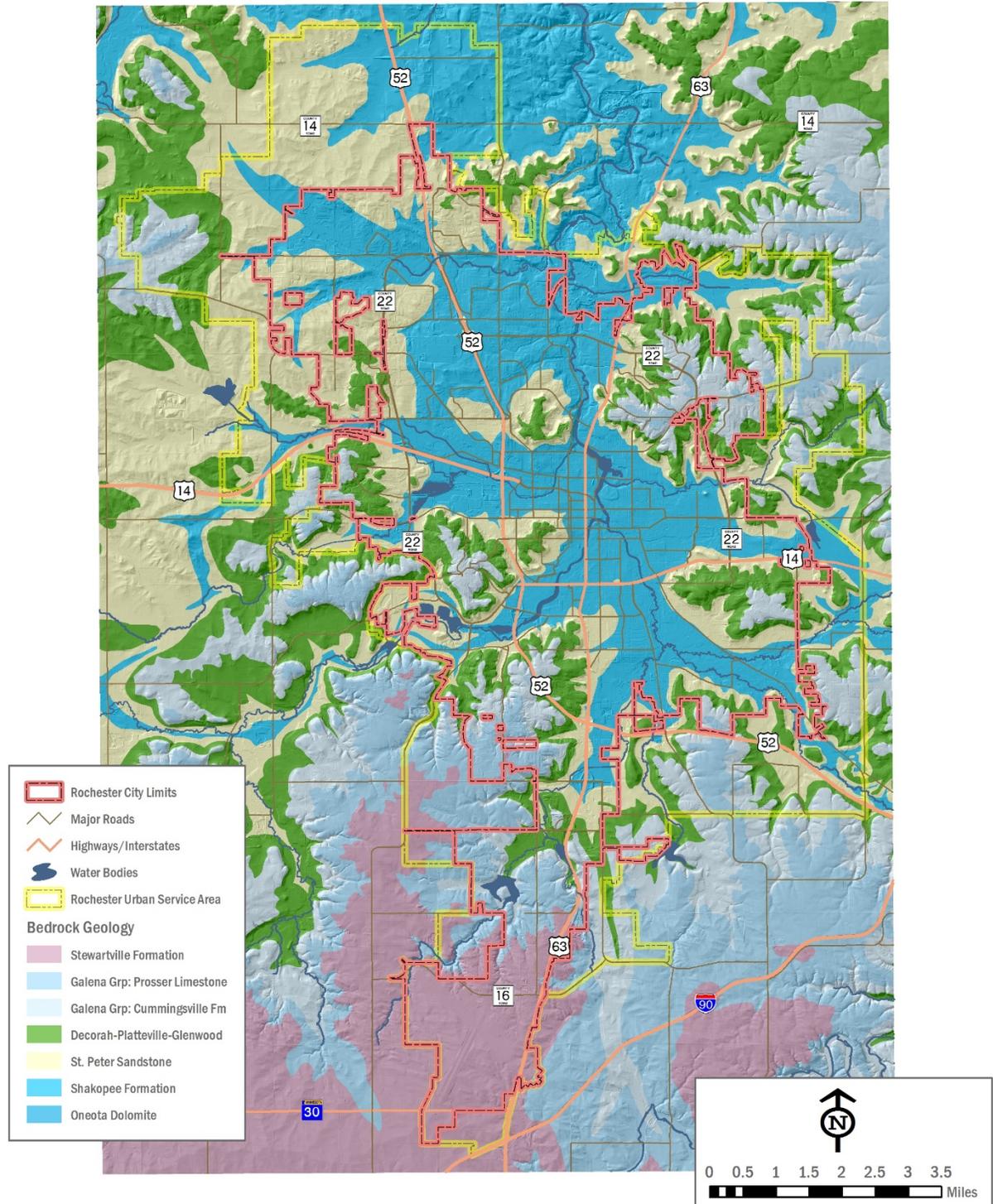


FIGURE 2- 6: DEPTH TO BEDROCK

# Depth to Bedrock

Data Source: Minnesota Geological Survey

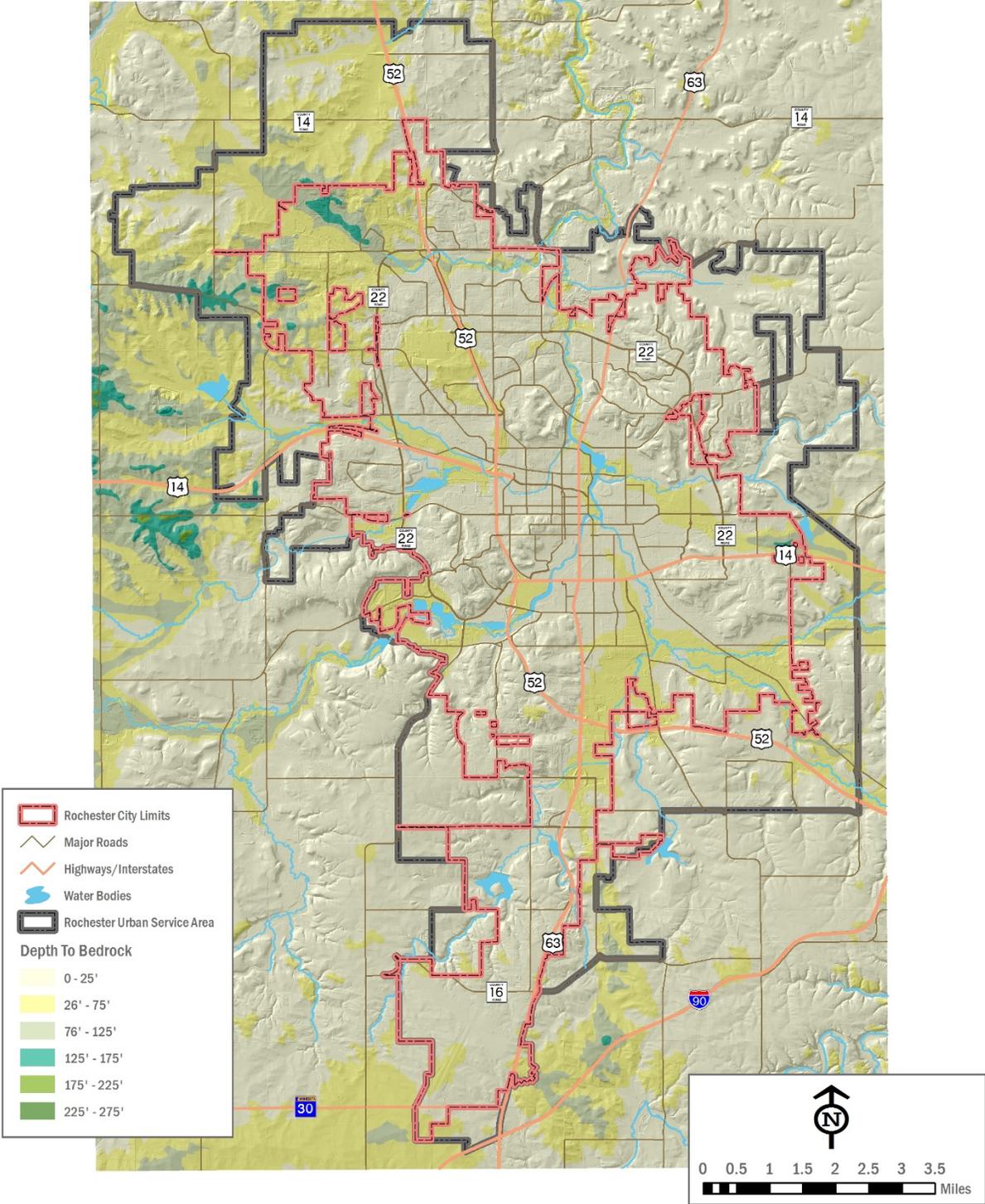
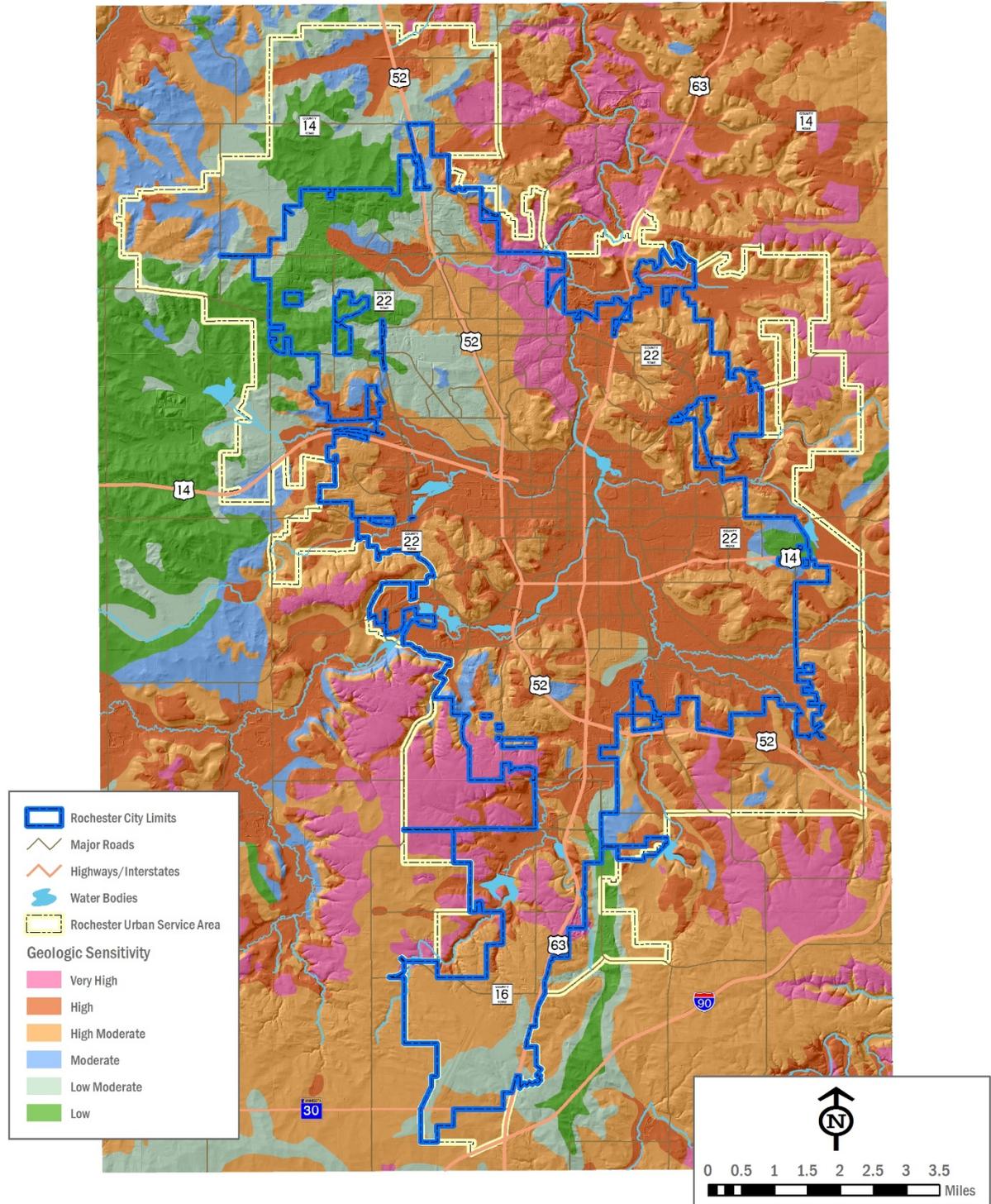


FIGURE 2- 7: GEOLOGIC SENSITIVITY

# Geologic Sensitivity

Data Source: Minnesota Geological Survey



## 2.6.2 Soils

The US Department of Agriculture’s Soil Conservation Service (now known as the Natural Resources Conservation Service) issued the *Soil Survey of Olmsted County, Minnesota* in March 1980.

A significant portion of the Rochester area’s soils are classified as “highly erodible”, based on their tendency to erode from wind or water movement. This erosion can result in slope instability, particularly when facing storm events (Figure 2-8).

As described in the Geology section, much of the Rochester area has shallow soils to the water table, providing potential interfaces for contaminants to reach the groundwater as well as the potential for localized structure and road damage (Figure 2-9). Some of these soils are also considered to be “hydric”, indicating the potential presence of sensitive wetlands areas.

Floodplain soils are found along the perennial rivers and streams, intermittent streams, and in depressional areas (Figure 2-10). Their flood prone nature may lead to safety concerns and hazardous and costly damages to adjacent structures, particularly where flooding is relatively frequent (Figure 2-11).

## 2.6.3 Land Use

Single family residential neighborhoods are the primary land activity found in Rochester. Areas of higher residential density are found scattered across the city, predominantly in the downtown area and close to major thoroughfares. Commercial and office uses are concentrated in the downtown and along major roadway corridors. Rochester is currently updating its Comprehensive Plan; a new future land use map will be adopted as part of that effort and will replace the one shown in Figure 2-12.

## 2.6.4 Parks and Open Spaces

Rochester has an extensive parks and open space system, providing its residents and visitors with a wide variety of recreational activities. Many of these facilities are within easy walking or biking distance from neighborhoods and the downtown. Rochester’s park system includes more than 4,200 acres of parkland, 120 parks, and 85 miles of trails. The system is accessible, well used, and an essential part of the City. They contribute to neighborhood identity, environmental sustainability, resident health and well-being, and economic development. A map of the parks system is shown in Figure 2-13.

# 2.7 The Water

## 2.7.1 Watersheds

All but the southernmost tip of Rochester’s Urban Service Area drains into the Zumbro River watershed (Figure 2-14). The Root River watershed collects water in the far south. Both of these watersheds drain to the Mississippi River.

FIGURE 2- 8: HIGHLY ERODIBLE SOILS

# Highly Erodible Soils

Data Source: Olmsted County Soil Survey (NRCS)

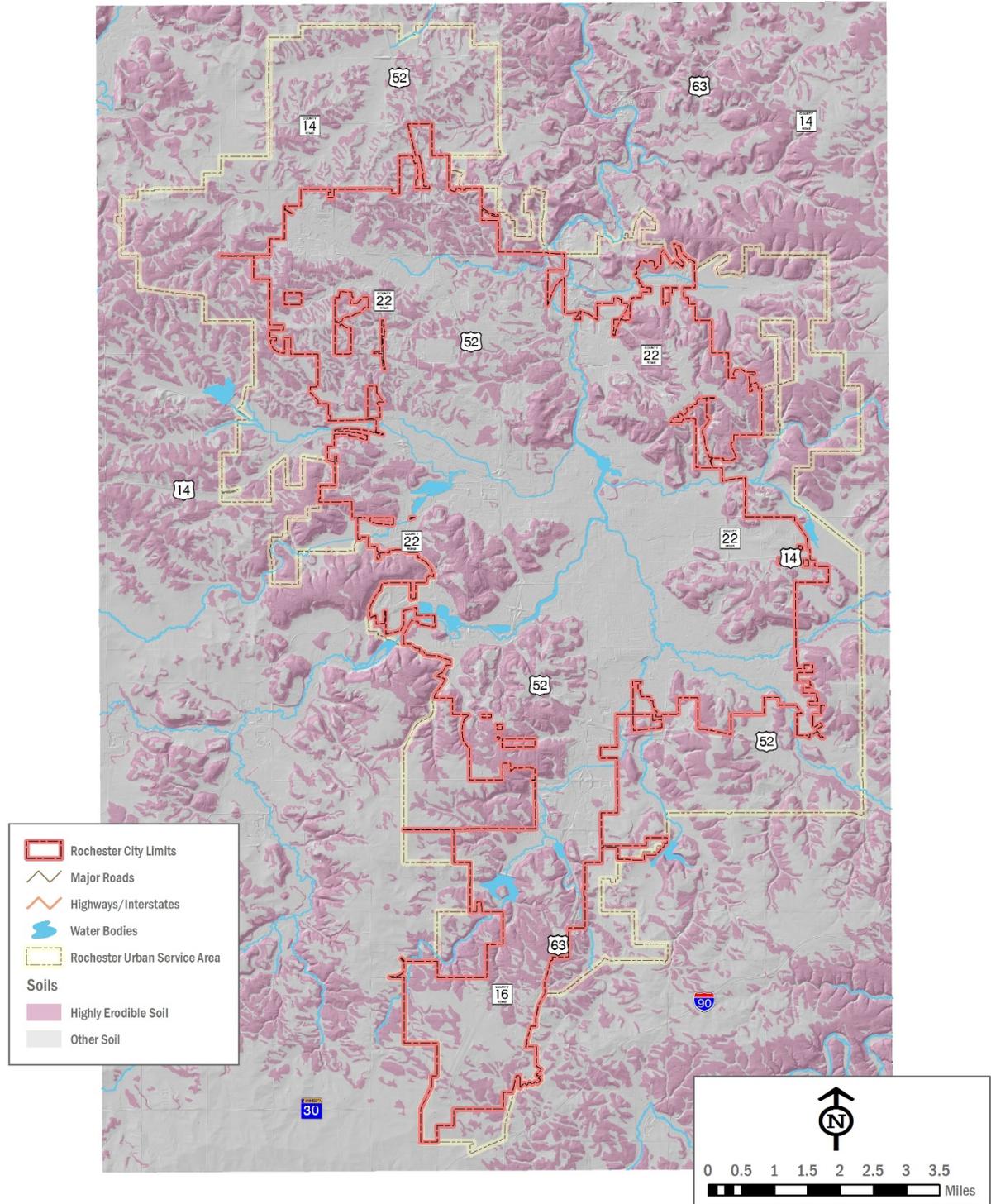


FIGURE 2- 9: DEPTH TO WATER TABLE

# Depth to Water Table

Data Source: Olmsted County Soil Survey (NRCS)

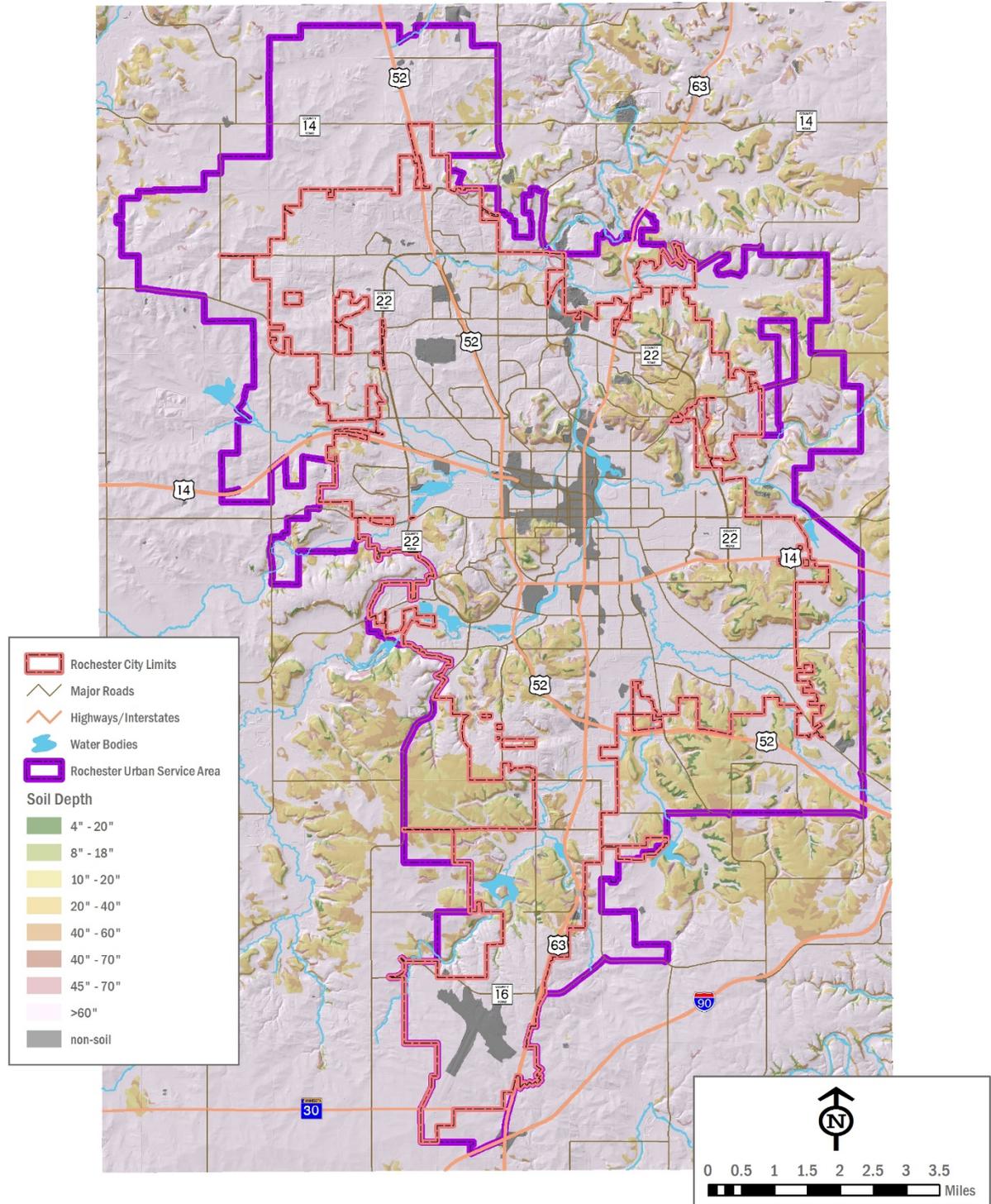


FIGURE 2- 10: HYDRIC AND FLOODPLAIN SOILS

# Hydric and Floodplain Soils

Data Source: Olmsted County Soil Survey (NRCS)

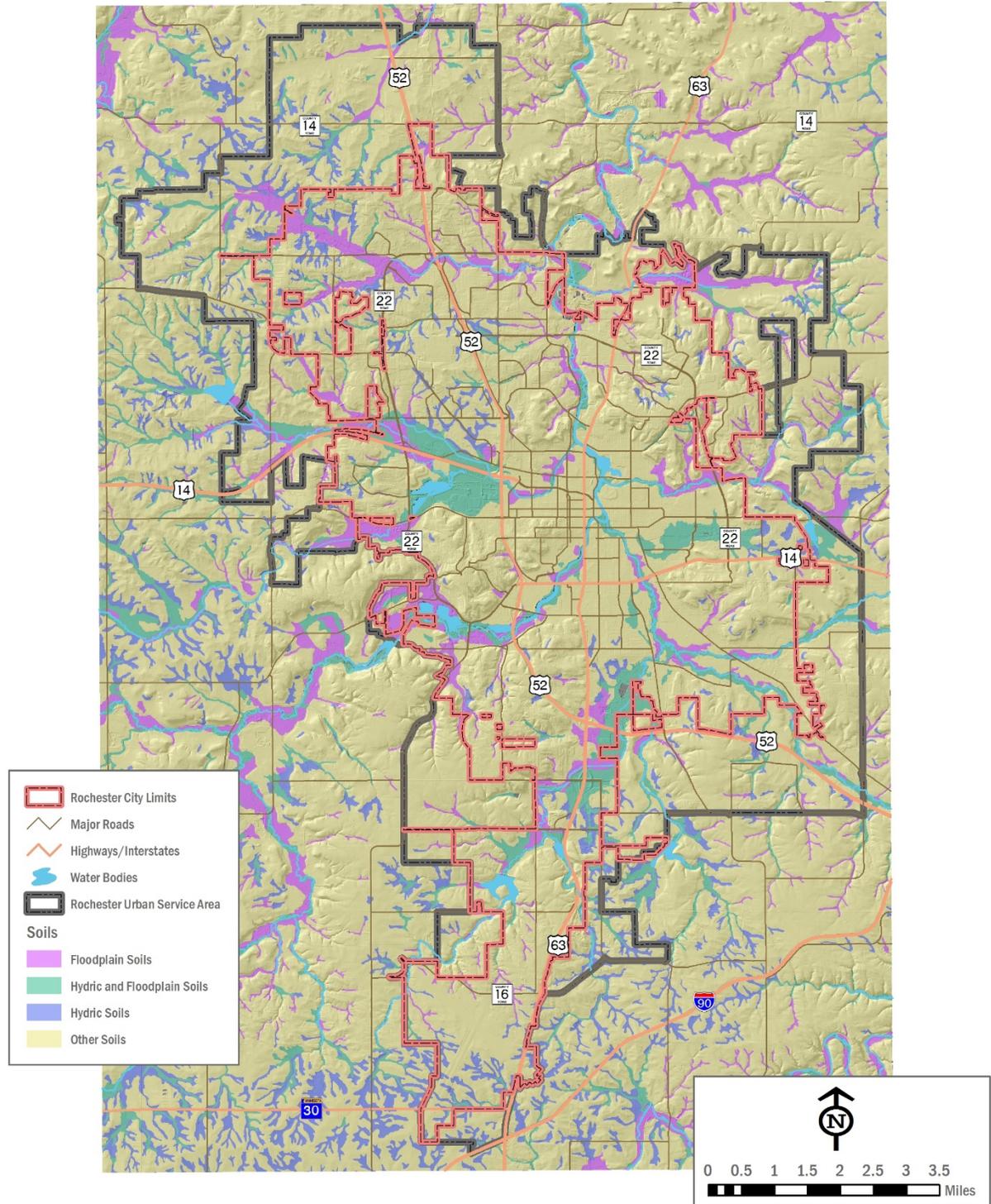


FIGURE 2- 11: FLOOD FREQUENCY BASED ON SOILS

# Flood Frequency - Soils

Data Source: Olmsted County Soil Survey (NRCS)

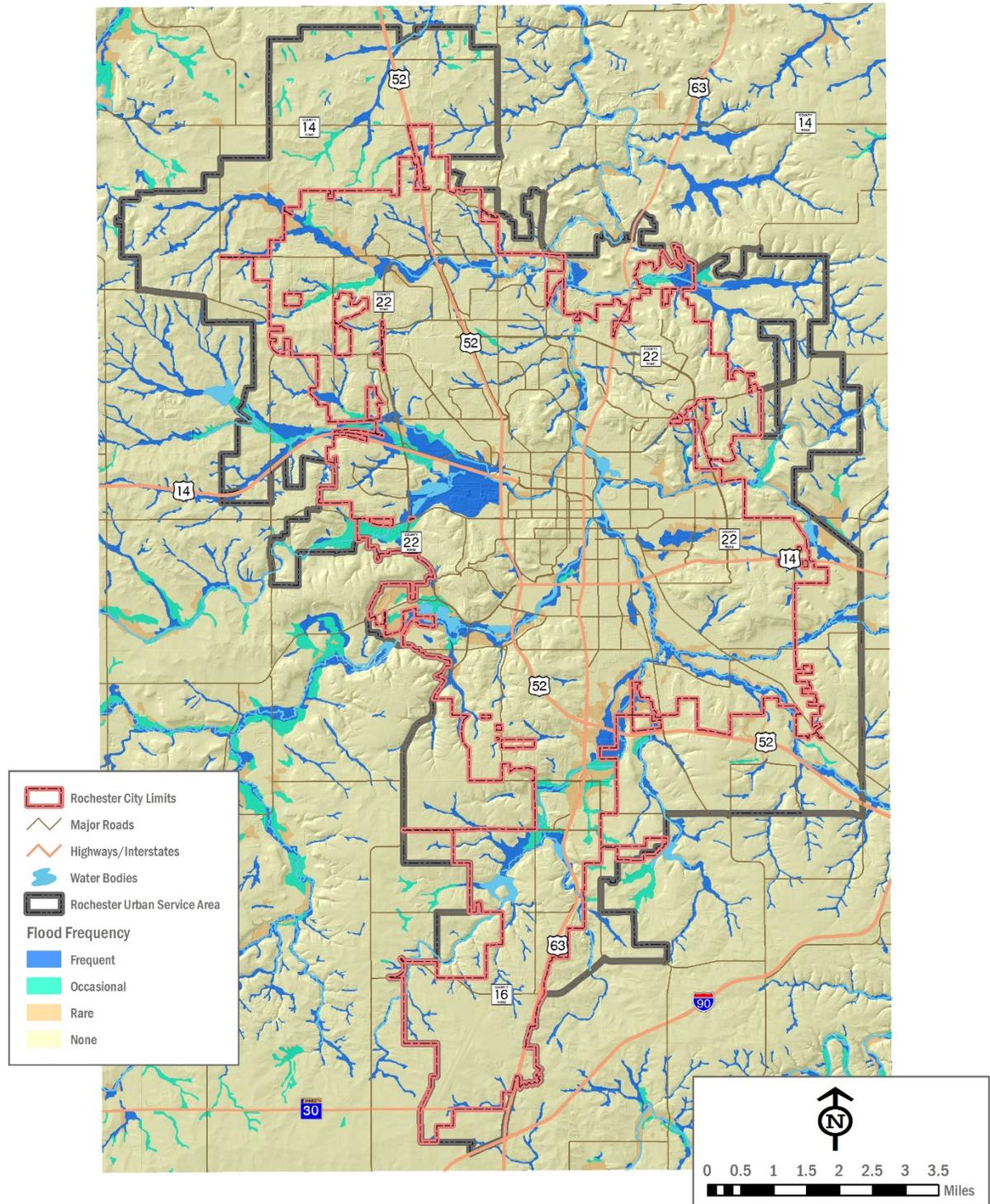


FIGURE 2- 12: ROCHESTER LAND USE PLAN

# Rochester Urban Service Area Land Use Plan

Data Source: Rochester-Olmsted Planning Department

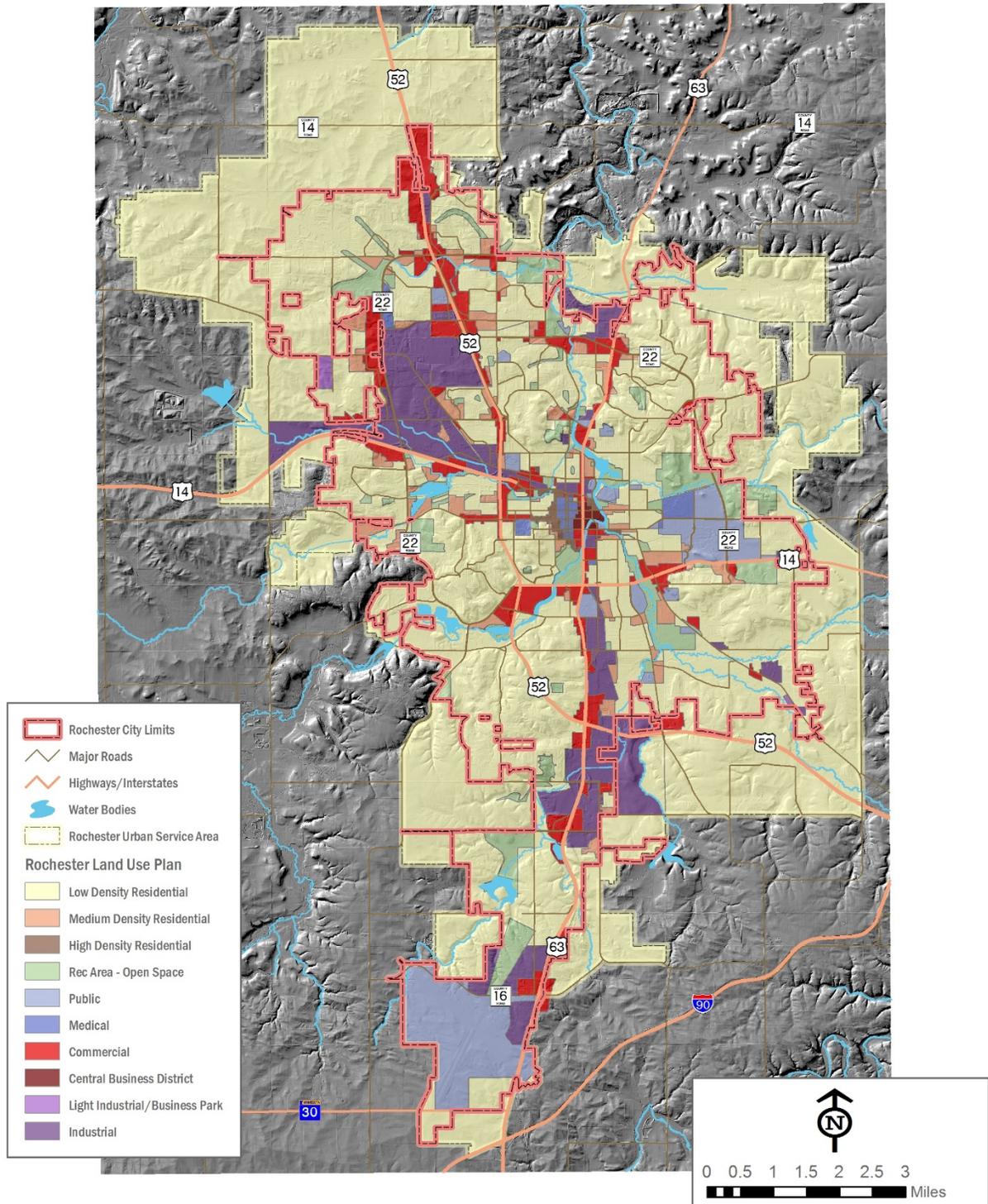


FIGURE 2- 13: PARKS & RECREATION

# Parks & Recreation

Data Source: Rochester Park & Rec Department, Rochester-Olmsted Planning Department

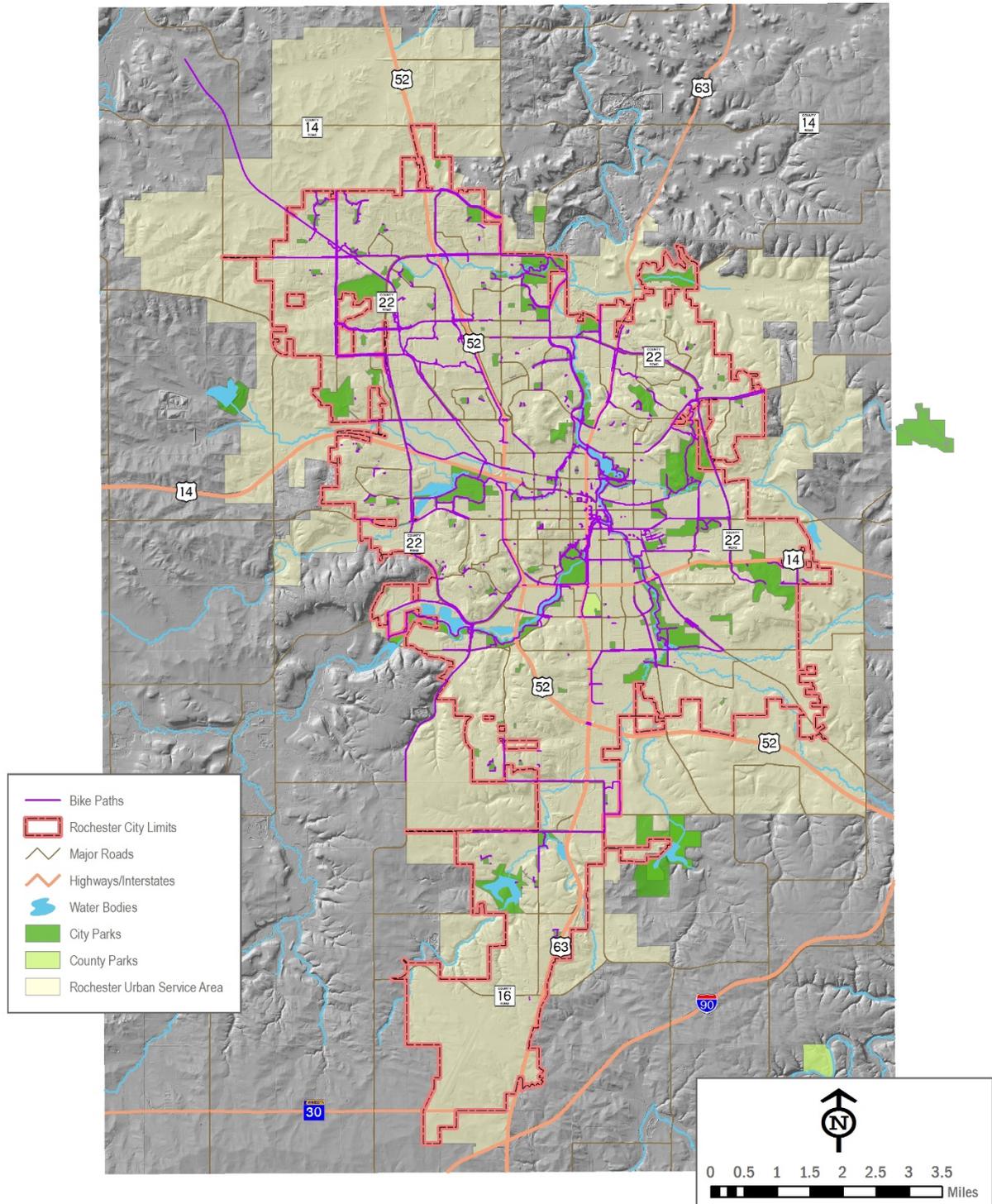
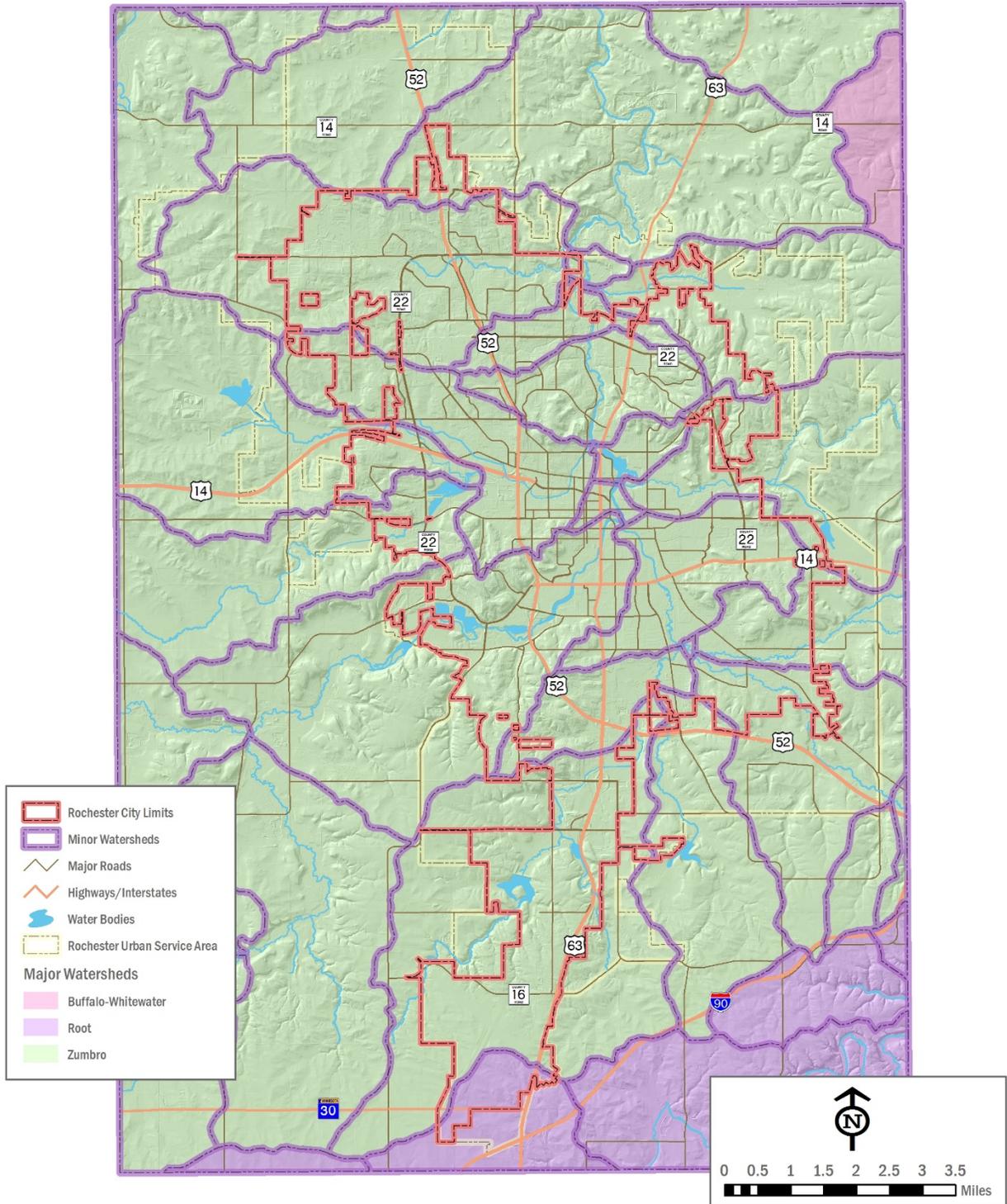


FIGURE 2- 14: SURFACE WATERSHEDS

# Major & Minor Watersheds

Data Source: Minnesota Department of Natural Resources



## 2.7.2 Interconnection of Groundwater and Surface Water

The groundwater and surface water systems in the Rochester area are highly interconnected due to the karst geology that characterizes this part of the state. The large areas of glacial till deposits found south and west of Rochester help to control groundwater recharge and discharge.

Virtually all of Rochester's water supply is drawn from the bedrock aquifers that underlay the city. All of this groundwater began as precipitation that entered the soil and moved into these rock formations. Located 300-700 feet below the surface, the St. Peter-Prairie du Chien-Jordan aquifer is the city's primary drinking water source. The flow of this critical water supply is toward the Rochester area. Since drinking water vulnerability is largely a function of ambient hydrogeologic and local land use conditions, even contaminants entering the aquifer from beyond the city limits will ultimately impact city water supplies. Potable water wells are now prohibited in the upper aquifers due to shallow depth to bedrock combined with higher levels of detected contaminants such as nitrate-nitrogen.

The Decorah-Platteville-Glenwood confining layer is an 80-foot thick sequence of rock formations that provides a very low level of permeability between the Upper Carbonate aquifer and the St. Peter-Prairie du Chien-Jordan aquifer, the source of most of the city's drinking water. This confining layer, however, has eroded away through much of the Rochester area. The terminal edge of the Decorah shale – the "Decorah Edge" – is the location of approximately half of the groundwater recharge for Rochester's potable water source (Figure 2-15). Alteration of the vegetation, soils, and hydrology is constrained in these areas by zoning and wetland ordinances in order to preserve the critical benefits provided by natural filtration. Rochester Public Utilities, in accordance with State law, has delineated wellhead protection areas to manage potential sources of contamination in areas that supply water to public wells (Figure 2-16).

Numerous reaches of the major water bodies that traverse the Rochester area have been placed on the state's Impaired Waters List (Figure 2-17). A water body is deemed "impaired" if it fails to meet one or more water quality standard of the federal Clean Water Act. These impairments include turbidity impacts upon aquatic life, fecal coliform impacts on aquatic recreation, biological indicator impacts on aquatic recreation, and nitrate impacts on drinking water. Fecal coliform, turbidity, and mercury in fish are the impairments found in Rochester waters to date. Best management practices must then be instituted and monitored to reduce this contamination. While surface water is not a drinking water source in Rochester, recreational activities in impaired waters can impact human and animal health.

Thus, while the area's groundwater is considered to be of a **very high quality**, local surface activities in sensitive areas, as well as improper well construction and abandonment, have introduced contaminants into the groundwater system. The highly interconnected nature of our groundwater and surface water systems make it imperative that we closely monitor the quality of our rivers and streams as well. A city cannot survive without clean drinking water. Should disaster occur, it is critical that emergency management planners understand these implications in order to properly direct responses that protect this valuable resource and maintain the high level drinking water quality that our community expects.

FIGURE 2- 15: DECORAH EDGE

# Decorah Edge

Data Source: Rochester-Olmsted Planning Department, MnDNR

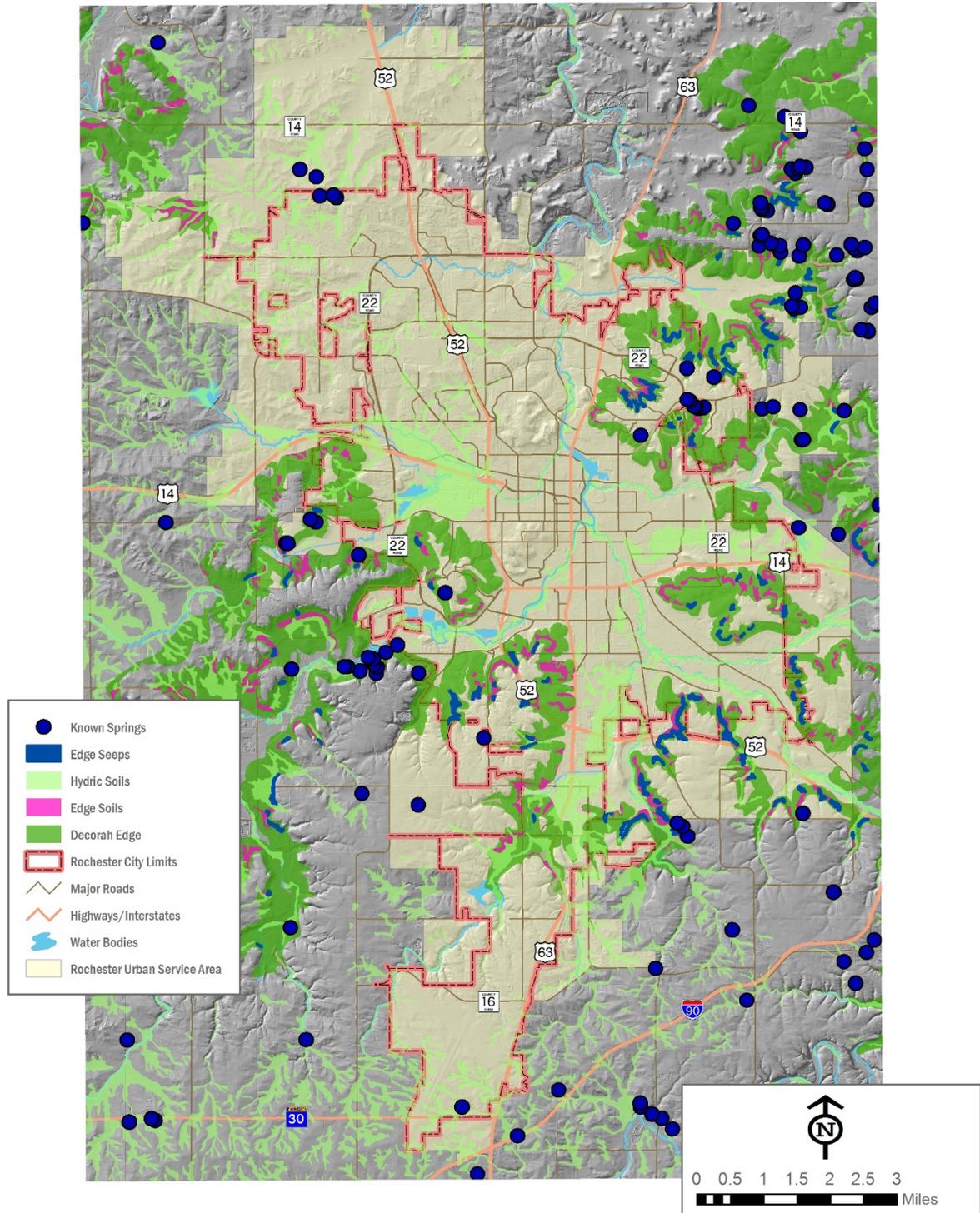


FIGURE 2- 16 WELLHEAD PROTECTION

# Wellhead Protection Zones

Data Source: Rochester Public Utilities

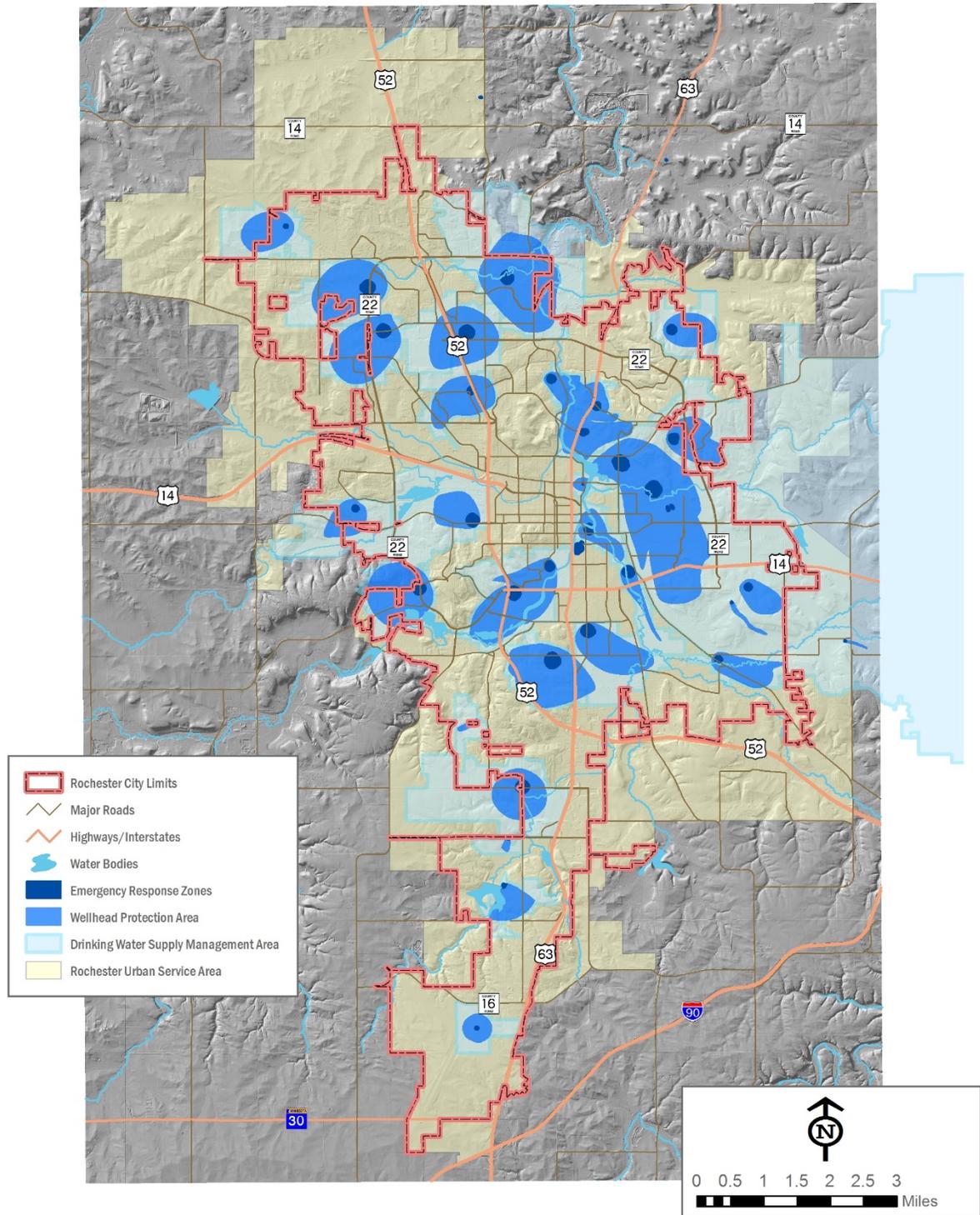
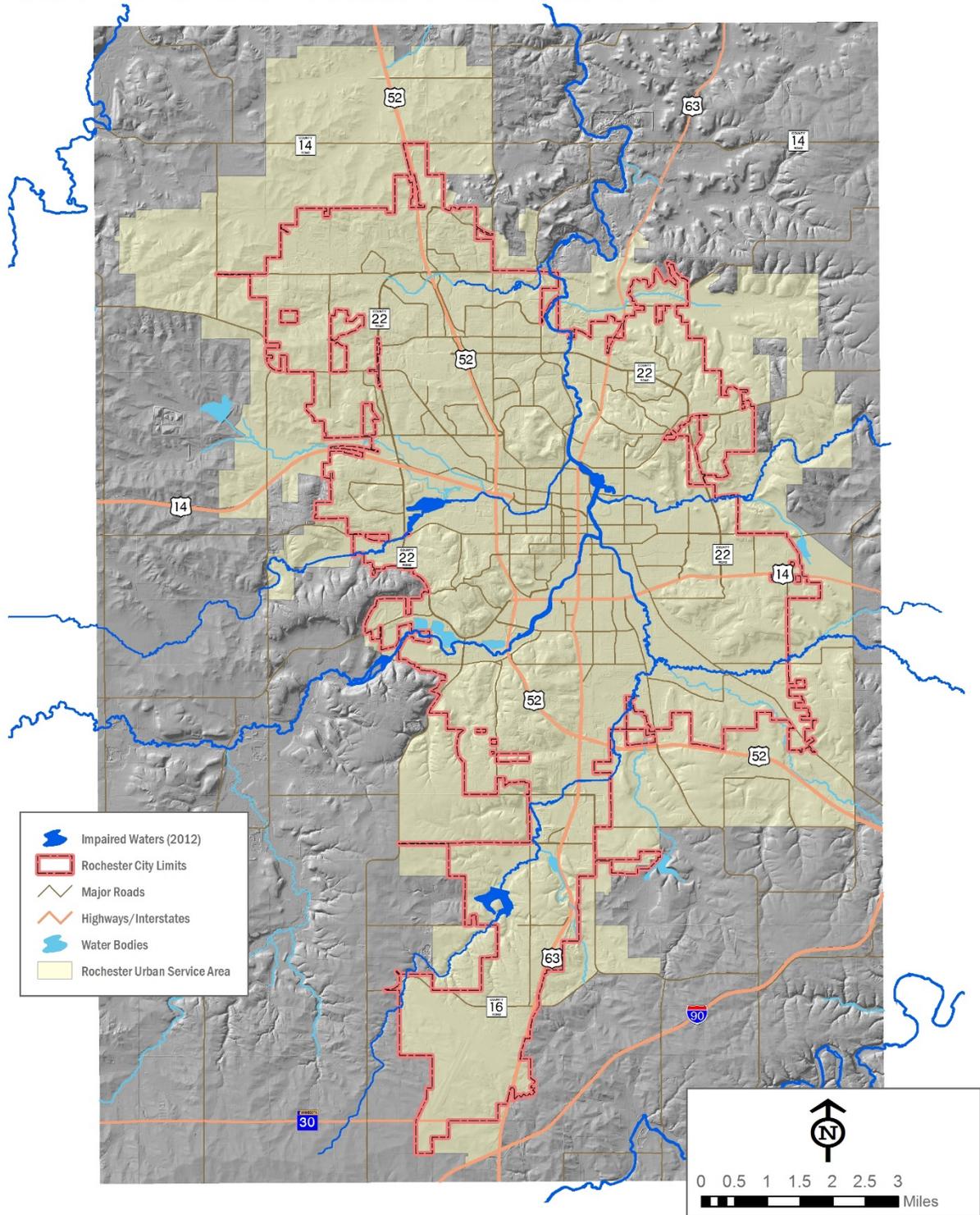


FIGURE 2- 17: IMPAIRED WATERS

# Impaired Waters

Data Source: Minnesota Pollution Control Agency (Last Approved by the US EPA in 2012)



### 2.7.3 Wetlands and Riparian Areas

Wetlands and riparian zones are highly sensitive settings since they are a direct connection of the terrestrial and aquatic systems. Since wetlands help retain surface waters on the landscape, they are a critical component for protecting surface water quality by filtering pollutants and trapping sediments that otherwise pollute surface water and groundwater supplies. They are a valuable part of flood water and stormwater retention, reducing the potential for flooding in the watershed. Wetlands and riparian areas are also important components of a broader set of natural habitat corridors, part of our “environmental capital” that benefits wildlife, drought mitigation, groundwater recharge, and carbon sequestration (Figure 2-18). Preservation of these areas is critical to successful hazard mitigation planning.

### 2.7.4 A History of Flooding

Rochester was built on the banks of the South Fork of the Zumbro River to take advantage of the water supply, the power of natural falls, and, eventually, the manmade mill races. The city is laced with small creeks feeding the Zumbro, primarily Cascade Creek, Bear Creek, Silver Creek, and Willow Creek. This location made the city subject to periodic flash flooding from heavy rainfall events. The first recorded flood in Rochester was in 1855 and historic floods occurred in 1866, 1882, and 1908. The city experienced serious flooding in the 1950s and its worst to date in 1965. City and County officials knew Rochester needed a flood control system, so officials made continued requests to state and federal agencies for assistance. Working with the federal government, a flood control plan for Rochester was developed in 1976-77 and first submitted for funding in a bill to Congress in 1977.

After a relatively wet early summer in 1978, an epic rainstorm began on July 5<sup>th</sup>. A 4-inch plus rainfall band hit the area; the band was 12-15 miles wide, 74 miles long, and covered 700 square miles. Nearly 5 inches of rain hit the Rochester international Airport in a 3-hour period, with a total rainfall of 6.74 inches. The tributary creeks began to rise during the night, causing flash floods through neighborhoods which would later be inundated again as the Zumbro River rose and left its banks. The July 6<sup>th</sup> crest established an all-time record of 23.36 feet (flood stage was 12 feet), exceeding the 1965 crest by 4 feet. Five deaths were attributed to this flood as well as \$60 million in damages to homes, buildings, and infrastructure. Over a third of the city’s area was affected by this flood.

The 1978 flood became a catalyst for renewed efforts to construct a flood control project to protect property along the streams and river. Federal assistance was received, the U.S. Corp of Engineers designed a channelization project, and the NRCS (formerly the Soil Conservation Service) laid out a series of seven flood control dam structures on the tributaries to the Zumbro River. The project required the acquisition of approximately 2000 homes, businesses, or portions thereof in Rochester and 2500 acres of land for the reservoir system. It was completed in 1996, at a cost of \$97 million for the Corps project, \$18 million for the reservoir system, and \$25 million collected through a city sales tax for its share of recreational and aesthetic costs, select property acquisitions, and continued maintenance. The flood control project protects a large part of the city against a 200-year recurrence interval flood event (Figure 2-19). This has reduced flood risk in Rochester to 0.52% in any given year and has reduced the impacts of flooding downstream. The highest Zumbro River level reached since completion of the project occurred in June 2014 with almost no flood related effects. Its long lasting

FIGURE 2- 18: WETLANDS

## Potential Wetlands & Known Fens

Data Source: Minnesota Department of Natural Resources, Rochester Public Works, Olmsted County Soils Survey, National Wetlands Inventory

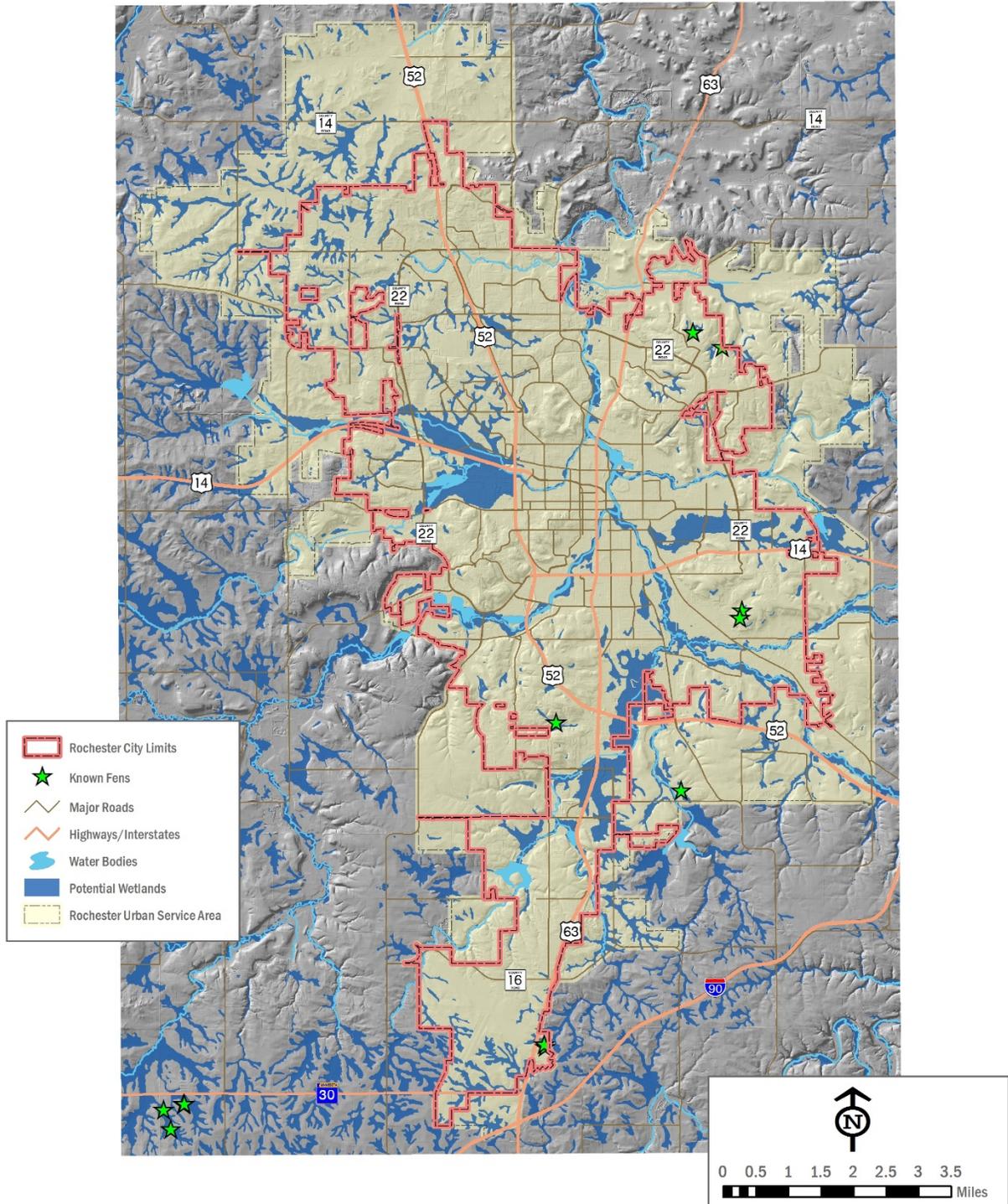
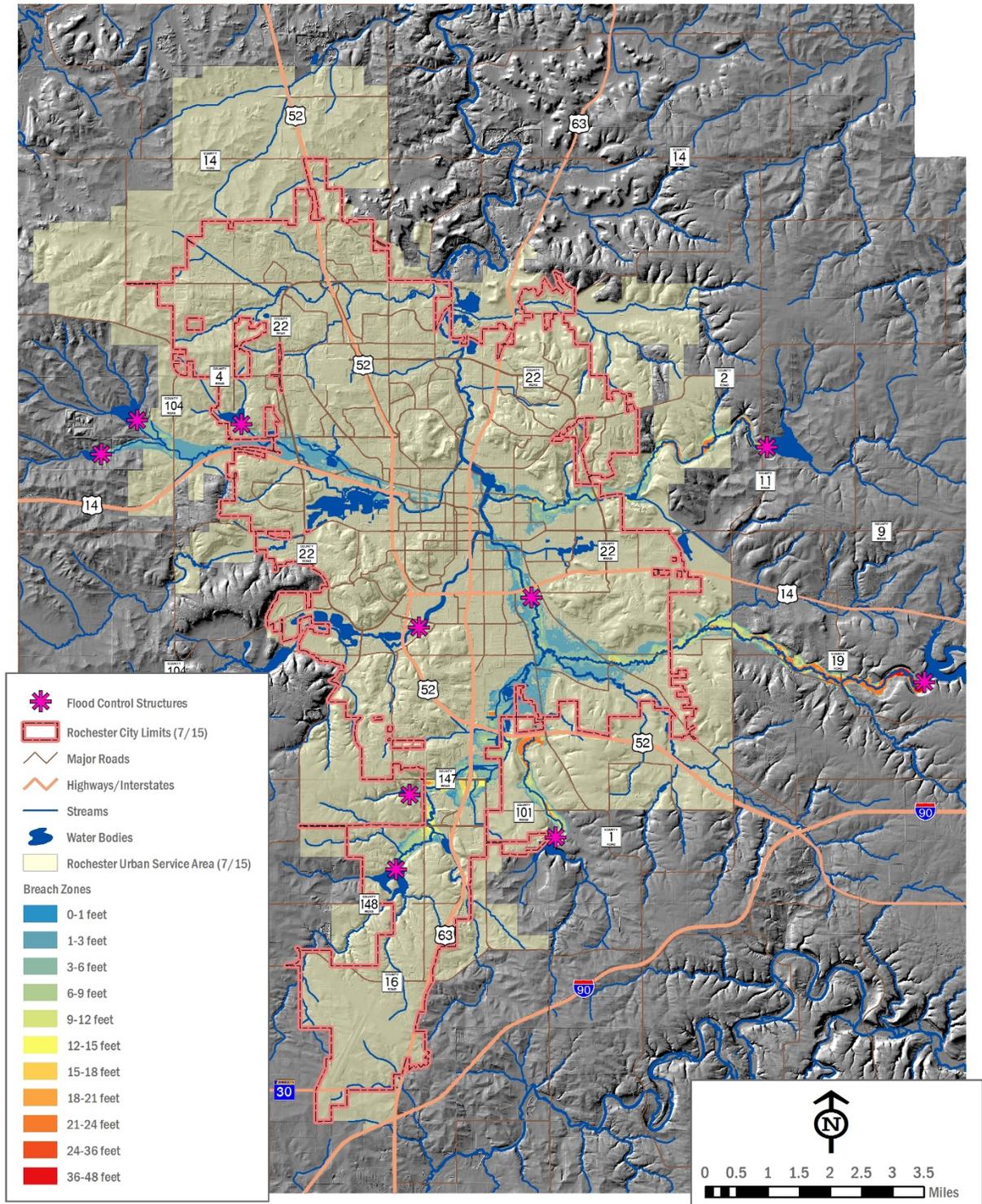


FIGURE 2- 19: ROCHESTER FLOOD CONTROL PROJECT

# Flood Control Structures and Breach Zones

Data Source: Rochester-Olmsted Planning Department, City of Rochester



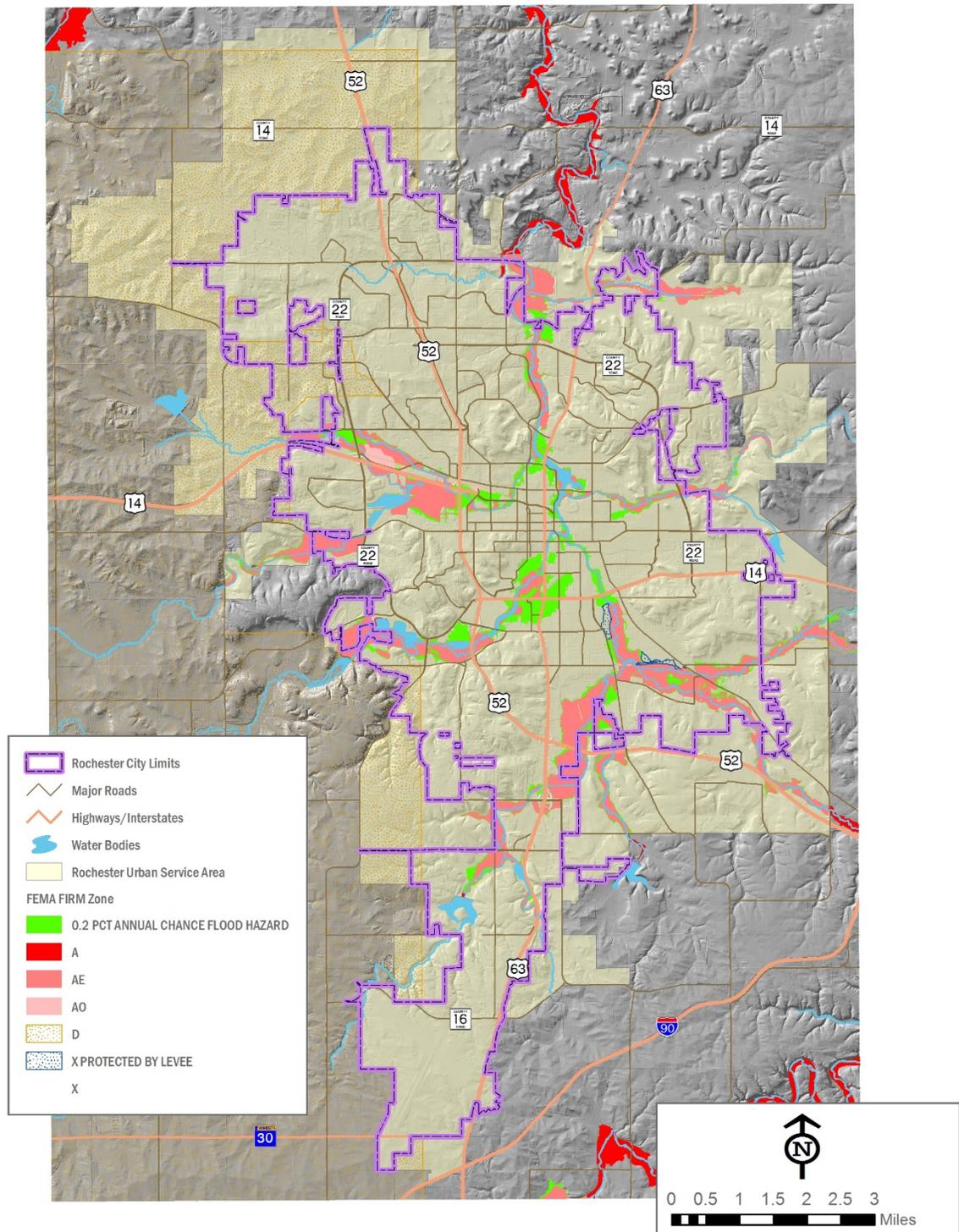
effects, besides flood protection, were the major expansion of a bicycle/pedestrian trail system along the stream corridors and a regional park system at the reservoir sites. The expansion of the trail system continued and still goes on today.

The City of Rochester has recently received the latest set of FEMA flood maps and is in the process of reviewing and adopting them. These maps, however, do not take into account flooding calculations using the Atlas 14 techniques now used to estimate precipitation frequency. The City, therefore, will need to determine how best to revise floodplain zoning in order to account for potentially higher floodplain elevations than delineated on current maps. Engineering studies are underway to evaluate the potential impact of these calculations on Rochester's flood control system and built environment. Figure 2-20 shows the draft FEMA flood designations.

FIGURE 2- 20: FEMA FLOOD ZONES

# FEMA FIRM Review Map

February 2017



## 2.8 Community Capabilities

Every community has its own set of agencies, policies, programs, and funding – not to mention the staff and resources needed to carry out mitigation work. Review of these existing capabilities helped the Core Planning Team identify those that currently help the community reduce disaster losses or do so in the future. This process also helped City staff identify gaps in the system, be they need for additional facilities or databases.

The primary types of capabilities for reducing long term community vulnerability through mitigation planning are

- Planning and regulatory
- Administrative and technical
- Financial
- Education and outreach

One on one interviews were conducted with City department heads and staff to take stock of Rochester’s community capabilities. The worksheets used to complete this task are found on the following pages. These worksheets are followed by some additional text that provide greater detail on Rochester’s public safety capabilities, public infrastructure, and critical facilities.



**Worksheet 4.1**  
Capability Assessment Worksheet

## Capability Assessment Worksheet

Jurisdiction: Rochester, MN

Local mitigation capabilities are existing authorities, policies, programs, and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible. Complete one worksheet for each jurisdiction.

### Planning and Regulatory

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Please indicate which of the following your jurisdiction has in place.

Plans	Yes/No Year	Does the plan address hazards?
		Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions?
Comprehensive/Master Plan	Y 2017	The comprehensive plan addresses both natural hazards and hazard mitigation. Additionally, the All Hazard Mitigation Plan itself will be approved as part of the comprehensive plan.
Capital Improvements Plan	Y	Flood control projects are addressed yearly in the CIP. Some of these flood control projects were brought over into the Mitigation Action Strategies section of the Mitigation plan.
Economic Development Plan	N	N/A
Local Emergency Operations Plan	Y 2017	The Rochester EOP addresses natural hazards but does not currently incorporate mitigation strategies or actions.
Continuity of Operations Plan	Y 2017	The Rochester COOP plans address natural hazards but do not currently incorporate mitigation strategies or actions.
Transportation Plan	Y 2015	The Transportation Plan discusses planning for security including discussion of key transportation assets; identification of key population concentrations where evacuation or other transportation considerations are critical, and discussion of relevant aspects of the AHMP. The plan also includes discussion of regional stormwater management strategies intended to reduce impact to transportation systems, which would have the beneficial impact of maintaining accessibility/mobility during critical weather events.
Stormwater Management Plan	Y 1999	The plan incorporates development floodplains and flood hazards. The plan identifies capital improvement projects which also appear in the mitigation plan. The plan can be used to implement those actions that also appear in the CIP. The plan update will be complete in 2018.
Community Wildfire Protection Plan	N	N/A
Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation)	Y	Wellhead Protection Plan-2018 DNR Water Supply Plan-2018 These plans assess natural hazards and risks and include mitigation strategies.

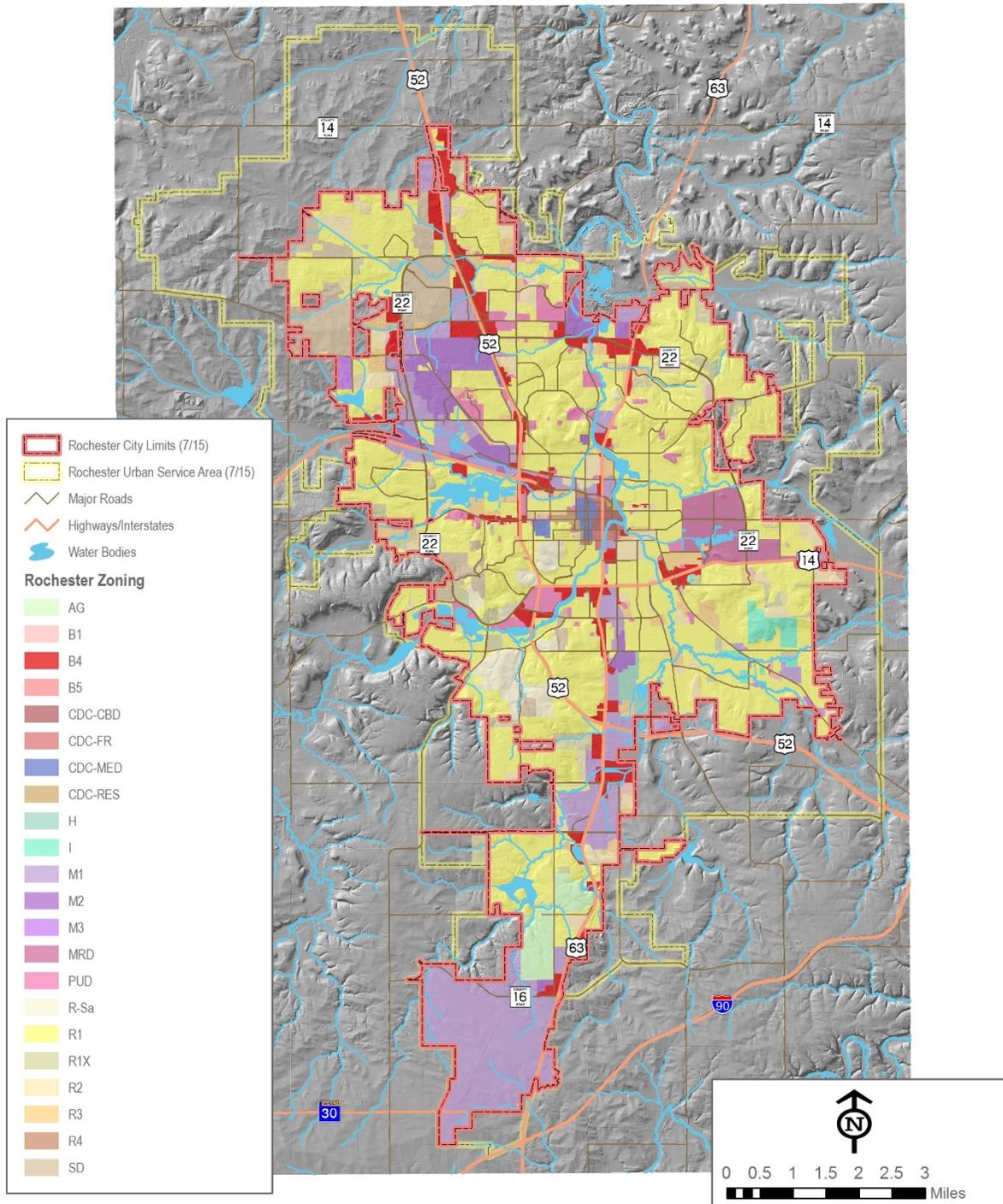
**Worksheet 4.1**  
Capability Assessment Worksheet

<b>Building Code, Permitting, and Inspections</b>	<b>Yes/No</b>	<b>Are codes adequately enforced?</b>
Building Code	Y	Version/Year: 2015 MN Building Code (2012 IBC with State Amendments) 2015 MN Electrical Code, 2015 MN Plumbing Code, 2015 MN Fire Code (2012 IFC with State Amendments)
Building Code Effectiveness Grading Schedule (BCEGS) Score	Y	Score: Class 4 for one and two family dwellings (2015) Class 4 for all other construction (2015)
Fire department ISO rating	Y	Rating: 3 - inside the city 8B - outside of the city (Townships)
Site plan review requirements	Y	Site Plans are reviewed against Olmsted County/Rochester Site Development Manual. This is completed by ROPD, Building Safety, Public Works, RPU, RFD, and others also review.
<b>Land Use Planning and Ordinances</b>	<b>Yes/No</b>	<b>Is the ordinance an effective measure for reducing hazard impacts? Is the ordinance adequately administered and enforced?</b>
Zoning ordinance	Y	The zoning ordinance allows for incentive development and hazard area avoidance. There are ordinances that set conditions for land use within the Floodplain, Decorah Edge, and shoreland areas. These ordinances are strictly enforced.
Subdivision ordinance	Y	Yes, for example cluster subdivisions are allowed in Decorah Edge areas to encourage avoidance of sensitive natural features. The ordinances are strictly enforced.
Floodplain ordinance	Y	Floodplain ordinances restrict land use in the Floodway and Flood Prone Districts to uses which have a low flood damage potential and do not obstruct flood flows. The ordinance is adequately enforced.
Natural hazard specific ordinance (stormwater, steep slope, wildfire)	Y	Decorah Edge Ordinance restricts building within sensitive zones Hillside development restrictions Shoreland zoning district restrictions Floodway, Floodprone, and Flood Fringe zoning restrictions
Flood insurance rate maps	Y	Updated FIRMs will be adopted April 2017. Current freeboard requirements are based on FEMA flood maps. The restrictions for developing in the floodplain are strictly enforced.
Acquisition of land for open space and public recreation uses	Y	Provisions have been included in the zoning ordinance and land development manual that detail plans for continued park creation corresponding with city growth.
Other		
<b>How can these capabilities be expanded and improved to reduce risk?</b>		
In the future, flood zone maps could be more accurate and useful if they utilize the Atlas 14 model.		

FIGURE 2- 21: CITY ZONING

# City of Rochester Zoning

Data Source: Rochester-Olmsted Planning Department



**Worksheet 4.1**  
Capability Assessment Worksheet

**Administrative and Technical**

Identify whether your community has the following administrative and technical capabilities. These include staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.

Administration	Yes/No	Describe capability Is coordination effective?
City Planning and Zoning Commission	Y	The CPZC is responsible for proposing and implementing plans, policies, programs, and ordinances addressing city planning and development. They are staff supported, ensuring coordination between staff and administrative efforts.
Mitigation Planning Committee	Y	The Mitigation Planning Committee was made up of a Core Planning Team, a Plan Development Team, and a Plan Validation Team. The coordination between these teams throughout the planning process was effective.
Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems)	Y	Public Works has maintenance staff that deal with maintaining the drainage system and right of way. Parks and Recreation also has maintenance staff. These teams coordinate with each other regularly.
Mutual Aid Agreements	Y	Various MAA's and MOU's exist between the City and community organizations. This coordination has been effective, however many of the agreements will need renewal within the life cycle of this plan.
Staff	Yes/No FT/PT <sup>1</sup>	Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?
Chief Building Official	Y FT	Building codes and standards are effectively enforced in the city. Building safety officials are aware of hazards and mitigation actions. Coordination is most effective during plan reviews.
Floodplain Administrator	Y PT	The responsibility of floodplain administrator is dispersed between several departments: Public Works, Parks, Planning and Zoning, etc. Staff are aware of flood hazards and mitigation actions and coordinate effectively.
Emergency Manager	Y FT	Staff received training in hazards and mitigation from State of MN HSEM training courses, FEMA Independent Study, and from FEMA delivery courses in the State of Minnesota. Planning is conducted collaboratively with input of city departments and community agencies.
Community Planner	Y PT	The AIIMP is adopted as part of the City's comprehensive plan, ensuring that any planning efforts must consider hazard impacts. Staff are aware of hazards and mitigation actions and routinely coordinate efforts between agencies and staff.
Civil Engineer	Y FT	Staff is adequate to enforce regulations. Engineers are aware of hazards that could affect Rochester and help play an active role in mitigation. Coordination is effective.
GIS Coordinator	Y FT	Staffing is adequate to enforce regulations. GIS staff members are keenly aware of hazards in the area. Coordination between the departments is strong and effective.
Other		

<sup>1</sup> Full-time (FT) or part-time (PT) position

**Worksheet 4.1**  
Capability Assessment Worksheet

Technical	Yes/No	Describe capability Has capability been used to assess/mitigate risk in the past?
Warning systems/services (Reverse 911, outdoor warning signals)	Y	IPAWS, Reverse 911 for Dam Breach Zones, Warning sirens, weather radios in government facilities.
Hazard data and information	Y	The most current and comprehensive data set resides in the Risk Assessment chapter of this plan. Additionally, a Threat Hazard and Risk Assessment (THIRA) was carried out in 2013.
Grant writing	Y	Although the city does not have a designated grant writer, the responsibility is carried out by various employees in various departments as needed.
Hazus analysis	Y	HAZUS was acquired near the end of the planning process for the Mitigation plan therefore its use was minimal. In the future, the use of HAZUS will be incorporated more fully into hazard planning.
Other		
<b>How can these capabilities be expanded and improved to reduce risk?</b>		
More staff members will be needed to effectively implement many of the mitigation action strategies identified in this plan.		

**Worksheet 4.1**  
Capability Assessment Worksheet

**Financial**

Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.

Funding Resource	Access/ Eligibility (Yes/No)	Has the funding resource been used in past and for what type of activities?  Could the resource be used to fund future mitigation actions?
Capital improvements project funding	Y	CIP funding is used for many city projects including tree removal, trails maintenance, stream bank stabilization, and flood control projects. CIP money has also been used for warning sirens and flood reservoirs.
Authority to levy taxes for specific purposes	Y	City Council holds this authority. This money is used to fund various projects at the council's discretion. Mitigation projects could be funded in this way if deemed necessary by council.
Fees for water, sewer, electric, and storm water services	Y	Rochester Public Utilities (RPU) collects these fees. RPU oversees all work and is responsible for the water enterprise fund and electric enterprise fund. The Rochester Public Works Department oversees all work and is responsible for the Stormwater Enterprise fund and Sewer Enterprise Fund. Each specific enterprise fund can be used for mitigation actions appropriate to its work area and infrastructure.
Impact fees for new development	Y	New developments are charged for water hook ups, permitting, and sewer hook ups. These funds are used for any improvements and future expansion of those facilities.
Incur debt through general obligation bonds and/or special tax bonds	Y	Funds from general obligation bonds and special tax bonds are typically used for major city projects. When the flood control system was designed and implemented, it was considered a major city project.
Incur debt through private activities	N	
Community Development Block Grant	Y	When the City receives these grants, it gives a portion back to community non-profits. The funds retained by the City are used primarily for blight reduction. The funds could be used for select mitigation actions.
Other federal funding programs	Y	Federal Transportation Alternatives Program - used for environmental mitigation and mitigation community improvement activities.
State funding programs	Y	MHFA-MN Housing Finance Agency State and federal highway funding State bonding
Other		
<b>How can these capabilities be expanded and improved to reduce risk?</b>		

**Worksheet 4.1**  
Capability Assessment Worksheet

**Education and Outreach**

Identify education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information.

Program/Organization	Yes/No	Describe program/organization and how relates to disaster resilience and mitigation.  Could the program/organization help implement future mitigation activities?
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc.	Y	Citizen's Advisory on Transit - considers access needs of special populations American Red Cross - SE MN Chapter, Salvation Army, Deaf and Hard of Hearing Services Division Southern Region (Minnesota), Department of Human Services /Deaf and Hard of Hearing Services, National Alliance on Mental Illness SE MN, The Arc of Southeastern Minnesota, Rochester Chapter, National Federation of the Blind, Southeastern Minnesota Center for Independent Living (SEMCIL), Rochester Senior Center, Interfaith Hospitality Network, Channel One Food Bank, Lutheran Social Services, University of Minnesota Extension Office
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	Y	Fire Prevention ESL classes offered Rochester is a Do 1 Thing Partner RPU K-12 Education programs (Project Wet, Drinking Water Institute) These programs are implementing some of our ongoing mitigation actions.
Natural disaster or safety related school programs	Y	Fire Prevention Week programs Emergency Preparedness presentations These programs implement some ongoing education and awareness activities.
StormReady certification	N	Rochester participates in NOAA's Weather Ready Nation Program and is recognized as a Weather Ready Ambassador.
Firewise Communities certification	N	
Public-private partnership initiatives addressing disaster-related issues	Y	Partner with the Mayo Clinic, Olmsted Medical Center, Olmsted County Public Health, State of Minnesota, Olmsted County, Region One Joint Powers Board, SEMN Disaster Healthcare Coalition
<b>How can these capabilities be expanded and improved to reduce risk?</b>		
<p>The following groups were contacted during the community engagement phase of plan development:</p> <ul style="list-style-type: none"> <li>Deaf and Hard of Hearing Services Division Southern Region (Minnesota)</li> <li>Department of Human Services /Deaf and Hard of Hearing Services</li> <li>National Alliance on Mental Illness SE MN</li> <li>The Arc of Southeastern Minnesota</li> <li>Rochester Chapter, National Federation of the Blind</li> <li>Southeastern Minnesota Center for Independent Living (SEMCIL)</li> <li>Rochester Senior Center</li> <li>Interfaith Hospitality Network</li> </ul> <p>Rochester Office of Emergency Management hopes to further partner with these citizen groups to ensure that they are represented in planning efforts throughout the city.</p>		

**Worksheet 4.2**  
Safe Growth Audit

## Safe Growth Audit

Use this worksheet to identify gaps in your community’s growth guidance instruments and improvements that could be made to reduce vulnerability to future development.

Comprehensive Plan	Yes	No
<b>Land Use</b>		
1. Does the future land-use map clearly identify natural hazard areas?	Y	
The map identifies flood plains and steep slopes. Although not specifically included in the land use map, the Decorah Edge map and wetland maps are used when land use applications are reviewed.		
2. Do the land-use policies discourage development or redevelopment within natural hazard areas?	Y	
The Decorah Edge Ordinance restricts building within sensitive zones Hillside development restrictions Shoreland zoning district restrictions Floodway, Floodprone, and Flood Fringe zoning restrictions All structures must have 1 ft. of freeboard over the 100 year flood elevation identified on current FEMA maps. In the future freeboard requirements will be based on Atlas 14 data.		
3. Does the plan provide adequate space for expected future growth in areas located outside natural hazard areas?	Y	
Space is deemed sufficient for projected future growth.		
<b>Transportation</b>		
1. Does the transportation plan limit access to hazard areas?		N
The transportation plan itself does not necessarily limit access, though expectations regarding matters such as flood free access are recognized. In the project development process the consideration of critical environmental features during concept planning and preliminary design probably plays a bigger role than the transportation plan.		
2. Is transportation policy used to guide growth to safe locations?		N
Transportation policy is more of a secondary factor; land use planning efforts to identify high risk development areas are the leading consideration and once that determination is made, transportation and access considerations come into play.		
3. Are movement systems designed to function under disaster conditions (e.g., evacuation)?	Y	
In the case of potential high risk situations related to water resources, transportation systems are designed to provide mobility during high risk events. Given the fact that much of the transportation infrastructure are legacy facilities already in place, a particularly critical action that is seeing more effort is inspection of facilities, particularly bridge facilities, to identify potential structural deficiencies.		

**Worksheet 4.2**  
Safe Growth Audit

Comprehensive Plan (continued)	Yes	No
<b>Environmental Management</b>		
1. Are environmental systems that protect development from hazards identified and mapped?	Y	
Wetlands Flood Control Infrastructure Dam Breach Zones Storm Water Ponds		
2. Do environmental policies maintain and restore protective ecosystems?	Y	
The design of transportation facilities takes into account existing functions of water resources and efforts to maintain and improve the functions of these natural systems are made through wetland restoration and replacement. Stormwater policies Wetlands are protected and maintained Decorah Edge Ordinance protects the main recharge area for the City of Rochester's drinking water		
3. Do environmental policies provide incentives to development that is located outside protective ecosystems?		N
Incentives are not provided, however there are disincentives for development within protected ecosystems due to severe restrictions.		
<b>Public Safety</b>		
1. Are the goals and policies of the comprehensive plan related to those of the FEMA Local Hazard Mitigation Plan?	Y	
The All Hazard Mitigation Plan was developed along side of the Rochester Comprehensive Plan and will be presented to the City Council as an integral part of that broader plan. The goals of the Comprehensive Plan were taken into consideration while developing the goals for the Mitigation plan.		
2. Is safety explicitly included in the plan's growth and development policies?	Y	
Public Safety entities are recognized as a key component of city growth. As growth occurs, the necessity for additional Public Safety services is analyzed to ensure the appropriate levels of police, fire, and EMS capabilities are maintained.  The Transportation Plan discusses safety and security needs and includes policies and strategies for improving hazardous conditions.		
3. Does the monitoring and implementation section of the plan cover safe growth objectives?	Y	
The monitoring and implementation section of the Comprehensive Plan seeks to ensure livability in all aspects-including safe growth.		

**Worksheet 4.2**  
Safe Growth Audit

Zoning Ordinance	Yes	No
1. Does the zoning ordinance conform to the comprehensive plan in terms of discouraging development or redevelopment within natural hazard areas?	Y	
The Rochester Zoning Ordinance and Land Development Manual is fully integrated into the Comprehensive Plan.		
2. Does the ordinance contain natural hazard overlay zones that set conditions for land use within such zones?	Y	
There are ordinances that set conditions for land use within the Floodplain, Decorah Edge, and shoreland areas.		
3. Do rezoning procedures recognize natural hazard areas as limits on zoning changes that allow greater intensity or density of use?	Y	
Cluster subdivisions are allowed in Decorah Edge areas to encourage avoidance of sensitive natural features.		
4. Does the ordinance prohibit development within, or filling of, wetlands, floodways, and floodplains?	Y	
Subdivision Regulations	Yes	No
1. Do the subdivision regulations restrict the subdivision of land within or adjacent to natural hazard areas?	Y	
Cluster subdivisions are allowed in Decorah Edge areas to encourage avoidance of sensitive natural features.		
2. Do the regulations provide for conservation subdivisions or cluster subdivisions in order to conserve environmental resources?		N
While subdivision ordinances do not specifically mention these forms of development, they are not prohibited. There are provisions that would allow for it.		
3. Do the regulations allow density transfers where hazard areas exist?		N
The zoning ordinance allows for incentive development and hazard area avoidance, but not specifically for density transfers.		

**Worksheet 4.2**  
Safe Growth Audit

<b>Capital Improvement Program and Infrastructure Policies</b>	<b>Yes</b>	<b>No</b>
1. Does the capital improvement program limit expenditures on projects that would encourage development in areas vulnerable to natural hazards?	Y	
Project approval and funding are dependent on proper adherence to the land use and zoning restrictions described in this worksheet.		
2. Do infrastructure policies limit extension of existing facilities and services that would encourage development in areas vulnerable to natural hazards?	Y	
In the project development process the consideration of critical environmental features and hazard specific zones limits future development in known hazard areas.		
3. Does the capital improvement program provide funding for hazard mitigation projects identified in the FEMA Mitigation Plan?	Y	
There is some overlap between projects in the mitigation plan and projects in the CIP. In the future it is hoped that more collaboration can exist in order to increase the number of projects that reach completion.		
<b>Other</b>	<b>Yes</b>	<b>No</b>
1. Do small area or corridor plans recognize the need to avoid or mitigate natural hazards?	Y	
Corridor transportation plans that are completed typically include an environmental screening process that will include assessment of potential risks from natural hazards even if a state/federal environmental assessment is not required.		
2. Does the building code contain provisions to strengthen or elevate construction to withstand hazard forces?	Y	
All structures are required to be constructed with one foot of freeboard over the 100 year flood elevation. Currently, this elevation requirement is based on FEMA maps, however, in the near future, freeboard requirements will be based on ATLAS 14 data.		
3. Do economic development or redevelopment strategies include provisions for mitigating natural hazards?	Y	
The Rochester Zoning Ordinance and Land Development Manual already limit economic development in hazard areas.		
4. Is there an adopted evacuation and shelter plan to deal with emergencies from natural hazards?	Y	
Transit Operation has worked with Emergency Management to develop a plan for utilization of transit vehicles for evacuation during emergency events from more densely populated areas or where concentrations of special populations may be at risk.		

Questions adapted from Godschalk, David R. Practice Safe Growth Audits, *Zoning Practice*, Issue Number 10, October 2009, American Planning Association. <http://www.planning.org/zoningpractice/open/pdf/oct09.pdf>.

## Worksheet 4.3

National Flood Insurance Program (NFIP)

### National Flood Insurance Program (NFIP) Worksheet

Use this worksheet to collect information on your community's participation in and continued compliance with the NFIP, as well as identify areas for improvement that could be potential mitigation actions. Indicate the source of information, if different from the one included.

NFIP Topic	Source of Information	Comments
<b>Insurance Summary</b>		
How many NFIP policies are in the community? What is the total premium and coverage?	State NFIP Coordinator or FEMA NFIP Specialist	Policies in force: 141 Insurance In-force whole: \$37,261,900 Written Premium In-force: \$97,049
How many claims have been paid in the community? What is the total amount of paid claims? How many of the claims were for substantial damage?	FEMA NFIP or Insurance Specialist	Total Losses: 661    Closed Losses: 527    Open Losses: 1 CWOP Losses: 133 Total Payments: \$4,207,514.94 Repetitive Loss Properties: 0
How many structures are exposed to flood risk within the community?	Community Floodplain Administrator (FPA)	There are 639 addresses in the A, AE, and AO flood zones and 1857 in the 0.2% floodplain.
Describe any areas of flood risk with limited NFIP policy coverage	Community FPA and FEMA Insurance Specialist	Kings Run, localized street and developed area flooding, unstudied tributaries
<b>Staff Resources</b>		
Is the Community FPA or NFIP Coordinator certified?	Community FPA	One certified staff member and several more that have gone through state training.
Is floodplain management an auxiliary function?	Community FPA	Yes.
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	Community FPA	Land use plan/zoning review, permitting, GIS, inspections, land subdivision/development.
What are the barriers to running an effective NFIP program in the community, if any?	Community FPA	Changing floodplain characteristics (Atlas 14)
<b>Compliance History</b>		
Is the community in good standing with the NFIP?	State NFIP Coordinator, FEMA NFIP Specialist, community records	Yes
Are there any outstanding compliance issues (i.e., current violations)?	MNDNR	No
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	MNDNR	January 2015
Is a CAV or CAC scheduled or needed?		No

## Worksheet 4.3

National Flood Insurance Program (NFIP)

NFIP Topic	Source of Information	Comments
<b>Regulation</b>		
When did the community enter the NFIP?	Community Status Book <a href="http://www.fema.gov/national-flood-insurance-program/national-flood-insurance-program-community-status-book">http://www.fema.gov/national-flood-insurance-program/national-flood-insurance-program-community-status-book</a>	Initial FIRM identified: 3/27/1971 Current Effective Map Date: 2/4/1998
Are the FIRMs digital or paper?	Community FPA	Currently paper, new maps coming April 2017 will be digital
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	Community FPA	Yes. Additional flood districts that allow for regulation. Ordinances are being updated to DNR standards - to be completed by April 2017.
Provide an explanation of the permitting process.	Community FPA, State, FEMA NFIP  Flood Insurance Manual <a href="http://www.fema.gov/flood-insurance-manual">http://www.fema.gov/flood-insurance-manual</a>  Community FPA, FEMA CRS Coordinator, ISO representative  CRS manual <a href="http://www.fema.gov/library/viewRecord.do?id=2434">http://www.fema.gov/library/viewRecord.do?id=2434</a>	Permitting occurs through the zoning ordinance's required procedures. Floodplain is a review element in all development review activities. ROPD coordinates reviews with other city agencies including Public Works to address grading, stormwater, and steep slopes related to the floodplain. Refer to the zoning ordinance and LDM.
<b>Community Rating System (CRS)</b>		
Does the community participate in CRS?	Community FPA, State, FEMA NFIP	Not currently
What is the community's CRS Class Ranking?	Flood Insurance Manual <a href="http://www.fema.gov/flood-insurance-manual">http://www.fema.gov/flood-insurance-manual</a>	10
What categories and activities provide CRS points and how can the class be improved?		N/A
Does the plan include CRS planning requirements	Community FPA, FEMA CRS Coordinator, ISO representative  CRS manual <a href="http://www.fema.gov/library/viewRecord.do?id=2434">http://www.fema.gov/library/viewRecord.do?id=2434</a>	

## 2.8.1 Public Safety Capabilities

### Rochester Fire Department

The Rochester Fire Department is comprised of 5 fire stations and 108.5 employees. Mutual aid agreements ensure coverage throughout the area. RFD had approximately 9,618 calls for service in 2016 and responded to 90% of calls in 4 minutes or less. The Fire Department also has a Structural Collapse Team, a Chemical Assessment Team, and all responders are trained to the HAZMAT technician level. Station 4 is trained to HAZMAT specialist level.

### Rochester Police Department

The Rochester Police Department has an authorized strength of 137.5 sworn officers, supported by 59 non-sworn members and an annual budget of approximately \$18.9 million. The department provides a full-range of patrol and investigative services. The Communications Center, staffed by non-sworn personnel under non-sworn management, serves the police and sheriff's office as well as the Rochester Fire Department and several smaller fire and first responder organizations within the local area. The records management unit assists the Olmsted County Sheriff's Office as well. The Department also benefits from the support of an active body of citizen volunteers.

With the total commitment of city officials and the citizens of the city, the Department is deeply engaged in Community/Problem Oriented and Intelligence-Led Policing activities. The Department continues to work in close collaboration with the school district in providing a Police/School Liaison Program.

### Staffing

TITLE	NUMBER IN POSITION
Police Chief	1
Deputy Chief	0
Captains	3
Lieutenants	9
Sergeants	25
Patrol Officers	99.5
Full-Time Sworn	137.5
Non-Sworn	59
Total Employees	197.5

### Emergency Warning Systems

The City of Rochester offers a free, unique alerting system called Rochester Alert that allows anyone to sign up to receive customized emergency alerts via text message, email, voice message, and social media. In addition, the city of Rochester is also a part of FEMA's Integrated Public Alert and Warning

System (IPAWS) which is an internet-based capability that can be used to issue critical public alerts and warnings.

### Emergency Operations Center

Direction and control of major emergencies or disasters within the city will be carried out at Rochester's Emergency Operations Center (EOC). Rochester's EOC is a dedicated EOC facility that functions as a multi-purpose training center for City staff. A space at City Hall is maintained as an alternate EOC.

## 2.8.2 Medical Centers

There are three hospitals in Rochester:

- Mayo Clinic Hospital, Methodist Campus
  - 794 beds and 41 operating rooms
- Mayo Clinic Hospital, Saint Mary's Campus
  - Level One Trauma Center with Emergency Department facilities and air transport capability
  - 1,265 beds and 55 operating rooms
  - 148-bed Mayo Eugenio Litta Children's Hospital
- Olmsted Medical Center
  - Level IV Trauma Center
  - 24-hour emergency room
  - 61 beds and 6 operating rooms

## 2.8.3 Public Infrastructure

### Water Reclamation Plant

The Water Reclamation Plant treats wastewater for the city's residents, industries, and frequent visitors. The original facility was built in 1926 and was one of the first wastewater treatment plants to operate in Minnesota. The facility continually undergoes change to comply with effluent regulations and meet the needs of the growing Rochester community.



The Water Reclamation Plant is staffed 24 hours per day and has 29 full time employees. The site is situated on 32 acres with buildings covering 8 acres. There are two parallel treatment processes used onsite. The High Purity Oxygen (HPO) plant was placed into operation in 1983 and is rated at 19.1 million gallons per day. The Aeration Basin Complex (ABC) was placed into operation in 2007 and is rated at 4.75 million gallons per day. The Rochester Water Reclamation Plant currently treats an average of 13 million gallons of wastewater per day using a combination of physical, chemical, and biological steps to treat pollutants. The wastewater goes through at least ten different steps, which takes approximately 24 hours to complete, before the water is discharged to the South Fork of the Zumbro River.

The whole plant is designed to be fully functional during a 100 year flood event. Many of the structures could withstand a 500 year flood event.

### Water

Each day, nearly 12 million gallons of water is needed to meet the City of Rochester's residential, commercial, and industrial needs. All of the water used for the Rochester municipal water supply is obtained from 31 groundwater wells spread throughout the city. The sedimentary bedrock aquifers that underlie and serve the City's community water supply wells have generally produced sufficient volumes of water with very few limitations. These bedrock aquifers for many thousands of years received glacial melt waters and precipitation, filling the crevices/cracks of the limestone and pore spaces of the sandstone, creating some of the largest groundwater reservoirs in the state. This large volume of groundwater contained beneath southeastern Minnesota should provide for a more than adequate quantity of water to meet the existing and near future demands of the City.

**TABLE Storage Capacity**

Total Storage Capacity		Average Day Demand (average of last 5 years)	
16,450,000 Gallons		13,330,000 Gallons per day	
Type of Structure	Number of Structures	Gallons	
Elevated Storage	13	6,900,000	
Ground Storage	6	9,550,000	

(2015 DNR Water Supply Plan)

Most of the City's wells are 24 inches in diameter and extend 400-1,000 feet in depth.

### Electric Power

**Generation Facilities – Silver Lake Plant (SLP)** | As of June 1, 2015, SLP is a steam producing facility providing a contracted amount of steam to the Mayo Clinic campus for cogeneration needs. The fuel burned for steam production in the boilers is natural gas. Prior to the transition from an electric generation facility, SLP was a 100-megawatt, coal-fired generating facility. The four boiler/turbine/generator units varied in age and size ranging from Unit #1 at 7.5 MW (1947) to Unit #4 rated at 55 MW (1969). Pulverized bituminous coal was the primary fuel, and was supported by natural gas. Coordination and dispatching of RPU other generating facilities still is handled at SLP.

FIGURE 2- 22: OUTDOOR WARNING SIRENS

# Outdoor Warning Sirens

Data Source: City of Rochester

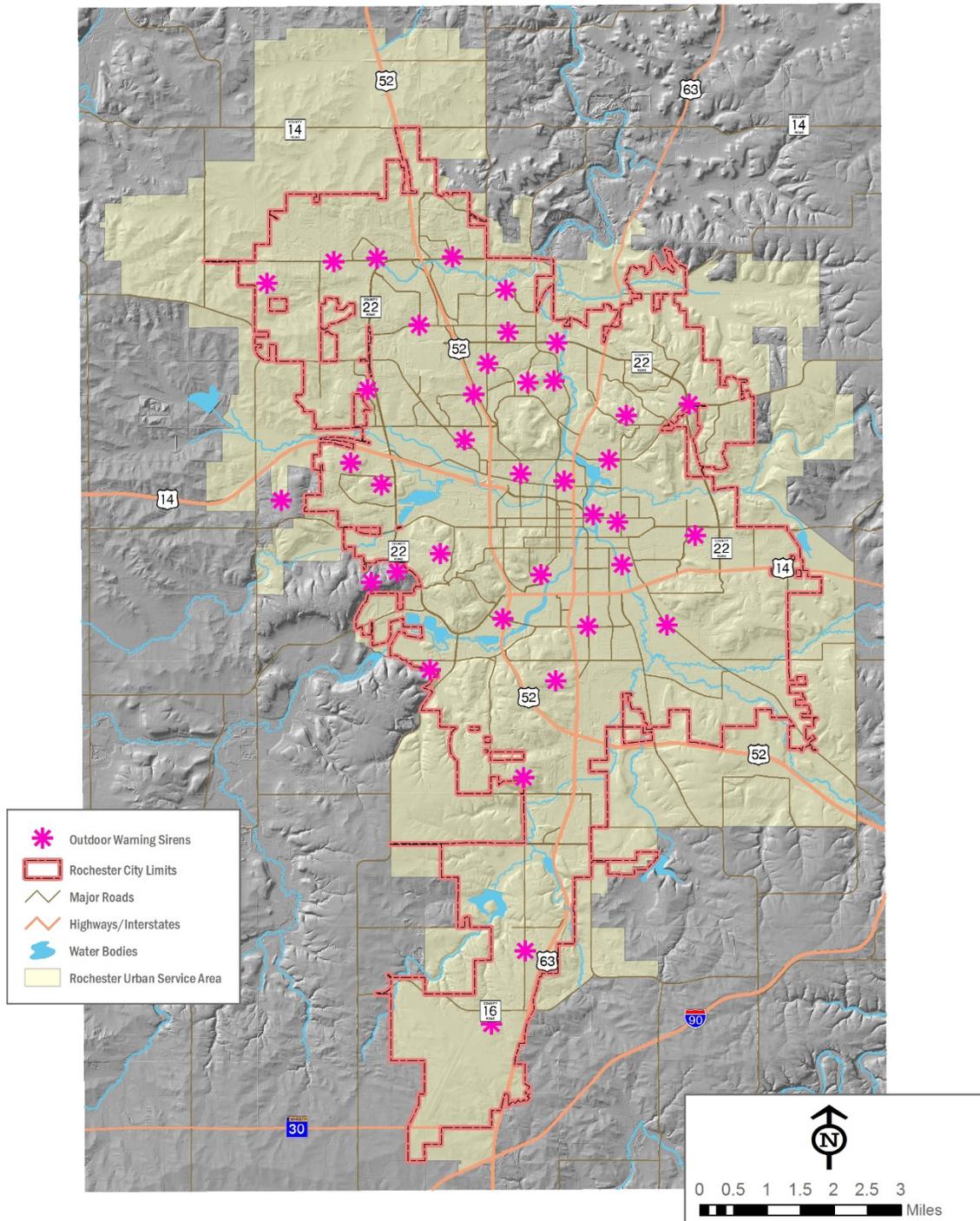
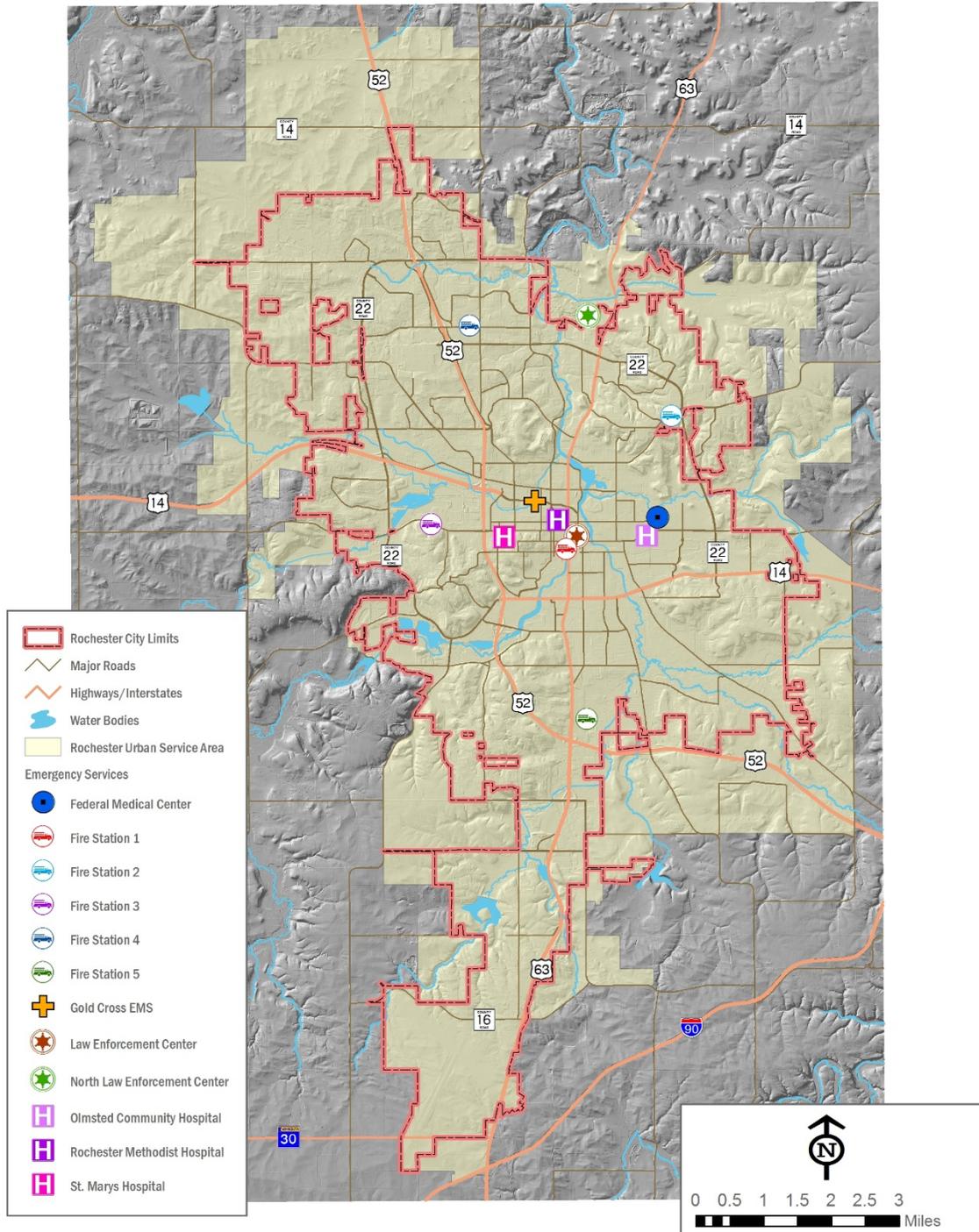


FIGURE 2- 23: EMERGENCY SERVICES FACILITIES

# Emergency Services Facilities

Data Source: City of Rochester



**Cascade Creek Combustion Turbines (CCCT)** | The two CCCT combustion turbines have a combined rating of 83 megawatts. These units resemble a jet aircraft engine coupled to a generator. The combustion turbines are capable of both local and remote operation and can provide power to the MISO (Midcontinent Independent System Operators) market within just a few minutes.

**Lake Zumbro Hydroelectric Plant (Hydro)** | Built in 1919, the hydro has consistently provided the City of Rochester with a renewable supply of energy. The facility consists of a powerhouse and a 440-foot spillway built across the Zumbro River. The General Electric generators are driven at 225 revolutions per minute by 1800-horsepower, Francis-type hydraulic turbines. This equates to approximately 1300 kilowatts per wheel, which rates the station at an output of 2.6 megawatts.

**Mayo Clinic Electrical Generation** | Mayo Clinic has three electrical generation plants that serve its facilities. The Franklin Heating Station and Prospect Utility Plant provide electrical power, emergency power, steam (Prospect distributes steam from RPU's SLP), and chilled water to 28 buildings on Mayo's downtown campus, including the Mayo Clinic buildings, Kahler hotels, and Charter House (a senior residential building). The distribution systems for these facilities are tied together to create one large system. The Saint Marys Power Plant provides the entire Saint Marys campus with electrical power, emergency power, steam, and chilled water.

### Transportation

The Rochester-Olmsted Council of Governments (ROCOG) was established in November 1971 to provide comprehensive planning services to member local government units. It was organized to comply with the Federal Aid Highway Act, which requires that all urbanized areas with a population of more than 50,000 have an organization designated by the Governor of the state that is responsible for implementation and maintenance of a regional transportation planning program.

That program includes preparation of a Long Range Transportation Plan (LRTP) and an annual Transportation Improvement Program (TIP), which identifies a list of transportation improvements supported by federal funding. ROCOG maintains a cooperative relationship with the City of Rochester, the Rochester-Olmsted Planning Department and Olmsted County, utilizing their staff as necessary to fulfill its transportation planning responsibilities.

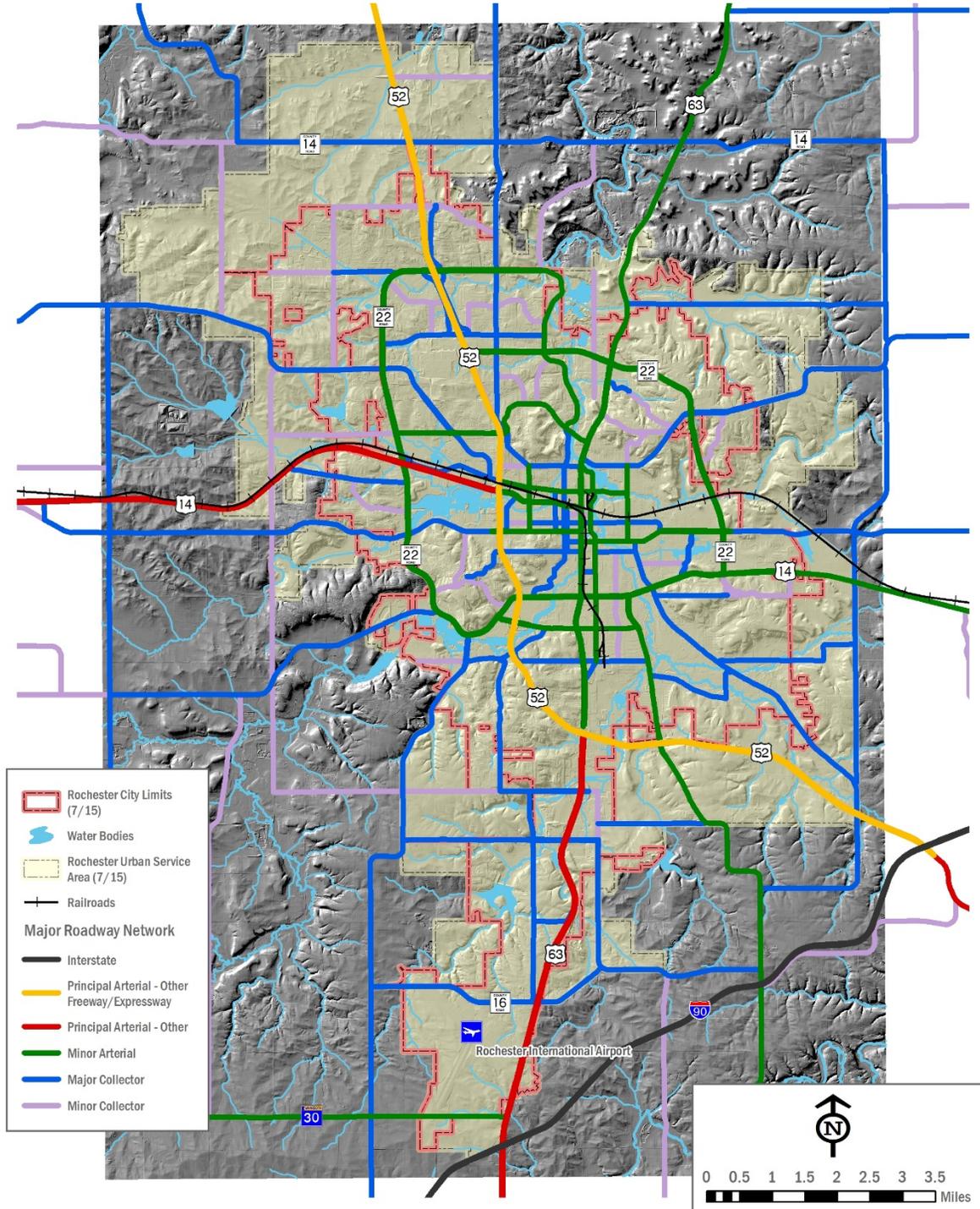
The Rochester-Olmsted Planning Department does limited transportation planning, primarily in the area of studies and other special reports done with or for the City of Rochester, Olmsted County, and the Minnesota Department of Transportation (MN/DOT).

The City of Rochester, Olmsted County, and MN/DOT all have roadway authority within the Rochester city limits. Figure 2-24 illustrates the functional capabilities of the City's roadway network.

FIGURE 2-24: TRANSPORTATION FACILITIES

# Transportation Facilities

Data Source: Rochester Olmsted Council of Governments (ROCOG)





### 3 Risk Assessment

## 3 Risk Assessment

Resilient communities must assess the hazards and threats to their community assets in order to establish policies and actions that serve to mitigate their potential impact or risk. This process of risk assessment serves to help a community devise strategies to implement not only in times of disaster, but also in times of planning and preparedness.

### 3.1 Risk assessment terminology

- Natural hazard | the source of harm or difficulty created by a meteorological, environmental, or geological event
- Technological hazard | a hazard originating from technological or industrial conditions, including accidents, dangerous procedures, infrastructure failures or specific human activities, that may cause loss of life, injury, illness or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage
- Human-caused threat | intentional malicious actions of a human adversary
- Vulnerability | characteristics of community assets that make them susceptible to damage from a given hazard or threat
- Exposure | people and property within the area the potential hazard could affect
- Risk | the potential for damage, loss, or other impacts created by the interaction of hazards with community assets
- Risk assessment | product or process that collects information and assigns values to risks for the purpose of informing priorities, developing or comparing courses of action, and informing decision making
- Mitigation | a systematic reduction in the exposure and vulnerability to a potential hazard

### 3.2 Why conduct a risk assessment?

Risk assessment provides the foundation for mitigation strategy development. It is critical to a community's resilience to understand not only what hazards and threats may be faced, but also recognize their potential frequency and extent of their impact on physical, social, and economic health.

For the immediate purposes of this hazard mitigation plan, risk assessment helps staff experts and official decision makers establish emergency preparedness and response priorities. For this exercise to be truly successful, however, the results of this analysis must also inform the community's other planning efforts, such as land use, transportation, and comprehensive plans, as well as be informed by them. Rochester's All Hazard Mitigation Plan will be adopted as part of the city's comprehensive plan. This intentionally synergistic planning approach will facilitate official decision making at all levels.

## 3.3 How we conducted our risk assessment

The city of Rochester retained the services of Comprehensive Emergency Management Associates, Inc. (CEMA) to assist the Planning Team with risk assessment. This consulting firm has worked with the city on other emergency management projects.

### 3.3.1 Risk Identification Process

CEMA and the Planning Team developed a risk identification survey to evaluate hazards and threats identified in the Olmsted County All Hazard Mitigation Plan, the Minnesota State Hazard Mitigation Plan, the City/County Threat and Hazard Identification and Risk Assessment (THIRA), and emerging issues as brought up by the Planning Team. Survey Monkey was used to administer the survey in March 2014.

Using a five-point scale, with 1 meaning “no risk whatsoever” and 5 meaning “extremely high risk”, the subject experts that comprise the Plan Development Team were asked to rate each of the identified potential threats and hazards. When rating each of these threats/hazards, the respondents were asked to consider the following:

- Do you feel the subject threat/hazard should be of concern to the City of Rochester?
- What is the probability that this type of incident will occur?
- When might this threat/hazard occur?
- How often/frequently might it occur?
- How severe would the overall impact likely be?
- How many persons might be impacted?
- How large of an area might be impacted?
- How large would the economic impact likely be?
- How important is it that we have early/rapid notification that this type of incident is likely to occur?
- How long might it take to fully resolve and recover from this type of incident?

CEMA compiled the results and provided the Planning Team with a statistical analysis of the results. Respondents agreed on the potential impact that a number of the presented threats/hazards pose to Rochester, however, responses were rather disparate for other items.

To try to reach consensus on rankings for those threats/hazards with significant disparity, the Planning Team invited the Plan Development Team and any others who responded to the survey to participate in a risk validation meeting. At that February 2015 meeting, the Planning Team presented the survey results, hazard by hazard. The group then discussed the significance of each hazard, relying on subject experts to clarify concerns expressed in the discussion. Using Turning Technologies’ TurningPoint polling software, participants then employed “clickers” to rate each threat/hazard, using the same scale as the survey. For those items still exhibiting disparate answers, additional discussion was had and the clickers used once

more. For those items failing to reach consensus, individual subject experts were asked to provide the final ranking.

### 3.3.2 Calculated Priority Risk Index (CPRI) Assessment

While this risk assessment approach provided invaluable insight from the Plan Development Team, concerns arose regarding the replicability of these results as well as their ability to be consistently measured and compared over time. The Planning Team, therefore decided to use these results to inform a Calculated Priority Risk Index (CPRI) assessment. CPRI rankings consider four elements of risk:

- Probability | How likely is the event to occur?
- Magnitude/Severity | What is the likely extent of human and structural impact as a result of the event?
- Warning Time | How much warning time can be expected for the event?
- Duration of Recovery | How long will it take to recover from the event?

The following tables illustrate the parameters used to rank the elements of risk for each hazard.

Probability	Rating	Rating Criteria
	4 Highly Likely	Event is probable within the calendar year
		Event has <i>up to</i> 1 out of 1 chance of occurring this year
		History of events is greater than 33% likely per year
	3 Likely	Event is probable within the next three years
		Event has <i>up to</i> 1 in 3 years chance of occurring
		History of events is greater than 20% but less than or equal to 33% likely per year
	2 Intermittent	Event is probable within the next five years
		Event has <i>up to</i> 1 in 5 years chance of occurring
		History of events is greater than 10% but less than or equal to 20% likely per year
	1 Unlikely	Event is possible within the next 10 years
		Event has up to 1 in 10 years chance of occurring
History of events is less than or equal to 10% likely per year		

<b>Magnitude / Severity</b>	<b>Rating</b>	<b>Rating Criteria</b>
	<b>4</b> Catastrophic	Multiple deaths
		Complete shutdown of facilities for 30 or more days
		More than 50 percent of property is severely damaged
	<b>3</b> Critical	Injuries and/or illnesses result in permanent disability
		Complete shutdown of critical facilities for at least two weeks
		25–50 percent of property is severely damaged
	<b>2</b> Limited	Injuries and/or illnesses do not result in permanent disability
		Complete shutdown of critical facilities for more than one week
		10–25 percent of property is severely damaged
	<b>1</b> Negligible	Injuries and/or illnesses are treatable with first aid
		Minor quality of life lost
		Shutdown of critical facilities and services for 24 hours or less
Less than 10 percent of property is severely damaged		
<b>Warning Time</b>	<b>Rating</b>	<b>Rating Criteria</b>
	<b>4</b>	Less than 6 hours
	<b>3</b>	6-12 hours
	<b>2</b>	12-24 hours
	<b>1</b>	24+ hours
<b>Duration of Recovery</b>	<b>Rating</b>	<b>Rating Criteria</b>
	<b>4</b>	More than 1 week
	<b>3</b>	Less than 1 week
	<b>2</b>	Less than 1 day
	<b>1</b>	Less than 6 hours

Using the rankings described in the tables above, the following weighted formula was used to determine each hazard’s CPRI:



The CPRI values should be general indicators of planning risk significance. Three levels of risk have been identified: High, Moderate and Low.

**High** | High probability of occurrence; at least 50 percent or more of population at risk from hazard; significant to catastrophic physical impacts to buildings and infrastructure; major loss or potential loss of functionality to all essential facilities (hospital, police, fire, EOC and shelters).

**Moderate** | Less than 50 percent of population at risk from hazard; moderate physical impacts to buildings and infrastructure; moderate potential for loss of functionality to essential facilities.

**Low** | Low probability of occurrence or low threat to population; minor physical impacts.

The following table details the CPRI scoring ranges.

PLANNING SIGNIFICANCE	CPRI RANGE VALUES	
	Low CPRI	High CPRI
<b>HIGH (H)</b>	3.0	4.0
<b>MODERATE (M)</b>	2.0	2.9
<b>LOW (L)</b>	1.0	1.9

The hazards described in each section of this chapter are listed in descending order of their CPRI score.

### 3.3.3 Geographic Extent

In addition to the components of the CPRI, the potential geographic extent that would likely be affected by an event will be classified:

Geographic Extent	Rating	Rating Criteria
	<b>1</b>	Localized impact
	<b>2</b>	Community-wide impact
	<b>3</b>	County-wide or greater impact

### 3.4 Natural Hazards

Mother Nature can rear her ugly head at any time of year in the Rochester plan area. While area natives are used to dealing with what she throws at us, Rochester has many vulnerable populations that are even more at risk during natural hazard events. Many visitors and residents are here seeking help from Mayo Clinic for medical needs or physical disabilities that require vital medications and treatment, impair their movement, or make them more sensitive to extreme weather conditions. Others are from areas of the country or world unfamiliar with the types of natural hazards we experience here and the strategies necessary to prepare for them. Still others, such as the blind, the deaf, and non-English speakers experience communications barriers that keep them from getting the precautionary information they need to stay safe.

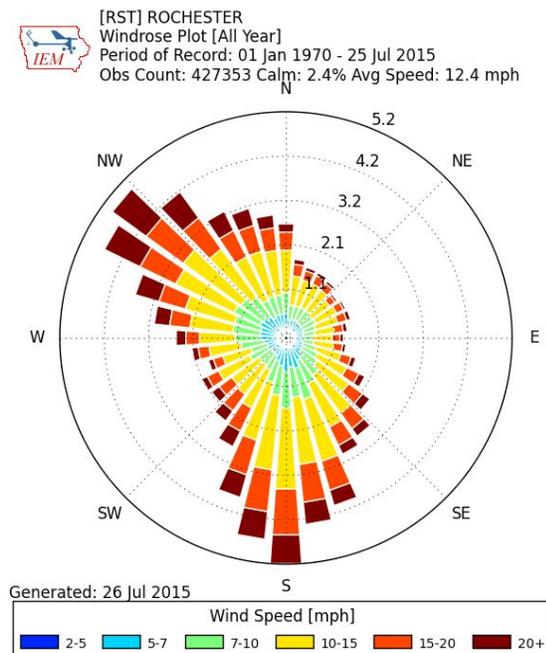
Technological advances, however, are helping people, businesses, and first responders better prepare for impending events. Weather tracking technology give meteorologists ample lead time to evaluate developing storm systems; smartphone weather apps enable laymen to stay on top of these developments. Unique alerting systems such as RochesterAlert notify subscribers of threatening conditions with customized alerts via text message, email, voice message, and on social media. Understanding what these events are and assessing their potential impacts will go a long way to mitigate negative consequences.

#### 3.4.1 Wind Storm

##### Description and History

With an average wind speed of 12.6 mph, The Weather Channel has ranked Rochester, Minnesota, as the second windiest city in the country; only Amarillo, Texas clocks a higher average wind speed. January and April are generally Rochester’s windiest months.

The National Oceanic & Atmospheric Administration (NOAA) classifies “damaging winds” as those exceeding 50-60 mph. Wind storms can occur any time during the year, typically accompanying a strong weather event such as a thunderstorm or snowstorm. Most winds associated with thunderstorms, however, occur in June and July and between the hours of 4 and 8 p.m., though they can occur at other times.



## High Wind Events | Olmsted County, MN

Source: NOAA Storm Events Database

Begin Date	Magnitude (mph)	Deaths	Injuries	Property Damage (\$)
2/10/1996	55	0	0	0
10/30/1996	60	0	0	25,000
4/6/1997	66	0	0	25,000
11/10/1998	56	0	0	60,000
4/5/2000	58	0	0	0
4/7/2001	62	0	0	4,500
10/25/2001	55	0	0	0
4/18/2004	60	0	0	8,000
12/12/2004	58	0	0	0
10/26/2010	63	0	0	7,000
6/16/2014	59	0	0	0
<b>TOTAL</b>		<b>0</b>	<b>0</b>	<b>129,500</b>

### Location

Windstorms can occur anywhere in Rochester, though their impacts may be felt differently in sheltered areas.

### Extent

According to NOAA's *Severe Weather 101* website, there are six types of damaging winds:

- **Straight-line** winds are generally any thunderstorm wind that is not associated with rotation (i.e., is not a tornado); these winds can exceed 100 mph and are responsible for most wind damage related to thunderstorms.
- A **downdraft** is a small-scale column of air that rapidly sinks toward the ground.
- A **downburst** is a result of a strong downdraft. A downburst is a strong downdraft with horizontal dimensions larger than 2.5 miles resulting in an outward burst of damaging winds on or near the ground. Downbursts are usually associated with thunderstorms, but they can occur with showers too weak to produce thunder.
- A **microburst** is a small concentrated downburst that produces an outward burst of damaging winds at the surface. Microbursts are generally small (less than 2.5 miles across) and short-lived, lasting only 5-

10 minutes, with maximum wind speeds up to 168 mph. Microbursts may occur in wet or dry surface events.

- A **gust front** is the leading edge of rain-cooled air that clashes with warmer thunderstorm inflow. Gust fronts are characterized by a wind shift, temperature drop, and gusty winds out ahead of a thunderstorm. Sometimes the winds push up air above them, forming a shelf cloud or detached roll cloud.
- A **derecho** is a widespread, long-lived wind storm that is associated with a band of rapidly moving showers or thunderstorms. A typical derecho consists of numerous microbursts, downbursts, and downburst clusters. By definition, if the wind damage swath extends more than 240 miles and includes wind gusts of at least 58 mph along most of its length, then the event may be classified as a derecho.

### Probability of Future Events

According to the National Weather Service – La Crosse, there were 142 reports of damaging winds in Olmsted County from 1992-2013. It is likely that the Rochester area will experience strong wind events on an annual basis.

### Impact and Vulnerability

Since thunderstorms do not have narrow tracks like tornadoes, the associated wind damage can be extensive and affect very large areas. Windstorms can cause significant property damage, threaten public safety, and affect the economy due to business closures. Objects like trees and utility lines/poles can be toppled or destroyed resulting in temporary loss of power and phone service lasting from a few hours to several days. Results of these impacts could complicate communication with staff. Damage to roofs and windows are common results of serious windstorm events.



People living in mobile homes are especially at risk for injury and even death; even anchored mobile homes can be seriously damaged by winds exceeding 80 mph.

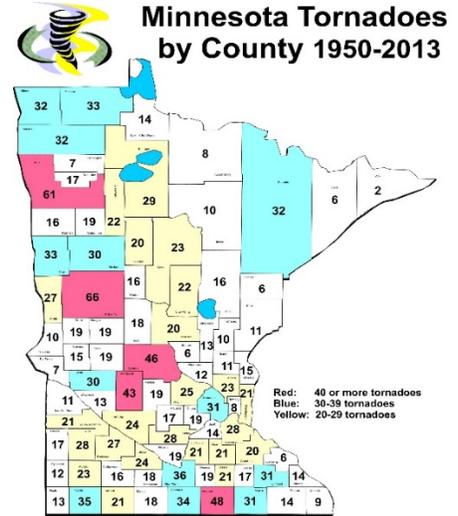
## 3.4.2 Tornado

### Description and History

A tornado is a destructive vortex of violently rotating winds, in contact with the ground, often having the appearance of a funnel-shaped cloud. May through July are the peak tornado months for Rochester, but tornadoes can happen any time of year if the conditions are right. They usually occur between 3:00 PM and 9:00 PM, but can happen any time of day or night. They are not always visible and can form with little advance warning.

The NWS – La Crosse issues a Tornado Watch for Olmsted County if atmospheric conditions are favorable for the development of severe thunderstorms that are capable of producing tornadoes. A Tornado Warning is issued when a severe thunderstorm has developed and has either produced a tornado or radar has indicated intense low level rotation in the presence of atmospheric conditions conducive to tornado development.

According to the National Weather Service, 44 tornadoes have occurred in the Rochester area since 1850. The strongest of these tornadoes is actually the cornerstone of Rochester’s history as a medical community. An F5 tornado hit the Rochester area in August 1883. The large number and severity of injuries resulting from this storm event led to the creation of St. Marys Hospital and the Mayo Clinic. No tornado deaths have been reported in Olmsted County since 1953, when two people died in separate tornadoes on May 10<sup>th</sup>. The last violent tornado struck Rochester in 1962; there were no deaths attributed to the storm, but 34 people were injured after a brief touchdown leveled four homes and destroyed seven others.



Source: Minnesota Department of Natural Resources

### Olmsted County Tornado Statistics 1850-Present

Source: National Weather Service

EF0/F0	EF1/F1	F2	F3	F4	F5	Total
16	8	13	1	5	1	44

#### Location

Tornadoes can occur anywhere in Rochester.

#### Extent

The Enhanced Fujita (EF) Scale is used to assign a tornado a “rating” based on estimated wind speeds and related damage. When tornado-related damage is assessed, it is compared to a list of Damage Indicators and Degrees of Damage which aid in the estimation of wind speeds the tornado likely produced. From that, a rating is assigned.

### Enhanced Fujita Scale for Tornado Damage

Source: NOAA

Fujita Scale			Derived EF Scale		Operational EF Scale	
F Number	Fastest ¼-mile (mph)	3 Second Gust (mph)	F Number	3 Second Gust (mph)	F Number	3 Second Gust (mph)
0	40-72	45-78	0	65-85	0	65-85

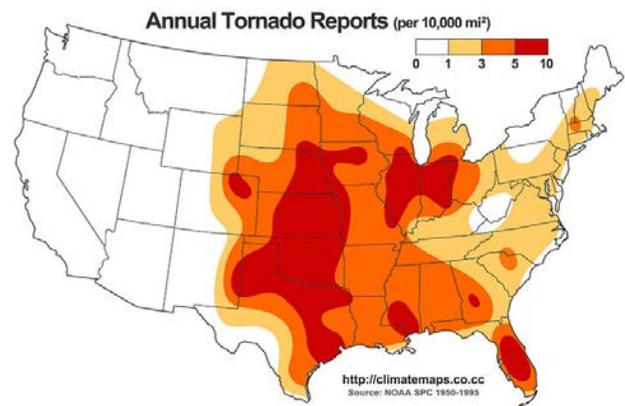
1	73-112	79-117	1	86-109	1	86-110
2	113-157	118-161	2	110-137	2	111-135
3	158-207	162-209	3	138-167	3	136-165
4	208-260	210-261	4	168-199	4	166-200
5	261-318	262-317	5	200-234	5	Over 200

Probability of Future Events

According to the NWS Storm Prediction Center’s tornado data for 1985-2014, Minnesota ranks 13<sup>th</sup> in the average annual number of tornadoes per state. The southern part of Minnesota typically reports 3-5 tornadoes per year; Olmsted County averages one tornado every 1-2 years.

Impact and Vulnerability

Tornadoes can be catastrophic to people, structures, and infrastructure, causing injuries, fatalities, building losses, and disruption of critical infrastructure. Their impact can be felt in a matter of seconds and can seem to last a lifetime.



Rochester’s daytime weekday population averages around 140,000 workers, residents, students, and visitors. Many of these people are concentrated in and around the Mayo Clinic campus, rendering that area particularly vulnerable to human casualties during a catastrophic storm event. Most of these potential human casualties can be avoided if businesses and institutions have emergency operations plans and if people heed emergency notifications and take refuge in basements and storm shelters.

Unfortunately, not everyone in Rochester is benefitting from advanced emergency preparations and alerts. Public engagement sessions held with some of our most vulnerable populations, limited English speakers and those with access and functional needs, indicate that while most of these people do have access to the traditional means of emergency communications (TV, radio, and social media), the messages are only delivered in English and may not be adapted for the blind and deaf. As a result, they may know something is going on, but they are unsure what it is and what they should do in response. Another vulnerable



population, Mayo Clinic visitors, may not be familiar with what a tornado even is, let alone tornado preparedness procedures or where to seek shelter.

Residential building damage, particularly to mobile homes, tend to account for the most property losses. Power outages from downed transmission lines are common during these storm events and communications disruptions can keep people from accessing vital warning information. In addition, loss of vital equipment and supplies could significantly hamper emergency response and recovery.

### 3.4.3 Hail

#### Description and History

Per NOAA's *Severe Weather 101* website, hail is a form of precipitation that occurs when updrafts in thunderstorms carry raindrops upward into extremely cold areas of the atmosphere where they freeze into balls of ice. Hailstones grow by colliding with supercooled water drops that freeze on contact with ice crystals, frozen raindrops, and dust. Thunderstorms that have a strong updraft keep lifting the hailstones up to the top of the cloud where they encounter more supercooled water and continue to grow. The stronger the updraft the larger the hailstone can grow. Hailstones can begin to melt and then re-freeze together, forming large and very irregularly shaped hail. The hail falls when it becomes heavy enough to overcome the strength of the updraft and is pulled by gravity towards the earth.

The NOAA Storm Events Database contains records for 83 hail events in Rochester from 1994 through 2016. While none of these events resulted in reported injuries or deaths, almost \$6 million in property damages were reported. The table below lists the most significant events with respect to property damage.

#### Most Significant Hail Events | Olmsted County, MN

*Source: NOAA Storm Events Database*

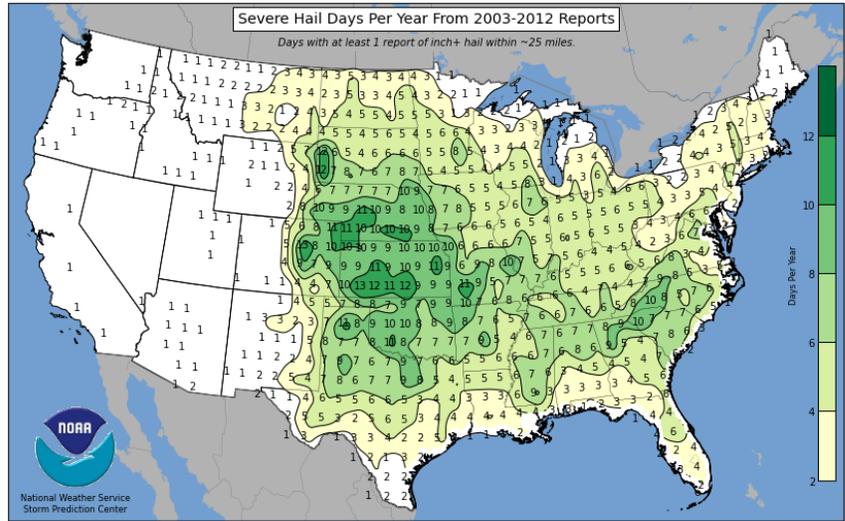
Begin Date	Magnitude (in)	Deaths	Injuries	Property Damage (\$)
8/9/1999	.88 – 1.75	0	0	5,000,000
3/29/1998	1.5	0	0	320,000
6/7/2005	.75 - 1	0	0	202,000
8/1/2000	1.75	0	0	75,000
5/18/1998	.75 - 1.5	0	0	58,000
3/29/1998	2	0	0	50,000

#### Location

Hail can occur anywhere in the plan area.

Extent

The Tornado and Storm Research Organisation (TORRO) in the United Kingdom has created a Hailstorm Intensity Scale to estimate the potential impact of a hail storm. While the size of a hailstone certain affects the amount of damage that can be expected, other factors such as number and density of hailstones, fall speed, and surface wind speed also impact severity.



**TORRO Hailstorm Intensity Scale**

Source: The Tornado and Storm Research Organisation

	Intensity Category	Diameter (mm)	Diameter (in)	Typical Damage Impacts
H0	Hard Hail	5	0.2	No damage
H1	Potentially Damaging	5-15	0.2 - 0.6	Slight general damage to plants, crops
H2	Significant	10-20	0.4 – 0.79	Significant damage to fruit, crops, vegetation
H3	Severe	20-30	0.79 – 1.2	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	25-40	1.0 – 1.6	Widespread glass damage, vehicle bodywork damage
H5	Destructive	30-50	1.2 – 2.0	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	40-60	1.6 – 2.4	Bodywork of grounded aircraft dented, brick walls pitted
H7	Destructive	50-75	2.0 – 3.0	Severe roof damage, risk of serious injuries
H8	Destructive	60-90	2.4 – 3.5	Severe damage to aircraft bodywork
H9	Super Hailstorms	75-100	3.0 – 3.9	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
H10	Super Hailstorms	>100	>3.9	Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

Probability of Future Events

Hail storms are an annual occurrence in the plan area. While May and June are the peak months for hail to fall in Rochester, it can occur in other warm season months. The most common time for hail to fall is between 1 and 9 p.m., although it can happen at any time of day.

Impact and Vulnerability

Hail is typically a crop damaging hazard, but it can damage roofs, windows, and vehicles. While injuries or fatalities are rare for hail, monetary expenses to repair and replace damages can be high. In August 1999, a severe thunderstorm moved through the county during the early afternoon dropping large hail. Hundreds of cars in the area were damaged, especially in Rochester, causing several million dollars in damage.



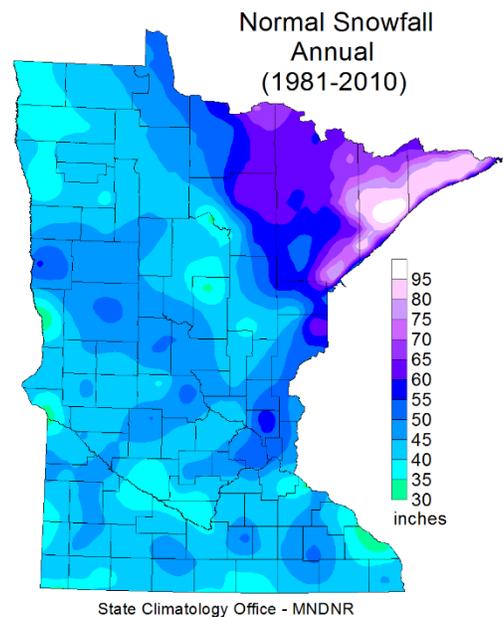
3.4.4 Winter Storm

Description and History

Every year, Rochester experiences heavy snow, sleet, and periods of blowing/drifting snow. While the majority of these winter storm events occur between the months of December and March, this is Minnesota, so periods of cold weather leading to snow are very likely both before and after these dates.

There are several tracks that winter storms tend to take through the Rochester area. The heaviest snows (6-10 inches) typically fall when low pressure systems develop in the southern plains states and move northeastward into our area. More common are the Canadian-born lows called “Alberta Clippers” that bring lighter, drier snowfalls of 1 to 4 inches with widespread blowing and drifting.

The 30-year average seasonal snowfall at Rochester is 52.5 inches with a record of 84.7 inches set during the 1996-1997 winter. Since 1996, The NOAA Storm Events Database has recorded 43 Winter Storm Events for the Rochester area, two of which accounted for a total of \$105,000 in property damage. Eleven blizzard events accounted for a total of \$65,000 in property damage and, unfortunately, 1 death and 5 injuries. Six ice storms in this time period led to a total a of \$20,000 in property damage and 1 injury.



## Highest Snowfalls

Source: National Weather Service

Seasonal			One-Day		
1.	84.7"	1996-97	1.	19.8"	March 18, 2005
2.	77.5"	1950-51	2.	15.4"	January 22, 1982
3.	74.5"	1961-62	3.	15.0"	December 11, 2010
4.	74.0"	2012-13	4.	14.0"	March 30, 1934
5.	73.6"	1951-52	5.	14.0"	April 20, 1893
6.	73.3"	1978-79	6.	13.5"	February 27, 1893
7.	70.5"	2010-11	7.	13.0"	April 26, 1988
8.	68.6"	1984-85	8.	12.0"	November 30, 1934
9.	68.0"	1881-82	9.	10.8"	March 10, 1956
10.	66.3"	1887-88	10.	10.6"	November 25, 1952

### Location

The entire planning area is affected by winter storms. The flatter, open portions of the city are more likely to experience blizzard conditions than those areas sheltered by trees and topography.

### Extent

The National Weather Service (NWS) in La Crosse, WI, issues *Winter Weather Advisories* for those winter weather events that are expected to be an inconvenience and should not become life-threatening as long as caution is exercised. These are often issued for 3 to 6 inches of snow, blowing and drifting snow, freezing drizzle, or a combination of these elements. It may be issued for less snow for early season events, when drivers may not be accustomed to slick roads.



In this part of the country, criteria for what constitutes a *winter storm* include snowfalls of 6 inches or more in 12 hours, 8 inches in 24 hours, or lower amounts if accompanied by strong winds or a combination of dangerous winter elements. The NWS-La Crosse issues a *Winter Storm Watch* when there is a potential for a winter storm to affect the region during the next 1 to 3 days. *Winter Storm Warnings* are usually issued when dangerous winter weather is expected, occurring, or imminent. Unnecessary travel should be avoided during these events.

**Blizzards** are our most dangerous winter event. The areas of our community that are relatively flat do see blizzard or near-blizzard conditions more frequently than areas to our east, with 9 blizzards documented since 1961. The NWS-La Crosse issues **Blizzard Warnings** when snow or blowing snow lowers visibilities to a 1/4 mile or less, wind gusts hit 35 mph or higher, and the storm lasts for 3 hours or more. Deep snow drifts can form on roadways and block building entrances. Wind chill values can become life-threatening. Travel is dangerous during these storms and should be avoided if possible.

Freezing or mixed precipitation, while not a common occurrence, can occur a few times a winter, typically at the beginning or end of the season. **Ice Storm Warnings** are issued when freezing rain will result in a coating of ice of 1/4 inch thick or more on objects, making travel nearly impossible. For lesser amounts of ice, a winter weather advisory is usually used, but even a thin glaze of ice can make travel difficult.

Snowfalls of 6 inches or more in 12 hours, 8 inches in 24 hours, or lower amounts if accompanied by strong winds, or a combination of dangerous winter elements constitute a **winter storm**. These snow events become “true” **blizzards** when snow or blowing snow lowers visibilities to a 1/4 mile or less, wind gusts hit 35 mph or higher, and the storm lasts for 3 hours or more. **Ice storms** are characterized by freezing rain that results in a coating of ice of 1/4 inch thick.

**Probability of Future Events**

On average, our area experiences 3-5 winter storms a season and 1 true blizzard every 3 years. Ice storms can be expected a few times a year, particularly at the beginning and end of winter.

**Impact and Vulnerability**

Heavy winter storms, especially when combined with low temperatures, can be a significant danger to life and property. Decreased visibilities and slick roadways put drivers at a greater crash risk of collision and pedestrians at a higher risk of falling or being hit by a motorized vehicle. Drivers may make uninformed decisions, such as abandoning their vehicle or following snowplows too closely, in conditions that can put them at risk. Power outages, extreme cold, and communications disruptions may make it difficult for residents and visitors to stay warm, obtain food and medicine, or reach their destinations.



Winter storms create difficulties for local governments and the services they provide. Poor driving conditions directly impact emergency response times to motor vehicle crashes, criminal reports, and fire and medical emergencies. Snow removal and road de-icing can lead to significant equipment and labor costs. Transit systems may be compromised in their ability to get people to their jobs. While most of the newer Rochester neighborhoods are served by underground power lines, the older parts of town are served by overhead lines that may be damaged by the weight of ice and heavy snows.

Transportation innovations, including improved vehicles and better constructed and maintained roads, have contributed to the decline in traffic deaths related to snow events. Heeding winter storm alerts and adequate preparedness can usually lessen the impact of winter storm events in Rochester.



Extent

The severity of an epidemic can be analyzed from two perspectives: that of the infected individual and the pervasiveness of the disease expected in population as a whole.

Probability of Future Events

Rochester is likely to experience future epidemics, perhaps more so than other communities of our size. Rochester is a global destination. Roughly 2 million people visit our city each year; the majority of these visitors are seeking health care from the Mayo Clinic. These patients come here from across the country and around the world, many to find answers to health concerns that their local physicians have been unable to give them. In addition, Rochester has seen an increase in the number of international immigrants choosing to settle here. Some of these visitors, may be reintroducing contagious diseases thought to be eradicated in our country or unwittingly spreading new agents.

Impact and Vulnerability

As described above, Rochester’s international status as a medical destination may increase the potential impact and vulnerability of the community to epidemics. Not only does the sheer number of national and international travelers in our community impact our potential exposure to contagions, especially in comparison with other cities our size, but many of the city’s residents and visitors are here because their health is compromised.

On the other hand, because Rochester is a center for medicine and innovation, we have excellent private and public health care. Vaccination rates are high in our community, the Olmsted County Public Health Services (OCPHS) Tuberculosis Clinic and Refugee Health Program serve to detect and treat communicable diseases among our area immigrants, and our residents are highly educated and attuned to health issues. The Disease Prevention and Control (DPC) division of OCPHS has the public health responsibility to prevent the spread of infectious diseases and in 2008 created the Medical Reserve Corps of Olmsted County (MRCOC), whose mission is to enhance emergency response capabilities by recruiting and training a corps of medical, non-medical and public health volunteers to assist in response to a public health emergency. And, of course, the Mayo Clinic is one of the premier research and medical treatment centers in the world.



3.4.6 Flood

Description and History

Flooding is an overflow of water into areas that are normally dry. They may be a result of heavy rains, rapid snowmelt, dam and levee breaks, water main breaks, or backed-up storm sewers. Flood depths may range from a few inches to many feet. They can occur in a matter of minutes or over a long period of time and may last days, weeks, or longer.

Rochester is no stranger to flooding. The city was built on the banks of the South Fork of the Zumbro River to take advantage of the water supply, the power of natural falls, and, eventually, the manmade mill races. The city is laced with small creeks feeding the Zumbro, which has made it subject to periodic severe flash flooding from heavy rainfall events.

Working with the federal government, a flood control plan for Rochester was developed in 1976-77 and first submitted for funding in a bill to Congress in 1977. A devastating flood in 1978 further



emphasized the need for this project; federal assistance was granted and the flood control project was completed in 1996. The historic 1978 flood was used as a model during the design process so that the Flood Control Project could handle any flood event previously experienced in the community. The Flood Control Project uses a multi-faceted approach that combines water storage in reservoirs upstream, stream bank stabilization, construction of a wider and deeper channel, and levees. The structures are designed for 24 inches of rain within a 6-hour period without overtopping; that is, they can handle flooding events of greater magnitude than a 200 year flood event. Rochester's Flood Control Project removed 2000 homes and businesses from the floodplain with an estimated damage reduction benefit of \$250 million per 100-year event. Reservoir structures are inspected by Rochester Public Works, Olmsted County Public Works, the Natural Resources Conservation Service (NRCS), and the Minnesota Department of Natural Resources (DNR).

Floodplain management continues to this day, with the City choosing to adopt development standards more stringent than those currently mandated by the Federal Emergency Management Agency (FEMA) in an effort to account for the greater number of intense storm events experienced here in recent years.

The DNR and the Minnesota Pollution Control Agency (MPCA) provide access to near real-time and historical stream flow and water quality data across the state of Minnesota via the Cooperative Stream Gaging Website. The National Weather Service in La Crosse, Wisconsin, provides near real-time rainfall amounts for the Rochester area.

### Location

The areas near Rochester's rivers and streams have the greatest potential for flooding. Figure 3-1 depicts the area's floodplain boundaries and Figure 3-2 indicates addresses most likely to be impacted by floodwaters. The City of Rochester's *Zoning Ordinance and Land Development Manual* restricts development in the floodplain, while the *Olmsted County Zoning Ordinance* regulates floodplain development in those portions of the plan area currently outside of Rochester's city limits. Not all structures in the floodplain are at risk of flooding; structures built after the adoption of the City's zoning ordinance are elevated to at least one foot above the flood plain elevation.

FIGURE 3-1: FEMA FLOOD ZONES

# FEMA FIRM Review Map

February 2017

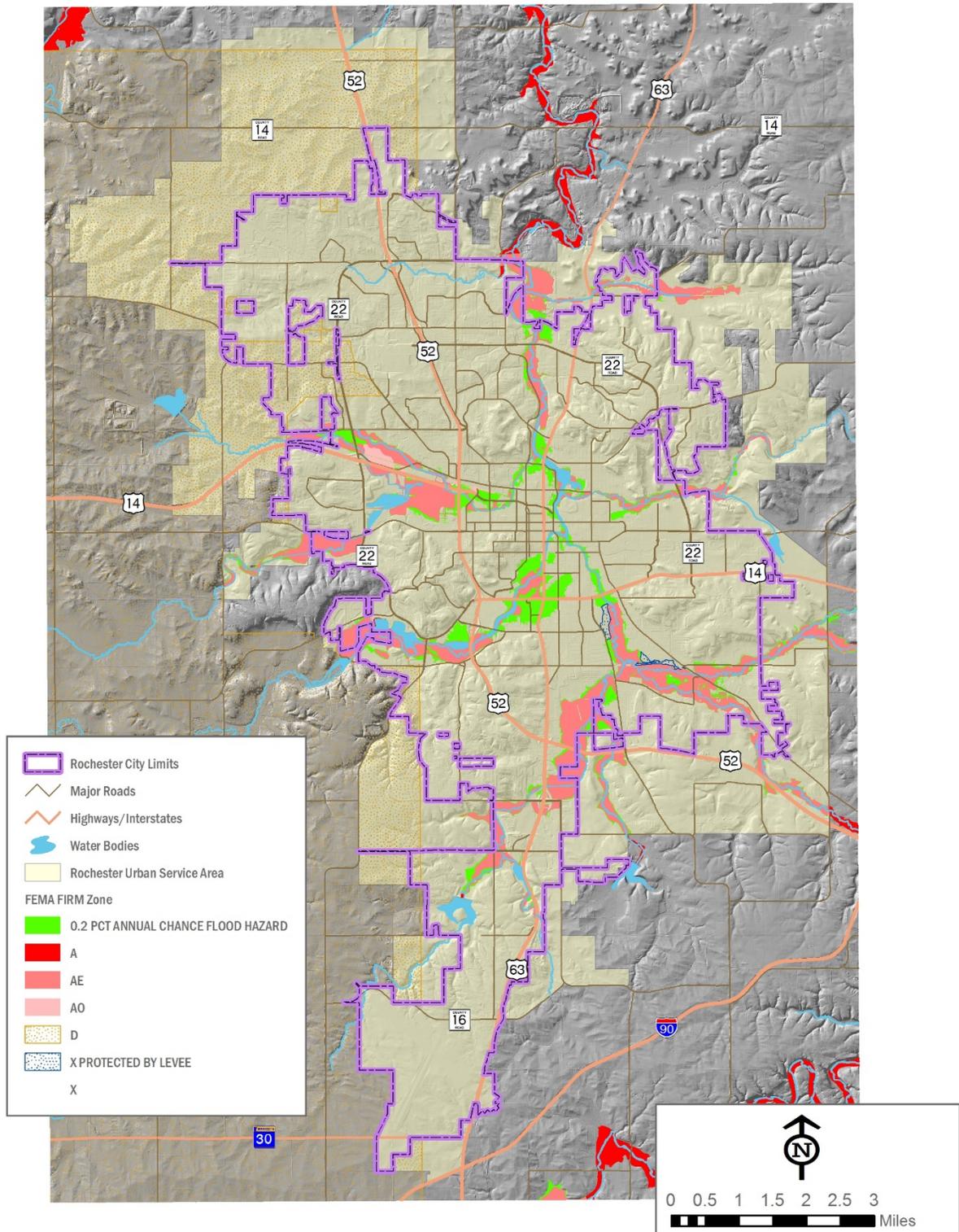
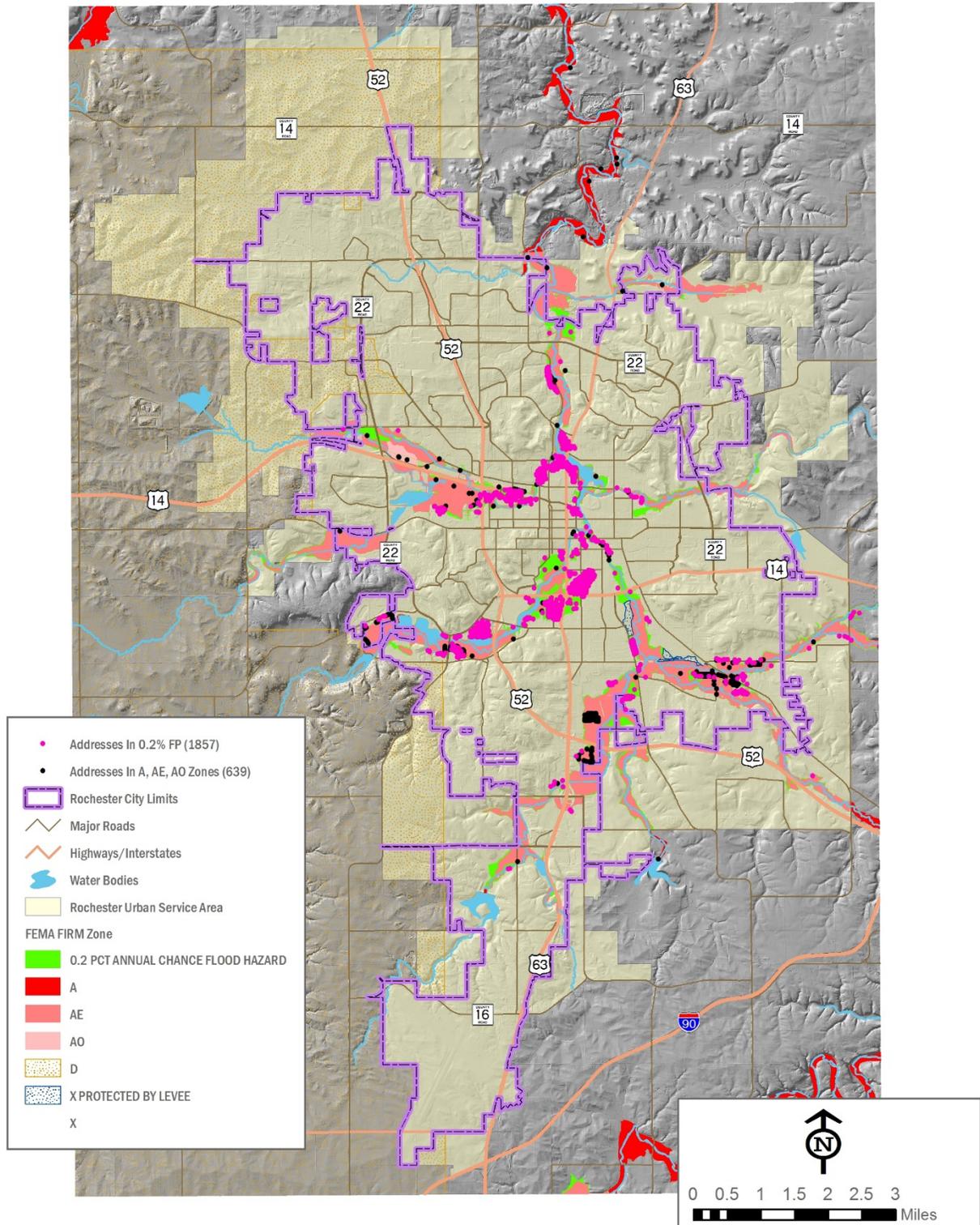


FIGURE 3-2: ADDRESSES WITH POTENTIAL FLOOD RISK

# Addresses With Potential Flood Risk

Draft FEMA FIRM Maps



The potential for flash flooding increases with the amount of impermeable surface in the area. Rochester's stormwater management system, which includes stormwater detention ponds and other forms of "green infrastructure", help reduce the impact of this phenomenon.

Repetitive loss structures are those structures which have sustained damages on two or more separate occasions within a 10-year time span for which the cost of repairs at the time of the flood meets or exceeds 25 percent of the market value of the structure before the damage occurred. There are no repetitive loss structures in the city of Rochester.

Rochester's recently acquired draft FEMA floodplain maps do not account for more recently adopted Atlas 14 precipitation measures. The City of Rochester is currently working with a consultant to analyze and map Atlas 14 impacts. This study is expected to be complete in 2017.



### Extent

Two types of flooding may impact the Rochester area. A **river flood** occurs when water levels exceed their banks due to persistent rain events for extended periods of time, rapid snowmelt, or an ice jam. A **flash flood** is typically caused by heavy rainfall within a short time period, typically less than six hours, a dam or levee break, or after a sudden release of water from a debris or ice jam.

Flash floods can occur with little to no warning while river floods may afford advanced warning. The National Weather Service – La Crosse issues the following notices to warn about flash flood and flood potential.

- **Flash Flood or Flood Watch:** Flash flooding or flooding is possible within the designated watch area. People in the area should be alert for future notices.
- **Flash Flood or Flood Warning:** Flash flooding or flooding has been reported or is imminent. People within the warning area should take necessary precautions at once and get to higher ground.
- **Urban and Small Stream Advisory:** Flooding of small streams, streets, and low-lying areas such as railroad underpasses and urban storm drains is occurring.
- **Flash Flood or Flood Statement:** Follow-up information regarding a flash flood/flood event.

### Probability of Future Events

Flooding in Rochester primarily occurs as a result of spring runoff, though the area's topography makes it prone to flooding and flash flooding during significant rain events. Rochester's Flood Control Project has reduced flood risk in Rochester to 0.52% in any given year and has reduced the impacts of flooding downstream.

### Impact and Vulnerability

Floods often cause damage to homes and businesses if they are placed in natural flood plains of rivers. Floods can result in partial or complete loss of facilities. Flooding events could also result in a temporary loss of power and/or phone service lasting from a few hours to several days. Results of these impacts could complicate communication with staff. Staff attendance may be impacted. Staffing issues, loss of power, and other impacts could reduce the ability to continue operations at acceptable levels.

Rochester’s Flood Control Project is working. Significant rainfall events in August 2007, September 2010, and September 2016 were contained by the Project. City staff are working on roadway and stormwater design issues in order to eliminate street flooding that occasionally occurs during heavy rain events.



### 3.4.7 Lightning

#### Description and History

Lightning is the occurrence of a high voltage electrical discharge in the atmosphere between clouds, the air, or the ground, according to NOAA’s *Severe Weather 101*. There are two types of ground flashes. **Natural**



**lightning** typically goes from cloud to ground, that is, a normal channel of negative charge in the environment is attracted to a positive charge on the ground, followed by an upward travelling return stroke. It is the return stroke that is visible. **Triggered lightning**, which includes strikes to very tall structures and airplanes, goes from ground to cloud. Lightning can also extend into the air around a storm (**cloud to air**) or imbed within a cloud (**intra-cloud**).

Thirteen records of lightning hitting the ground in Rochester have been recorded by NOAA’s Storm Events

Database since 1999. Thankfully, none of these resulted in injuries or death. A total of \$172,000 of property damage due to lightning occurred in Rochester during this time period.

#### Location

Tall objects such as trees and skyscrapers are commonly struck by lightning. Rochester’s hilltops also make good targets. The reason for this is their tops are closer to the base of the storm cloud. Since the atmosphere is a good electrical insulator, the less insulation the lightning has to burn through, the easier it is for it to strike. However, this does not always mean tall objects will be struck. It all depends on where the charges accumulate. Lightning can strike the ground in an open field even if the tree line is close by.

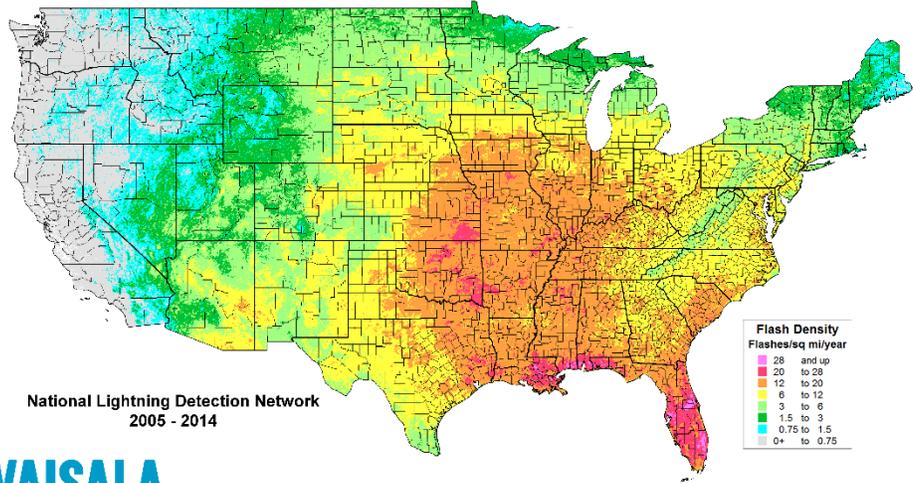
Extent

Energy from lightning heats the air anywhere from 18,000 degrees Fahrenheit to up to 60,000 degrees Fahrenheit. Lightning can have 100 million to 1 billion volts and contains billions of watts. Positive lightning is often considered more dangerous than a negative strike because its electrical field is stronger (forming at the top of the storm), the flash duration is typically longer, and its peak charge can be much greater.

Positively charged lightning can occur near the edge of a cloud or strike more than 10 miles away, when people aren't aware of the impending danger.

Probability of Future Events

Lightning strikes the ground approximately 25 million times each year in the U.S. According to the NWS, the chance of an individual in the U.S. being killed or injured by lightning during a given year is one in 240,000. Assuming an average lifespan of 80 years, a person's odds of being struck by lightning is 1 in 3000. Lightning strikes have been annually reported in Rochester since 2011.



National Lightning Detection Network  
2005 - 2014  
**VAISALA**

Impact and Vulnerability

According to the National Weather Service, lightning is one of the most underrated severe weather hazards. It is the second deadliest weather killer in the United States, ranking it above hurricanes and tornadoes with an average of 73 deaths and 300 injuries each year in the US. Lightning can cause injury and/or death and large amounts of damage to property, including loss of network equipment, computers, and communication systems. Lightning events commonly cause electrical power outages which can last for several hours.

- 4 Probability
- 1 Magnitude
- 3 Warning Time
- 1 Duration
- 2.65 CPRI
- M Planning Significance
- 1 Geographic Extent

Lightning

### 3.4.8 Excessive/Prolonged Cold

Description and History

Arctic cold outbreaks occur in the Rochester area when a persistent period of low winter temperatures combine with moderate to strong northwest winds to produce dangerous wind chills. Snow depth can modify these cold temperatures, leading to sub-zero readings. The coldest temperatures usually occur in January and February, with average lows in the single digits and record lows colder than -30°F most days. Since 2007, 10 Extreme Cold/Wind Chill events were recorded in the Storm Events Database for the area.

## Record Cold Temperatures in Rochester

Source: National Weather Service

Coldest Mean Temperature for a Month (°F)			Coldest Daily Temperature (°F)		
1.	-2.3	January 1912	1.	-42	January 7, 1887
2.	-2.0	January 1888	2.	-40	January 30, 1951
3.	-1.8	January 1977	3.	-39	February 20, 1930
4.	-1.5	January 1979	4.	-39	January 13, 1912
5.	0.5	February 1936	5.	-39	January 12, 1912
6.	1.5	January 1887	6.	-39	January 21, 1888
7.	1.9	January 1918	7.	-37	January 22, 1888
8.	2.7	January 1893	8.	-36	January 15, 1888
9.	2.9	December 1983	9.	-35	February 2, 1996
10.	3.0	January 1982, January 1929	10.	-34	February 24, 1936; January 23-24, 1935

### Location

Excessive/prolonged cold occurs throughout the region.

### Extent

The La Crosse National Weather Service issues **Wind Chill Advisories** when wind chill readings of -20°F to -34°F are expected. **Wind Chill Warnings** are issued when wind chill values at or below -35°F are expected or occurring.

### Probability of Future Events

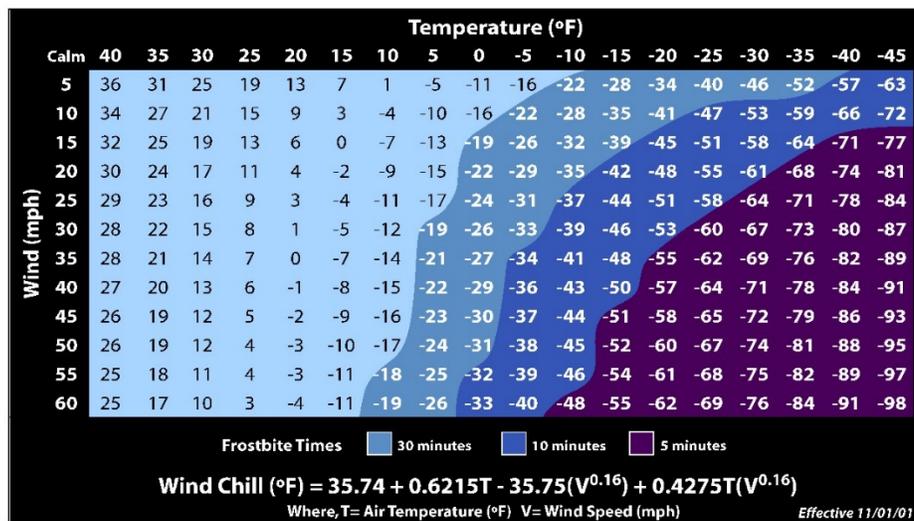
Sub-zero temperatures and wind chills routinely occur each winter in Rochester.

### Impact and Vulnerability

Low temperatures, when combined with strong winds, create wind chills that put people and



## Wind Chill Chart



animals at risk. Frostbite can strike in a matter of minutes and death can occur with prolonged exposure to the elements. From 2005-2015, the NWS recorded 21 cold-related fatalities. While none of these occurred in Rochester, typical winter conditions do make such tragedies possible in this area.

Property damage due to cold does not happen often, but periods of extreme cold can result in burst water pipes and septic system failures.



### 3.4.9 Excessive/Prolonged Heat

#### Description and History

Minnesota is typically thought of as a cold weather state. The area’s continental climate, however, also makes summer conditions ripe for hot, humid weather. Nationwide, heat events – prolonged periods of hot weather – cause more deaths than any other natural disaster. Dehydration, heat exhaustion, and heat stroke can occur when the body becomes too hot and can’t cool down. Heat can also exacerbate chronic conditions such as asthma, heart disease, and diabetes. July and August tend to be the hottest months. Eight heat events have been recorded in NOAA’s Storm Events Database for the Rochester area since 1999, tragically resulting in one death in 1999 and another in 2013.

### Record Heat in Rochester

Source: National Weather Service

Hottest Mean Temperature for a Month (°F)			Hottest Daily Temperature (°F)		
1.	77.7	July 1936	1.	108	July 14, 1936
2.	77.3	July 1916	2.	107	July 13, 1936
3.	77.2	July 1955	3.	107	July 12, 1936
4.	77.1	July 2012	4.	106	May 31, 1934
5.	77.0	August 1947	5.	105	July 10, 1936
6.	75.7	July 1935	6.	105	July 6, 1936
7.	75.3	July 1949	7.	105	June 27, 1934
8.	75.1	July 2011	8.	104	July 11, 1936
9.	75.0	July 1957	9.	102	July 31, 1988; July 10, 1976; July 19, 1940; July 17, 1936; July 7, 1936
10.	74.5	July 1974, August 1955	10.		

Location

Excessive heat events can affect everyone across the region. Some people, however, are at greater risk for heat-related illness than others. The Minnesota Department of Health (MDH) notes that some of these vulnerable populations are based on the amount of time spent in the heat, while others are affected by the ability of people to regulate their body temperature.

Extent

Heat Index measures the effect that the combination of heat and humidity have on the human body by accurately measuring how hot it **really** feels. The NWS issues an **Excessive Heat Warning** within 12 hours of the onset of a heat index of at least 105°F for more than 3 hours per day for 2 consecutive days, or heat index more than 115°F for any period of time. An **Excessive Heat Watch** is issued when heat indices in excess of 105°F during the day combined with nighttime low temperatures of 80°F or higher are forecast to occur for two consecutive days.

The National Weather Service’s Heat Chart Index depicts this relationship between heat, humidity, and the potential for heat illnesses and health risks.

**NOAA's National Weather Service**

**Heat Index**

Temperature (°F)

	80	82	84	86	88	90	92	94	96	98	100	102	104	106	108	110
40	80	81	83	85	88	91	94	97	101	105	109	114	119	124	130	136
45	80	82	84	87	89	93	96	100	104	109	114	119	124	130	137	
50	81	83	85	88	91	95	99	103	108	113	118	124	131	137		
55	81	84	86	89	93	97	101	106	112	117	124	130	137			
60	82	84	88	91	95	100	105	110	116	123	129	137				
65	82	85	89	93	98	103	108	114	121	128	136					
70	83	86	90	95	100	105	112	119	126	134						
75	84	88	92	97	103	109	116	124	132							
80	84	89	94	100	106	113	121	129								
85	85	90	96	102	110	117	126	135								
90	86	91	98	105	113	122	131									
95	86	93	100	108	117	127										
100	87	95	103	112	121	132										

**Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity**

- Caution
- Extreme Caution
- Danger
- Extreme Danger

Probability of Future Events

Extreme heat events are likely to continue on a regular basis in the future, particularly as climate change leads to more extreme weather events.

### Impact and Vulnerability

While extreme heat events impact the entire region, some people are more susceptible to illness and even death as a result. These vulnerable populations include:

- Older adults (age 65 and older)
- Infants and young children
- People with underlying medical conditions such as diabetes, high blood pressure, heart disease, mental illness, respiratory conditions, asthma, and obesity
- Outdoor workers, athletes, and other people who are outdoors for a long time
- People without air conditioning
- People living alone and who are socially isolated
- People living in top floor apartments
- People taking medications that affect their body's ability to stay hydrated and respond to heat
- People taking diuretics



While heat does not tend to impact property, widespread power outages can result from an increase in demand for electricity to power air conditioning. Water usage may also increase as people search for ways to cool off.

### 3.4.10 Landslide/Mudslide

#### Description and History

Landslides are the movement of rock, dirt, and debris down a slope. Major natural hazards such as extreme storm events, flooding, seismic events, and wildfire may trigger landslides; debris flows resulting from these events may also causes them. Landslides occurred throughout southeastern Minnesota during the record breaking storm in August, 2007. These landslides occurred along waterways, roads, and in developed areas. The blockage of stream flow could have significant impact on flood potential is topographic settings that constrict the flow of floodwaters during high flow events. Landslides also can affect access and traffic safety during these same storm events in addition to costs of repair of infrastructure. Landslides in developed areas can cause significant damage to buildings and property.

#### Location

Landslides can occur in areas of topographically steep slopes (Figure 3-3), areas with highly erodible soils (Figure 3-4), and slopes destabilized by natural (rainfall and channel erosion) or manmade actions (construction activity or site grading, mining, etc.). Over time, river corridors, roadway cuts, and developing areas graded to steeper slopes are areas most prone to landslides.

FIGURE 3-3: TERRAIN SLOPE

# Terrain Slope

Data Source: State of Minnesota LiDAR

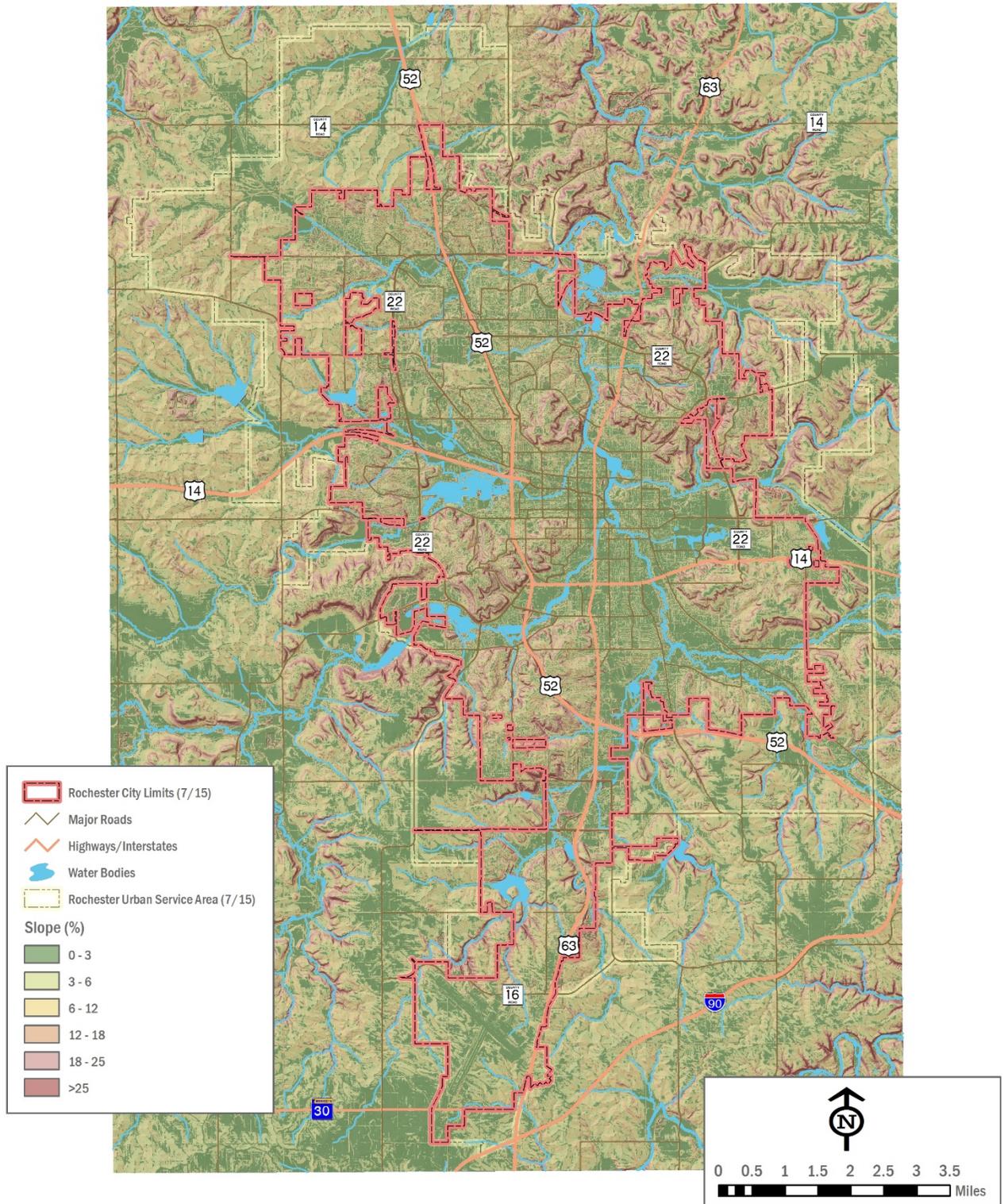
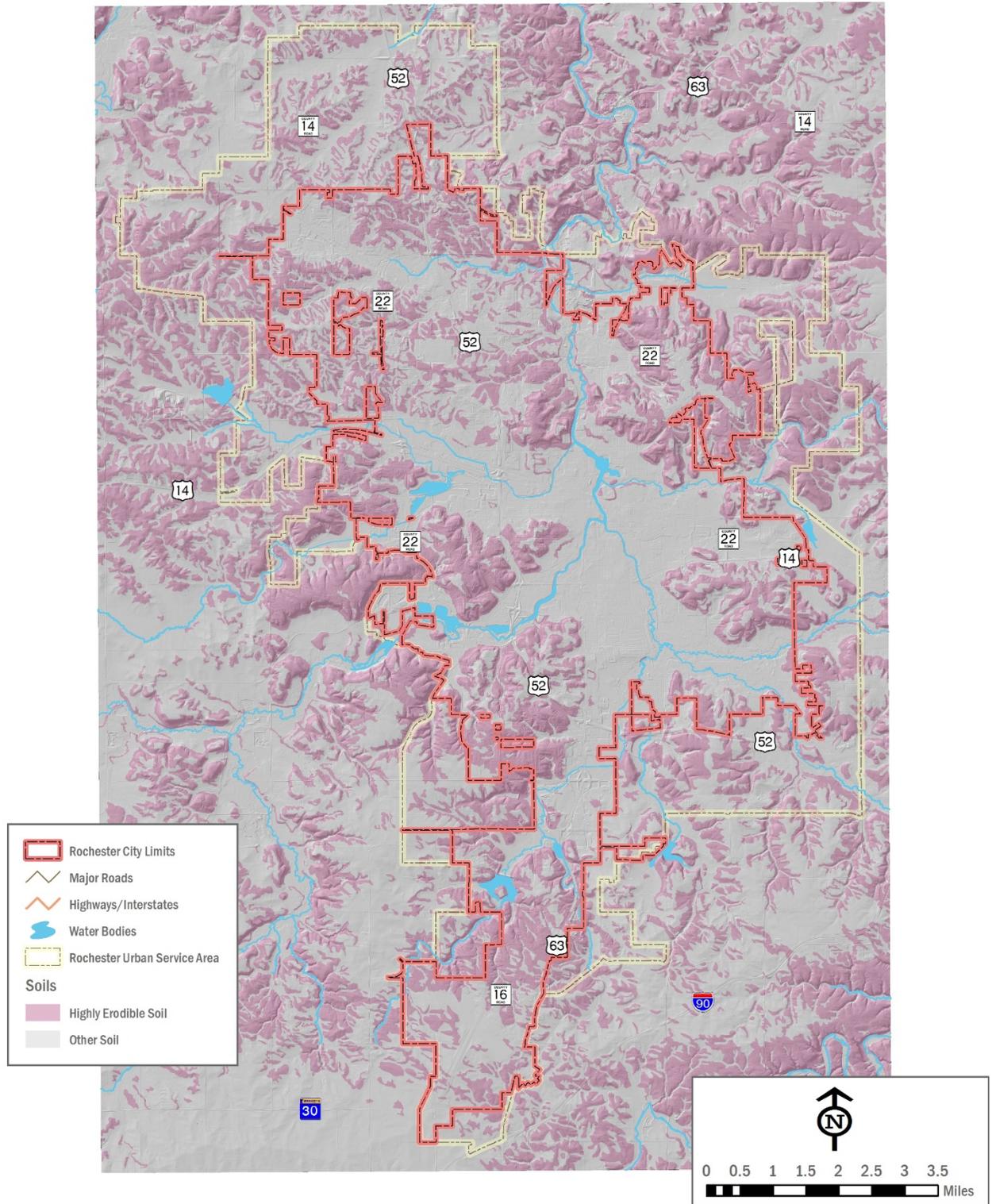


FIGURE 3-4: HIGHLY ERODIBLE SOILS

# Highly Erodible Soils

Data Source: Olmsted County Soil Survey (NRCS)



Extent

Slopes greater than 18% are considered to be “steep”. The Olmsted County Soil Survey rates soil erodibility.

Probability of Future Events

While the City of Rochester’s Zoning Ordinance and Land Development Manual regulates development on steep slopes and establishes site grading standards, Rochester’s topography is characterized by a network of steep slopes along its many waterways. As climate change leads to more extreme rain events, these vulnerable areas will likely continue to be prone to erosion.

Impact and Vulnerability

Landslides and mudslides are capable of wiping out buildings, infrastructure, and life. Streambank erosion can degrade the quality of our rivers and streams. Continued attention to grading standards, construction practices, and channel erosion will help preserve the health of our natural, human, and built environments.



3.4.11 Land Subsidence (Sinkholes & Karst)

Description and History

According to the Minnesota Geological Survey’s *Geologic Atlas – Olmsted County, Minnesota*, southeast Minnesota’s mildly acid groundwater is slowly dissolving the carbonate bedrock that underlies Rochester and Olmsted County, producing distinctive groundwater conditions and landforms called “karst”. Common features of karst geology include cracks, crevices, caves, sinkholes, and springs that serve as direct conduits for surface pollutants to the groundwater below. These geologically sensitive areas are oftentimes overlain by only thin layers of soil.



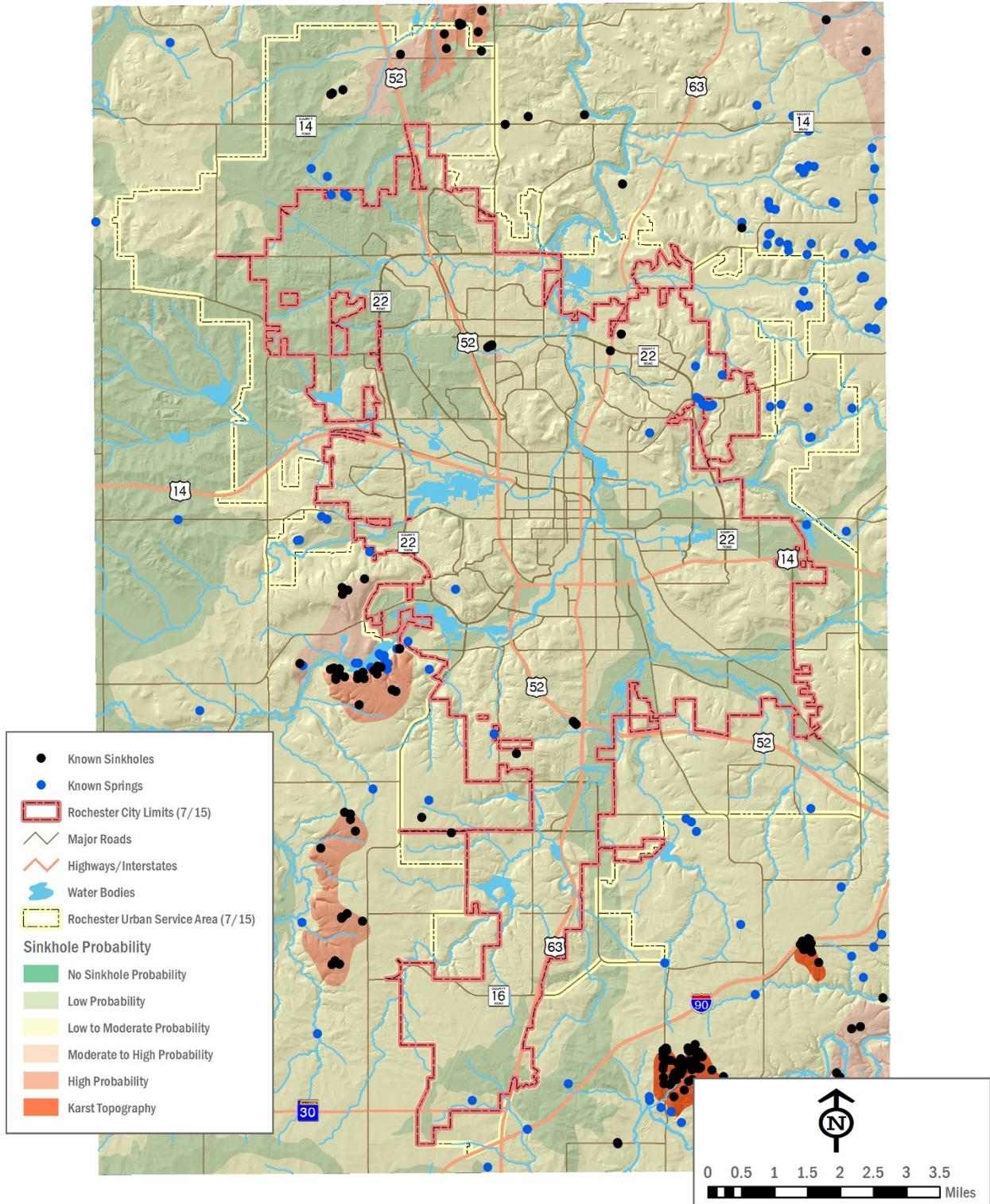
Location

See Figure 3-5 for the location of karst features in the Rochester area.

FIGURE 3-5: KARST FEATURES

# Karst Features

Data Source: Minnesota Geological Survey



Extent

Figure 3-6 indicates the geologic sensitivity of the area based on a combination of these karst features and depth to bedrock. In areas classified as “Very High”, surface contaminants will likely reach the first encountered bedrock in a matter of hours to months, while contaminants in areas of “Low” sensitivity will likely take decades to get there.

Probability of Future Events

In general, land subsidence in a karst setting is an ongoing, naturally occurring process. Human activities resulting in the collapse of materials into sinkholes, however, may accelerate this process.

Impact and Vulnerability

Virtually all of Rochester’s water supply is drawn from the bedrock aquifers that underlay the city. All of this groundwater began as precipitation that entered the soil and moved into these rock formations. Located 300-700 feet below the surface, the St. Peter-Prairie du Chien-Jordan aquifer is the city’s primary drinking water source. The flow of this critical water supply is toward the Rochester area. Since drinking water vulnerability is largely a function of ambient hydrogeologic and local land use conditions, even contaminants entering the aquifer from beyond the city limits will ultimately impact city water supplies. Potable water wells are now prohibited in the upper aquifers due to shallow depth to bedrock combined with higher levels of detected contaminants such as nitrate-nitrogen.

Physical problems also exist with karst geology. At the surface, the collapse of unconsolidated rock material into sinkholes can cause damage to buildings, roads, sewer lines, wells, and other structures including water retention facilities. Such facilities may hold contaminants that if released through a chronic or catastrophic failure would cause pollution of the groundwater system. The Geologic Atlas reported that the rate of sinkhole formation had appeared to have increased in the last few decades.



3.4.12 Drought

Description and History

Drought is an extended period of deficient precipitation, usually lasting a season or more, resulting in a water shortage. It is a normal feature of all climate zones and happens cumulatively rather than abruptly. Since it is a temporary variance from normal precipitation levels, what constitutes a drought varies from location to location.

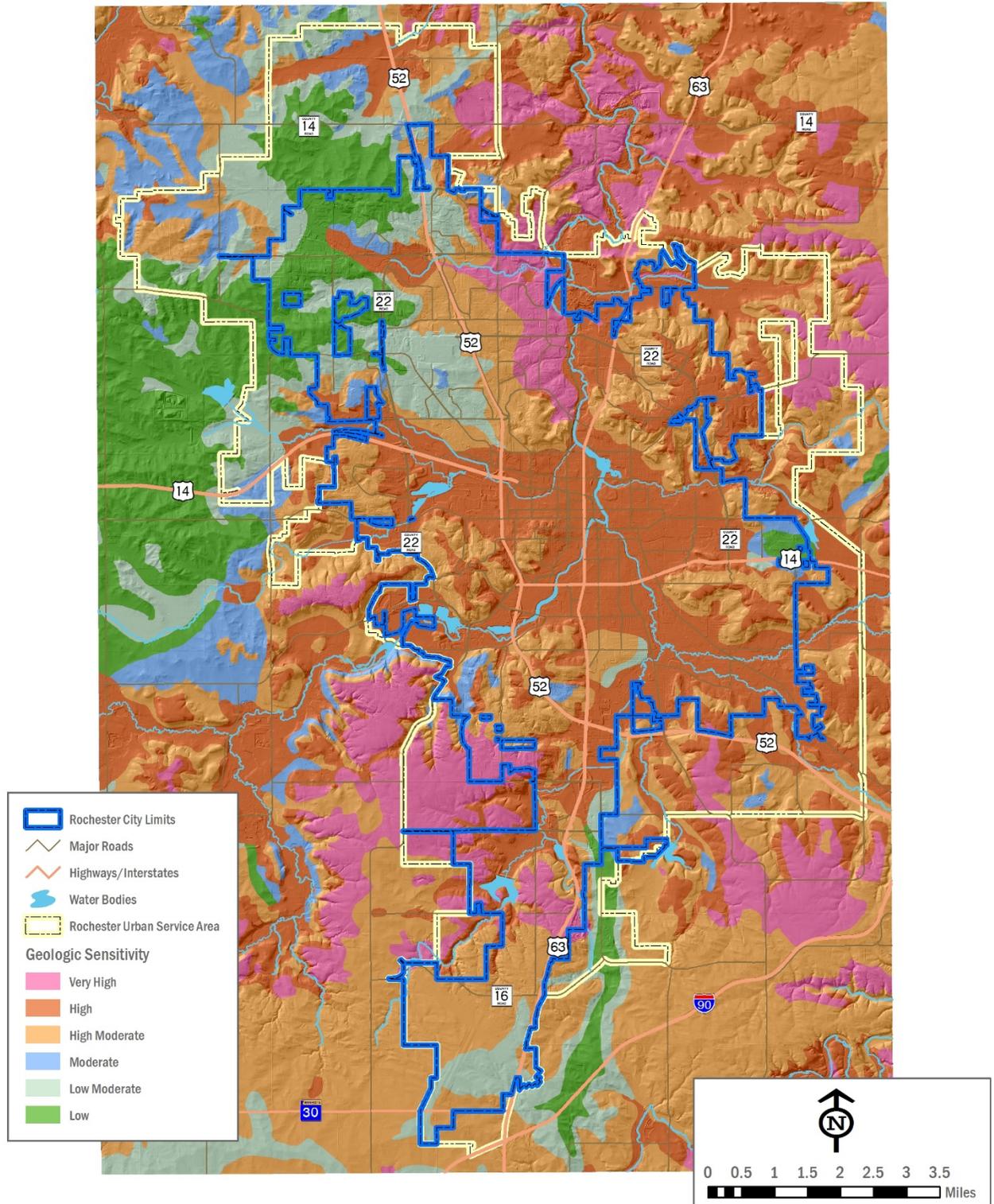
The National Weather Service’s *Drought Public Fact Sheet* defines three types of drought:

- **Meteorological drought** is usually defined based on the degree of dryness relative to some “normal” level and the duration of the dry period. Drought onset generally occurs with a meteorological drought.
- **Agricultural drought** links various characteristics of meteorological (or hydrological) drought to agricultural impacts, focusing on precipitation shortages, soil water deficits, reduced ground water or reservoir levels needed for irrigation.

FIGURE 3-6: GEOLOGIC SENSITIVITY

# Geologic Sensitivity

Data Source: Minnesota Geological Survey



■ **Hydrological drought** usually occurs following periods of extended precipitation shortfalls that impact water supply (i.e., streamflow, reservoir and lake levels, ground water), potentially resulting in significant societal impacts. Because regions are interconnected by hydrologic systems, the impact of meteorological drought may extend well beyond the borders of the precipitation-deficient area.

NOAA’s Storm Events Database has eight drought records on file for Olmsted County since 2012. The NWS – La Crosse lists the following low precipitation records:

<b>Record Low Precipitation in Rochester</b>					
<i>Source: National Weather Service</i>					
<b>Lowest Monthly Totals (inches)</b>			<b>Lowest Yearly Totals (inches)</b>		
1.	trace	December 1943	1.	11.65	1910
2.	trace	June 1910	2.	15.44	1976
3.	trace	March 1910	3.	19.91	1964
4.	0.01	October 1952	4.	20.21	1958
5.	0.01	November 1917	5.	20.32	1955
6.	0.04	February 1964	6.	21.19	1936
7.	0.05	February 1910	7.	21.39	1988
8.	0.06	November 1967	8.	21.92	1939
9.	0.06	February 1958	9.	21.92	1932
10.	0.06	February 1920	10.	22.47	1944

**Location**

Drought can occur throughout the area and is a normal part of all climatic regions.

Extent

The United States Drought Monitor has established a drought severity classification system and regularly posts maps on their website showing areas of concern.

Drought Severity Classification		
Source: US Drought Monitor		
Category	Description	Possible Impacts
D0	Abnormally Dry	Going into drought: <ul style="list-style-type: none"> <li>short-term dryness slowing planting, growth of crops or pastures</li> </ul> Coming out of drought: <ul style="list-style-type: none"> <li>some lingering water deficits</li> <li>pastures or crops not fully recovered</li> </ul>
D1	Moderate Drought	<ul style="list-style-type: none"> <li>Some damage to crops, pastures</li> <li>Streams, reservoirs, or wells low, some water shortages developing or imminent</li> <li>Voluntary water-use restrictions requested</li> </ul>
D2	Severe Drought	<ul style="list-style-type: none"> <li>Crop or pasture losses likely</li> <li>Water shortages common</li> <li>Water restrictions imposed</li> </ul>
D3	Extreme Drought	<ul style="list-style-type: none"> <li>Major crop/pasture losses</li> <li>Widespread water shortages or restrictions</li> </ul>
D4	Exceptional Drought	<ul style="list-style-type: none"> <li>Exceptional and widespread crop/pasture losses</li> <li>Shortages of water in reservoirs, streams, and wells creating water emergencies</li> </ul>

Probability of Future Events

Rochester typically experiences routine dry spells, though long term droughts occur less often.

Impact and Vulnerability

When rainfall is below normal for a significant period of time, stream and river flow declines, water levels in lakes and reservoirs fall, and water tables drop. Area crops may fail, impacting the price and availability of fresh food.

All drinking water supplies, public and private, are obtained through wells drilled into the St. Peter/Prairie du Chien, Jordan, and St. Lawrence geologic

formations/aquifers. The groundwater system is less likely to be affected by short term droughts unlike surface water systems. Watering bans are typically put into effect during dry periods to reduce lawn irrigation and reduce potential drawdown impacts on our groundwater aquifers.



The planning team decided not to outline specific mitigation actions for drought. While this hazard is possible within the planning area, the planning team determined that the impact and/or likelihood would be minimal.

### 3.4.13 Wildfire

#### Description and History

A wildfire is any uncontrolled fire in combustible vegetation that typically occurs in the countryside, open space areas, and wilderness. A wildfire differs from other fires by its extensive size, the speed at which it can spread out from its original source, its potential to change direction unexpectedly, and its ability to jump gaps such as roads, rivers and fire breaks. About 75 percent of wildfires start during spring due to dry weather conditions.

The NOAA Storm Events Database has two records of wildfire in Rochester. In April 2009, very dry conditions and strong winds caused a grass fire to get out of control and burn two acres in northeast Rochester. Later that month, the same conditions led to the burning of five acres in southwest Rochester.

#### Location

By definition, wildfires occur in open space areas. In an urban area like Rochester, areas on the fringe of the city as well as those in and adjacent to parkland, urban agricultural areas, and school fields are most likely to be exposed to potential wildfires.

#### Extent

The U.S. Forest Service has devised a Fire Danger Rating system that rates fire potential as a product of weather patterns, fuel types, and both live and dead fuel moisture.

Fire Danger Rating	
<i>Source: US Forest Service</i>	
Category	Description
Low	Fuels do not ignite readily from small firebrands although a more intense heat source, such as lightning, may start fires in duff or punky wood. Fires in open cured grasslands may burn freely a few hours after rain, but woods fires spread slowly by creeping or smoldering, and burn in irregular fingers. There is little danger of spotting.
Moderate	Fires can start from most accidental causes, but with the exception of lightning fires in some areas, the number of starts is generally low. Fires in open cured grasslands will burn briskly and spread rapidly on windy days. Timber fires spread slowly to moderately fast. The average fire is of moderate intensity, although heavy concentrations of fuel, especially draped fuel, may burn hot. Short-distance spotting may occur, but is not persistent. Fires are not likely to become serious and control is relatively easy.
High	All fine dead fuels ignite readily and fires start easily from most causes. Unattended brush and campfires are likely to escape. Fires spread rapidly and short-distance spotting is common. High-intensity burning may develop on slopes or in concentrations of fine fuels. Fires may become serious and their control difficult unless they are attacked successfully while small.

<b>Very High</b>	Fires start easily from all causes and, immediately after ignition, spread rapidly and increase quickly in intensity. Spot fires are a constant danger. Fires burning in light fuels may quickly develop high intensity characteristics such as long distance spotting and fire whirlwinds when they burn into heavier fuels.
<b>Extreme</b>	Fires start quickly, spread furiously, and burn intensely. All fires are potentially serious. Development into high intensity burning will usually be faster and occur from smaller fires than in the very high fire danger class. Direct attack is rarely possible and may be dangerous except immediately after ignition. Fires that develop headway in heavy slash or in conifer stands may be unmanageable while the extreme burning condition lasts. Under these conditions the only effective and safe control action is on the flanks until the weather changes or the fuel supply lessens.

The Minnesota DNR also posts statewide fire danger and burning permit restrictions on their website at [http://www.dnr.state.mn.us/forestry/fire/firerating\\_restrictions.html](http://www.dnr.state.mn.us/forestry/fire/firerating_restrictions.html).

**Probability of Future Events**

Wildfires are not common in Rochester. As the city further urbanizes, their likelihood should remain the same or decrease.

**Impact and Vulnerability**

Wildfires can cause damage to residences, outbuildings, and other properties. Public facilities may be closed for an extended period of time due to the proximity of the fire. Wildfires pose health risks and even death to the population and personnel due to flames, smoke and poor air quality.

The planning team decided not to outline specific mitigation actions for wildfires. While this hazard is possible within the planning area, the planning team determined that the impact and/or likelihood would be minimal.



**3.4.14 Earthquake**

**Description and History**

An earthquake is the result of a sudden release of energy in the Earth's crust that creates seismic waves. An earthquake is caused by the breaking and shifting of rock beneath the Earth's surface. Most of these occur when solid rock masses move past one another along fracture planes called "faults". Earthquakes strike suddenly, violently, and without warning at any time of the year and at any time of the day or night. Smaller earthquakes often follow the main shock of a larger earthquake. While Minnesota is far from any plate margin, the New Madrid seismic zone, located between St. Louis, Missouri and Memphis, Tennessee, has the potential for generating major earthquakes.

According to the MGS publication "Earthquakes in Minnesota", Minnesota has one of the lowest occurrence levels of earthquakes in the United States, though 19 small to moderate earthquakes have been

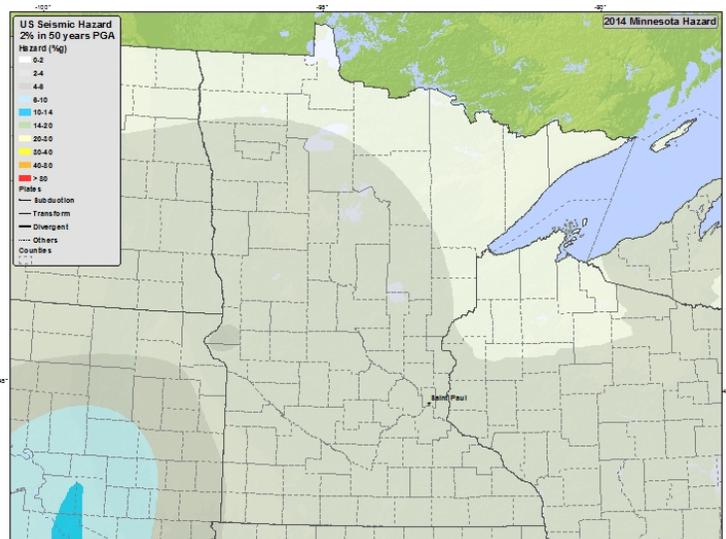
documented since 1860. These are attributed to minor reactivation of ancient faults in response to modern stresses. None of these have occurred in Southeast Minnesota.

**Location**

Earthquakes are rare events in Minnesota. No part of the Rochester area is more likely to experience an earthquake than any other, as shown on the USGS map to the right.

**Extent**

The Richter Scale is the most common standard for measuring the magnitude of earthquakes. SMS-Tsunami Warning.com shares the graphic below depicting the impact of earthquakes.

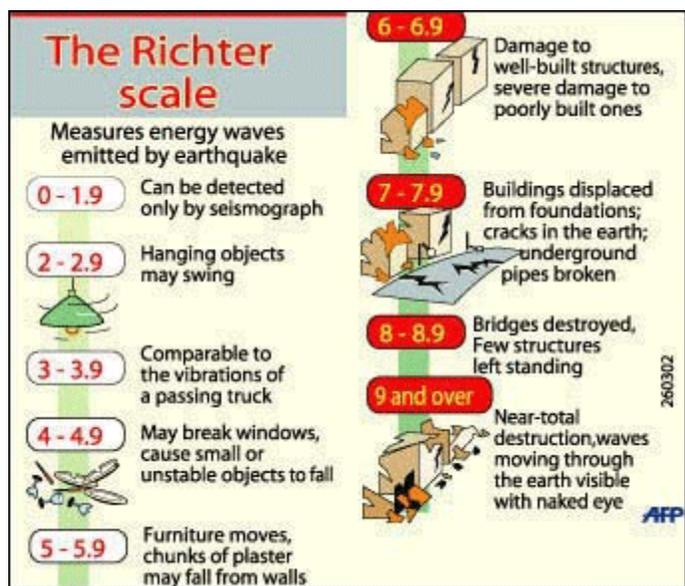


**Probability of Future Events**

Average recurrence rates for Minnesota earthquakes have been estimated by MGS as follows:

- Magnitude 4.0 - 10 years
- Magnitude 4.5 - 30 years
- Magnitude 5.0 - 89 years
- Magnitude 5.5 - 266 years

Earthquakes attributed to fracking operations have become more common in recent years. Should these types of activities start occurring in Minnesota, this phenomenon should be studied in greater depth as to the potential impact on our community.



### Impact and Vulnerability

Earthquakes can collapse buildings and bridges; disrupt gas, electric, and phone service; and sometimes trigger landslides, flash floods, and fires. Earthquakes can result in injuries and/or loss of life. Results of these impacts could complicate communications, travel, and workplace staffing levels.

The planning team decided not to outline specific mitigation actions for earthquakes. While these hazards are possible within the planning area, the planning team determined that the impact and/or likelihood would be minimal.



## 3.5 Technological Hazards

Technological hazards are those caused by unintentional systemic or structural failures.

### 3.5.1 Train Derailment

#### Description and History

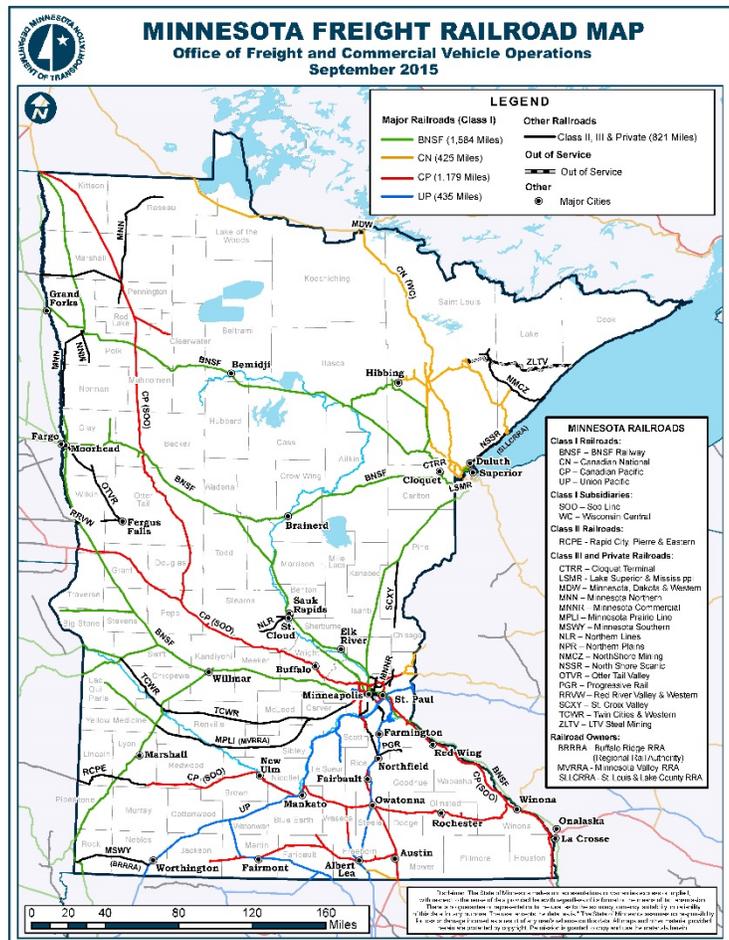
Train derailments occur as a result of a number of different causes. Broken rails, worn welds, bearing failures, and broken wheels are among the equipment failures that can lead a train to leave its tracks. Human factors, such as driving at improper speeds, braking operations, and violation of switching rules, may also cause derailments.

No record of historic train derailments was found for Rochester.

#### Location

While no derailment records were found for Rochester, the city does have an active Canadian Pacific line that runs through the downtown and bisects many residential and commercial areas. In particular, the tracks run through the Mayo Clinic campus.

There are also a number of spur lines that connect industrial and manufacturing businesses to the main line.



Extent

The severity of a train derailment can be measured in terms of human life/injury and value of property damage.

Probability of Future Events

Because trains are actively using the rail lines found in Rochester, the probability of future derailments is dependent on the maintenance of the railroad infrastructure and training of railroad personnel.

Impact and Vulnerability

Residential neighborhoods, the Mayo Clinic campus, Rochester’s Federal Medical Center (a federal prison for the infirm), and the Olmsted County Human Services Campus are located directly adjacent to the Canadian Pacific rail line. Should a derailment occur, a potentially large number of people could be impacted by a localized incident, many of them sick, disabled, and difficult to move quickly. Homes, workplaces, and medical facilities could suffer major structural damage. The Olmsted County Waste to Energy facility, which provides power, heating, and cooling to many public buildings, is also adjacent to the railroad tracks; damage to that facility could result in lack of services for thousands of workers and public servants.



### 3.5.2 Hazardous Materials Release – Transportation

Description and History

Hazardous materials are substances that are capable of posing an “unreasonable risk” to health, safety, and property if improperly handled. Movement of hazardous materials is commonly by truck, rail, or pipeline. Truck and rail transportation of hazardous materials is regulated and requires placards to categorize chemicals. Tankers have restrictions as to baffles, valves, and the amount of chemical materials to be transported. As described in 3.5.1 Train Derailment, Rochester has one rail transportation line, and tanker cars with hazardous chemicals pass through at various times – mostly during overnight hours when roadway traffic is lighter. Hazardous chemical transportation by roadway is common.

Facilities that use hazardous chemicals are regulated by Title III of the federal Superfund Amendments and Reauthorization Act (SARA). This act is also known as the Emergency Planning and Community Right-to-Know Act (EPCRA). EPCRA establishes requirements for local governments and industry regarding emergency planning and reporting on hazardous chemicals (see 3.6.5 Hazardous Materials Release – Fixed Site). Transportation to, and off-loading of substances at fixed site locations creates risk. Transporters must obtain a Hazardous Materials Endorsement. These regulations reduce risk and prevent accidents because haulers are trained how to safety handle and transfer chemical products.

Location

The Minnesota Pollution Control Agency (MPCA) offers a database called “What’s in My Neighborhood” that provides tabular data and location maps for all Minnesota businesses and facilities that store hazardous materials. Rochester has industrial areas close to major roadways and away from residential

areas. Still, some industries are located in areas outside of industrial parks and these sites lie in close proximity to residential areas. Rochester has 1798 facilities listed in the “What’s in My Neighborhood” database (see Figure 3.7). This includes hardware stores, gas stations, propane gas exchange locations, and other sites with small amounts of chemical storage. Larger quantities of hazardous materials are regulated by EPCRA and include sites with “reportable quantities”. In 2015, 193 sites are listed as possessing Extremely Hazardous Substances (EHS) with reportable quantities.

**Extent**

The severity of a transportation-oriented hazardous material release can be measured in terms of human life/injury and value of property damage.

**Probability of Future Events**

The probability of future events is likely in that there are many sites housing hazardous materials that must get shipped to them somehow. Vehicle crashes, train derailments, and shipping errors could lead to future releases.

**Impact and Vulnerability**

The release of hazardous materials due to a transportation incident could greatly impact human health and property values. A rail accident with a gaseous chemical released at a temperature supporting vaporization, along with persistent winds, could cause sheltering or evacuation of people in a two mile by ¾ mile downstream plume. For roadway incidents, high speed accidents with a catastrophic release of chemicals poses the largest threat. US 52 and US 14 on the west side of Rochester are transportation routes where high speeds can be achieved by transport trucks. Prediction of accident locations is not possible. Rochester Fire Department maintains a highly trained hazardous materials team as a 24 hour response that can work to quickly mitigate incidents and lessen impact of chemical release.



**3.5.3 Critical Infrastructure/Utility Failure**

**Description and History**

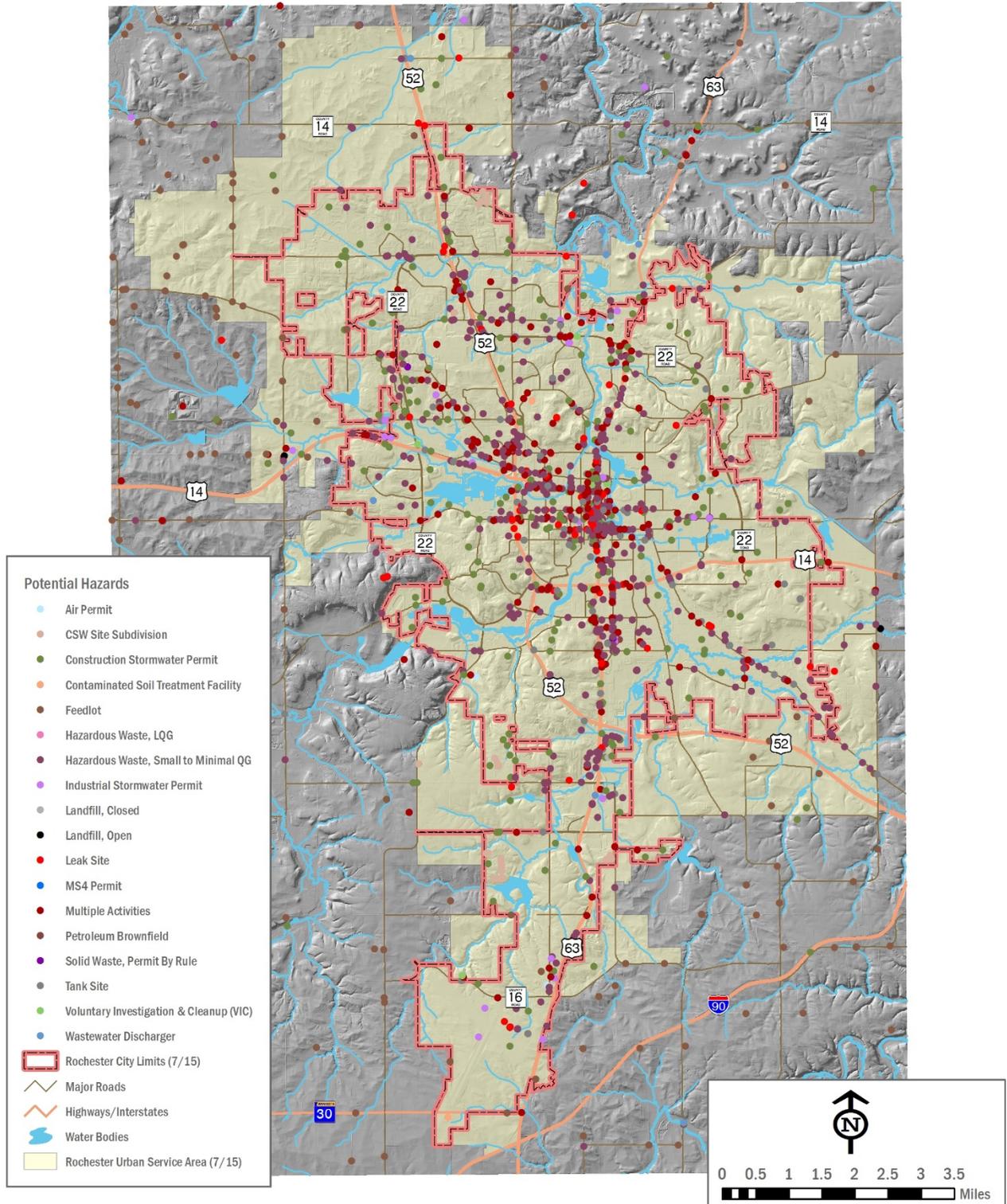
Rochester’s critical infrastructure includes several different types of facilities and systems: transportation networks, power and natural gas systems, water and sewer networks, and telecommunications facilities. Some of these systems are municipally owned and operated, others are built and maintained as private ventures. Failure of one or more of these systems is possible due to weather events, age and deterioration, or human factors.

In general, Rochester’s infrastructure is in serviceable to good condition. Rochester is a growing community; much of the local infrastructure has been built since the 1980s and is continuing to be extended. Budgets are tight, requiring the City to walk a tightrope between extending access and services

FIGURE 3-7: POTENTIAL ENVIRONMENTAL HAZARD SITES

# Potential Environmental Hazard Sites

Data Source: Minnesota Pollution Control Agency



to newly developing areas on the fringe of town and investing in needed maintenance and replacement of aging infrastructure in the neighborhoods closer to the downtown. The I-35 W bridge failure in Minneapolis is still fresh in the minds of Minnesotans and no one wants to see that type of tragedy occur again.

Components of many of these facilities and systems are occasionally interrupted, particularly those that are exposed to the elements, such as overhead power lines. These service issues typically occur in conjunction with severe weather events and are back up and running in a matter of minutes to hours. No large-scale or long-term outages have occurred in recent years.

As described in greater detail in the previous chapter, Rochester completed a flood control project in 1996 to protect the community from recurring damage due to flash flooding. This system of reservoirs includes seven high-hazard dams as well as relief spillways. The reservoir structures are inspected by Rochester Public Works, Olmsted County Public Works, The Natural Resource Conservation Service (NRCS), and the DNR. Numerous excessive rain events have occurred since the project was completed and all have been contained by the project. Thus far, no water has flowed through the spillways and there has been no cause for concern of system failure. Internal erosion, improper maintenance, or sabotage could also contribute to dam failure.

The following table indicates who has the primary responsible for construction, maintenance, inspection, and replacement of Rochester’s critical infrastructure.

<b>Rochester’s Critical Infrastructure</b>	
<b>Agency</b>	<b>Facilities &amp; Systems</b>
<b>Rochester Public Works</b>	<ul style="list-style-type: none"> <li>▣ Street infrastructure and traffic control</li> <li>▣ Sanitary sewer and wastewater treatment</li> <li>▣ Storm sewer</li> <li>▣ Stormwater management facilities</li> </ul>
<b>Rochester Public Utilities (municipally owned)</b>	<ul style="list-style-type: none"> <li>▣ Electric utilities</li> <li>▣ Water utilities</li> <li>▣ Street lighting</li> <li>▣ Water mains</li> </ul>
<b>Olmsted County</b>	<ul style="list-style-type: none"> <li>▣ County road system</li> <li>▣ Waste to Energy plant</li> </ul>
<b>Minnesota Department of Transportation</b>	<ul style="list-style-type: none"> <li>▣ Highway system</li> </ul>
<b>Minnesota Energy</b>	<ul style="list-style-type: none"> <li>▣ Natural gas</li> </ul>
<b>Charter Communications/Spectrum</b>	<ul style="list-style-type: none"> <li>▣ Cable television, high speed Internet, telephone</li> </ul>
<b>CenturyLink</b>	<ul style="list-style-type: none"> <li>▣ Telephone, Internet</li> </ul>

Multiple private providers serve the Rochester community with cellular telephone service, satellite television, and other telecommunications and Internet service.

Location

Most of this infrastructure is located in the rights of way of the roadway network. The locations of the structures and breach zones are found in Figure 3-8.

Extent

The severity of a critical infrastructure failure can be measured in terms of human life/injury, value of property damage, and value of workforce productivity.

Probability of Future Events

It is likely that storm events will continue to result in minor outages. The risk of failure due to aging infrastructure will continue to increase until those portions of the system are replaced. Rochester’s Flood Control Project was designed to contain a 200 year flood event; monitoring systems are in place to measure water levels and structural integrity. Extreme storm events associated with climate change may test the future ability of the project to contain all of the stormwater. Inspection and maintenance are critical to reducing the chance of system failure.



Impact and Vulnerability

Failure of utilities or other components of the critical infrastructure can seriously impact public health, the performance of critical functions, the functioning of communities, workplace productivity, and the overall economy. The amount of water released, not to mention the tremendous energy of that flow as the result of a dam/levee failure can result in injuries, loss of life, and damage to property and the environment.

### 3.5.4 Food Contamination

Description and History

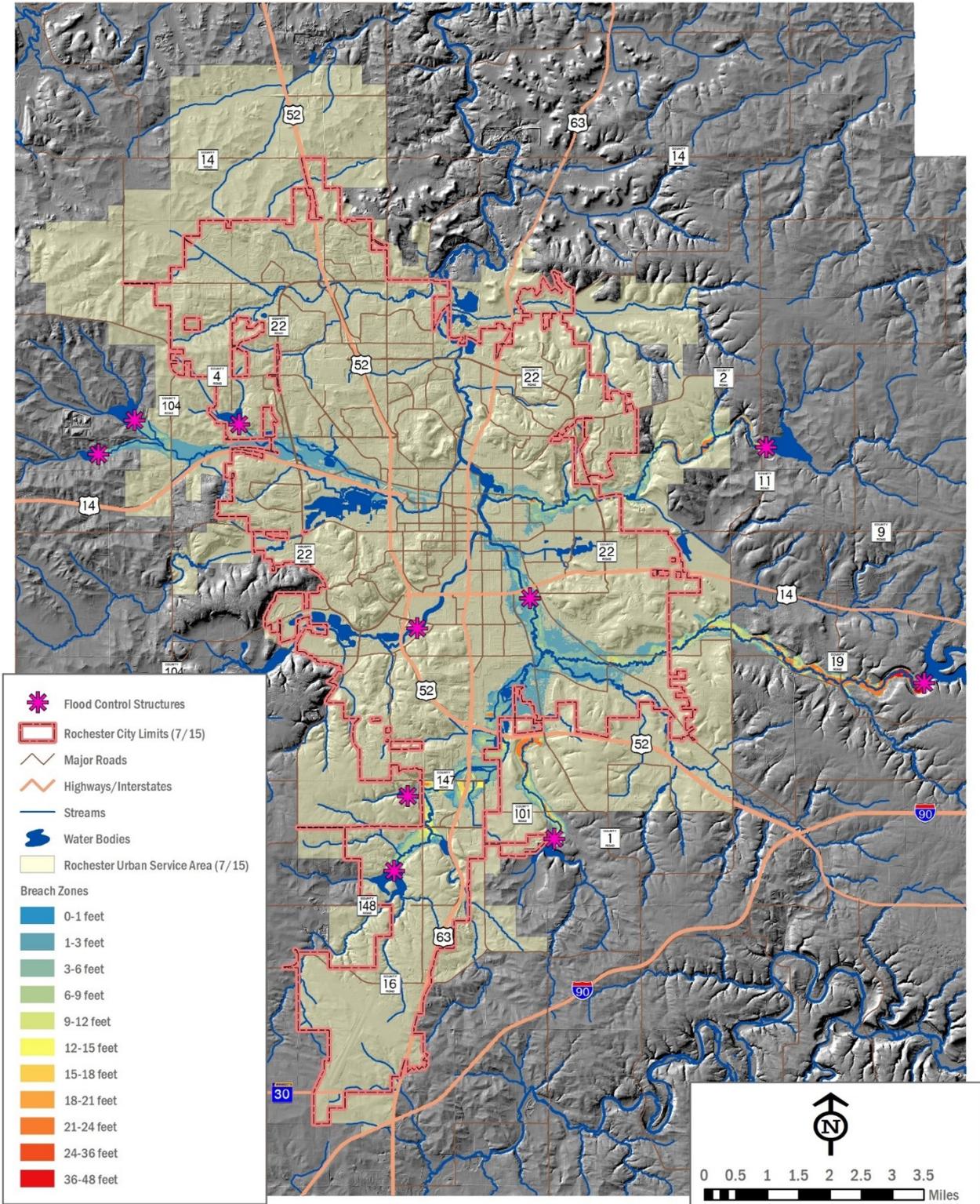
Norovirus, E. coli, and salmonella are among the many foodborne disease-causing organisms that frequently cause illness in the United States. The threats they pose are numerous and varied, with symptoms ranging from relatively mild discomfort to very serious life-threatening illness. While the very young, the elderly, and persons with weakened immune systems are at greatest risk of serious consequences from most foodborne illnesses, some of these organisms pose grave threats to **all** persons.

Food may become contaminated at any point along the food production chain. Meat may be contaminated during the slaughtering process; fruits and vegetables may be contaminated if they are washed with water that is contaminated by animal manure or human sewage. Foodborne illness caused by the disease-causing organisms may be spread by those processing, cooking, or handling food.

FIGURE 3-8: FLOOD CONTROL STRUCTURES AND BREACH ZONES

# Flood Control Structures and Breach Zones

Data Source: Rochester-Olmsted Planning Department, City of Rochester



Olmsted County’s Public Health Services (OCPHS), Environmental Health Division serves as a local collector of foodborne illness complaints. This information is confidential and can help determine if other illnesses are linked to food contamination. In an average year, OCPHS staff investigate two foodborne illness outbreaks. The Minnesota Department of Health also collects this information at their Minnesota Foodborne Illness Hotline.

Location

Food contamination can occur anywhere in the community.

Extent

The severity of food contamination can be measured in terms of human life/injury and the value of lost workforce productivity.

Probability of Future Events

As long as humans are working with the food supply, there will always be a potential for food contamination.

Impact and Vulnerability

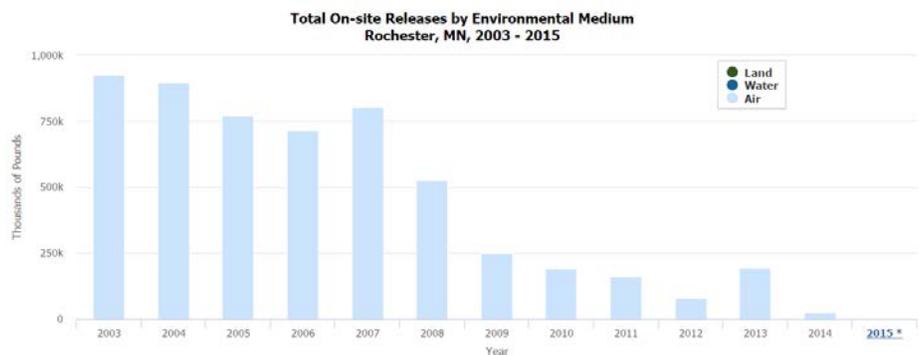
While the American food supply is among the safest in the world, the Federal government estimates that there are about **48 million cases of foodborne illness annually**—the equivalent of sickening 1 in 6 Americans each year. The U.S. Food & Drug Administration estimates that each year these illnesses result in 128,000 hospitalizations and 3,000 deaths. Food contamination can cause great monetary expense to affected food companies and restaurants.



### 3.5.5 Hazardous Materials Release – Fixed Site

Description and History

Facilities that use hazardous chemicals are regulated by Title III of the federal Superfund Amendments and Reauthorization Act (SARA). This act is also known as the Emergency Planning and Community Right-to-Know Act (EPCRA). EPCRA establishes requirements for local



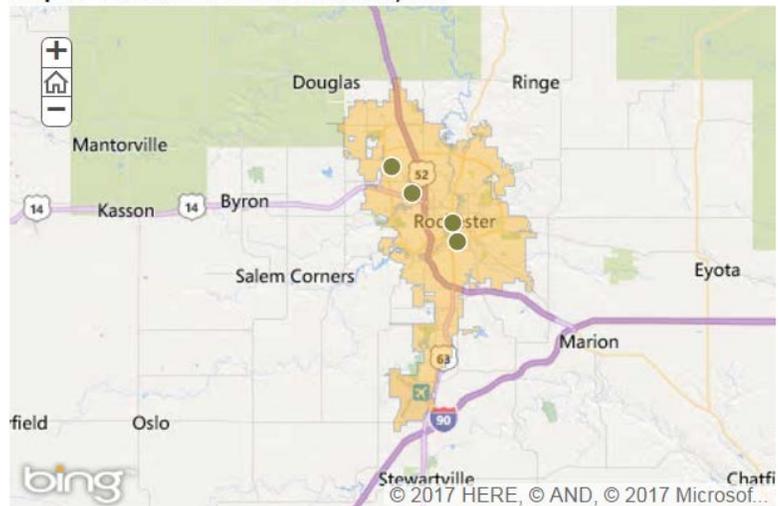
governments and industry regarding location of facilities storing any of 355 Extremely Hazardous Substances above Threshold Planning Quantities at any one time (Section 302), emergency notification (Section 304), identification of stored chemicals and emergency planning (Section 311), and quantities of EHS substances (Section 312). Facilities with quantities below thresholds are exempt from reporting. Of

1798 facilities with chemicals in Rochester, only 193 are required to submit a Tier II Report under EPCRA. Tier II Reports are filed with State of Minnesota EPCRA program, and local fire departments where the facility is located.

In Rochester, Tier II Reports are entered into a database. This database is searchable by facility name and facility address. The Tier II Report lists emergency contact information, type of chemicals stored at the facility, and emergency planning information. This process ensures information is accessible to Rochester Emergency Management and can be accessed at the Emergency Operations Center. In addition, the Rochester Fire Department hazardous materials team receives an extensive database from State of Minnesota EPCRA with all facilities, type of chemicals, identification numbers, and quantities stored.

EPCRA Section 313 – Toxic Chemical Release Form provides public data on toxic chemical release to the environment and on- and off-site chemical management. Certain facilities under Section 313 are required to submit reports for toxic chemical releases. The Toxic Release Inventory (TRI) tracks the release of chemicals. There are four fixed site locations in Rochester that released reports under Section 313 (see Map of TRI Facilities in Rochester, MN). Additionally, Section 304 – Emergency Notification requires that emergency authorities are informed of all releases of hazardous substances. Notifications are made to local 911 Centers, the Minnesota Duty Officer, and the National Response Center.

Map of TRI Facilities in Rochester, MN



Location

The TRI maps the location of the reported fixed site releases that have been reported in Rochester.

Extent

The severity of a fixed site hazardous material release can be measured in terms of human life/injury and value of property damage.

Probability of Future Events

Since fixed site hazardous materials releases have occurred on an annual basis, it is likely to continue in the future until new technologies are developed to eliminate them.



Impact and Vulnerability

Fixed site hazardous chemical releases impact human and environmental health. Community vulnerability is dependent on our ability to reduce and eliminate possible sources of release now and in the future.

3.5.6 Natural Gas Overpressurization/Explosion

Description and History

Natural gas is a major fuel source in the state of Minnesota. It is used to heat our homes and businesses, cook our food, and heat our water. Natural gas comes to Minnesota through high-pressure pipelines. Local distribution companies connect to these transmission lines and pipe the gas to customers throughout the community.

While natural gas is considered to be a clean and relatively safe fuel, a leak in the system can cause the gas to build up in an enclosed area; this build-up is very volatile. Any errant spark or static electricity can cause that build-up to explode. Such events have occurred in Rochester in recent years.



Location

Natural gas service lines are located throughout the city of Rochester, typically in road rights of way. Explosions could happen along these routes or the structures they serve.

Extent

The severity of a natural gas explosion can be measured in terms of human life/injury and value of property damage.

Probability of Future Events

Since natural gas is a common fuel source in this area, the potential exists for future explosions.

Impact and Vulnerability

Natural gas explosions can result in loss of life, injury, and severe property damage.



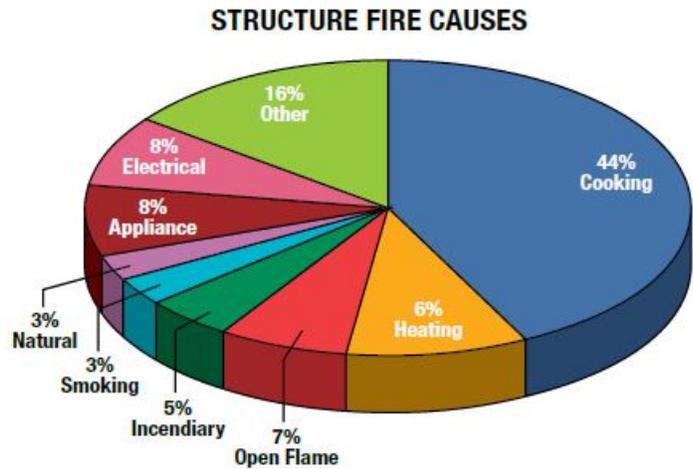
3.5.7 Fires (Structures and Vehicles)

Description and History

Structural and vehicle fires include any instances of uncontrolled burning that result in damage to residential, commercial, industrial, or other properties and vehicles. In 2015, the Minnesota State Fire Marshall’s 2015 Fire in Minnesota reports that 44% of all structural fires were caused by cooking.

Residential fires accounted for 77% of all structure fires and 60% of the total dollar loss. 74% of all fire deaths in 2015 occurred in residential fires.

The Rochester Fire Department notes that locally, Rochester’s fire causes tend to trend the same as the state. Since 1990, 24 deaths in Olmsted County were attributed to fire.



**Location**

Fires can occur anywhere in the community.

**Extent**

The severity of structural and vehicle fires can be measured in terms of human life/injury and the value of property damage.

**Probability of Future Events**

It is highly likely that structural and vehicle fires will continue to occur in the future.

**Impact and Vulnerability**

Most structural and vehicle fires are limited in the amount of human injury and property damage they cause. Some of these events, however, may be catastrophic in nature, particularly if hazardous or extremely combustible materials are present. Structures may be rendered a total loss and, more tragically, human life may be irreparable damaged or extinguished.



**3.5.8 Airplane Crash**

**Description and History**

The Rochester International Airport is the third busiest commercial airport in Minnesota, following the Minneapolis-St. Paul International Airport and Duluth International Airport. RST is a significant contributor to the local economy.

In 2015, RST served about 226,000 commercial flight customers. As the city and the Mayo Clinic continue to grow, the demand for RST services will continue to increase.



Airplane crashes typically occur due to mechanical failure, weather conditions, or pilot error.

Airplane crashes, some of them fatal, have occurred in and around the Rochester area. None of these have involved large commercial aircraft.

Location

Airplane crashes can occur anywhere in the area, though they may be more likely to happen in proximity to the airport since crashes are more likely to occur during takeoff or landing.

Extent

The severity of airplane crashes can be measured in terms of human life/injury and the value of property damage.

Probability of Future Events

Although airplane crashes tend to grab media headlines, they are relatively rare events. Since Rochester does have an international airport, it is more likely that crashes will happen in this area than in those without airports.

Impact and Vulnerability

While airplane crashes are relatively rare in this area, they may be catastrophic in nature when they do occur. Property damage incurred may seem irrelevant compared to severe injury and death.



### 3.6 Human-Caused Threats

The following section focuses on threats that are intentionally caused by humans to damage property or inflict bodily harm.

#### 3.6.1 School/Work Place Violence

Description and History

Every workday, there are an estimated 16,400 threats, 723 worker attacks and 48,300 harassment incidents according to a Study by the Workplace Violence Research Institute. In Minnesota, the Department of Labor & Industry notes that approximately 1,000 work-related assaults are reported each year – nearly 20 per week.

Schools are not immune to these types of threats. While more than 90% of Olmsted County students feel safe at school, the 2016 Minnesota Student Survey indicates that the rest of these students have been regularly harassed or bullied over that preceding 30 days.

In extreme acts of school/workplace violence, an “active shooter” actively engages in killing or attempting to kill people in a confined and populated area; in most cases, there is no pattern or method to their selection of victims. Rochester has been fortunate in not experiencing such violent acts.

2016 Minnesota Student Survey

TABLE 11  
BEING BULLIED OR HARASSED AT SCHOOL; BEING CYBERBULLIED

Olmsted County

			Grade							
			5th		8th		9th		11th	
			Male	Female	Male	Female	Male	Female	Male	Female
			%	%	%	%	%	%	%	%
During the last 30 days, on how many days have other students at school...	...pushed, shoved slapped, hit or kicked you when they weren't kidding around?	Never	71%	82%	88%	88%	88%	93%	94%	95%
		Once or twice	21%	14%	9%	10%	8%	5%	4%	5%
		About once a week	4%	2%	2%	1%	2%	1%	1%	0%
		Several times a week	3%	1%	1%	1%	1%	0%	1%	0%
		Every day	1%	0%	1%	1%	1%	1%	1%	0%

Location

School and workplace violence may occur in Rochester’s educational and employment centers.

Extent

The severity of school and workplace violence can be measured in terms of human life/injury and the value of property damage. What may be more difficult to measure is the extent of damage to mental health as a result of these experiences.

Probability of Future Events

It is likely that school and workplace violence will continue to occur to some degree.

Impact and Vulnerability

At its worst, school and workplace violence may lead to serious injury and death. Panic, anxiety, and depression may stem from these events. From a financial view, schools and businesses may face lawsuits, loss of reputation, credibility, and potential revenue. Long term, businesses may experience an inability to hire and retain employees.

In workplace settings, “active shooter” training may help reduce anxiety and empower employees with knowledge of how to act in a crisis situation.



3.6.2 Cyber Incidents

Description and History

Cyber incidents are malicious activities by individuals or organizations designed to target computer data systems, computer servers and networks, and personal computers in order to steal, alter, or destroy data. Some attacks are designed strictly to wreak havoc. Methods employed include data breaches, network intrusions, and intentional virus attacks. Cyber incidents seem to be reported daily in media sources.

Location

No company, organization, agency, or individual is immune to targeted cyber attacks.

Extent

Cyber incidents may be measured by their economic impact and loss of security.

Probability of Future Events

It is highly likely that cyber incidents will occur in the future.

Impact and Vulnerability

Rochester’s economy is based in technology and innovation; practically all aspects of our businesses are computerized to some extent. Intrusions into medical records, research databases, voter information, and the like could be devastating to the local economy.



### 3.6.3 Terrorist Acts

Description and History

The Federal Bureau of Investigation defines terrorism as, "the unlawful use of force or violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives." The threat of terrorism, both international and domestic, is ever present, and an attack is likely to occur when least expected. Terrorists typically use threats to generate public fear or gain immediate publicity for their cause. Acts of terrorism include threats, killings, bombings, and the use of chemical and biological weapons. Threat assessment, mitigation, and response to terrorism are federal and state directives; these agencies work primarily with local law enforcement.

There are no historic records of serious terrorist acts in Rochester.

Location

Terroristic acts could happen anywhere in the community, but high-profile or densely populated targets such as employment centers, public gatherings, or the airport may be more probable targets. Food and water supplies, utilities, and critical infrastructure may also be targeted.

Extent

Terrorist acts may be measured in terms of human life/injury, impact on mental health, and the extent of property damage.

Probability of Future Events

While Rochester is not a high profile city, terrorist attacks may occur when and where they are least expected in order to heighten the sense of fear. Terrorist acts may be in Rochester’s future.

**Impact and Vulnerability**

Terrorist acts may be catastrophic in terms of injury, fatality, loss of property, and economic crisis.

**3.6.4 Civil Disturbance**

**Description and History**

Civil disorder, also known as civil unrest or civil strife, is a broad term that is typically used by law enforcement to describe one or more forms of unrest caused by a group of people. Civil disturbance is typically a symptom of, and a form of protest against, major socio-political problems; the severity of the action coincides with public expression(s) of displeasure. Examples of civil disorder include, but are not necessarily limited to: illegal parades; sit-ins and other forms of obstructions; riots; sabotage; and other forms of crime. It is intended to be a demonstration to the public and the government, but can escalate into general chaos.

While many public demonstrations have occurred in Rochester in recent years, they have largely remained peaceful in nature.

**Location**

Civil disturbances could happen anywhere in the community, but, depending on the issue, they may be most likely to occur in large or highly visible public spaces such as the downtown.

**Extent**

The impacts of civil disturbance may be measured in terms of property damage, economic loss, and human injury/death.

**Probability of Future Events**

While it is not likely that civil disturbance will happen in Rochester’s future, the possible certainly exists, particularly if emotional social or economic values are at stake.

**Impact and Vulnerability**

Citizens not directly involved in a civil disorder may have their lives significantly disrupted. Their ability to work, enjoy recreation and in some cases, obtain necessities may be jeopardized. Disruption may occur during very severe events. Public utilities such as water, fuel and electricity may be temporarily unavailable, as well as public infrastructure for communication. Economic stagnation, severe inflation, oppression, political scandal, or human rights issues may trigger unrest. Civil disorder can occur in any country and environment.



### 3.7 Summary Table

Hazard	Ranking	Planning Significance
Wind Storm	3.30	H
Tornado	3.25	H
Train Derailment	3.25	H
Hail	3.10	H
School/Work Place Violence	3.05	H
Cyber Incidents	2.95	M
Winter Storm	2.85	M
Hazardous Materials Release – Transportation	2.85	M
Epidemic and Disease Outbreak	2.80	M
Critical Infrastructure/Utility Failure	2.80	M
Flood	2.70	M
Lightning	2.65	M
Excessive/Prolonged Cold	2.65	M
Excessive/Prolonged Heat	2.55	M
Landslide/Mudslide	2.55	M
Food Contamination	2.55	M
Hazardous Materials Release – Fixed Site	2.45	M
Natural Gas Overpressurization/Explosion	2.40	M
Terrorist Acts	2.40	M
Fires (Structures and Vehicles)	2.35	M
Airplane Crash	2.25	M
Land Subsidence (Sinkholes and Karst)	2.20	M
Civil Disturbance	2.10	M
Drought	1.75	L
Wildfire	1.75	L
Earthquake	1.55	L





## 4 Mitigation Strategies

## 4 Mitigation Strategies

The mitigation actions in this plan are summarized into four strategy types, as described in the FEMA publication *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards (2013)*. Also included are the new FEMA Climate Resilient Mitigation Actions (CRMA) released in 2016. They are listed as follows:

- Local Planning and Regulations
- Structure and Infrastructure Projects
- Natural Systems Protection
- Education and Awareness Programs
- Mitigation Preparedness and Response Support

**Local Planning and Regulations** | 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, building codes, capital improvement programs, open space preservation, and storm water management regulations.

**Structure and Infrastructure Projects** | Actions that involve the construction of structures to reduce the impact of a hazard, such as dams, levees, floodwalls, seawalls, retaining walls, and safe rooms; and actions that involve the modification of existing buildings or structures to protect them from a hazard or remove them from the hazard area. Examples include acquisition, elevation, structural retrofits, storm shutters, and shatter-resistant glass. CRMA include flood diversion and storage (FDS) and green infrastructure.

**Natural Systems Protection** | Actions that, in addition to minimizing hazard losses, 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. Aquifer storage and recovery (ASR) and floodplain and stream restoration (FSR).

**Education and Awareness Programs** | Actions to inform and educate citizens, elected officials, and property owners about the 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.

**Mitigation Preparedness and Response Support** | Actions that protect people and property prior to, during and immediately after a disaster or hazard event. Services include warning systems and emergency response services. These activities are typically not considered mitigation, but support reduction of the effects of damaging events.

Mitigation Actions are arranged in table format grouped by hazard type. Each row of the table contains the following information:

- Strategy Type
- Action Item
- Potential Funding Source
- Approximate Cost (N/A used if the action is staff supported or internally funded)

- Lead Agency
- Timeframe for Completion
  - Ongoing
  - Short Term (< 3 years)
  - Long Term (> 3 years)
- Implementation Priority (Low, Medium, or High)
- Comments from a subject matter expert

A cost benefit review was conducted to prioritize the mitigation actions and eliminate the ones that were not cost effective. For this cost benefit review, a modified version of STAPLEE was used. The action strategies that have been included in this plan are prioritized as high, medium, or low based on the cost benefit review completed by subject matter experts. An example of our survey questions can be found in the appendices.

Respondents were asked about the following:

- Life Safety
- Property Protection
- Technical Feasibility
- Political Will
- Legal authority
- Environmental Compliance
- Social Impacts
- Administrative Capabilities
- Local Champion
- Economic Costs vs. Benefits

If the proposed action positively impacted the specific category, it was given a +1 for that category. If the action negatively impacted one of the specific categories it was given a -1 for that category. Neutral responses were given a 0. Due to the importance placed on life safety, positive impacts in that column were given a +2 and negative impacts were given a -2. Once the numbers were totaled for each action, they were assigned a priority based on their total score. Any action strategy that scored below zero was removed.

Modified STAPLEE Scoring:

- 0-4=Low Priority
- 5-8=Medium Priority
- 9-12=High Priority

Of the 140 actions documented below, 66 are ranked as a high priority, 52 are ranked as a medium priority, and 22 are ranked as a low priority.

## 4.1 Mitigation Goals

Goal 1 | Utilize land use planning and management to mitigate hazards.

Goal 2 | Develop, maintain, and/or modify building codes and standards to mitigate hazards.

Goal 3 | Provide methods of prediction, forecast, and warning for residents and travelers in Rochester.

Goal 4 | Promote risk reduction to structures and property vulnerable to hazards.

Goal 5 | Promote public awareness of hazard mitigation and disaster preparedness.

Goal 6 | Develop engineering controls to mitigate risk.

Goal 7 | Build and strengthen community partnerships aimed toward mitigating hazard impacts.

Goal 8 | Maintain and expand relationships between Rochester Office of Emergency Management, Limited English Proficiency communities, and the Access and Functional Needs communities.

Goal 9 | Strengthen community partnerships and confidence in the ability of local government to mitigate and respond to hazard events.

## 4.2 Mitigation Actions

## Natural Hazards

## 1. Windstorm (CPRI: 3.3)

Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
Education and Awareness Programs	1.1 Improve public awareness of severe wind hazards and educate about mitigation projects through outreach activities.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt.	Short Term	High	
Local Planning and Regulations	1.2 Prohibit the use of carports and open coverings attached to manufactured homes.	Internal - Staff Supported	N/A	ROPD	Long Term	Low	This question is affected by the Building Code and has different answers depending on the type of construction - attached/detached.
Structure and Infrastructure	1.3 Identify areas where vulnerable populations are susceptible to tornadoes or extreme wind events (i.e. schools, campgrounds, or mobile home parks) and evaluate for construction or retrofit of safe rooms or storm shelters.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt.	Ongoing	Medium	
Structure and Infrastructure	1.4 Implement construction or retrofit projects for safe rooms or storm shelters in identified vulnerable locations.	HMA	\$500,000 per safe room	Rochester Emergency Mgmt.	Long Term	Low	

2. Tornado (CPRI: 3.25)							
Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
Structure and Infrastructure	2.1 Construct safe rooms at Rochester’s most heavily used park facilities.	HMA, CIP, Legacy grants	\$500,000 per safe room	Parks and Recreation	Ongoing, As funding becomes available	High	
Education and Awareness Programs	2.2 Conduct outreach activities to inform the population of the difference between a tornado watch and a tornado warning and how to take appropriate protective actions.	Internal - Staff Supported	N/A	Rochester Emergency Mgmt., PIO, NWS	Short Term	High	
Local Planning and Regulations/ Structure and Infrastructure	2.3 Conduct an inventory of storm shelters in the city and determine where additional facilities are needed. Construct storm shelters in identified areas.	HMA	\$500,000	Rochester Emergency Mgmt.	Long Term	Medium	
Education and Awareness Programs	2.4 Encourage community members to become storm spotters.	Internal - Staff Supported	N/A	Rochester Emergency Mgmt.	Ongoing	High	
Local Planning and Regulations	2.5 Encourage the construction of safe rooms in new schools, daycares, and nursing homes.	Internal – Staff Supported	N/A	ROPD	Long Term	Low	The idea of storm shelters has had a troubled past politically.
Mitigation Preparedness and Response Support	2.6 Continue evaluating the need for and placement of new tornado sirens as the city expands. Purchase new sirens as needed.	HMGP – 5%, Internal	\$25,000	Rochester Emergency Mgmt.	Ongoing	High	Rochester growth and expansion requires adding new sirens to maintain coverage.

**3. Hail (CPRI: 3.1)**

Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
Education and Awareness Programs	3.1 Conduct an education and awareness campaign about the dangers of hail and how to take safety precautions.	Internal - Staff Supported	N/A	Rochester Emergency Mgmt.	Ongoing	High	
Education and Awareness Programs	3.2 Post hail warning signage at local parks, county fairs, and other outdoor venues.	HMGP – 5%	\$50 per sign	Rochester Emergency Mgmt., Parks and Recreation	Ongoing	High	

**4. Winter Storm (CPRI: 2.85)**

Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
Education and Awareness Programs	4.1 Conduct outreach activities to increase awareness of winter storm risk and promote mitigation and preparedness measures.	Internal - Staff Supported	N/A	Rochester Emergency Mgmt.	Ongoing	High	

**5. Epidemic or Disease Outbreak (CPRI: 2.8)**

Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
Mitigation Preparedness	5.1 Develop an active disease surveillance plan that includes the necessary staff, just-in-time training and logistical support to daily assess new cases, hospitalizations,	Internal,	N/A	Olmsted County	Ongoing	Medium	One "active disease surveillance" system cannot accomplish all of this. However many existing surveillance systems can do portions of this.

and Response Support	pharmaceutical impact, medical supply impact, mortality and other epidemiology data necessary during an ongoing epidemic, and be prepared to implement when needed.	HMGP – 5%		Public Health			
Mitigation Preparedness and Response Support	5.2 Develop agreements/contracts with hotels, dormitories or other suitable housing for small groups or possibly large numbers of people who need to be quarantined following exposure to a dangerous infectious disease.	Internal, HMGP – 5%	N/A	Olmsted County Public Health	Ongoing	Low	
Mitigation Preparedness and Response Support	5.3 Maintain and enhance the existing system to support basic needs (e.g. food, medications) for individuals/families that are placed in isolation or quarantine, or are following recommendations to self-isolate/quarantine.	Internal, HMGP – 5%	N/A	Olmsted County Public Health	Ongoing	Medium	
Mitigation Preparedness and Response Support	5.4 Ensure that local government agencies have the ability and resources necessary to conduct on-going surveillance for vector-borne and other zoonotic diseases that may threaten Rochester residents due to illness or economic repercussions.	Internal	N/A	Olmsted County Public Health	Ongoing	Medium	
Mitigation Preparedness and Response Support	5.5 Acquire new freezers for vaccine storage.	HMGP – 5%, Internal	\$5,000 per freezer	Olmsted County Public Health	Short Term	Low	
Education and Awareness Programs	5.6 Continue programs to educate public about proper handwashing techniques.	Internal – staff supported	\$3,000	Olmsted County Public Health	Ongoing	Medium	

Mitigation Preparedness and Response Support	5.7 Continue providing hand washing stations at large public gatherings (e.g. the Olmsted County Fair).	HMGP – 5%	\$30,000	Olmsted County Public Health	Ongoing	Medium	
Mitigation Preparedness and Response Support	5.8 Create and exercise a plan for virtual EOC coordination/Joint Command in the event of a pandemic.	HMGP – 5%	\$10,000	Olmsted County Public Health and Rochester Emergency Mgmt.	Long Term	Low	

**6. Flood (CPRI: 2.7)**

Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
Local Planning and Regulations	6.1 Update inventory of high risk streambank/ waterbody shoreline erosion areas.	Internal – Staff Supported	N/A	Public Works, Park and Recreation	Ongoing	High	This project would require environmental review and approval by a number of different regulatory agencies.
Natural Systems Protection	6.2 Incorporate rain gardens, bio-swales, water retention, and permeable paving when feasible.	HMA, CIP	TBD	Parks and Recreation	Ongoing	High	This project provides quality of life and water quality enhancements rather than having an immediate safety factor, although it could help minimize potential flooding
Natural Systems Protection	6.3 Reduce impervious surfaces in the design of parks and facilities.	HMA, CIP	TBD	Parks and Recreation	Ongoing	High	
Natural Systems Protection	6.4 Establish 50-foot vegetation buffers around wetlands, rivers, ponds, reservoirs, and lakes on appropriate public land and parks.	HMA, CIP	TBD	Parks and Recreation	Long Term	Medium	The comments for this implementation assumes this work occurs on public lands and not private properties or properties to be acquired.

Natural Systems Protection	6.5 Explore use of natural stream bank erosion control techniques (e.g. root balls, brush mattress, etc.)	HMA, DNR, CIP	TBD	Parks and Recreation, Public Works	Long Term	Medium	This method is the currently desired mitigation measure. There are some thoughts that this method may not mitigate the erosion as well as other proven, but not so 'green' methods.
Local Planning and Regulations	6.6 Update the Stormwater Management Plan.	CIP (re)	\$450,000	Public Works	Short Term	Medium	
Local Planning and Regulations	6.7 Draft the Downtown Stormwater Management Master Plan.	CIP	\$250,000	Public Works	Short Term	Medium	
Structure and Infrastructure	6.8 Complete all conveyance projects as outlined in the Flood Control and Stormwater sections of the Capital Improvements Program.	CIP	\$8,000,000	Public Works, Parks and Recreation	Ongoing Long Term	High	Sediment removal will improve flood protection volumes, protect structures from becoming clog with sediment, and can help with water quality as more sediment storage will again be available. Not all lakes/reservoirs can be cleaned of sediment at one time. The process would need to be staged over many years.  The political will to completely perform this project is based on available funding and impact to private properties.
Natural Systems Protection	6.9 Complete dredging as outlined in the Flood Control Section of the Capital Improvements Program.	CIP-Flood Reserves	\$4,600,000	Public Works, Parks and Recreation	Ongoing	High	Sediment removal will improve flood protection volumes, protect structures from becoming clog with sediment, and can help with water quality as more sediment storage will again be available. Not all lakes/reservoirs can be cleaned of sediment at one time. The process would need to be staged over many years.
Structure and Infrastructure	6.10 Study and analyze the potential for flood control system capacity improvements.	CIP-Flood Reserves, HMA	\$350,000	Public Works, Joint	Long Term	Medium	The analysis would not itself safe lives or property, but the results of the analysis could lead to projects that would increase flood storage, which would give Rochester greater protection in

				Powers Board			the future and reduce the costs from flood damage.
Natural Systems Protection, Structure and Infrastructure	6.11 Implement recommended stabilization of all reaches of Cascade Creek as laid out in the Cascade Creek Stabilization Report.	CIP-Flood Reserves, HMA, DNR	\$400,000	Public Works, Parks and Recreation	Short Term	High	<p>The Cascade Creek stabilization will protect the channel from further erosion which could impact City Infrastructure and property along the creek. The stabilization will also provide water quality improvements as it will prevent the ongoing sediment loss that is occurring during high water events.</p> <p>This is scheduled in the short term. However the cost may impact the political will and the funding available to complete the project.</p>
Local Planning and Regulations	6.12 Update and maintain the emergency action plans for each flood control reservoir and dam site.	CIP, HMA, DNR	\$70,000	Rochester Emergency Mgmt., Public Works, ROPD	Ongoing	High	Emergency Action Plans would make sure the dams and reservoirs are properly inspected and maintained during flood events and help staff understand their responsibility during flood events.
Natural Systems Protections	6.13 Create 90 acres of wetlands at WR-4 Reservoir.	CIP, HMA	\$1,200,000	Public Works, Parks and Recreation	Long Term	High	<p>The wetland creation will provide water quality treatment of the upland watershed which will reduce sedimentation in the reservoir. This will decrease the maintenance costs for the reservoir. The wetland will also increase infiltration, which will also help reduce runoff from major storms.</p> <p>This project is scheduled and has benefits as possible parkland uses in addition to storm water/flood control mitigation.</p>

Natural Systems Protections	6.14 Complete stabilization projects as outlined in the Flood Control and Storm Water sections of the Capital Improvements Plan.	CIP, HMA	\$2,500,000	Public Works	Ongoing Long Term	High	Some stabilization projects will protect infrastructure and property more than others. Some projects are more water quality protection in the reduction of erosion.
Local Planning and Regulations	6.15 Develop policies for incorporating NOAA Atlas 14 Precipitation Frequency estimates into existing plans, policies, and ordinances.	Internal – staff supported	N/A	ROPD	Short Term	High	The city has already hired a consultant to help prepare maps and other data for council consideration.
Local Planning and Regulations	6.16 Consider participating in the Community Rating System (CRS) to reduce flood insurance rates for citizens.	Internal – staff supported	N/A	ROPD	Short Term	Low	Rochester has a very limited number of structures in the flood plain therefore the benefits of participation in the CRS might not be worth the cost in terms of staff time and money.
Education and Awareness Programs	6.17 Create and publicize a user-friendly, publicly-accessible repository for inquirers to obtain Flood Insurance Rate Maps.	HMGP – 5%	\$150,000	Rochester Emergency Mgmt., GIS	Long Term	Medium	Flood maps will need to be updated to include Atlas 14 data. A consulting firm will need to be brought in to develop interactive maps showing parcel locations and impact when any given flood elevation is input.
Local Planning and Regulations	6.18 Consider requiring all critical facilities to be built 1 foot above the 500-year flood elevation.	Internal – staff supported	N/A	ROPD	Short Term	High	This optional item per MNDNR is included in the proposed zoning ordinance update to be considered by the council.
Local Planning and Regulations	6.19 Consider streambank erosion potential in all land suitability analyses (LSA).	Internal – Staff Supported	N/A	ROPD	Long Term	High	
Local Planning and Regulations	6.20 Encourage the use of Low Impact Development (LID) techniques in road and development projects to more effectively manage stormwater runoff during heavy rain events.	Internal – Staff Supported	N/A	Public Works	Long Term	Medium	
Structure and Infrastructure	6.21 Regional Stormwater Detention/Flood Control Facility Project: Construct regional stormwater facility KR-P.1	CIP, HMA	\$3,350,000	Public Works	Short Term	High	

Structure and Infrastructure	6.22 Regional Stormwater Detention Facility Project: Construct regional stormwater detention facility KR-P1.2	CIP, HMA	\$1,275,000	Public Works	Short Term	High	
Structure and Infrastructure	6.23 Regional Stormwater Detention Facility: Construct stormwater detention facility at 75th Street NW east of TH 52 (pond NW-P3.3).	CIP, HMA	\$800,000	Public Works	Long Term	Medium	
Structure and Infrastructure	6.24 Regional Stormwater Detention Facility: Construct regional stormwater detention facility in northeast quadrant of Valley High Drive and 50th Ave NW within CCA3.1.	CIP, HMA	\$506,000	Public Works	Short Term	Medium	
Structure and Infrastructure	6.25 Regional Stormwater Detention/Flood Control Facility Project: Phase 2 regional pond for KR-P1.8c (Cascade Section 18).	CIP, HMA	\$100,000	Public Works	Long Term	High	
Structure and Infrastructure	6.26 Construct regional stormwater detention facilities to serve Hadley Valley.	CIP, HMA	\$1,300,000	Public Works	Long Term	Medium	
Structure and Infrastructure	6.27 Upsize storm sewer system in 7th Ave SW from 2nd St SW to Cascade Creek (companion project to 7th Ave SW street reconstruction project).	CIP, HMA	\$500,000	Public Works	Short Term	Medium	
Structure and Infrastructure	6.28 Conveyance Project: Address flooding on 10th Street SE between 4th Avenue SE and 7th Avenue SE by installing sewer along 10th St SE from 6th Ave SE to Bear Creek.	CIP, HMA	\$700,000	Public Works	Long Term	Low	
Mitigation Preparedness and Response Support	6.29 Study and consider improvements to the flood warning system.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt., Public Works	Ongoing	High	As technology changes the flood warning system needs to change with it to make sure we have a system that works with property owners that would be impacted by a potential breach of one of the reservoirs.

Mitigation Preparedness and Response Support	6.30 Conduct periodic EOC exercises involving a flood event.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt.	Ongoing	High	
Natural Systems Protection	6.31 Protect and manage urban forest and other natural systems to keep floodplains and wetlands functioning properly.	Internal – Staff Supported	N/A	Parks and Recreation	Ongoing	Medium	Use of natural systems as a mean to protect or aid in protecting property (and to some extent life) is a good idea. However, depending on how this is contemplated to be implemented will determine the viability and effectiveness of achieving desired results.
Local Planning and Regulations	6.32 Pursue NOAA StormReady community designation for city of Rochester.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt.	Short Term	High	StormReady designation begins with an application from city of Rochester. After submission, NWS schedules a site visit. If approved, Rochester receives community road sign and designation for advertising.

**7. Lightning (CPRI: 2.65)**

Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
Mitigation Preparedness and Response Support	7.1 Install a lightning detection system in high use sports areas.	HMGP-5%	\$3,000	Parks and Recreation	Long Term	Medium	
Education and Awareness Programs	7.2 Conduct an education and awareness campaign about the dangers of lightning and how to take safety precautions.	Internal – staff supported	N/A	Rochester Emergency Mgmt.	Ongoing	High	

8. Excessive/Prolonged Cold (CPRI: 2.65)							
Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
Education and Awareness Programs	8.1 Conduct an education and awareness campaign about the risks of frozen pipes and steps homeowners can take to mitigate that risk.	Internal – staff supported	N/A	Rochester Emergency Mgmt., RPU	Ongoing	High	
Local Planning and Regulations	8.2 Create a shelter plan in the event of large scale power outages occurring during excessive cold.	Internal – staff supported	\$15,000	Rochester Emergency Mgmt.	Short Term	Medium	Costs are associated with consultant assistance to develop an exercise. It will be necessary to determine if mass sheltering is preferred over sheltering-in-place. Many factors will need to be considered before creating and implementing a mass sheltering plan for prolonged power outages during excessive cold.
Education and Awareness Programs	8.3 Provide outreach and education to vulnerable populations in the community (i.e. senior citizens, young adults, immigrant populations, etc.) on personal safety measures to take during periods of extreme cold.	Internal – staff supported	N/A	Rochester Emergency Mgmt.	Ongoing	High	
Mitigation Preparedness and Response Support	8.4 Expand the capacity to shelter vulnerable homeless populations during extreme cold.	Community Supported	N/A	Rochester Emergency Mgmt., Olmsted County Public Health	Ongoing	Medium	Currently, Salvation Army provides overnight sheltering at a day-use facility. Volunteer staff work in the shelter to provide oversight. Volunteers are limited in their availability for continued support during a cold spell. For this mitigation strategy to be effective, these things will need to be included: dedicated staff time by community agencies, training, adequate facilities for sheltering, and rules or standard operating practices for shelter management.

							Note: This is not an emergency management sheltering function. This is a "bandaid" for the long term issue of limited affordable housing for our community.
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**9. Excessive/Prolonged Heat (CPRI 2.55)**

Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
Structure and Infrastructure	9.1 Encourage the installation of green roofs in future developments, especially downtown.	Internal – Staff Supported	N/A	ROPD	Long Term	Medium	Green roofs are good for reducing heat island effect. They are also used to improve water quality.
Local Planning and Regulations	9.2 Continue setting aside designated park land as the city expands.	Internal – Staff Supported	N/A	Parks and Recreation, ROPD	Ongoing	High	Parkland preservation is not directly a life safety solution although it can play a part depending on where the park is placed. It is definitely a quality of life issue.
Local Planning and Regulations	9.3 Pre-plan cooling centers to be open during excessive or prolonged heat. Publicize the locations of these shelters using various methods.	Internal – Staff Supported	N/A	Olmsted County Public Health	Long Term	Low	
Mitigation Preparedness and Response Support	9.4 Continue partnering with Rochester Public Transit to transport people to cool places during extreme heat events.	Internal – Staff Supported	N/A	Rochester Emergency Management, RPT	Ongoing as needed	High	"A Cool Place to Be" has been a successful program to provide temporary relief from heat hazards, especially for low-income and senior populations.
Education and Awareness Programs	9.5 Provide outreach and education to vulnerable populations in the community (i.e. senior citizens, young adults, immigrant populations, etc.) on personal safety measures to take during periods of extreme heat.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt., Olmsted County Public Health	Ongoing	High	

10.Landslide/Mudslide (CPRI: 2.55)							
Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
Local Planning and Regulations	10.1 Conduct a study of unstable slopes in Rochester. Develop a plan to address unstable slopes particularly near public roads and other critical facilities.	Internal – Staff Supported	\$50,000	ROPD, Public Works	Long Term	Medium	
Local Planning and Regulations	10.2 Establish setback requirements and use large setbacks when building roads near slopes of marginal stability.	Internal – Staff Supported	N/A	ROPD, Public Works	Long Term	High	

11.Fire (Structure and Vehicle) (CPRI: 2.55)							
Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
Education and Awareness Programs	11.1 Continue educational programs for school aged children relating to fire prevention.	Internal – staff supported	N/A	RFD	Ongoing	Medium	The challenge is receiving funding to support a position to management this type of proactive program. Educating school age children has also proven to be an effective way to get the information home to their parents as well.
Education and Awareness Programs	11.2 Continue reaching out to ESL groups to provide fire prevention classes.	Internal – Staff supported	N/A	RFD	Ongoing	Medium	
Education and Awareness Programs	11.3 Consider launching an awareness campaign about cooking fire prevention.	Internal – Staff supported	N/A	RFD	Ongoing	High	The Rochester Fire Department could implement a proactive program addressing cooking fires with a collaborative effort between the Fire Marshal's Office and Operations.

Mitigation Preparedness and Response Support	11.4 Continue to seek federal grant and private institution funding for smoke detector education and giveaway programs.	Internal – Staff Supported	N/A	RFD	Ongoing	High	
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**12.Land Subsidence (Sinkholes & Karst) (CPRI: 2.2)**

Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
Local Planning and Regulations	12.1 Conduct studies and map areas that are susceptible to subsidence.	Internal – Staff Supported	\$50,000	ROPD, Public Works	Long Term	Low	
Local Planning and Regulations	12.2 Consider adopting an ordinance that requires a sinkhole evaluation for proposed developments that occur in elevations above 1200 feet (this occurs on top of underlying karst with very little soil cover).	Internal – Staff Supported	N/A	Public Works, ROPD	Short Term	Medium	The proposed language could be incorporated into the Grading Plan checklist, so each new development that requires a Grading Plan would also be required to think about the site phasing and the impact the underlying geology would have on the area.
Local Planning and Regulations	12.3 Consider adopting an ordinance that requires a sinkhole evaluation for proposed developments that occur near known soil subsidence or sinkhole areas.	Internal – Staff Supported	N/A	Public Works, ROPD	Short Term	Medium	

**Technological Hazards**

**13.Train Derailment (CPRI: 3.25)**

Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
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Education and Awareness Programs	13.1 Implement a Shelter in Place educational campaign for individuals and households who could be affected by a train derailment.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt., RFD	Long Term	Low	For chemical hazards, shelter-in-place versus evacuation is determined by incident commanders who respond to specific incidents. Planning for unknown incidents is difficult. Educating populations about one possible response to an unknown incident is especially difficult.
Education and Awareness Programs	13.2 Implement an evacuation educational campaign for individuals and households who could be affected by a train derailment.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt., RFD	Long Term	Low	For chemical hazards, shelter-in-place versus evacuation is determined by incident commanders who respond to specific incidents. Planning for unknown incidents is difficult. Educating populations about one possible response to an unknown incident is especially difficult.
Mitigation Preparedness and Response Support	13.3 Acquire additional AreaRAE gas monitors for use during HAZMAT incidents.	HMGP – 5%	\$8,000 to \$15,000 per unit	RFD	Short Term	High	
Mitigation Preparedness and Response Support	13.4 Maintain and improve methods of warning public for rail incidents involving hazardous chemicals that pose a threat to life.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt.	Ongoing	High	

**14. Hazardous Materials Release – Transportation (CPRI: 2.85)**

Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
Local Planning and Regulation	14.1 Identify major routes of travel for evacuation. Determine basic SOPs for mass evacuation.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt.	Short Term	High	This action strategy is required by State of Minnesota planning guidelines.

Local Planning and Regulation	14.2 Investigate the concept and language of local ordinance provisions that would address the transport routes for hazardous materials within population centers.	Internal – Staff Supported	N/A	ROPD	Short Term	Medium	
Mitigation Preparedness and Response Support	14.3 Conduct a full scale exercise involving a HAZMAT release necessitating an evacuation.	HMGP – 5%, HMEP	\$25,000	RFD, RPD, Public Works, Rochester Emergency Mgmt.	Short Term	High	The last hazardous materials exercise was 2011. Funds for consultant will cover development and delivery of an exercise.

**15. Critical Infrastructure/Utility Failure (CPRI: 2.8)**

Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
Local Planning and Regulations	15.1 Continue to conduct studies related to groundwater movement.	HMA, DNR, MGS, USGS	\$100,000	RPU	Ongoing	High	Conducting ongoing groundwater studies will benefit RPU and our Water Customers moving into the future to ensure a reliable water source that exceeds drinking water standards.
Local Planning and Regulations	15.2 Update the city land use plans to provide additional policies on development/land uses within the highly sensitive areas to groundwater pollution. Follow up with any necessary changes to the local zoning ordinances.	Internal – Staff Supported	N/A	ROPD, RPU	Ongoing	Medium	RPU's wellhead protection areas will have some restrictions to help protect the groundwater.
Local Planning and Regulations	15.3 Storm Water #34: Conduct a Water Quality Treatment and Pollutant Generation Assessment.	CIP (re)	\$200,000	Public Works, RPU	Long Term	Low	
Structure and Infrastructure	15.4 Bridge Replacement Program. Several bridges are nearing their life expectancy, functional deficient, or restricted in use. City	CIP, MN State Fund	6 Million	Public Works	Ongoing	High	

	will program bridge replacements beginning in 2018 and expect to replace a bridge every two or three years.						
Structure and Infrastructure	15.5 Identify above-ground powerlines vulnerable to failure during severe ice storms or wind events and evaluate/implement mitigation projects such as hardening or burying powerlines as needed.	HMGP, PDM	\$4M/mile to bury distribution lines	RPU	Long Term	Low	
Structure and Infrastructure	15.6 Add additional layers of backup contingencies to the electrical distribution system.	HMA	TBD	RPU	Long Term as funding becomes available	Low	These actions will allow for higher levels of electric reliability.
Structure and Infrastructure	15.7 Expand or construct additional substation transformers and add more electrical feeders to back up neighboring feeders if an entire substation were lost during a peak electrical usage period.	HMA	TBD	RPU	Long Term as funding becomes available	Low	
Education and Awareness Programs	15.8 Increase public awareness of communication techniques used by RPU during utility failures.	Internal – staff supported	N/A	RPU	Ongoing	Medium	
Mitigation Preparedness and Response Support	15.9 Identify critical facilities or infrastructure that do not have back-up power in the event of a major power outage.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt.	Long Term	Medium	
Mitigation Preparedness and Response Support	15.10 Purchase and install generators or related equipment (e.g., generator hook-ups) for identified critical facilities that require back-up power.	HMGP – 5%	\$15,000	Rochester Emergency Mgmt.	Short Term	Medium	Private and public infrastructure can be impacted by hazards. Identifying and preparing private infrastructure will require funding assistance.

16.Dam/Levee Failure (CPRI: 2.65)							
Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
Education and Awareness Programs	16.1 Conduct an awareness campaign for residents in the dam breach zones.	Internal – Staff Supported	\$20,000	Rochester Emergency Mgmt., Public Works	Short Term	High	An effective warning strategy begins with public education. Impacted residents should become aware of threats, and actions to take from impacts. Funding support will pay for additional staff or consultants to develop an effective education campaign.
Mitigation Preparedness and Response Support	16.2 Update and maintain data on breach zones, reverse 911 numbers, and response teams for all dam sites as needed.	HMGP – 5%, Internal	\$20,000	Public Works, Rochester Emergency Mgmt.	Ongoing	High	Being able to contact residents/property owners in the breach zones is important to help save lives in a dam breach. Updates to the breach zone analysis would help to make sure we know who is impacted by a breach.
Local Planning and Regulations	16.3 Consider regulating land use in the breach zones around the flood control reservoirs.	Internal – Staff Supported	N/A	ROPD	Short Term	Medium	A dam failure could be catastrophic but each reservoir is above varying levels of development so it is difficult to answer for all reservoirs.
17.Food Contamination (CPRI: 2.55)							
Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
Education and Awareness Programs	17.1 Conduct an awareness campaign for residents so they know to notify Olmsted County Public Health if they think they contracted a food borne illness.	Internal – Staff Supported	\$3,000	Olmsted County Public Health	Ongoing	Medium	
Education and	17.2 Conduct an awareness campaign to educate residents about safe food handling	Internal – Staff Supported	\$3,000	Olmsted County	Ongoing	Medium	

Awareness Programs	practices and how to prevent food borne illnesses.			Public Health			
<b>18.Hazardous Materials Release – Fixed Site (CPRI: 2.45)</b>							
Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
Local Planning and Regulations	18.1 Develop a GIS map detailing fixed facilities storing/generating/disposing of hazardous waste or materials.	Internal – Staff Supported	N/A	ROPD, RFD, Rochester Emergency Mgmt.	Short Term	Medium	
Mitigation Preparedness and Response Support	18.2 Form a COAD involving facility directors of Tier II sites and local responders. Hold regular meetings to explore possible resource sharing, readiness, and response techniques.	Internal	\$50,000	Rochester Emergency Mgmt.	Short Term	Medium	Developing a Community Organization Active in Disasters (COAD) is challenging, and will require consultant assistance to implement.
Local Planning and Regulations	18.3 Audit Section 302 facility reports to determine if RFD received the same Tier II sites as the State of Minnesota received.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt., RFD	Ongoing	High	Tier II reports are delivered to Rochester Fire Department. These reports are uploaded to Laserfiche where the documents are filed by facility name, as well as facility address. Rochester EOC is able to access Laserfiche files for disaster operations. Viewing the files provides key pieces of information allowing EOC staff to manage operations with greater effectiveness.
Mitigation Preparedness and Response Support	18.4 Partner with Minnesota Duty Officer and Local 911 center to ensure that Rochester Emergency Management receives timely notifications of chemical releases from fixed site facilities.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt.	Ongoing	High	Rochester Emergency Management has not received notification of chemical substance release since 2010. This strategy will develop a procedure for timely notification to allow improvement in emergency planning.

19. Natural Gas Overpressurization/Explosion (CPRI: 2.4)							
Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
Education and Awareness Programs	19.1 Conduct an awareness campaign designed to encourage residents to keep the area around the furnace, water heater, and laundry equipment free of clothing or other flammable materials to prevent fire in the case of improper combustion.	Internal – Staff Supported	N/A	RFD, MN Energy	Ongoing	High	
Education and Awareness Programs	19.2 Conduct an awareness campaign designed to remind people to “Know What’s Below; Call 811 Before You Dig.”	Internal – Staff Supported	N/A	MN Energy	Ongoing	High	MNOPS has the authority to enforce Call Before You Dig.
Education and Awareness Programs	19.3 Encourage residents to check their gas meters outside during winter to be sure they stay free of ice and snow that can block the regulator vent and cause it to malfunction.	Internal – Staff Supported	N/A	MN Energy, Rochester Emergency Management	Ongoing	High	
Mitigation Preparedness and Response Support	19.4 Continue use of free emergency responder training provided by Minnesota Energy Resources.	Internal – Staff Supported	N/A	RFD, MN Energy	Ongoing	High	
Mitigation Preparedness and Response Support	19.5 Continue to seek federal grant and private institution funding for carbon monoxide detector education and giveaway programs.	Internal – Staff Supported	N/A	RFD	Ongoing	High	

20. Airplane Crash (CPRI: 2.25)							
Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
Mitigation Preparedness and Response Support	20.1 Continue conducting periodic exercises involving the Rochester International Airport.	RST Internal	N/A	Rochester Emergency Mgmt., RFD	Ongoing	Low	Airports must conduct a full-scale or functional exercise every three years. Rochester International Airport (RST) conducts planning efforts separate from city of Rochester.

**Human-Caused Threats**

21. School/Work Place Violence (CPRI: 3.05)							
Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	
Mitigation Preparedness and Response Support	21.1 Evaluate parent notification processes at schools to include language evaluation.	Internal-staff supported	N/A	Rochester Emergency Mgmt.	Short Term	Low	
Education and Awareness Programs	21.2 Encourage a partnership between the Minnesota School Safety Center and the Rochester Public School District to facilitate emergency planning.	Internal – staff supported	N/A	Rochester Emergency Mgmt., Rochester Public Schools	Short Term	Medium	

22. Cyber Incidents (CPRI: 2.95)							
Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	

Local Planning and Regulations	22.1 Start conducting Business Impact Analyses to systematically determine and evaluate the effects of a potential interruption to critical systems.	Internal – staff supported	N/A	Enterprise IT Security & Technology Steering Committee	Ongoing	Low	
Education and Awareness Programs	22.2 Create a feature in outlook to quickly and easily report phishing attempts to IT security.	Internal – Staff Supported	N/A	Enterprise IT Security & Technology Steering Committee	Short Term	Medium	
Education and Awareness Programs	22.3 Create an employee education module that addresses IT security issues.	Internal – staff supported	N/A	Enterprise IT Security & Technology Steering Committee	Ongoing	Medium	
Local Planning and Regulations	22.4 Continue working to implement the Top 5 CIS Goals to reduce the risk of cyber attacks by around 85%.	Internal – Staff Supported	N/A	Enterprise IT Security & Technology Steering Committee	Long Term, Ongoing	Medium	
Mitigation Preparedness and Response Support	22.5 Consider creating a Cyber Incident Response Plan.	Internal – staff supported	N/A	Enterprise IT Security & Technology Steering Committee	Short Term	Medium	

23.Terrorist Acts (CPRI: 2.4)							
Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	
Local Planning and Regulations	23.1 Prepare a site-specific vulnerability assessment of City- owned critical facilities with regards to human-caused hazards.	Internal – Staff Supported	N/A	RPD, Rochester Emergency Mgmt.	Short Term	Medium	
Structure and Infrastructure	23.2 Identify and implement hardening measures for critical infrastructure.	CIP	TBD after assessment	RPD	Short Term As Funding Becomes Available	Medium	
Local Planning and Regulations	23.3 Determine an appropriate standoff distance at the Rochester International Airport and develop a method to enforce it.	Internal – Staff Supported	N/A	RPD, Rochester International Airport	Short Term	Medium	
Structure and Infrastructure	23.4 Incorporate standoff distance into future critical infrastructure designs.	Internal – Staff Supported	N/A	RPD, ROPD	Long Term	Low	
Mitigation Preparedness and Response Support	23.5 Encourage critical facilities to create standoff distance procedures for use during a credible threat. Plans should include provisions for creating a perimeter, check points, and options to preposition resources to harden facilities.	Internal – Staff Supported	N/A	RPD	Long Term	Medium	

24.Civil Disturbance (CPRI: 2.1)							
Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	

Local Planning and Regulations	24.1 Develop a formal system of intelligence gathering and a process to communicate with external partners before, during, and after civil disturbance events.	Internal – Staff Supported	N/A	RPD	Short Term	High	
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**All Hazards Action Strategies**

Strategy	Action Item	Potential Funding Source	Approx. Cost	Lead Agency	Timeframe	Priority	Subject Matter Expert Comments
Local Planning and Regulation	25.1 Develop a Debris Management Plan to identify handling of hazardous debris and streamline short term recovery activities.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt., Parks and Recreation, Public Works, RPU	Short Term	High	
Education and Awareness Programs	25.2 Create a brochure about hazards that could affect Rochester for visitors and new residents. Make this brochure available at visitor’s centers and hotels.	HMGP – 5%, Internal – Staff Supported	\$5,000	Rochester Emergency Mgmt., PIO	Short Term	Low	
Mitigation Preparedness and Response Support	25.3 Develop a short term sheltering plan using Parks and Recreation facilities as emergency shelters and draft MOUs to use non-city facilities as shelters.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt., Parks and Recreation	Short Term	High	
Local Planning and Regulation	25.4 Develop a vulnerability map layer using GIS. Include sites such as nursing homes, group homes, day cares, pre-schools, etc.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt., GIS	Short Term	High	

Mitigation Preparedness and Response Support	25.4a Encourage facilities that care for vulnerable populations to have emergency plans in place in the event of severe storms, extreme temperatures, or other events that require emergency measures to save lives.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt.	Ongoing	High	
Local Planning and Regulation	25.5 Develop a communications plan to notify vulnerable populations of potential hazards.	Internal – Staff supported	\$75,000	Rochester Emergency Mgmt.	Short Term	Medium	Funding needed for interpreters to translate and deliver effective messages. An effective message may or may not be written materials, and most likely will include video productions or public speaking events to deliver messages with interpreters. Funds for equipment (e.g. hearing assist) may be needed.
Local Planning and Regulation	25.6 Develop a Community Long Term Recovery Plan for Rochester.	HMA	\$50,000	Rochester Emergency Mgmt., ROPD	Long Term	High	Joint initiative with Rochester Olmsted Planning Department (ROPD) is needed for success.
Local Planning and Regulation	25.7 Conduct an outreach meeting with area nonprofits to determine existing MOU’s and MOA’s in the community.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt.	Ongoing	High	
Education and Awareness Programs	25.8 Conduct meetings with the Deaf and Hard of Hearing community to inform them of the availability of Special Needs Weather Radios.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt.	Ongoing	High	
Education and Awareness Programs	25.9 Provide refresher training for first responders on how to use the translation line available to them to facilitate interactions with Limited English Proficiency individuals.	Internal – Staff Supported	N/A	RPD, RFD, Gold Cross, PSAP	Short Term	High	
Education and	25.10 Develop multilingual preparedness materials to be distributed at churches and schools.	HMGP – 5%, Internal	\$5,000	Rochester Emergency Mgmt.	Ongoing	Low	Written materials are less effective than oral or video delivery of education materials.

Awareness Programs							
Education and Awareness Programs	25.11 Distribute multi-language Preparedness DVD's, developed by ECHO, to limited English proficiency households.	HMGP – 5%, Internal	\$50,000	Rochester Emergency Mgmt.	Ongoing	High	Consultant assistance needed for success.
Local Planning and Regulation, Mitigation Preparedness and Response Support	25.12 Evaluate, update, and exercise government Continuity of Operations Plans (COOP).	Internal – Staff Supported	N/A	Rochester Emergency Mgmt.	Ongoing	High	
Mitigation Preparedness and Response Support	25.13 Provide NOAA Weather Radios for area schools.	HMGP – 5%	\$1,000	Rochester Emergency Mgmt.	Short Term	Medium	Need support by ISD 535.
Education and Awareness Programs	25.14 Continue conducting lumber yard meetings to inform area contractors of code changes and common mistakes seen during plan review and inspection.	Internal – Staff Supported	N/A	Building Safety	Ongoing	Medium	
Mitigation Preparedness and Response Support	25.15 Develop an Interpreter/Liaison List: Assemble a list of interpreters willing to be on call during crisis response.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt.	Short Term	High	
Mitigation Preparedness and Response Support	25.16 Provide National Oceanic and Atmospheric Administration (NOAA) weather radios to identified special needs citizens (for example, elderly, rural, low income).	HMGP – 5%	\$15,000	Rochester Emergency Mgmt.	Ongoing	High	Purchase of equipment needed using grant funding.

Mitigation Preparedness and Response Support	25.17 Identify city areas with limited egress routes and determine their vulnerability to hazards that would require evacuation.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt.	Ongoing	High	
Mitigation Preparedness and Response Support	25.18 Develop multi-lingual message templates for Rochester Alert emergency alerts.	Internal – Staff Supported	\$15,000	Rochester Emergency Mgmt.	Short Term	Medium	Message translations will be two kinds: Written messages, and video messages. Some groups require oral/video messages to be effective. Examples are Somali populations and deaf groups.
Local Planning and Regulations	25.19 To assist in floodplain zoning, create a comprehensive GIS database for structures located in the flood plain, indicating which structures are built in the flood plain and which structures have been raised above the base flood elevation.	Internal – Staff Supported	N/A	ROPD	Ongoing	High	There really should be no new impacts to the property owners with structures in the floodplain in that all of this data is currently kept on paper copies. Creating a database would merely serve to streamline data access and analysis.
Local Planning and Regulations	25.20 Predetermine egress routes and create an evacuation plan for the downtown area.	Internal – Staff Supported	N/A	Rochester Emergency Mgmt., RFD	Short Term	Low	
Local Planning and Regulations	25.21 Develop Building Emergency Response Plans for all city departments to include building response teams and address all hazards emergency response actions.	Internal— Staff Supported	N/A	Building Safety	Short Term	High	
Local Planning and Regulations	25.22 Encourage area businesses to develop COOP plans and other plans that would protect the health and safety of community members.	Internal— Staff Supported	\$2,000	Rochester Emergency Mgmt.	Ongoing	Medium	





## 5 Executing the Plan

## 5 Executing the Plan

### 5.1 Implementation

Rochester’s Office of Emergency Management will lead implementation efforts. City Departments identified as Lead Agencies in the plan will be responsible for submitting for identified projects. Work on the individual strategies will proceed according to priority ranking and available funding.

While some of the actions identified are likely to receive grant funding assistance, many are not. Rochester understands that many of these actions will be carried out solely by the dedication of the men and women working in these departments. This list of actions is designed to not only identify future projects that would be beneficial but also to recognize the ongoing mitigation actions being carried out in the day to day efforts of many city departments.

When crafting these mitigation action strategies, an effort was made to integrate existing plans and policies. With that in mind, many of the actions are already included in Rochester’s Capital Improvements Program. In the future, it is hoped that even more of the identified mitigation action strategies can be incorporated. Additionally, Rochester’s All Hazard Mitigation Plan will be adopted by the City Council as a part of the city’s larger Comprehensive Plan. This will further underscore the importance of these mitigation actions and ensure that they will remain on the minds of those with the power to implement them.

The table below outlines some of the existing plans, policies, and programs that can be used to implement the mitigation actions identified in the plan.

Hazard Addressed	Existing Plans, Policies, and Programs
Severe Summer Storms (Windstorm, Tornado, Hail, Lightning)	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Severe Weather Warning System</li> <li><input checked="" type="checkbox"/> Rochester Alert and IPAWS</li> <li><input checked="" type="checkbox"/> Weather Ready Ambassador Program</li> <li><input checked="" type="checkbox"/> Storm Water Management Plan</li> <li><input checked="" type="checkbox"/> Olmsted County Water Management Plan</li> </ul>
Epidemic or Disease Outbreak	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Olmsted County Public Health Services (OCPHS)                             <ul style="list-style-type: none"> <li><input type="checkbox"/> Disease Surveillance and Epidemiological Investigation Annex</li> <li><input type="checkbox"/> Foodborne Illness Outbreak Investigation Plan</li> <li><input type="checkbox"/> Isolation and Quarantine Plan</li> <li><input type="checkbox"/> Pandemic Influenza Annex</li> <li><input type="checkbox"/> Airport Communicable Disease Plan</li> <li><input type="checkbox"/> Avian Influenza Plan</li> <li><input type="checkbox"/> Flu Center Plan</li> <li><input type="checkbox"/> Alternate Care Site Plan</li> <li><input type="checkbox"/> Health Alert Network Protocol</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li><input type="checkbox"/> Medical Countermeasures Distribution Annex</li> <li><input type="checkbox"/> Infectious Disease Reporting systems</li> <li><input type="checkbox"/> Vaccination Program</li> <li><input checked="" type="checkbox"/> Minnesota Department of Health             <ul style="list-style-type: none"> <li><input type="checkbox"/> Food, Pools, and Lodging Services Delegation Agreement</li> </ul> </li> <li><input checked="" type="checkbox"/> State Community Health Services Advisory Committee             <ul style="list-style-type: none"> <li><input type="checkbox"/> Disease Prevention and Control (DPC) Common Activities Framework</li> </ul> </li> </ul>
Flood	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Ordinance 64.350: Wetlands</li> <li><input checked="" type="checkbox"/> Land Use Map: Flood Plain</li> <li><input checked="" type="checkbox"/> Rochester Land Development Manual Section 62.800 – Flood Districts and Intent</li> <li><input checked="" type="checkbox"/> FIRM Maps</li> <li><input checked="" type="checkbox"/> Floodway, Flood prone, Flood Fringe requirements</li> <li><input checked="" type="checkbox"/> Cascade Creek Stabilization Report</li> <li><input checked="" type="checkbox"/> Rochester Land Development Manual Section 62.1000 – Shoreland District</li> <li><input checked="" type="checkbox"/> Olmsted County Water Management Plan</li> </ul>
Excessive/Prolonged Heat or Cold	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> MOU between Rochester Emergency Management and Rochester Public Transit</li> <li><input checked="" type="checkbox"/> “A Cool Place to be” Program</li> <li><input checked="" type="checkbox"/> Community Extreme Temperature Plan (Olmsted County, Public Health, Rochester)</li> </ul>
Fire (Structure and Vehicle)	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Fire Department Annual Training Plan</li> <li><input checked="" type="checkbox"/> English Second Language Classes – Fire Home Safety Program</li> <li><input checked="" type="checkbox"/> Fire Prevention Week</li> </ul>
Erosion – Landslides, Subsidence, Sinkhole, and Karst	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Grading Plans</li> <li><input checked="" type="checkbox"/> Erosion Control Ordinance 64.320</li> <li><input checked="" type="checkbox"/> Hillside Development Ordinance 64.340</li> <li><input checked="" type="checkbox"/> Decorah Edge Ordinance – Chapter 59</li> <li><input checked="" type="checkbox"/> Rochester Land Development Manual Section 62.1100 – Excavation Activities and Substantial Land Alteration</li> </ul>
HAZMAT Incidents & Train Derailment	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Fire Department Annual Training Plan</li> <li><input checked="" type="checkbox"/> Tier II Reports</li> <li><input checked="" type="checkbox"/> Chemical Assessment Team</li> <li><input checked="" type="checkbox"/> EPCRA Program SARA Title III Information Packet</li> </ul>
Critical Infrastructure/Utility Failure	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Wellhead Protection Plan-2018</li> <li><input checked="" type="checkbox"/> DNR Water Supply Plan-2018</li> </ul>

Dam/Levee Failure	<ul style="list-style-type: none"> <li>❑ Dam inundation zone breach maps</li> <li>❑ BR-1 (Chester Woods) Emergency Action Plan</li> <li>❑ KR-3 (Landfill) Emergency Action Plan</li> <li>❑ KR-6 (50 AVE NW) Emergency Action Plan</li> <li>❑ KR-7 (19 ST NW) Emergency Action Plan</li> <li>❑ SR-2 (Silver Creek) Emergency Action Plan</li> <li>❑ WR-4 (Gamehaven) Emergency Action Plan</li> <li>❑ WR-6A (Willow Creek) Emergency Action Plan</li> </ul>
Food Contamination	<ul style="list-style-type: none"> <li>❑ ServSafe Program</li> <li>❑ Foodborne Illness Outbreak Investigation Plan</li> </ul>
Airplane Crash	<ul style="list-style-type: none"> <li>❑ Airport Exercise (every three years)</li> </ul>
Cyber Incidents	<ul style="list-style-type: none"> <li>❑ Enterprise IT Security &amp; Technology Steering Committee</li> </ul>
Terrorist Acts/Civil Disturbance	<ul style="list-style-type: none"> <li>❑ Rochester Police Department Manual Revision 28A-1</li> </ul>
All Hazards	<ul style="list-style-type: none"> <li>❑ Rochester’s Emergency Operations Plan – Includes training plan</li> <li>❑ Continuity of Operations Plan</li> <li>❑ Capital Improvements Program</li> <li>❑ Comprehensive Plan (P2S)</li> <li>❑ PSCC – Public Safety Communication Center</li> <li>❑ OCPHS Emergency Public Information Annex</li> <li>❑ OCPHS All-Hazards Base Plan (EOP)</li> <li>❑ OCPHS COOP</li> <li>❑ OCPHS Volunteer Management (Medical Reserve Corps)</li> <li>❑ OCPHS Responder Safety and Health</li> <li>❑ Do 1 Thing</li> <li>❑ State of MN HSEM – Public Affairs</li> <li>❑ Internet – VISION Website</li> <li>❑ Public presentations – service groups, residential homes</li> <li>❑ Annual Budget Process</li> </ul>

## 5.2 Keeping the Plan Current

Rochester’s first All Hazard Mitigation Plan focuses primarily on City departments. For the five-year plan update, we intend to expand the scope of this plan to include a deeper partnership with Rochester Public Schools, the Mayo Clinic, Olmsted Medical Center, Tier II sites, and other businesses and non-profits within the community.

Public outreach and engagement efforts will continue during the life of this plan. Many of the mitigation strategies presented in Section 4 of this document will require a formal review and adoption process, including notice of and opportunity for public commentary. In addition, the City of Rochester will continue

to maintain its Emergency Management website, including hyperlinks to the All Hazard Mitigation Plan document and contact information for submitting questions, concerns, and ideas.

Other goals for the plan update cycle include the following:

- Revalidate Risk Assessment halfway through five year update cycle
- Meet with all designated Lead Agencies every year to assess progress on mitigation actions and assist in removing barriers to implementation

Rochester Division of Emergency Management will coordinate the update of this plan every five years and submit it to HSEM and FEMA.





## 6 Appendices

## 6 Appendices

### 6.1 Planning Team Members

Department	Title or Function	Planning Team
<b>Rochester-Olmsted Planning Department</b>	AHMP Lead, Planning Supervisor	Core Planning Team
<b>Rochester-Olmsted Planning Department</b>	AHMP Lead, Principal Planner, GIS	Core Planning Team
<b>City of Rochester Emergency Management</b>	AHMP Lead, Emergency Management Director	Core Planning Team
<b>City of Rochester Emergency Management</b>	Hazard Mitigation Specialist	Core Planning Team
<b>City of Rochester Building Safety</b>	Building Safety Director	Plan Development
<b>City of Rochester Fire Department</b>	Fire Chief	Plan Development
<b>City of Rochester Fire Department</b>	Deputy Fire Chief	Plan Development
<b>City of Rochester Fire Department</b>	Battalion Chief	Plan Development
<b>City of Rochester Park and Recreation</b>	Park & Forestry Division Head	Plan Development
<b>City of Rochester Park and Recreation</b>	Parks and Recreation Director	Plan Development
<b>City of Rochester Public Works</b>	Project Development Manager	Plan Development
<b>City of Rochester Public Works</b>	Director of Public Works	Plan Development
<b>City of Rochester Public Works</b>	Stormwater Management	Plan Development
<b>City of Rochester Public Works</b>	Transit/Parking Division	Plan Development
<b>City of Rochester Public Works</b>	Manager of Engineering	Plan Development
<b>City of Rochester Public Works</b>	Water Reclamation Plant Manager	Plan Development
<b>City of Rochester Public Works</b>	Water Reclamation Plant Project Manager	Plan Development
<b>City of Rochester Public Works</b>	Water Resources Manager	Plan Development
<b>City of Rochester Public Works</b>	Storm Water Utility/Flood Control Project Compliance Specialist	Plan Development

<b>City of Rochester Public Works</b>	Infrastructure Manager	Plan Development
<b>City of Rochester Public Works</b>	Storm Water Utility Compliance Specialist	Plan Development
<b>Minnesota Department of Transportation</b>	District Engineer - District 6	Plan Development
<b>Minnesota Energy Resources</b>	External Relations Manager	Plan Development
<b>Olmsted County Community Services</b>	Director of Community Services	Plan Development
<b>Olmsted County Emergency Management</b>	Director of Olmsted County Emergency Management	Plan Development
<b>Olmsted County Emergency Management</b>	Olmsted County Sheriff	Plan Development
<b>Olmsted County Public Health Services</b>	Associate Director	Plan Development
<b>Olmsted County Public Health Services</b>	Public Health Emergency Preparedness Coordinator	Plan Development
<b>Olmsted County Public Health Services</b>	Director of Public Health	Plan Development
<b>Olmsted County Public Health Services</b>	Public Health Emergency Preparedness	Plan Development
<b>Olmsted County Public Works</b>	Director of Public Works	Plan Development
<b>Rochester City Administration</b>	City Administrator	Plan Development
<b>Rochester City Administration</b>	Flood Control Project	Plan Development
<b>Rochester City Administration</b>	IT Security Specialist	Plan Development
<b>Rochester International Airport</b>	Executive Director for Airport	Plan Development
<b>Rochester Police Department</b>	Chief of Police	Plan Development
<b>Rochester Police Department</b>	Patrol Division-Community Action Team (CAT) Supervisor	Plan Development
<b>Rochester Public Utilities</b>	Director of Field Services	Plan Development
<b>Rochester Public Utilities</b>	General Manager	Plan Development
<b>Rochester Public Utilities</b>	Manager of Engineering	Plan Development
<b>Rochester Public Utilities</b>	Environmental and Regulatory Affairs Coordinator	Plan Development

<b>Rochester Public Utilities</b>	Manager of Maintenance and Construction - Water Operations	Plan Development
<b>Rochester-Olmsted Planning Department</b>	Geographic Information Systems Supervisor	Plan Development
<b>Rochester-Olmsted Planning Department</b>	Floodplain and Wetlands Administrator	Plan Development
<b>State of Minnesota HSEM</b>	Hazard Mitigation Planner, Rochester Contact	Plan Development
<b>Council on Black Minnesotans</b>	Director	Plan Validation
<b>Minnesota DNR Division of Ecological and Water Resources/Dam Safety</b>	Hydrologist - Emergency Action Plans	Plan Validation
<b>Deaf and Hard of Hearing Services</b>	"Captain" for the Deaf and Hard of Hearing Community	Plan Validation
<b>FBI</b>	Special Agent, Minneapolis Division	Plan Validation
<b>IBM</b>	Americas Operations Manager, Integrated Health Services	Plan Validation
<b>Interfaith Hospitality Network</b>	"Captain" for the Recovery and Addiction Community	Plan Validation
<b>Mayo Civic Center</b>	Executive Director	Plan Validation
<b>Mayo Clinic</b>	Director, Emergency Mgmt. Dept. of Safety and Security	Plan Validation
<b>Mayo Clinic</b>	Public Affairs Manager	Plan Validation
<b>Minnesota Department of Health</b>	Community Public Water Supply Sr. Engineer	Plan Validation
<b>Minnesota Department of Health</b>	Emergency Preparedness Consultant	Plan Validation
<b>Minnesota Department of Natural Resources</b>	Hydrologist	Plan Validation
<b>Minnesota Energy Resources</b>	External Affairs Manager	Plan Validation
<b>Minnesota Geological Survey</b>	Chief Geologist	Plan Validation
<b>MN Board of Soil and Water Resources</b>	Board Conservationist	Plan Validation
<b>MN National Guard</b>	Interagency Operations NCO, SE MN	Plan Validation
<b>MN Pollution Control Agency</b>	Emergency Response and Large Facility Cleanup	Plan Validation

<b>NAMI SE MN</b>	"Captain" for Mental Health Community	Plan Validation
<b>National Federation of the Blind</b>	"Captain" for the Blind Community	Plan Validation
<b>NOAA - La Crosse</b>	Weather Services, Climatology	Plan Validation
<b>Olmsted County Administration</b>	County Administrator	Plan Validation
<b>Olmsted County Environmental Resources</b>	Director of Environmental Resources	Plan Validation
<b>Olmsted County Parks</b>	Parks Superintendent	Plan Validation
<b>Olmsted County Property Records and Licensing</b>	Director of Property Records and Licensing	Plan Validation
<b>Olmsted County Sheriff's Department</b>	Sheriff	Plan Validation
<b>Olmsted Medical Center</b>	Director of Plant Operations	Plan Validation
<b>RNeighbors</b>	Executive Director for Airport	Plan Validation
<b>Rochester Area Builders</b>	Executive Director	Plan Validation
<b>Rochester Chamber of Commerce</b>	Government Affairs Director	Plan Validation
<b>Rochester Chamber of Commerce</b>	Chamber President	Plan Validation
<b>Rochester City Clerk</b>	City Clerk	Plan Validation
<b>Rochester City Council</b>	City Council Representative	Plan Validation
<b>Rochester City Finance</b>	Risk Manager/Purchasing Officer	Plan Validation
<b>Rochester City Finance</b>	City Finance Director	Plan Validation
<b>Rochester Community and Technical College</b>	President	Plan Validation
<b>Rochester Convention and Visitors Bureau</b>	Executive Director	Plan Validation
<b>Rochester Downtown Alliance</b>	Executive Director	Plan Validation
<b>Rochester Human Resources</b>	Director of Human Resources	Plan Validation
<b>Rochester Human Resources</b>	Benefits and Safety Administrator	Plan Validation
<b>Rochester Information Systems</b>	Information Systems Manager	Plan Validation
<b>Rochester Office of the City Attorney</b>	City Attorney	Plan Validation

<b>Rochester Olmsted Council of Governments</b>	Transportation Planning Coordinator	Plan Validation
<b>Rochester Planning and Zoning Commission</b>	CPZC Chair	Plan Validation
<b>Rochester Public Library</b>	Director	Plan Validation
<b>Rochester Public Schools</b>	Superintendent	Plan Validation
<b>Rochester Public Schools</b>	Director of Facilities	Plan Validation
<b>Rochester Senior Center</b>	"Captain" for the Senior Community	Plan Validation
<b>Salvation Army</b>	Core Commanding Officer of the Salvation Army in Rochester	Plan Validation
<b>SE Minnesota Chapter of the American Red Cross</b>	Disaster Program Manager	Plan Validation
<b>SE Minnesota Chapter of the American Red Cross</b>	Regional Disaster Program Officer	Plan Validation
<b>SEMCIL</b>	"Captain" for the Physically Disabled Community	Plan Validation
<b>State of Minnesota HSEM</b>	Regional Program Coordinator	Plan Validation
<b>The ARC Southeastern Minnesota</b>	"Captain" for Developmentally Disabled Community	Plan Validation
<b>United Way of Olmsted County</b>	Community and Corporate Engagement Director	Plan Validation
<b>University of MN - Rochester</b>	Associate Vice Chancellor for Finance and Operations	Plan Validation
<b>University of MN - Rochester</b>	Facilities and Operations Coordinator	Plan Validation

## 6.2 Plans, Studies, Reports, Data Reviewed

The following plans, studies, reports, and technical information were reviewed and incorporated into the text, maps, and graphics found in this mitigation plan as cited in the document and noted below.

### 6.2.1 Plans

#### Hazard Mitigation Plans

These background documents were used to inform the Planning Team on previous hazard planning efforts and to create the list of potential risks/hazards facing the city of Rochester.

- ❑ State of Minnesota Hazard Mitigation Plan
- ❑ All Hazard Mitigation Plan Olmsted County, MN
- ❑ Dakota County All-Hazard Mitigation Plan 2016
- ❑ 2013 Hazard Mitigation Plan: St. Louis County, Minnesota
- ❑ City of Saint Paul All-Hazard Mitigation Plan – April 2012 Update

#### Other City of Rochester Plans

These plans were used to create the City Profile and help the Core Planning Team and Plan Development Team understand the physical, geographic, and socioeconomic characteristics that shape the city of Rochester. The plans helped planning team members inventory and understand other City plans that are interconnected with and dependent upon Rochester's All Hazard Mitigation Plan. They also helped planning team members assess risks facing the community and develop mitigation strategies.

- ❑ Rochester Urban Service Area Land Use Plan
- ❑ P2S Planning 2 Succeed: Rochester Comprehensive Plan 2040 (Draft)
- ❑ Rochester Parks and Recreation Master Plan
- ❑ Wellhead Protection Plan Part I
- ❑ Wellhead and Source Water Protection Part II: Wellhead Protection Plan City of Rochester, Minnesota
- ❑ Rochester Emergency Operations Plan
- ❑ 2013 THIRA: Threat and Hazard Identification and Risk Assessment – City of Rochester and Olmsted County Minnesota

#### Other Local Plans

These plans were used to create the City Profile and help the Core Planning Team and Plan Development Team understand the physical, geographic, and socioeconomic characteristics that shape the city of Rochester and Olmsted County. The plans helped planning team members inventory and understand other local plans that are interconnected with and dependent upon Rochester's All Hazard Mitigation Plan. They also helped planning team members assess risks facing the community and develop mitigation strategies.

- ❑ Olmsted County Water Management Plan
- ❑ Olmsted County General Land Use Plan
- ❑ Rochester-Olmsted Council of Governments (ROCOG) Long Range Transportation Plan

### 6.2.2 Studies and Reports

These documents were used for risk assessment and development of mitigation strategies.

- ❑ Cascade Creek Stabilization Report (April 2014)
- ❑ Rochester Public Utilities Water Quality Report: 2015
- ❑ 2015 Fire in Minnesota - Minnesota State Fire Marshall's Office

### 6.2.3 Technical Datasets

These sources contributed to the data, maps, and graphics found in the City Profile, Risk Assessment, and Mitigation Strategies chapters.

- ❑ 2015 US Census American Community Survey Data
- ❑ 2010 US Census Data
- ❑ National Oceanic and Atmospheric Administration and National Weather Service Datasets
- ❑ Olmsted County Geologic Atlas – Minnesota Geological Survey (MGS)
- ❑ Olmsted County GIS Databases – Rochester-Olmsted Planning Department, GIS Division
- ❑ City of Rochester GIS Databases – City of Rochester Public Works
- ❑ Olmsted County LiDAR Topographic Data – State of Minnesota
- ❑ Olmsted County Soil Survey – Natural Resources Conservation Service (NRCS)
- ❑ Wellhead Protection Databases – Rochester Public Utilities (RPU)
- ❑ Natural Resources Data – Minnesota Department of Natural Resources (MnDNR)
- ❑ Impaired Water Data, Environmental Hazard Sites – Minnesota Pollution Control Agency (MPCA)
- ❑ National Wetlands Inventory Database – US Fish and Wildlife Service
- ❑ FIRM Floodplain Datasets – FEMA
- ❑ Epidemic and Disease Outbreak Data – Minnesota Department of Health Website
- ❑ Drought Data – US Drought Monitor
- ❑ Fire Danger Data – US Forest Service

### 6.2.4 Other Resources

This resource provided an excellent guide for the development of the plan.

- ❑ Federal Emergency Management Agency (FEMA) regulations and guidance

### 6.3 Hazard Validation Meeting Attendance 2/12/15

Rochester All-Hazard Mitigation Plan

Sign-in Sheet: February 12, 2015

Rochester Public Library

#### ROCHESTER HAZARD VALIDATION MEETING SIGN-IN SHEET

(PLEASE PRINT CLEARLY)

Name	Agency/Department	Phone Number	E-Mail
Sandi Gostee	ROPD	328-7133	gostee.sandi@co. olmsted.mn.us
Ken Jones	Emergency Mgmt		kjones@rochestermn.gov
DAVID MORRISON	MPCA	251-7560	DAVID.MORRISON@STATE.MN.US
Jeff Ellerbusch	Planning	328 7132	ellek@BUSH.JETT@CO. OLMSDED.MN.US
Amy Evans	OC. Public Health	328-7425	evans.amy@co. olmsted.mn.us
Laura Engelman	RDA	424-2866	lengelman@rdowntownalliance.com
Marek Kotschewski	RPU	280-1601	mkotschewski@RPV.ORG
John W. Miller	IC Public Work	328-2422	jmiller@rochestermn.gov
Michael Stock	Rochester Public Schods	507-328-4507	mstock@rochester.k12.mn.us
Robert Wadigal	SEMCA	507-285-3933	Rob@SEMCA.ORG

Rochester All-Hazard Mitigation Plan

Sign-in Sheet: February 12, 2015

Rochester Public Library

**ROCHESTER HAZARD VALIDATION MEETING SIGN-IN SHEET**

(PLEASE PRINT CLEARLY)

Name	Agency/Department	Phone Number	E-Mail
John Lewis	RPD	328-6982	jllewis@rochester.gov
Don Turk	RPD	328-6940	dturk@rochester.gov
Mike Nibler	PARKS	328-2511	mnibler@rochester.gov
DAVID SILKER	MCC	328-2126	DAVE@MAYOCIVICCENTER.COM
Scott Shelden	RPS	316-5703	scshelden@k12.mn.us
Rene Loffum	RNFISHERS	244-0451	rene@RNFISHERS.ORG
Geri Maki	MDH	206-2729	Geri.Maki@State.mn.us
Byron Ames	MAYO CLINIC	266-2083	Callie.byron@mayo.edu
Tony Krawiec	City - RPT	328-2424	tkrawiec@rochester.gov
AKK	Urn PR	328-7663	Krupsk, maki & Co. Limited, MN, US

Hazard Mitigation Grant

2

Reimbursement Documents

Rochester All-Hazard Mitigation Plan

Sign-in Sheet: February 12, 2015

Rochester Public Library

**ROCHESTER HAZARD VALIDATION MEETING SIGN-IN SHEET**

(PLEASE PRINT CLEARLY)

Name	Agency/Department	Phone Number	E-Mail
Tom Graham	Olmsted Medical Center	993-7690	tgraham@olmmed.org
JOHN MURPHY	MAYO CLINIC	538-0491	Murphy.JJ@mayo.edu

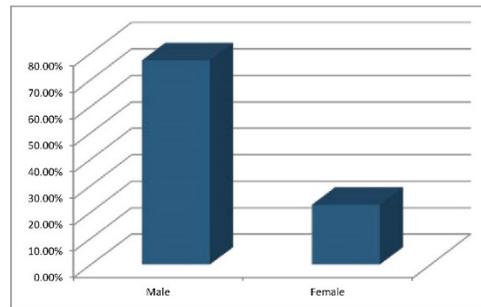
## 6.4 Hazard Validation Meeting Results 2/12/15

<b>Session Name</b>			Std Dev 0-2.99
AHMP Hazard Validation 2-12-2015 4-15 PM			
<b>Date Created</b>	<b>Active Participants</b>	<b>Total Participants</b>	Std Dev 3-4.99
#####	22	22	
<b>Average Score</b>	<b>Questions</b>		Std Dev 5+
0.00%	36		

### Results by Question

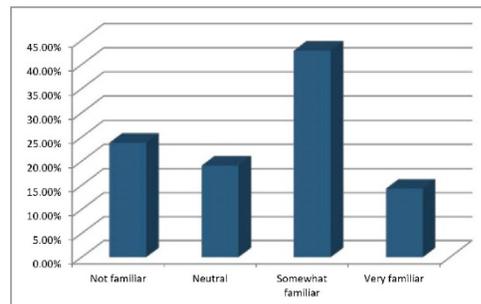
#### 1. Please select your demographic (Demographic Assignment)

	Responses	
	Percent	Count
Male	77.27%	17
Female	22.73%	5
<b>Totals</b>	<b>100%</b>	<b>22</b>



#### 2. How familiar are you with clickers (Multiple Choice)

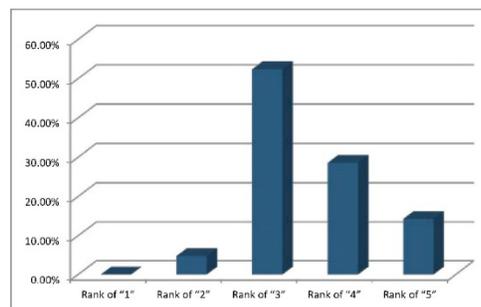
	Responses	
	Percent	Count
Not familiar	23.81%	5
Neutral	19.05%	4
Somewhat familiar	42.86%	9
Very familiar	14.29%	3
<b>Totals</b>	<b>100%</b>	<b>21</b>



#### 3. Disease outbreak (Multiple Choice)

	Responses	
	Percent	Count
Rank of "1"	0.00%	0
Rank of "2"	4.76%	1
Rank of "3"	52.38%	11
Rank of "4"	28.57%	6
Rank of "5"	14.29%	3
<b>Totals</b>	<b>100%</b>	<b>21</b>

Mean Rank: 3.52  
 Range Low: 2  
 Range High: 5  
 Standard Deviation: 4.4



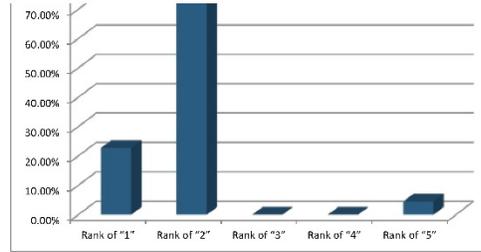
#### 4. Drought / Water Shortage (Multiple Choice)

	Responses	
	Percent	Count



Rank of "1"	22.73%	5
Rank of "2"	72.73%	16
Rank of "3"	0.00%	0
Rank of "4"	0.00%	0
Rank of "5"	4.55%	1
<b>Totals</b>	<b>100%</b>	<b>22</b>

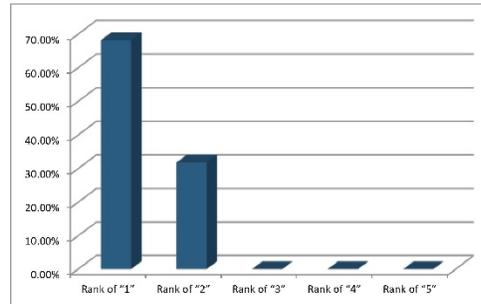
Mean Rank: 1.91  
 Range Low: 1  
 Range High: 5  
 Standard Deviation: 6.8



5. earthquakes (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	68.18%	15
Rank of "2"	31.82%	7
Rank of "3"	0.00%	0
Rank of "4"	0.00%	0
Rank of "5"	0.00%	0
<b>Totals</b>	<b>100%</b>	<b>22</b>

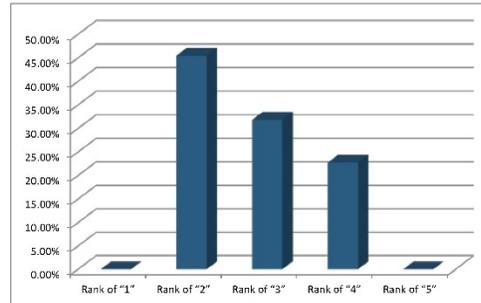
Mean Rank: 1.32  
 Range Low: 1  
 Range High: 2  
 Standard Deviation: 6.7



6. epidemic (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	0.00%	0
Rank of "2"	45.45%	10
Rank of "3"	31.82%	7
Rank of "4"	22.73%	5
Rank of "5"	0.00%	0
<b>Totals</b>	<b>100%</b>	<b>22</b>

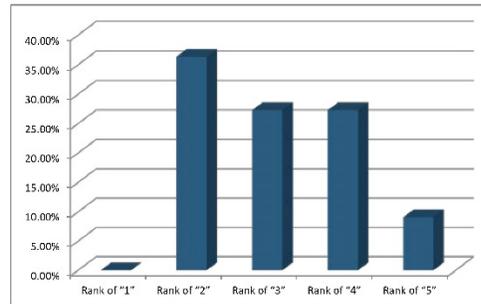
Mean Rank: 2.77  
 Range Low: 2  
 Range High: 4  
 Standard Deviation: 4.4



7. Excessive or prolonged cold (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	0.00%	0
Rank of "2"	36.36%	8
Rank of "3"	27.27%	6
Rank of "4"	27.27%	6
Rank of "5"	9.09%	2
<b>Totals</b>	<b>100%</b>	<b>22</b>

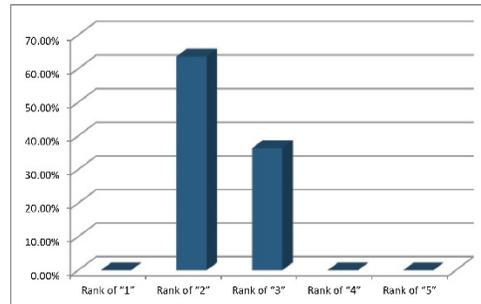
Mean Rank: 3.09  
 Range Low: 2  
 Range High: 5  
 Standard Deviation: 3.3



8. Excessive / prolonged (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	0.00%	0
Rank of "2"	63.64%	14
Rank of "3"	36.36%	8
Rank of "4"	0.00%	0
Rank of "5"	0.00%	0
<b>Totals</b>	<b>100%</b>	<b>22</b>

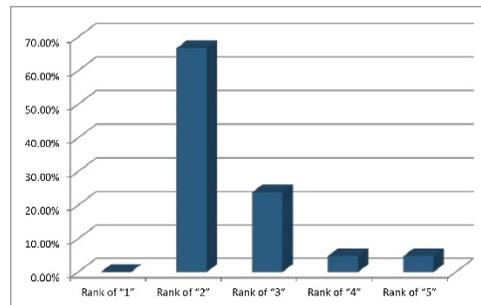
Mean Rank: 2.36  
 Range Low: 2  
 Range High: 3  
 Standard Deviation: 6.4



9. flood (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	0.00%	0
Rank of "2"	66.67%	14
Rank of "3"	23.81%	5
Rank of "4"	4.76%	1
Rank of "5"	4.76%	1
<b>Totals</b>	<b>100%</b>	<b>21</b>

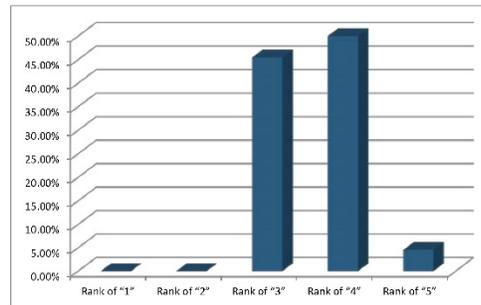
Mean Rank: 2.48  
 Range Low: 2  
 Range High: 5  
 Standard Deviation: 5.8



10. Ice storm (excessive & long-lasting) (Multiple Choice)

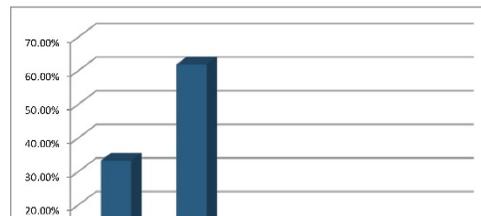
Responses		
	Percent	Count
Rank of "1"	0.00%	0
Rank of "2"	0.00%	0
Rank of "3"	45.45%	10
Rank of "4"	50.00%	11
Rank of "5"	4.55%	1
<b>Totals</b>	<b>100%</b>	<b>22</b>

Mean Rank: 3.59  
 Range Low: 3  
 Range High: 5  
 Standard Deviation: 5.6

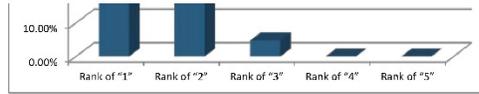


11. landslide (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	33.33%	7
Rank of "2"	61.90%	13
Rank of "3"	4.76%	1
Rank of "4"	0.00%	0
Rank of "5"	0.00%	0
<b>Totals</b>	<b>100%</b>	<b>21</b>



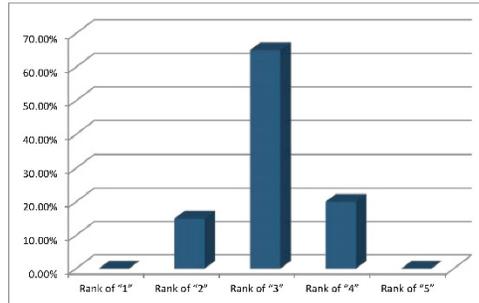
Mean Rank: 1.71  
 Range Low: 1  
 Range High: 3  
 Standard Deviation: 5.7



12. Severe thunderstorm & lightening (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	0.00%	0
Rank of "2"	15.00%	3
Rank of "3"	65.00%	13
Rank of "4"	20.00%	4
Rank of "5"	0.00%	0
<b>Totals</b>	<b>100%</b>	<b>20</b>

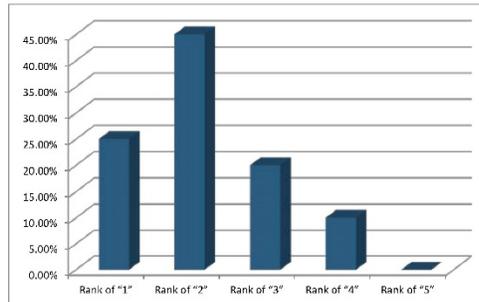
Mean Rank: 3.05  
 Range Low: 2  
 Range High: 4  
 Standard Deviation: 5.3



13. Sinkholes & land subsidence (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	25.00%	5
Rank of "2"	45.00%	9
Rank of "3"	20.00%	4
Rank of "4"	10.00%	2
Rank of "5"	0.00%	0
<b>Totals</b>	<b>100%</b>	<b>20</b>

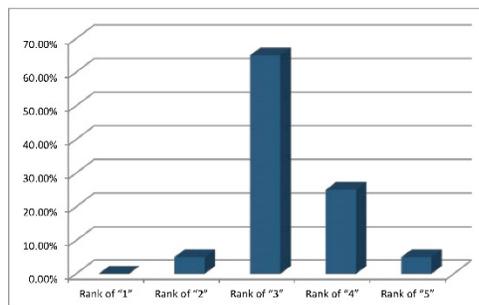
Mean Rank: 2.15  
 Range Low: 1  
 Range High: 4  
 Standard Deviation: 3.4



14. Straightline wind (Multiple Choice)

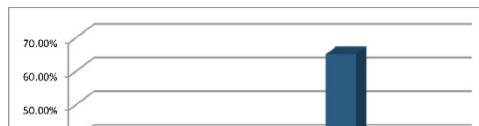
Responses		
	Percent	Count
Rank of "1"	0.00%	0
Rank of "2"	5.00%	1
Rank of "3"	65.00%	13
Rank of "4"	25.00%	5
Rank of "5"	5.00%	1
<b>Totals</b>	<b>100%</b>	<b>20</b>

Mean Rank: 3.30  
 Range Low: 2  
 Range High: 5  
 Standard Deviation: 5.4



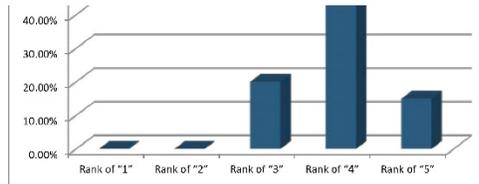
15. Tornado (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	0.00%	0
Rank of "2"	0.00%	0
Rank of "3"	20.00%	4



Rank of "4"	65.00%	13
Rank of "5"	15.00%	3
<b>Totals</b>	<b>100%</b>	<b>20</b>

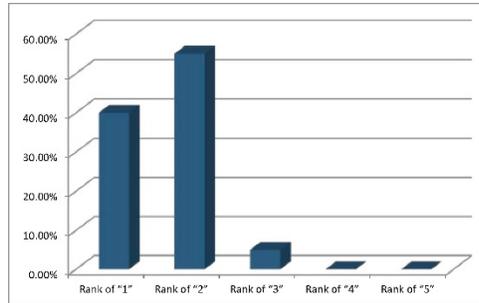
Mean Rank: 3.95  
 Range Low: 3  
 Range High: 5  
 Standard Deviation: 5.3



16. wildfire (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	40.00%	8
Rank of "2"	55.00%	11
Rank of "3"	5.00%	1
Rank of "4"	0.00%	0
Rank of "5"	0.00%	0
<b>Totals</b>	<b>100%</b>	<b>20</b>

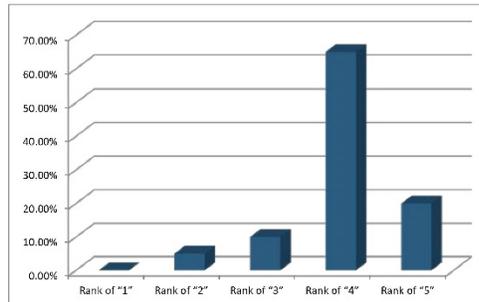
Mean Rank: 1.65  
 Range Low: 1  
 Range High: 3  
 Standard Deviation: 5.1



17. Winter storm (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	0.00%	0
Rank of "2"	5.00%	1
Rank of "3"	10.00%	2
Rank of "4"	65.00%	13
Rank of "5"	20.00%	4
<b>Totals</b>	<b>100%</b>	<b>20</b>

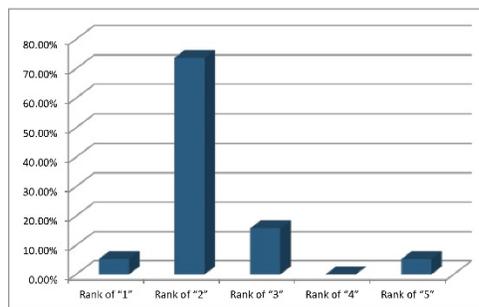
Mean Rank: 4.00  
 Range Low: 2  
 Range High: 5  
 Standard Deviation: 5.2



18. airplane crash (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	5.26%	1
Rank of "2"	73.68%	14
Rank of "3"	15.79%	3
Rank of "4"	0.00%	0
Rank of "5"	5.26%	1
<b>Totals</b>	<b>100%</b>	<b>19</b>

Mean Rank: 2.26  
 Range Low: 1  
 Range High: 5  
 Standard Deviation: 5.8



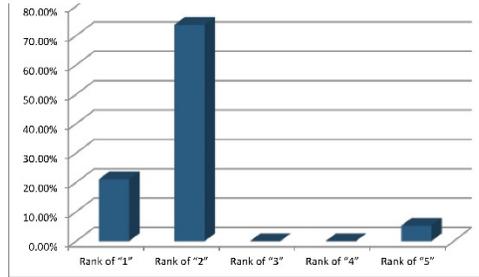
19. Bridge failure (Multiple Choice)

Responses		
-----------	--	--



	Percent	Count
Rank of "1"	21.05%	4
Rank of "2"	73.68%	14
Rank of "3"	0.00%	0
Rank of "4"	0.00%	0
Rank of "5"	5.26%	1
<b>Totals</b>	<b>100%</b>	<b>19</b>

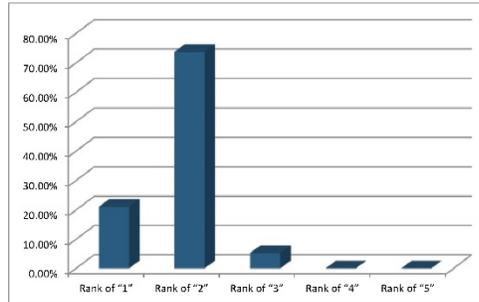
Mean Rank: 1.95  
 Range Low: 1  
 Range High: 5  
 Standard Deviation: 5.9



20. Dam / levee failure (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	21.05%	4
Rank of "2"	73.68%	14
Rank of "3"	5.26%	1
Rank of "4"	0.00%	0
Rank of "5"	0.00%	0
<b>Totals</b>	<b>100%</b>	<b>19</b>

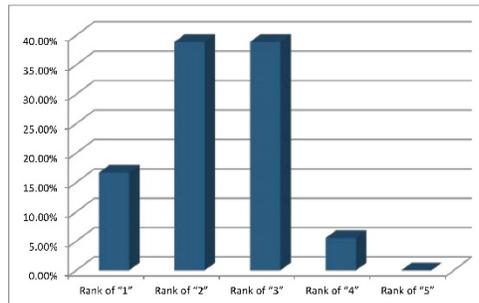
Mean Rank: 1.84  
 Range Low: 1  
 Range High: 3  
 Standard Deviation: 5.9



21. Food contamination (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	16.67%	3
Rank of "2"	38.89%	7
Rank of "3"	38.89%	7
Rank of "4"	5.56%	1
Rank of "5"	0.00%	0
<b>Totals</b>	<b>100%</b>	<b>18</b>

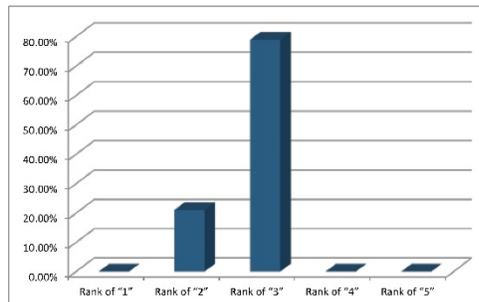
Mean Rank: 2.33  
 Range Low: 1  
 Range High: 4  
 Standard Deviation: 3.3



22. Haz mat release – fixed site (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	0.00%	0
Rank of "2"	21.05%	4
Rank of "3"	78.95%	15
Rank of "4"	0.00%	0
Rank of "5"	0.00%	0
<b>Totals</b>	<b>100%</b>	<b>19</b>

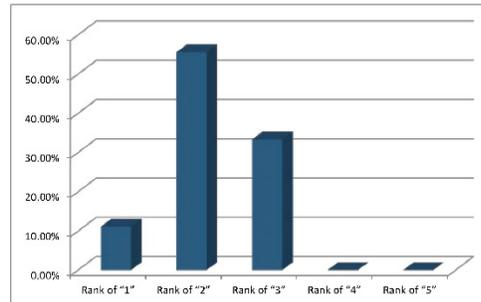
Mean Rank: 2.79  
 Range Low: 2  
 Range High: 3  
 Standard Deviation: 6.5



23. Haz mat release - pipeline (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	11.11%	2
Rank of "2"	55.56%	10
Rank of "3"	33.33%	6
Rank of "4"	0.00%	0
Rank of "5"	0.00%	0
<b>Totals</b>	<b>100%</b>	<b>18</b>

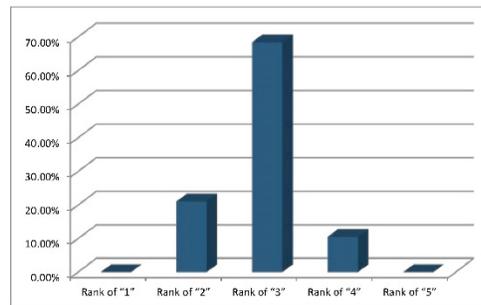
Mean Rank: 2.22  
 Range Low: 1  
 Range High: 3  
 Standard Deviation: 4.3



24. Haz mat release - transportation (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	0.00%	0
Rank of "2"	21.05%	4
Rank of "3"	68.42%	13
Rank of "4"	10.53%	2
Rank of "5"	0.00%	0
<b>Totals</b>	<b>100%</b>	<b>19</b>

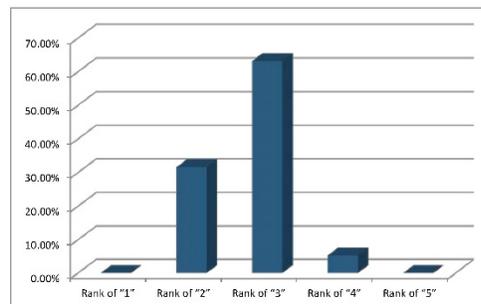
Mean Rank: 2.89  
 Range Low: 2  
 Range High: 4  
 Standard Deviation: 5.4



25. Natural gas explosion (Multiple Choice)

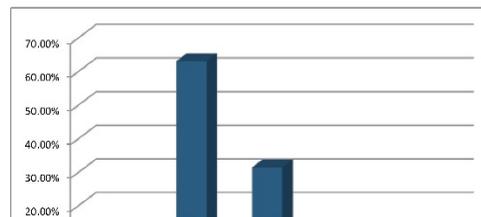
Responses		
	Percent	Count
Rank of "1"	0.00%	0
Rank of "2"	31.58%	6
Rank of "3"	63.16%	12
Rank of "4"	5.26%	1
Rank of "5"	0.00%	0
<b>Totals</b>	<b>100%</b>	<b>19</b>

Mean Rank: 2.74  
 Range Low: 2  
 Range High: 4  
 Standard Deviation: 5.2

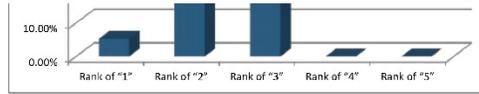


26. Power failure (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	5.26%	1
Rank of "2"	63.16%	12
Rank of "3"	31.58%	6
Rank of "4"	0.00%	0
Rank of "5"	0.00%	0
<b>Totals</b>	<b>100%</b>	<b>19</b>



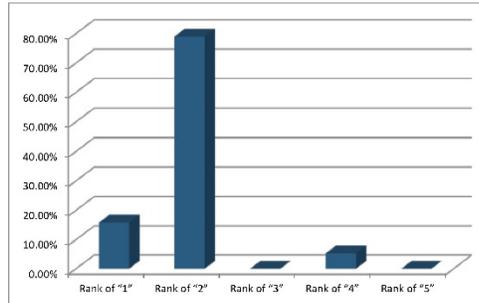
Mean Rank: 2.25  
 Range Low: 1  
 Range High: 3  
 Standard Deviation: 5.2



27. Radiological release (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	15.79%	3
Rank of "2"	78.95%	15
Rank of "3"	0.00%	0
Rank of "4"	5.26%	1
Rank of "5"	0.00%	0
<b>Totals</b>	<b>100%</b>	<b>19</b>

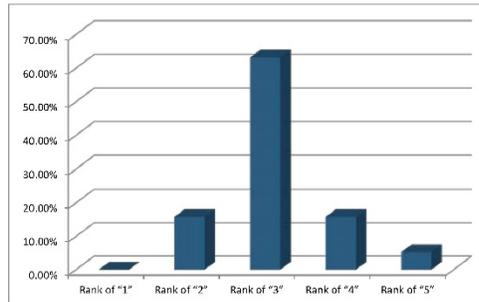
Mean Rank: 1.95  
 Range Low: 1  
 Range High: 4  
 Standard Deviation: 6.4



28. Train derailment (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	0.00%	0
Rank of "2"	15.79%	3
Rank of "3"	63.16%	12
Rank of "4"	15.79%	3
Rank of "5"	5.26%	1
<b>Totals</b>	<b>100%</b>	<b>19</b>

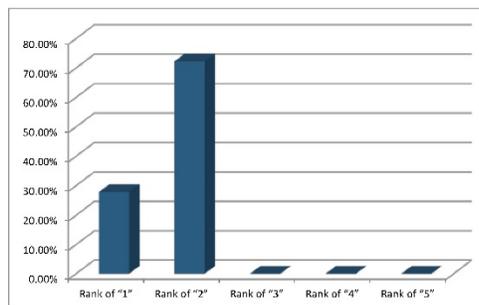
Mean Rank: 3.11  
 Range Low: 2  
 Range High: 5  
 Standard Deviation: 4.8



29. Urban configuration (Multiple Choice)

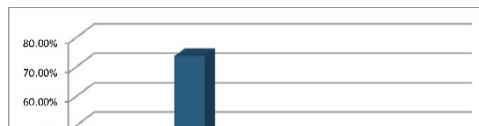
Responses		
	Percent	Count
Rank of "1"	27.78%	5
Rank of "2"	72.22%	13
Rank of "3"	0.00%	0
Rank of "4"	0.00%	0
Rank of "5"	0.00%	0
<b>Totals</b>	<b>100%</b>	<b>18</b>

Mean Rank: 1.72  
 Range Low: 1  
 Range High: 2  
 Standard Deviation: 5.7



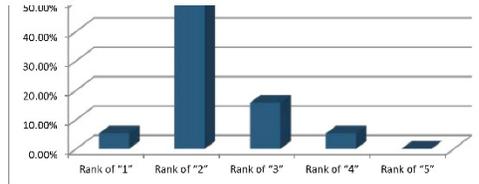
30. Wastewater treatment system failure (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	5.26%	1
Rank of "2"	73.68%	14
Rank of "3"	15.79%	3



Rank of "4"	5.26%	1
Rank of "5"	0.00%	0
<b>Totals</b>	<b>100%</b>	<b>19</b>

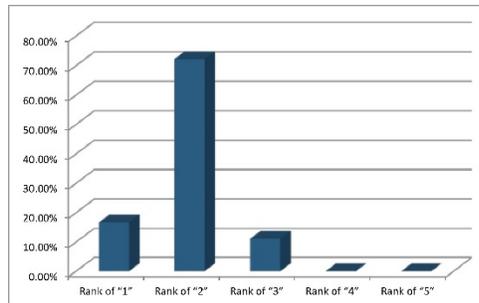
Mean Rank: 2.21  
 Range Low: 1  
 Range High: 4  
 Standard Deviation: 5.8



31. Water contamination (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	16.67%	3
Rank of "2"	72.22%	13
Rank of "3"	11.11%	2
Rank of "4"	0.00%	0
Rank of "5"	0.00%	0
<b>Totals</b>	<b>100%</b>	<b>18</b>

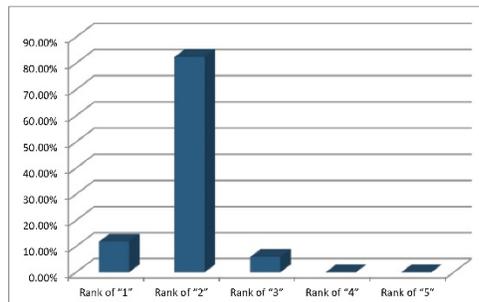
Mean Rank: 1.94  
 Range Low: 1  
 Range High: 3  
 Standard Deviation: 5.4



32. Civil disturbance (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	11.76%	2
Rank of "2"	82.35%	14
Rank of "3"	5.88%	1
Rank of "4"	0.00%	0
Rank of "5"	0.00%	0
<b>Totals</b>	<b>100%</b>	<b>17</b>

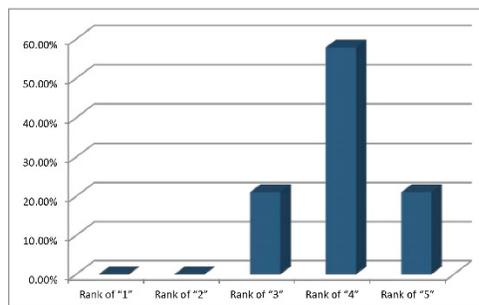
Mean Rank: 1.94  
 Range Low: 1  
 Range High: 3  
 Standard Deviation: 6.0



33. Cyber incidents (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	0.00%	0
Rank of "2"	0.00%	0
Rank of "3"	21.05%	4
Rank of "4"	57.89%	11
Rank of "5"	21.05%	4
<b>Totals</b>	<b>100%</b>	<b>19</b>

Mean Rank: 4.00  
 Range Low: 3  
 Range High: 5  
 Standard Deviation: 4.5



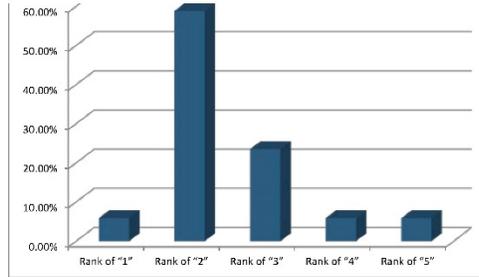
34. sabotage (Multiple Choice)

Responses		
-----------	--	--



	Percent	Count
Rank of "1"	5.88%	1
Rank of "2"	58.82%	10
Rank of "3"	23.53%	4
Rank of "4"	5.88%	1
Rank of "5"	5.88%	1
<b>Totals</b>	<b>100%</b>	<b>17</b>

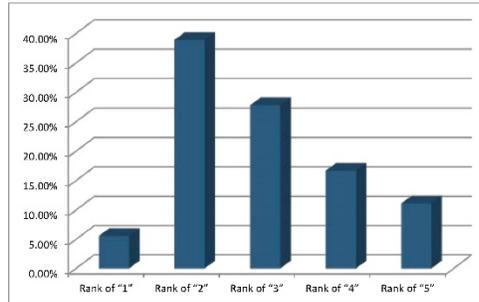
Mean Rank: 2.47  
 Range Low: 1  
 Range High: 5  
 Standard Deviation: 3.9



35. School violence (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	5.56%	1
Rank of "2"	38.89%	7
Rank of "3"	27.78%	5
Rank of "4"	16.67%	3
Rank of "5"	11.11%	2
<b>Totals</b>	<b>100%</b>	<b>18</b>

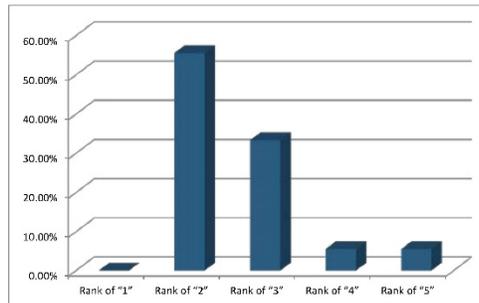
Mean Rank: 2.89  
 Range Low: 1  
 Range High: 5  
 Standard Deviation: 2.2



36. Terrorist acts (Multiple Choice)

Responses		
	Percent	Count
Rank of "1"	0.00%	0
Rank of "2"	55.56%	10
Rank of "3"	33.33%	6
Rank of "4"	5.56%	1
Rank of "5"	5.56%	1
<b>Totals</b>	<b>100%</b>	<b>18</b>

Mean Rank: 2.61  
 Range Low: 2  
 Range High: 5  
 Standard Deviation: 4.3



## 6.5 Cost-Benefit Survey | January-March 2017

As described in greater detail in Chapter 4, cost benefit review was conducted to prioritize the mitigation actions and eliminate the ones that were not cost effective. For this cost benefit review, a modified version of STAPLEE was used. The action strategies that have been included in this plan are prioritized as high, medium, or low based on the cost benefit review completed by subject matter experts.

### Cost Benefit Survey Responses

Q1: Highly effective, Neutral, Ineffective

Q2, Q3, Q4: Highly effective or feasible, Neutral, Ineffective or not feasible

Q5-Q12: Yes, Maybe, No

### Questions

1. Life Safety – How effective will the action be at protecting lives and preventing injuries?
2. Property Protection – How significant will the action be at eliminating or reducing damage to structures and infrastructure?
3. Technical – Is the mitigation action technically feasible and a long term solution?
4. Political – Is there overall public support for the mitigation action and political will to support it?
5. Legal – Does the community have the authority to implement the action?
6. Environmental – Will the action comply with environmental regulations?
7. Social – Will the proposed action adversely affect one segment of the population?
8. Social – Will the action disrupt established neighborhoods, break up voting districts, or cause the relocation of lower income people?
9. Administrative – Does Rochester have the personnel and administrative capabilities to implement the action and maintain it?
10. Local Champion – Is there a strong advocate for the action or project among local departments and agencies that will support the action's implementation?
11. Economic – Do the benefits of the action exceed the expected cost?
12. What is your best estimation of the approximate cost of this action? (IF internally funded or staff supported, simply put "staff supported").
13. Which of the following would best characterize the ideal time frame to complete this strategy?
  - Short Term ( < 3 years)
  - Long Term ( > 3 years)

Ongoing

14. If you have any comments about the verbiage or content of this action, please include them here.

# 6.6 MPR Event | April 2016

**MPRnews**

Sections ▾ Members ▾ More ▾

GIVE NOW

46° MSP



## MPR Special event: The impact of climate change on public health

May 19, 2016

Environment



LISTEN MPR News Presents for  
 May 19, 2016  
 54min



A tick climbs up Dave Neitzel's finger. *Matthew Hintz for MPR News*

MPR's Cathy Wurzer hosted a discussion about the impact of climate change on our health. Hot days will send a larger number of Minnesotans to the ER, and we are already seeing an increase in disease-carrying insects like ticks and mosquitoes.

Speakers at the April 26, 2016 event held at the Rochester Civic Theater were Univ. of Minn. climatologist Mark Seeley, MPR chief meteorologist Paul Huttner, Kristin Raab and Dave Neitzel of the Minnesota Department of Health, and Ken Jones and Sandy Goslee of the Rochester emergency management and planning departments.

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Environment

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1 day ago

**About 100 elk live in MN, should there be more?** 15 hours ago

**Update on the Red River flood diversion project** 15 hours ago

**Climate Cast: Understanding Trump's climate policy** 1 day ago

Sponsor

## 6.7 Committee of the Whole Presentation 10/7/13

**CITY OF ROCHESTER  
COUNCIL AGENDA  
Room 104  
201 Fourth Street SE**

**Committee of The Whole**

**October 07, 2013  
03:30 PM**

### **COMMITTEE OF THE WHOLE MEETING ITEMS**

- 1 Coalition of Greater Minnesota Cities Update / Bradley Peterson
- 2 EOC Update and Review of Hazard Mitigation Grant / Ken Jones

### **OTHER BUSINESS**

## 6.8 Rochester Planning and Zoning Commission 3/8/17



Rochester-Olmsted Planning Department  
2122 Campus Drive SE – Suite 100  
Rochester, MN 55904-4744  
(507) 328-7100

**March 8, 2017**

### NOTICE

You are hereby notified of the City Planning & Zoning Commission meeting to be held **Wednesday, March 08, 2017 at 6:00 PM in the Council/Board Chambers of the 151 4th Street SE, Rochester, MN 55904.**

### AGENDA

- A. CALL MEETING TO ORDER
- B. SET ORDER OF AGENDA
  - 1. Motion
- C. CONSENT AGENDA:
  - 1. Meeting Minutes - February 22, 2017
- D. PUBLIC HEARINGS:
  - 1. Conditional Use Permit #R2017-003CUP by Mayo Clinic for a for a group residential care use located on three existing lots on 14th Avenue SW, south of 2nd Street SW and north of 6th Street SW, across the street from St. Mary's Hospital.
  - 2. Design Modification #R2017-001DM by Mayo Clinic for additional building height associated with a proposed group residential care use located on three existing lots on 14th Avenue SW, south of 2nd Street SW and north of 6th Street SW, across the street from St. Mary's Hospital.
- E. INFORMATIONAL ITEM
  - 1. City of Rochester All Hazard Mitigation Plan (AHMP)
- F. OTHER BUSINESS:
  - 1. City Council Recap
  - 2. Any Items brought up by Members

## 6.9 Rochester's CUDE Input Session 3/16/17

The logo for the City of Rochester's Committee on Urban Design & Environment (CUDE). It features the letters 'CUDE' in a stylized, teal, hand-drawn font. The logo is positioned to the left of a horizontal line that spans the width of the page. The line is teal on the left side and grey on the right side.

**March 16, 2017**

### **NOTICE**

You are hereby notified of the Rochester's Committee on Urban Design & Environment meeting to be held **THURSDAY, MARCH 16, 2017 AT 11:30 AM IN ROOM 104, CITY HALL 201 FOURTH STREET SE, ROCHESTER, MN 55904.**

- A. Administrative Business**
  - 1. Call the Meeting to Order
  - 2. Approval of Meeting Minutes
    - 1. February Meeting Minutes
  - 3. Referral Notices and Action Taken
    - 1. Referral Notes
  - 4. Review of Proposed Upcoming Projects
- B. Presentation - City All Hazard Mitigation Plan**
- C. Old Business**
  - 1. As may be brought up by Members
  - 2. Update - Letter regarding Urban Forest Master Plan Letter
- D. New Business**
  - 1. As may be brought up by Members

Rochester's Committee on Urban Design & Environment  
2122 Campus Drive SE, Suite 100 Rochester, MN 55904  
507.328.7133 [www.rochestermn.gov/CUDE](http://www.rochestermn.gov/CUDE)

## 6.10 Committee of the Whole 3/20/17

**CITY OF ROCHESTER  
COUNCIL AGENDA  
Room 104, City Hall  
201 Fourth Street SE**

**Committee of The Whole**

**March 20, 2017  
03:30 PM**

### **COMMITTEE OF THE WHOLE MEETING ITEMS**

- 1 All Hazard Mitigation Plan Update (attachment) / Ken Jones
- 2 Sewer Capacity Analysis / Richard Freese  
Sewer Analysis
- 3 2017 C.O.W. Meeting Schedule (attached)
- 4 Other Business



**To: Rochester Common Council**

**From: Ken Jones, Director of Emergency Management, City of Rochester; Sandra Goslee, Principle Planner, ROPD**

**Date: March 15, 2017**

**RE: Plan Overview – City of Rochester, All Hazard Mitigation Plan**

### **Introduction**

Local government is charged with the protection of the health, safety, and welfare of their residents and visitors. Hazard mitigation reduces disaster damages by proactively reducing or eliminating long-term risk to life and property from weather, geologic, and human threats. Events such as tornadoes, hazardous chemical spills, and terrorist attacks may result in the loss of life, property, infrastructure, and income. The ability of a community to prepare, respond, mitigate, and recover when confronted by these threats may mean the difference between long-term devastation and systemic resilience.

While mitigation strategies and efforts cannot eliminate all threats and hazards, the City of Rochester endeavors to limit their potential physical, economic, and social impacts as much as possible. Preparation is the key to Rochester's ability to respond to and rebound from adverse situations. With the assistance of technical experts and community stakeholders, the purpose of this plan is to identify and analyze those hazards most likely to impact the city of Rochester, assess the community's ability to respond to these events, and develop strategies to mitigate their impact.

### **Background**

Under Federal law, local governments must have a FEMA approved local mitigation plan in order to apply for and/or receive hazard mitigation grant funding. For several years, by means of a joint powers agreement, Olmsted County Homeland Security and Emergency Management was responsible for the creation of the Emergency Operations Plan for the City of Rochester. In December 2009, the Olmsted County Board of Commissioners adopted the area's first All Hazard Mitigation Plan, with a geographic scope of all unincorporated areas, townships, and cities within the county. Rochester's Common Council also adopted this document, which currently serves as the official mitigation plan for the city.

On October 1, 2010, the City of Rochester formally ended the Joint Powers Agreement for Emergency Management with Olmsted County and adopted Ordinance 14A, thereby establishing emergency management functions, including leadership and staffing. By the end of 2011, the Common Council formally opted out of the Olmsted County Emergency Operation Plan (EOP) and began to solely enforce the Rochester EOP. The City of Rochester's Threat Hazard Identification and Risk Assessment (THIRA) received State approval on April 2, 2013.

Rochester's status as a "City of the First Class" prompted the State of Minnesota Division of Homeland Security and Emergency Management (HSEM) to request that the City develop its own AHMP rather than continue to utilize the County's plan. The City of Rochester is committed to creating a well-rounded emergency management program, and the AHMP represents a significant step in this process.

The City of Rochester charged Rochester's Office of Emergency Management and the Analysis, Planning, and Policy Division of the Rochester-Olmsted Planning Department (ROPD) with coordinating the development of Rochester's first AHMP. These two agencies have expertise in understanding the local threats, hazards, and risks that may potentially impact the City of Rochester and possess the resources and skills necessary to develop and assess the strategies needed for their mitigation. These agencies are also responsible for many of the activities and resources needed to create this plan.

The City applied for Hazard Mitigation Grant Program (HMGP) funding in April 2013 to help with the expenses of creating the AHMP. A State of Minnesota grant contract was signed by both parties in September 2013, thereby beginning the process of creating the first AHMP focused solely on Rochester's unique needs. The grant allowed for contracts with two consultants to assist with outreach efforts.

Inclusion Solutions of Evanston, IL was asked to assist with outreach to Access and Functional Needs (AFN) communities. We requested a proposal, and received an interesting reply. Inclusion Solutions wanted to conduct an intensive series of meetings with seven groups – blind, deaf and hard-of-hearing, physical disabilities, developmental disabilities, mental health related, recovery groups, and seniors. The result was a new initiative, "Connect 20/80" that bought us an intimate look into issues and challenges faced by each group. For details, see [Connect 20/80 – community engagement report for people with disabilities](#)

ECHO Minnesota was enlisted to perform outreach to limited-English populations. The proposal submitted by ECHO sought to obtain engagement through large and small group meetings with Somali, Cambodian, and Spanish-speaking communities. They began with a demographic assessment, and incorporated findings in a final report, [Safe for Everyone – outreach to explore special needs within immigrant communities](#)

### Outcome

The outreach effort was valuable.

*In over 20 years of work in the disabilities field, my most meaningful project was the week I spent in Rochester. - Patrick Hughes, Founder and CEO of Inclusion Solutions*

### Presentation Purpose

It is the City's intent to adopt this document as part of the Comprehensive Plan. The purpose of this presentation is to show progress, update you on plan status, summarize risk assessment findings, review proposed mitigation strategies, and discuss next steps. Ken Jones, Sandra Goslee, Senior Planner ROPD, and Katie Mortenson of CEMA, Inc. will provide this presentation.

## 6.11 Rochester Planning and Zoning Commission

### 3/22/17



Rochester-Olmsted Planning Department  
2122 Campus Drive SE – Suite 100  
Rochester, MN 55904-4744  
(507) 328-7100

**March 22, 2017**

#### **NOTICE**

You are hereby notified of the City Planning & Zoning Commission meeting to be held **Wednesday, March 22, 2017 at 6:00 PM in the Council/Board Chambers of the 151 4th Street SE, Rochester, MN 55904.**

#### **A G E N D A**

- A. CALL MEETING TO ORDER
- B. SET ORDER OF AGENDA
  - 1. Motion
- C. CONSENT AGENDA:
  - 1. Meeting Minutes - March 8, 2017
- D. PUBLIC HEARINGS:
  - 1. Text Amendment #R2017-004TA to Section 61.148 staff authorized changes to Conditional Use Permits
  - 2. City of Rochester All Hazard Mitigation Plan (AHMP) to the State of Minnesota and the Federal Emergency Management Agency (FEMA). FEMA approved local mitigation plans are a prerequisite for funding through FEMA's Hazard Mitigation Assistance grant programs.
  - 3. Rochester DMC - District Design Guidelines and text amendment #R2017-002TA to adopt a portion of the Design Guidelines as part of the Land Development Manual.
- E. OTHER BUSINESS:
  - 1. City Council Recap
  - 2. **Comprehensive Plan Update**
  - 3. Any Items brought up by Members

City Planning and Zoning Commission Minutes

Hearing Date: March 22, 2017

Ms. Baker noted the City attorney's office has been consulted; the conclusion was well encompassing of upcoming situations; she did ask for any suggestions of things left out.

Discussion ensued among the commission in regards to a list of examples that may cause limitations to allowing project changes being heard before the commission; discussion also ensued in regards to reduction in landscaping for staff review.

**Ms. Meek opened the public hearing.**

No one came forward.

**With no one else wishing to be heard, Ms. Meek closed the public hearing.**

Discussion among the commission ensued in regards to any needed changes in the staff changes to the text to Subdivision 2, Section G, Examples include, but not limited to.

Ms. Baker spoke on policy change and the number of instances where there has been an issue and specifically landscape reduction; the times these changes come about is few.

Ms. Alfredson recommended the commission not use a percentage because of the variable size of projects that are proposed.

**Mr. Walters moved to recommend approval of Text Amendment #R2017-004TA with the staff-recommended findings and an additional bullet point to Subsection 2.G. Ms. Seabrook seconded the motion. The motion carried unanimously.**

- Significant reduction to landscape area that would result in a change to the essence or character to the project as approved.

**Submittal of the City of Rochester All Hazard Mitigation Plan (AHMP) to the State of Minnesota and the Federal Emergency Management Agency (FEMA). FEMA approved local mitigation plans are a prerequisite for funding through FEMA's Hazard Mitigation Assistance grant program.**

Ms. Goslee and Ms. Mortenson presented the All Hazard Mitigation plan, dated March 22, 2017, to the Commission. The staff report is on file at the Rochester-Olmsted Planning Department.

Ms. Seabrook appreciated filling in the gaps for citizens' safety; then asked if the City has an existing plan; or is the City governed under the County's plan.

Ms. Goslee stated the City is covered under the County's plan until the new plan is approved.

Ms. Seabrook asked about water runoff from outside the City.

Ms. Goslee stated the City and County work closely together on clean water plans; this is a concern and there are measurements in place to prevent contaminations.

Ms. Baker added there is a benefit to a joint planning department working with both the County Public Works and City departments for runoff water; protection of water resources.

City Planning and Zoning Commission Minutes

Hearing Date: March 22, 2017

Mr. Prabhakar asked if matching dollars from the City will be needed.

Ms. Goslee noted there are factors that need to be established for funding sources.

Mr. Castro asked if the plan will supersede an existing plan.

Ms. Goslee noted the background on how the plan came into existence for the City.

Mr. Castro asked if the document is a "living" document.

Ms. Goslee said the plan boundary is the urban service area so no changes will be needed as land is annexed.

Ms. Mortenson noted there is an amendment process which can be used if needed.

**Ms. Meek opened the public hearing.**

No one came forward.

**With no one else wishing to be heard, Ms. Meek closed the public hearing.**

**Mr. Durst moved to recommend approval to Council for submission of the City of Rochester All Hazard Mitigation Plan (AHMP) to FEMA. Mr. Prabhakar seconded the motion. The motion carried unanimously.**

~~**Consideration for adopting the Rochester DMC - District Design Guidelines and text amendment #R2017-002TA to adopt a portion of the Design Guidelines as part of the Land Development Manual.**~~

~~Mr. Ellerbusch presented the staff report, dated March 14, 2017, to the Commission. The staff report is on file at the Rochester-Olmsted Planning Department.~~

~~Mr. Walters asked about tall buildings design roof for sustainability would the section be adopted with a force of law.~~

~~Mr. Ellerbusch noted nothing will be adopted at this meeting; the entire document would be adopted as a guideline, only selected parts would become zoning law.~~

~~Mr. Prabhakar noted this guidelines are for adopting future projects.~~

~~Mr. Ellerbusch stated the guidelines are for anything seeking approval.~~

~~Discussion ensued in regards to addressing the 2<sup>nd</sup> Street Corridor plan being within the DMC boundary; along with endorsing of the DMC will the reference for other plans being eliminated such as the downtown master plan, etc.~~

~~Ms. Meek noted she has 27 comments she would like to go through and would like to receive feedback from city staff. She proceeded to read through her comments. Mr. Ellerbusch responded to the best of his knowledge.~~

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## 6.12 Rochester City Council Public Hearing 4/17/17

**CITY OF ROCHESTER  
City Council Agenda  
Council/Board Chambers  
151 4th Street SE**

Regular Adjourned Meeting

April 17, 2017  
07:00 PM

### **PLEDGE OF ALLEGIANCE**

#### **A. OPEN COMMENT PERIOD**

- A.1. Open Comment Period

#### **B. CALL TO ORDER**

#### **C. LETTERS AND PETITIONS**

- C.1. Youth Commission Delegates Report to NLC Youth Program

#### **D. CONSENT AGENDA/ORGANIZATIONAL BUSINESS**

- D.1. Approval of Consent Agenda Items
- D.2. Approval of April 3, 2017 Council Meeting Minutes & Video as Official Record of Proceedings
- D.3. Proposed Internet/Cable Utility Study
- D.4. TNC Ordinance Update - Vehicle Definition
- D.5. Bid Award for Terminal Building Environmental Remediation Project
- D.6. Purchase of Airfield Pavement Maintenance Equipment.
- D.7. Special Events and Miscellaneous Activities
- D.8. Accounts Payable for April 17, 2017
- D.9. Mayo Civic Center - Convention Center Expansion Change Order 13
- D.10. Mayo Civic Center - GESP Work Order Contract (WOC) Amendment 4
- D.11. Correction to legal description for Ordinance #4279 for Zone Change R2004-014ZC by Willow Creek Commons LLC
- D.12. Correction to legal description for Resolution 57-16 for R2004LUPA by Willow Creek Commons LLC

City Council Agenda  
Monday, April 17, 2017  
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- D.13. City-Owner and Construction Observation Contracts – Public Watermain & Hydrant to Serve Kwik Trip 279 – J5456
- D.14. City-Owner and Construction Observation Contracts – Public Improvements to Serve Fieldstone 6th – J5465
- D.15. Award of Contract: (J4702) 2017 Replacement and Repair of public sidewalk (South)
- D.16. Award of Contract: (J4701) 2017 Construct Pedestrian Ramps in Various Locations
- D.17. PROFESSIONAL DESIGN SERVICES: Develop storm water management practices and infrastructure along Viola Rd NE / 14th St NE (J7814)
- D.18. Change Parking Regulation on 6th Avenue SE
- D.19. Revisions to the Municipal State Aid System
- D.20. Professional Engineering Services -- Highway 14 East Trail - Property Acquisition, J4670
- D.21. Individual Site Development Agreement - Marion Road Self Storage
- D.22. Development Agreement – Kwik Trip #279 Subdivision
- D.23. Award of Contract, Annual Traffic Signal Painting, J6399
- D.24. Award of Contract: (J4699) 2017 Replacement and Repair of public sidewalk (North)

## **E. REPORTS AND RECOMMENDATIONS**

### **F. HEARINGS**

- . PUBLIC HEARING GUIDELINES
- F.1. Public Comments Concerning Finalists for Ethical Practices Board
- F.2. Expand Residential Permit Parking in Zone 6; 10 St SW from 8 Ave to 9 Ave SW
- F.3. Approval of Conduit Financing for the Fontaine Towers project
- F.4. Approval of Conduit Financing for the Eastgate project
- F.5. Approval of Conduit Financing for the River Glen project
- F.6. Final Plat R2017-008PLAT to be known as Crimson Ridge Fourth Subdivision by Wright Holmes, Inc. The final plat would re-plate 9 existing lots into 6 lots.

City Council Agenda  
Monday, April 17, 2017  
Page 3 of 3

- F.7. Final Plat R2017-012PLAT by 2980 Hwy 14W LLC, to be known as Rochester Car Clearance Center Subdivision. The final plat will combine two existing parcels and a portion of a third parcel into one lot.
- F.8. Vacation petition #R2017-001VAC by Waterfront Business Park, LLC, to vacate a 30' drainage easement located at Lot 2, Block 1, Waterfront Business Park Second.
- F.9. Conditional Use Permit - Restricted Development Final Plan #R2016-034CUP, by GZ East Center Street for a 6-story, 152 unit residential building to be known as the Riverwalk Downtown City Apartments.
- F.10. Final Plat R2017-011PLAT by GZ East Center Street, to be known as Riverwalk Apartments, to combine four parcels into one lot.
- F.11. Rochester Zoning Ordinance and Land Development Manual Text Amendment #17-04, Section 61.148 Changes to Approved Conditional Use Permits

**F.12. All Hazard Mitigation Plan Public Hearing**

**G. COUNCIL-INITIATED ACTIONS**

- G.1. 37th St. NE Guard Rail Extension
- G.2. Road Conversion Project Process

**H. RESOLUTIONS AND ORDINANCES**

- H.1. H1 - First Reading:
- H.2. H2 - Second Reading: Amendments to RCO Chapter 76 & RCO Chapter 5

**I. TABLED ITEMS**

- I.1. Policy Revisions (Social Media/Policy Statement & Scope)

**J. OTHER BUSINESS**

**K. ADJOURN**

<b><u>REQUEST FOR COUNCIL ACTION</u></b>		<b>MEETING DATE:</b> 4/17/2017
<b>AGENDA SECTION:</b> Hearings	<b>ORIGINATING DEPT:</b> Fire Department	
<b>ITEM DESCRIPTION:</b> All Hazard Mitigation Plan Public Hearing		<b>PREPARED BY:</b> Ken Jones
<p>Local government is charged with protection of health, safety, and welfare of residents and visitors. Hazard mitigation reduces disaster impact by proactively reducing or eliminating long-term risk to life and property from a variety of hazards. The All Hazard Mitigation Plan (AHMP) describes the community, identifies and ranks risks and hazards, and proposes actions to undertake that will mitigate hazards.</p> <p>A federal hazard mitigation grant was awarded to develop Rochester's first mitigation plan. Since the award in 2013, several phases have been completed:</p> <ol style="list-style-type: none"> <li>1. Outreach to Access and Functional Needs, and limited-English speaking communities</li> <li>2. Community capability assessment</li> <li>3. Risk assessment and mapping</li> <li>4. Mitigation action strategy development</li> <li>5. Plan validation, revisions, and local review</li> </ol> <p>And, two phases are pending:</p> <ol style="list-style-type: none"> <li>6. State/FEMA review and approval</li> <li>7. Local adoption and grant closeout</li> </ol> <p>Currently, step (phase) five (5) covers plan validation, revisions, and local review. A draft of the AHMP was created with the help of city departments and community partner agencies - known as the Plan Development Team. A larger group of interested community partners were asked to review the plan and offer comments - known as the Plan Validation and Stakeholder group. Meeting and hearings were held before City Planning and Zoning Commission (CPZC), and Committee on Urban Design and Environment (CUDE), and Rochester Common Council Committee of the Whole (COW). Many comments and revisions were suggested by stakeholders and planning team members. After a final public hearing before Council, the Office of Emergency Management will submit the draft plan to state and federal reviewers. The draft plan is available at: <a href="http://www.rochestermn.gov/departments/emergency-management/planning-and-operations/planning/all-hazard-mitigation-plan">http://www.rochestermn.gov/departments/emergency-management/planning-and-operations/planning/all-hazard-mitigation-plan</a></p> <p>After State of Minnesota and FEMA completes the review, the All Hazard Mitigation Plan will be brought back to Council for review and adoption.</p> <p><b><u>COUNCIL ACTION REQUESTED:</u></b></p> <p>After the hearing, Council is requested to authorize the Director of Emergency Management to submit the All Hazard Mitigation Plan to State of Minnesota/Federal Emergency Management Agency (FEMA) for review and approval.</p>		



# 7

## Consultant Reports

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## 7 Consultant Reports

The following documents provide a narrative of the focused outreach efforts conducted as part of this planning process.



**CONNECT** 20/80™  
Inclusive planning for the whole community



# PEOPLE WITH DISABILITIES: Community Engagement Report

for  
**The City of Rochester**  
**Emergency Management Division**  
Rochester, Minnesota

Program and report developed by



# PEOPLE WITH DISABILITIES: Community Engagement Report

August 8, 2014

For  
**City of Rochester**  
**Hazard Mitigation Assistance Planning**

By  
**Patrick Hughes**  
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Olmstead County  
Public Health/ Mental Health  
Meeting

# INTRODUCTION

The City of Rochester's Division of Emergency Management is writing an All Hazard Mitigation Plan. The appropriate agencies and professional staff have been engaged to write this plan.

**Essential to the creation of a "living" plan is to engage in the planning process the community of citizens who would be most vulnerable in cases of emergency: people with access and functional needs.**

This engagement process was attempted in early 2013 by inviting members of disability organizations for a series of meetings hosted by Parks and Recreation in Rochester. The meetings included advocacy groups and representatives from housing organizations. Three meetings were held with limited success towards the goal of building a plan that includes the views and input of people with disabilities.

Inclusion Solutions was therefore contracted by the City of Rochester to implement their CONNECT 20/80 program as part of the Preparedness (Planning) phase of the Four Phases of Emergency Management. The program set out to accomplish the following:

1. Identify the Functional Needs Support Services (FNSS) population and key organizations / people to include in the planning process.
2. Lead and facilitate introductory meetings that support communication "in perpetuity".
3. Report on key findings and processes for the final Hazard Mitigation Plan for the City of Rochester.

This report will set out what was learned from our meetings with citizens with access and functional needs in Rochester.



## IDENTIFY ORGANIZATIONS



## IDENTIFY KEY PEOPLE ("Captains")

### FOUR PHASES OF EMERGENCY MANAGEMENT



## HIGH LEVEL SUMMARY OF FINDINGS

"We're all the same...but different."

1. The key ingredient to our methodology is to meet people with disabilities and their caregivers **where they live their lives**. We recommend continuing with this model to access contribution from the FNSS population.
2. Meetings were conducted with groups of people with like disabilities and similar situations. We recommend continuing with this model to access contribution from the FNSS population.
3. "Captains" were identified for each group. We recommend sustaining relationships with these captains to gain input on the best use of dollars and resources in planning, training, and exercising for preparedness.
4. Most people with disabilities want to contribute. There was little defensiveness, unreasonableness, or anger expressed in our meetings.
5. Listening is the most powerful tool in gaining access to contribution and gaining "buy-in" (FEMA Task 3) from the FNSS population. Therefore, creating an environment where "listening is made easy" will increase contribution.
6. Public hearings tend to limit contribution of ideas and experiences to a self-selected group. We found this method not to be an effective way to learn what needs to be learned and to test ideas with citizens.
7. One person does not speak for all with the same disability. For this reason, finding the right "captain" (who recognizes this and solicits other points of view in the community) is essential.



"We're all  
the same...  
but  
different."

8. Think of meetings where important information is exchanged as taking place at the kitchen table. The most important and honest conversations in life take place at home, around a table, where everyone feels safe and respected. We duplicated this vision as much as possible — and recommend continuing to replicate it.
9. Communication with the deaf community needs to be rethought. Participants in our meeting with the deaf community clearly stated that much is lost by writing things down; real communication (at the kitchen table) requires an ASL interpreter.
10. Witnessing genuine dialogue with those in the disability community is a compelling agent for change. We were told by many participants that the power of these meetings went beyond what was learned from citizens with disabilities: seeing the impact of these meetings on colleagues sharpened and made more permanent what was heard and felt.

## BACKGROUND

All communities have people with disabilities — on average, 20% of the population. It is the responsibility of Emergency Management to develop an All Hazard Mitigation Plan that takes into account the differing needs of those with access and functional needs — no easy task!

For example:

- What is the best way to communicate to a blind person the direction from which a storm is coming?
- What is the best way to alert a person with spinal cord injury at night, when he or she doesn't have immediate access to the wheelchair, of an impending hazard?
- What is the best way to communicate at the scene of an accident with a person who is deaf, and no ASL interpreter is available?

FEMA states that “process is as important as the plan itself” as *“the plan is only as good as the process and people involved in its development.”* (emphasis added) (p. 1–2, Local Mitigation Planning Handbook, March 2013). For this reason, FEMA advocates the “Whole Community” approach to developing an All Hazard Mitigation Plan. The Whole Community approach is described as follows on their website:

When the community is engaged in an **authentic dialogue**, it becomes empowered to identify its needs and the existing resources that may be used to address them. Collectively, we can determine the best ways to organize and strengthen community assets, capacities, and interests. This allows us, as a nation, to expand our reach and deliver services more efficiently and cost effectively to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards. (emphasis added) (<http://www.fema.gov/whole-community>)

### A First Try

This engagement process was attempted in early 2013 by inviting members of disability organizations for a series of meetings hosted by Parks and Recreation in Rochester. The meetings included advocacy groups and representatives from housing organizations. Three meetings were held with limited success towards the goal of building a plan that includes the views and input of



“I discovered more gatekeepers than helpers.”

people with disabilities.

Ken Jones, the City of Rochester’s Emergency Manager, described it this way:

In 2004, I conducted a “special populations” tabletop exercise at the behest of my coworker. She was planning a large full-scale exercise, and wanted to include disability groups as a lead to the big event. The tabletop went well and opened my eyes to [a group that we as planners, often miss].

...A few years later...Spurred on by FEMA to include the whole community, I wanted to reach out to disability and multi-cultural groups. Not sure where to start, I asked for help. I discovered more gatekeepers than helpers. *Why do you need to reach out? I have groups I work with, but can't share my mailing list. Let me get back with you.*

Eight months later...I sat down with a disabilities group and a few representatives of other groups.... I explained emergency management, why planning (vs. plans) were important; how the unique needs of their groups should be served in a disaster; why recovery needed to include considerations for people [with access and functional needs].

After the first meeting, they decided to recruit more attendees to hear my message. The next month was a recap of my first presentation. ‘I want to help you’ was my plea.... [However, the attendees] were not

people who had disabilities. They provided services to clients with disabilities. I gave them samples of plans, links to resources, and instructions for how to respond. I was ready for the next step, and at our next meeting...only a few...came back. Satisfied with what I provided, there was no reason to meet again, they told me.

I [concluded that I was in front of] the wrong audience, [and reasoned that I] needed to find the right way to make my case. The next opportunity came with the application for a Hazard Mitigation grant...as the new FEMA guidelines had just been released and stressed Outreach as an early phase of development.

It was the charge of Inclusion Solutions to develop a plan for outreach (as described by FEMA) and create the basis for continuing relationships with those in the community with access and functional needs. Ken Jones put it this way: "At the outset, I asked Inclusion Solutions for one thing: meaningful relationships that will be sustainable with [people with disabilities]...not their agents."

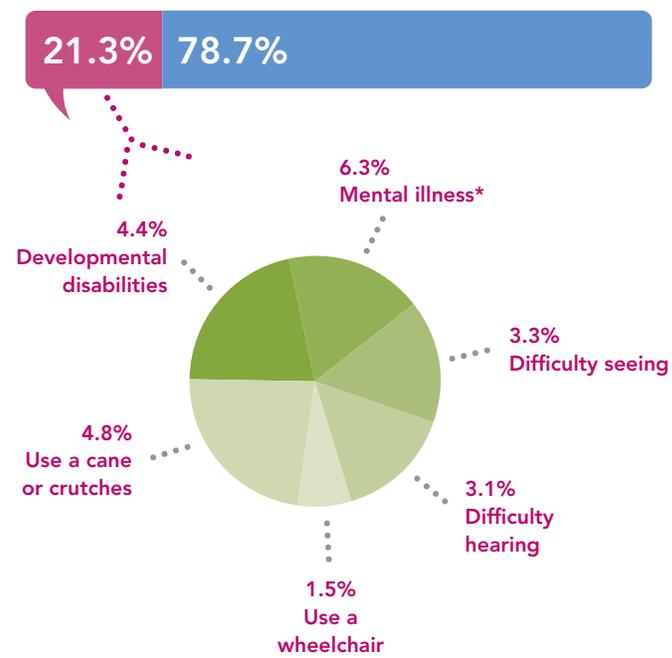
The methodology which nurtured this dialogue is described in the next section beginning on page 7.

### Why 20/80?

Approximately twenty percent of a typical community has a disability, according to the U.S. Census Bureau.<sup>1</sup> Traditional planning focuses on the "general population" (the 80%), and then making special accommodations for those with "special needs" (the 20%). This 20% can be harder to reach and harder to understand — and so emergency plans often account for people with disabilities by referencing statistics, rather than engaging with real people and understanding the diversity of the local disability community.

We believe that by seeking out and engaging first with the "20%" — those often vulnerable in emergencies — and preparing for their needs, emergency managers will be better able to create a plan that serves the needs of the Whole Community. It's not "80+20" — it's "20+80".

### The 20/80 Snapshot



\*About one in four adults suffers from a diagnosable mental disorder in a given year.<sup>2</sup>

**NOTE:** Inclusion Solutions also engaged a meeting with the Recovery and Addiction community which is not counted in U.S. Census information. "It has been estimated that nearly one in every 13 adults is an alcoholic.<sup>3</sup> Further, in 2012, an estimated 23.9 million Americans aged 12 or older were current (past month) illicit drug users, representing 9.2 percent of the population aged 12 or older.<sup>4</sup>

Sources:

<sup>1</sup> U.S. Census Bureau, "Americans With Disabilities: 2010" issued July 2012.

<sup>2</sup> "The Numbers Count: Mental Disorders in America," National Institute of Mental Health, 2012.

<sup>3</sup> <http://www.projectknow.com/research/drug-addiction-statistics-alcoholism-statistics/#alcoholism-statistics-in-the-us>

<sup>4</sup> Substance Abuse and Mental Health Services Administration, Results from the 2011 National Survey on Drug Use and Health: Summary of National Findings, NSDUH Series H-44, HHS Publication No. (SMA) 12-4713. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2012.

# METHODOLOGY

“We created a two-way street instead of two one-way streets.”

1. Identify a leader who will bring others to the meeting.
2. Enrollment.
3. Make it safe, real and fun.
4. Listen! And show you are listening!

## 1. Identify a leader who will bring others to the meeting.

Buff Hennessey is Executive Director of The Arc Southeastern Minnesota. When presenting to Mayor Ardell F. Brede on May 9, 2014, she proclaimed that she and Patrick “had the longest phone tag exchange in recorded history”.

This is not incidental. A leader who will bring others to the meeting is almost always busy, engaged with many projects, and therefore hard to reach.

When Patrick and Buff finally spoke, the conversation was personal. Both have an Irish heritage; both enjoyed talking about their trips to Ireland and sharing stories about their extended families.

The world of disabilities is a personal world. Disabilities are often hidden, and often a source of dissonant emotion. A leader in this world is one who “makes visible the unspoken” — who has the courage to share what is personal and by doing so access what is hidden. Only then can the “authentic dialogue” required by FEMA occur.

Buff was named frequently by others in Patrick’s telephone inquiries. “You have to talk to Buff Hennessey about that.” “Have you spoken to Buff?”

Leaders are social. They like people, connect to people, know people, and are named by people. They become the “draw” for the event, as people “first follow the person, then the plan” (James M. Kouzes, “The Leadership Challenge”).



Buff Hennessey  
Executive Director of The Arc  
Southeastern Minnesota

## 2. Enrollment.

Knowing who to talk to is the first step; knowing how to enroll is the second.

Enrollment requires knowing the culture of the community. When speaking to Tracy Bell, Regional manager, Deaf and Hard of Hearing Services Division — Southern Region (Minnesota), Patrick asked “do you want to text or VP (videophone)?” It is by being familiar with the deaf community and the customization of communications that one gains the credibility needed to enroll, reinforcing the concept of meeting people where they are.

Credibility creates trust. Many people with disabilities find it difficult to trust those in the larger community... and feel isolated.

In our meeting with the deaf community, it became clear that first responders (police) could be perceived as threatening — because events occur faster than the speed at which communication occurs, sometimes producing anger and the tendency to be dismissive on the part of the responder (and corresponding defensiveness and frustration on the part of the citizen).

### 3. Make it safe, real and fun.

“Heavy” meetings produce light results. It is only when people — especially people with disabilities — feel safe and believe that the conversation is authentic — that real communication takes place.

Notice the look and feel of the sample invitation for the deaf community (Appendix I). It is colorful (fun), it is real (three logos on the top), it is safe (feel free to bring your children). It uses exclamation points to add to levity. It is simple to understand and direct.

To make it safe, real and fun (and access the maximum contribution) Inclusion Solutions deliberately did not act like consultants, like “experts”. Rather, the approach was to be educated facilitators: people who knew the culture of the community and respected that culture, and who genuinely wanted to learn what we did not know about emergency planning.

Every meeting began with a simple exercise: asking each participant where s/he was born and what was outside the window. By bringing back memories of childhood and an image connected to growing up, one brings safety into the room. One also learns the starting point of every conversation and contribution.



People on city bus touring Mental Health sites

### 4. Listen! And SHOW you are listening!

Listening is demonstrated in two ways:

- by asking questions;
- by showing one is listening by taking notes.

At every meeting, officials from the county and city visibly took notes — in front of each member of the community. Taking notes demonstrates listening, and does so without the “camera effect” of recording the meeting (which can attract people who want to be seen, but may or may not have something to contribute).

Amy Evans, Emergency Preparedness Coordinator, Olmsted County Public Health Services summarized the process best: “We created a two-way street instead of two one-way streets.”

#### FINALLY: Assess Progress, “Buy-In”

FEMA’s Local Mitigation Planning Handbook (March 2013) states the following:

A key element in the mitigation planning process is the discussion it promotes among community members about creating a safer, more disaster-resilient community. A plan that accurately reflects the community’s values and priorities is likely to have greater legitimacy and “buy-in” and greater success in implementing mitigation actions and projects to reduce risk. (p. 3–1)

FEMA calls this element of the planning process “Task 3: Create an Outreach Strategy”. To measure our success in executing Task 3, Inclusion Solutions asked meeting participants to complete a Pre-Assessment and Post-Assessment questionnaire.

We measure the level of engagement — the level of “buy-in” — as the percentage change in participant attitudes between Pre- and Post-Assessment. The best measure is the TOTAL change. This measured change (delta) was greatest for the Deaf and Hard of Hearing Community (+68%) and lowest for the Senior Community (+5%). The average change for all groups was +25%.

Results of these assessments appear in the Scores chart for each community group visited and in Appendix V.

# MEETING SUMMARIES

## MENTAL ILLNESS / MENTAL HEALTH

**Captain:** Courtney Lawson, Executive Director, NAMI SE Minnesota

**Location:** Olmsted County Public Health Building, 2100 Campus Dr SE, Rochester

**Agenda:** See Appendix III

**In Brief:**

Jenna Benson and Carrie Clark spoke about their experience with mental illness and how it may be impacted by emergency management events. The group boarded a bus and traveled to locations in the community that provide services for those with mental illness. At each location, we heard a summary of the organization’s purpose and information about who they serve.



Jenna describes her personal story

**Take Aways:**

- Mental illness is often invisible – and temporary.
- Some locations would be difficult to access by public transportation in cases of emergency.
- Those with mental illness seek stability and comfort: access to medications is important, as is the availability to talk to someone when needed.
- Security is important: those with mental illness feel more vulnerable (opposite of those in recovery and addiction, who see “opportunity”).
- Observation from Ken Jones: Those with mental illness tend to see the world as filled with police (fear, enforcement, force); whereas those with developmental disabilities tend to see the world as filled with firemen (heroes, safety, immediate trust).

**Scores:**

	PRE	POST	DELTA
<b>Relationship with Emergency Management</b>	4.5	5.0	<b>+11%</b>
<b>Emergency Management has People with Disabilities in mind</b>	2.9	4.0	<b>+38%</b>
<b>I can contribute</b>	4.2	4.5	<b>+7%</b>
<b>Personal Preparedness</b>	3.2	4.7	<b>+47%</b>
<b>TOTAL</b>	<b>14.8</b>	<b>18.2</b>	<b>23%</b>



Jeff and Terry on the bus together

## DEVELOPMENTAL DISABILITIES

**Captain:** Buff Hennessey, Executive Director,  
The Arc, Southeastern Minnesota

**Location:** 3008 Wellner Drive NE, Rochester,  
MN 55906

### In Brief:

Buff Hennessey hosted our meeting at the corporate offices of Cardinal of Minnesota, LTD. We boarded a city bus and visited two (of 120) group homes and two private residences where people with developmental disabilities live.

The last stop on our tour was Hiawatha Homes Activity Center, Inc., where young people with developmental disabilities “drop in” during the day, cook meals, relax, do homework, etc.

### Take Aways:

- The group homes we visited had thought through and posted their emergency plans.
- Group homes are integrated into larger neighborhoods (not clustered) — and the neighbors are part of the care and concern mix.
- Homes are not “institutional” — more like family
- People with developmental disabilities usually live with staff or family members (not completely independent).

### Scores:

	PRE	POST	DELTA
<b>Relationship with Emergency Management</b>	4.7	4.9	<b>+4%</b>
<b>Emergency Management has People with Disabilities in mind</b>	3.6	4.0	<b>+11%</b>
<b>I can contribute</b>	4.1	4.4	<b>+7%</b>
<b>Personal Preparedness</b>	3.6	4.8	<b>+36%</b>
<b>TOTAL</b>	<b>16.0</b>	<b>18.1</b>	<b>+16%</b>



Planners congregate outside of residence





Meeting at Jan's dining room table

## BLIND

**Captain:** Jan Bailey, Treasurer, Past President, Rochester Chapter, National Federation of the Blind

**Location:** Home of Jan Bailey

### In Brief:

This was the location where Inclusion Solutions was most able to replicate the model that "all important conversations take place around the kitchen table." Food was served (a local favorite: Canadian Honker) for 12. The group split into two to address questions regarding how the blind community responds to emergencies.

### Take Aways:

- The blind community has a strong relationship with the Lion's Club – provided rides to the meeting.
- I learned that news is becoming more franchised and less local – making communication regarding impending weather events, etc., less available.
- How direction is expressed matters! "Here to there" is useless; "north to south" is meaningful.
- Transportation is a big issue for the blind community (no one can get from here to there without assistance). "Evacuations are a concern especially within the limitations of Rochester's bus system." (participant).
- "Rely on own networks before government agencies." When asked by Jeff Ellerbusch, one participant commented that neighborhood groups and neighbors matter.



Captain Jan Bailey

- "Another critical piece of equipment is the baseball cap. The bill on the cap provides three inches of protection from things you may run into." A perfect example of the nuances one learns in such meetings.
- Low percentage of blind people read Braille (from 2–10%).
- Websites matter more...accessibility important.
- "Phone calls best for immediate danger; texts and emails for impending events."

### Scores:

	PRE	POST	DELTA
<b>Relationship with Emergency Management</b>	4.7	4.8	<b>+2%</b>
<b>Emergency Management has People with Disabilities in mind</b>	2.7	3.4	<b>+26%</b>
<b>I can contribute</b>	3.4	4.2	<b>+24%</b>
<b>Personal Preparedness</b>	3.1	4.8	<b>+55%</b>
<b>TOTAL</b>	<b>13.9</b>	<b>17.2</b>	<b>+31%</b>

## DEAF AND HARD OF HEARING

**Captain:** Tracy Bell, Regional Manager, Minnesota Department of Human Services / Deaf and Hard of Hearing Services

**Location:** IBEW Local 343, 9 80<sup>th</sup> Street SE, Rochester, MN 55904

### In Brief:

In our best attended meeting, we hosted nearly thirty 30 deaf citizens to pizza. Six interpreters were present for this large group to meet everyone’s communication needs, including those who could hear — as those who are hearing wouldn’t be able to get information from the deaf community without interpreters.

Interpretive services made available included CART (Communication Access Realtime Translation), a deaf interpreter who “copied sign” for a deafblind individual, and ASL interpreters.

The presence of these interpretive services made a significant impact on the perception of the community.

### Take Aways:

- “Hunger” to be heard was evidenced in the largest increase in overall scores.
- Texting is an oft-used method of communication between people who are deaf – however, one cannot assume everyone has access to a smart phone.
- Unlike other disability communities, the deaf often require an intermediary: an interpreter.
- There was much concern voiced about what occurs when there are accidents involving injury and police: fear of poor communication or misunderstandings. Great concern that “writing it down” is insufficient in traumatic situation involving injury and requiring fast response.
- Desire to have more interpreters available in Rochester — any measurements available on demand? We understood Mayo Clinic has two interpreters on staff.
- Responders should be aware that many notification systems do not work for the deaf community (sirens, automated phone calls not integrated with videophone equipment, etc.).



Ken introducing Emergency Management to the deaf community while Jimmy interprets in sign language

### Scores:

	PRE	POST	DELTA
<b>Relationship with Emergency Management</b>	4.4	4.9	<b>+11%</b>
<b>Emergency Management has People with Disabilities in mind</b>	3.0	3.8	<b>+27%</b>
<b>I can contribute</b>	4.0	4.3	<b>+8%</b>
<b>Personal Preparedness</b>	3.0	4.5	<b>+50%</b>
<b>TOTAL</b>	<b>10.4</b>	<b>17.5</b>	<b>+68%</b>



Patty interprets the meeting while Lloyd looks on



Group meeting for people with physical disabilities

## PHYSICAL DISABILITIES

**Captain:** Robert Weigel, Independent Living Coordinator/Accessibility Specialist, Southeastern Minnesota Center for Independent Living (SEMCIL)

**Location:** 2200 2<sup>nd</sup> Street SW, Rochester, MN 55902

**In Brief:**

- Building access, electronics, generators
- Before / after
- Transportation
- Power outages
- Access to medications

**Take Aways:**

- Smart phones are used as primary communication tool.
- Many live in a world of “before” (injury) and “after” (injury).
- Backup systems and caretakers are a common part of daily life.
- Once in bed, one may only have access to phones; Personal Care Assistants (PCAs) may not be available.
- Most buses can handle no more than two people using wheelchairs.
- It takes longer to move from point A to point B; time and early warning are important.
- “A minor emergency for most people is a big emergency for me.”
- Medications should be taken into account when evacuating.
- Registries are controversial: concern about vulnerability and concern about being left behind.



Adam

**Scores:**

	PRE	POST	DELTA
<b>Relationship with Emergency Management</b>	4.5	4.9	<b>+9%</b>
<b>Emergency Management has People with Disabilities in mind</b>	3.1	4.2	<b>+29%</b>
<b>I can contribute</b>	3.4	4.2	<b>+25%</b>
<b>Personal Preparedness</b>	2.6	4.7	<b>+81%</b>
<b>TOTAL</b>	<b>13.6</b>	<b>18.0</b>	<b>+32%</b>



Local seniors in a group discussion

## SENIORS

**Captain:** Julie Gran, Program Director,  
Rochester Senior Center

**Location:** 121 N. Broadway, Rochester, MN 55906

### In Brief:

The meeting was attended by several clients of the Rochester Senior Center and staff members of the Red Cross, Salvation Army, and Family Service Rochester. The question of whether older adults should be “lumped in” with those with disabilities was discussed.

### Take Aways:

- Affirmation that older adults prefer to rely on the technology they grew up with (e.g., siren, TV alerts, etc.).
- Social media is growing due to connection with grandchildren.
- Potential for isolation in community is greater than for other groups.
- More comfortable using “traditional” means to express views (call City Council, call Donna at the Mayor’s office).
- Difficult to inspire and move (see Scores).

### Scores:

	PRE	POST	DELTA
<b>Relationship with Emergency Management</b>	4.4	4.4	<b>+0%</b>
<b>Emergency Management has People with Disabilities in mind</b>	3.4	3.4	<b>+0%</b>
<b>I can contribute</b>	3.5	3.9	<b>+11%</b>
<b>Personal Preparedness</b>	4.0	4.4	<b>+10%</b>
<b>TOTAL</b>	<b>15.3</b>	<b>16.1</b>	<b>+5%</b>



Kevin listening to Lad

## RECOVERY COMMUNITY

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**Captain:** Trent Fluegel, Executive Director,  
Interfaith Hospitality Network

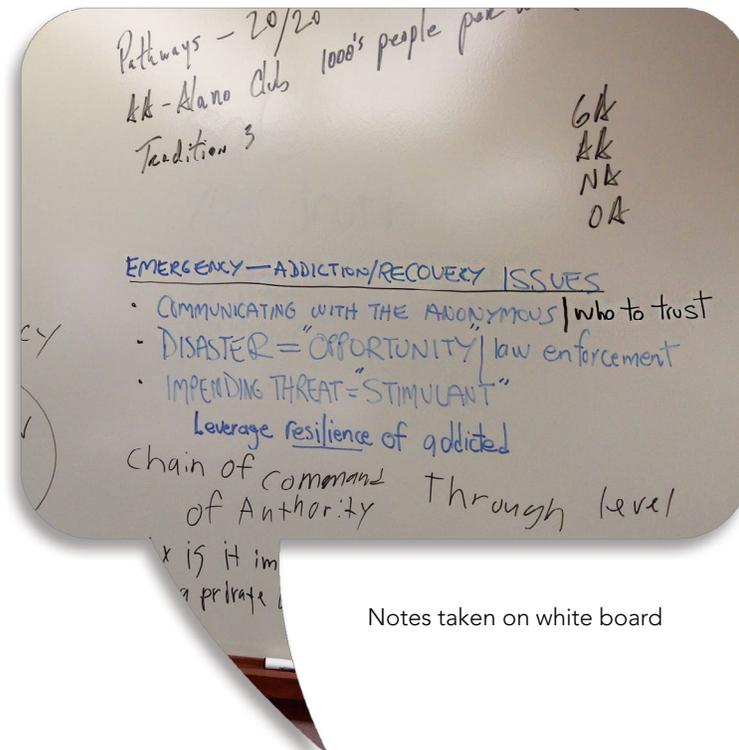
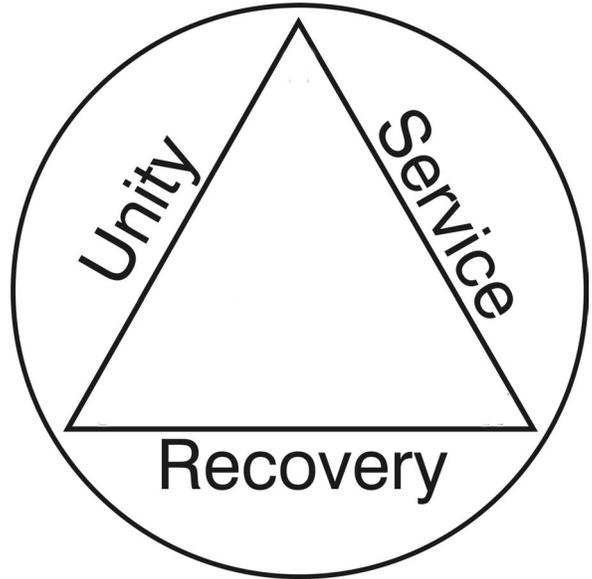
**Location:** Rochester Public Library

### In Brief:

- Anonymity
- Resiliency
- Possible untapped resource

### Take Aways:

- Disaster = Opportunity: chaos creates opportunity to obtain drugs and narcotics.
- Impending Threat = Stimulant: charges up drug abusers.
- Privacy issues created by "communicating with the anonymous": those who want to keep drug abuse private tend not to want to be on lists.
- Methadone clinics have a one week supply.
- Eighty-two AA meetings every week in Rochester.
- Twelve Step groups may be a volunteer resource.
- Tremendous resiliency in this population: they are "survivors".



Notes taken on white board

## RECOMMENDATIONS

In a meeting with Mayor Ardell F. Brede on May 9, 2014, Inclusion Solutions presented its findings and recommendations by asking key participants in the week to speak. Remembering that “the plan is only as good as the process and people involved in its development” this provided an ideal opportunity for the process and people with whom relationships were developed to be heard. The key recommendations (as outlined in the High Level Summary of Findings) were:

- Access contribution from community members with access and functional needs by engaging and meeting them where they live their lives. We say it this way: **in order to be deserving of contribution from you, I must go to you.**
- Continue all dialogues and information gathering by respecting the differences among people with disabilities. It is not true that a person affected by addiction and recovery will have the same needs, communication styles, and interests as one who is blind or physically disabled. This is best accomplished by speaking to people within groups separately.
- Ask for contribution! People want to contribute — and will do so if the setting is safe, real and fun.
- Remember that authentic dialogue as required by FEMA occurs “at the kitchen table”. Always have this vision in mind as you continue conversation with members of the community.
- Finally, continue conversation with members of the community. Continuing relationships with those in the community with access and functional needs requires continuous conversation.

Inclusion Solutions also left a video of an interview with Karen M. Tamley, Commissioner, Mayor’s Office for People with Disabilities (MOPD) in Chicago. We recommend that the City of Rochester consider creating such a position to ensure that disability is part of every conversation the city has as it develops its All Hazard Mitigation Plan, City Streets Plan.



Rochester street sign



Amy and Lad enjoying a moment

# SAFE FOR EVERYONE

December 2014

A discussion with the Rochester Somali, Cambodian and Latino communities to identify special needs and assets in planning for an emergency or disaster.



## **Hazard Mitigation in Rochester** Outreach to Explore Special Needs within Immigrant Communities

**Photo credits:**

Alliance of Chicanos, Hispano, Latino Americans (ACHLA), page 4, festival scene; page 12, Miriam Goodson

Rochester Post Bulletin, page 12, Mohamoud Hamud

Miguel Valdez Soto, page 17

Susan Waughtal/Squash Blossom Farm, page 17, Bunly Suy

City of Rochester, pages 6, 10, 19

# Introduction

## Messaging: Easier Said Than Done

Effective communication during emergency management operations is a necessity — and easier said than done.

Including residents in emergency planning and delivering effective messages to them is complex when they are English speakers. But when residents are immigrants and refugees who may not speak English, and who may not read in their native language, planning and communication become considerably more complex.

The City of Rochester Emergency Management is currently engaged in writing an All Hazard Mitigation Plan as part of its overall emergency management efforts. As part of the initial planning process, team leaders viewed outreach to members of the city's three largest cultural groups — the Latino, Somali and Cambodian communities — as integral to thorough emergency planning.

To facilitate this effort, the City of Rochester contracted with ECHO Minnesota to design and execute an outreach strategy.

ECHO's mission is to collaborate with diverse communities to deliver programs and services that help people be healthy, contribute, and succeed. Founded in 2004 by a collaborative of local and state public health and safety agencies, ECHO Minnesota addresses the growing health, safety and emergency information needs of Minnesota's rapidly expanding limited English speaking communities. As a leader in multi-language health, safety, civic engagement and emergency readiness communication, ECHO bridges

the gap for immigrants and refugees in Minnesota. Through close collaborations with health and safety experts, bilingual community leaders and talented Ambassadors, ECHO crafts high quality programming for television and radio broadcast and phone, print, web, DVD and partner relay distribution. Additionally, ECHO provides outreach initiatives that lend themselves to additional methods of bridging relationships between public, private, and non-profit agencies looking for ways to integrate with diverse communities and improve their initiatives.

ECHO's charge in Rochester was to:

- design and implement a plan to assess the effectiveness of current efforts to communicate emergency information within cultural communities
- solicit opinions from community members on possible improvements,
- create a basis for sustainable partnerships between government and limited-English proficiency communities within Rochester, and
- connect city officials with a core group of bi-lingual leaders from each of the Latino, Somali and Cambodian communities willing to continue relationship building with the City of Rochester.

This report documents ECHO's method of approach, lays out what was learned during the research process, and makes recommendations for short- and long-term strategies to communicate effectively with all communities within Rochester.



“Emergency planning and communication conducted solely in English will inevitably leave many Rochester residents uninformed and potentially exposed to injury or loss from man-made or natural disasters.”

## Background Rochester: A Diverse Community

Compared to Minnesota as a whole, Rochester is an exceptionally diverse community. Nearly 12 percent of Rochester's total 2010 population was born in another country compared to seven percent in the state as a whole.

The largest immigrant groups within Olmsted County, which includes the City of Rochester (2008 figures), are:

- Hispanic/Latinos (2,959)
- Somalis (2,900)
- Cambodians (1,527)

Within nearly 7,000 Rochester households a language other than English is spoken in the home.

### Rochester Language Spoken at Home:

Language	Households	Percent
English	35,886	83.84
Spanish	1,804	4.21
Other Indo-European	1,671	3.9
Asian-Pacific Island	2,020	4.72
Other	1,420	3.2

American Community Survey, 2008-2012, five-year data set

Emergency planning and communication conducted solely in English will inevitably leave many Rochester residents

uninformed and potentially exposed to injury or loss from man-made or natural disasters.

## Federal Emergency Management Agency Outreach Recommendations

In its *Local Mitigation Planning Handbook*, FEMA outlines key measures that communities should undertake to reach limited English speakers and immigrant communities. Among these tasks are the following:

Consider stakeholders who should be included in planning:

- Business leaders? Prominent business figures in immigrant communities?
- Nonprofit organizations? In addition to Mutual Assistance Organizations, are there mosques, churches, temples, markets that serve as gathering spots for large numbers of people on a regular basis?
- Opportunities for general public to comment, and to offer granular information about community assets, problem areas, hazard history, and to prioritize mitigation alternatives.

To determine during input process: What input do you need from immigrant communities? Possibilities:

- How best to communicate with members of various cultures in case of emergency, both in terms of language and mode (print, text, school-based systems, posters at stores, presentations at churches, mosques, etc., Facebook or web pages of organizations?)
- Assets that are particularly important within the community but might not be obvious to outsiders.

- Best methods of outreach with details of planning/input. Leaders and focus groups help to develop the plan, but is there also a need for broader participation? Could this come through community fairs, celebrations, through radio or newspapers? Are there important online resources within communities that could be engaged?

Evaluation and reporting back

- Develop a clear strategy for evaluating and incorporating outreach feedback. How will we let people know how their opinions have been used?
- Public opportunity for review and comment on plan: how will this be done in cultural communities?

## A Path Toward Effective Planning

The City of Rochester is an international destination for medical care, and it is a place where languages other than English are spoken in thousands of homes. To create a plan that reduces disaster and emergency risk for everyone, the special needs of limited English speakers and cultural communities must be taken into consideration. That is a clear directive from FEMA in its *Local Mitigation Planning Handbook*. But beyond that, the city's Director of Emergency Management, Ken Jones, and Rochester-Olmsted County's Principal Planner, Sandra Goslee, recognize that clear, concise communication with all Rochester households in an emergency is a matter of potential life-and-death consequence, and a responsibility of government.

To meet these obligations, the City of Rochester engaged the expertise of ECHO Minnesota to devise a strategy that would:

- elicit the impressions from members of local cultural communities on current emergency communication,
- identify mitigation and preparedness concerns particular to those communities,
- ask participants for ideas on how to improve planning and messaging to limited English speakers, and
- establish the basis for long-term relationships with Rochester's cultural communities that would improve future planning efforts.

ECHO's goal was to create a manageable process that would answer key questions about:

**City leaders recognize that clear, concise communication with all Rochester households in an emergency is a matter of potential life-and-death consequence, and a responsibility of government.”**

- perception of hazards within cultural communities,
- concerns particular to specific communities,
- success and failures of current preparedness and emergency communication efforts,
- techniques or programs to get better information to more people, and
- ways to keep members of cultural communities engaged in future planning efforts.

**Natural Disaster**

Heavy rainfall in 1978 left Rochester inundated. To help reduce the harm from natural disasters, non-English speaking populations need preparedness education delivered in ways that they can understand.



# Methodology

## A Mix of the Subjective & Objective

Like many efforts to gain information about and within communities, ECHO's process was a mixture of the objective and subjective. By necessity such a process relies on persistence, patience, and a recognition that many of the people who are critical to the success of the project are highly esteemed within their communities, frequently asked to provide assistance to fellow immigrants, extremely busy with their own lives, and are too often asked to participate in public engagement processes that in their view come to nothing.

ECHO's work began by compiling a list of key figures within Rochester's immigrant-serving organizations, plus government services, hospitals and clinics, media outlets and other organizations that could potentially reach into cultural communities. That list of 49 organizations was compiled in early 2014, and included a list of Rochester-area ethnic events, plus potential foundation funders of ongoing work.

In an attempt to create a workable process that would provide a foundation for future efforts, Rochester officials and ECHO decided to limit the initial engagement effort to Rochester's three largest cultural communities — Latinos, Somalis and Cambodians.

The next step was to derive a list of critical participants within these communities. In the spring of 2014, ECHO consulted with Marty Aleman, Public Health Nursing Manager for Olmsted County Public Health Services, who is involved in the activities of a multi-racial, multi-ethnic Rochester group, the Community Alliance for Racial Equality. Working with Aleman, ECHO

compiled a short list of leaders who would bring insight and authority to the engagement effort. ECHO called these potential informants to determine whether they would be willing to participate, and to ask them about others from their communities who should also be included. As a question of process, it is worth noting here that in many instances it was necessary to make repeated phone calls and to send several emails before connecting.

This is a measure of the demands upon the time of the people ECHO called. They are frequently asked to participate in surveys and focus groups, and suspect that yet another survey, focus group or meeting will not prove to be meaningful. Convincing participants that the city and county's intent was serious, and not an instance of bureaucratic t-crossing, added a time-consuming aspect to the project. Respectful, polite persistence is a basic requirement for this type of work.

ECHO set an initial meeting for the evening of May 19, 2014 at the public library, and sent written invitations from Ken Jones and Sandra Goslee to three or four key representatives of each cultural group. These invitations were followed up with an email reminder and a phone call. All of these contacts stressed the importance of cross-cultural emergency communication and the significance of having highly-regarded leaders involved in the process. Among the messages delivered by informants in this meeting were these:

- Leaders felt that more members of their communities should be interviewed in a focus-group like setting to deepen understanding,



**Participants said that winter blizzards and extreme cold can come as horrible and dangerous surprises for immigrants from equatorial climates. One solution for people with limited English: education in visual and audio forms.**

- Collecting further information in surveys was bound to be difficult given the language considerations and would gather results of limited significance.

Following this meeting ECHO organized individual interviews with key leaders to allow them an opportunity to expand on their thoughts, and to engage their assistance in organizing focus groups. We received generous assistance from leaders of all three cultural groups in assembling well-balanced and vocal participants in separate focus groups for the Latino, Somali and Cambodian communities. To encourage participation, and as a token of respect for the time and attention attendees devoted to the focus groups, ECHO offered

food, refreshments and a \$20 Target gift certificate to participants.

At the initial May 19 meeting (see Appendix 1 for attendees), leaders observed that though their opinions are often solicited, they are rarely informed later about the outcome, or given the opportunity to participate in the ongoing development of plans. ECHO scheduled a follow-up meeting for October 28 to report back on findings to date, to seek confirmation or correction on its conclusions, and to engage participants in ongoing development of emergency plans. ECHO and Rochester officials presented a PowerPoint slide show that summarized findings to date. Participants were issued electronic clickers that allowed them to offer feedback to help validate these

conclusions. Perhaps ironically, this meeting was less well attended than the initial meeting, but the voting technology proved engaging for those who were present.

These meetings were co-led by Rochester Emergency Management director Ken Jones and Rochester/Olmsted County

Principal Planner Sandra Goslee to signal that top officials were active participants in the process, had a genuine interest in the concerns raised by the group, and, as Jones and Goslee repeatedly stressed, that they hoped to build an ongoing relationship with participants that will continue into other local government planning and emergency management efforts.



In focus groups, participants repeatedly observed that communication with 911 dispatchers is an enormous problem for people with limited English skills. Finding solutions is a top emergency planning concern for immigrant populations.

## Reports from the Field

### Large Groups, Informants, Focus Groups

#### Initial Meeting Community Leaders

May 19, 2014  
Rochester Public Library  
Complete Notes: See Appendix 2

**The Agenda:** Leaders within the Somali, Latino and Cambodian cultural communities were invited to an evening meeting with emergency management and planning staff, plus officials from the police and fire departments, public library, public schools, public health, ECHO and IMAA (Intercultural Mutual Assistance Association). In a discussion moderated by

ECHO, community leaders were asked to identify:

- top emergency/disaster fears,
- why they are not involved in emergency planning now
- what can be done to reduce potential emergency hazards
- best ways to communicate emergency information to Rochester cultural communities
- how best to create ongoing an ongoing partnership

#### Results Summary:

- Top concerns and fears

- o Lack of understandable information for limited English speakers
- o False rumors
- o Panic
- o Inadequate preparation within families
- o Care for vulnerable people, such as children, the elderly, the disabled
- Most worrisome type of emergency
  - o Winter and summer storms
  - o Train derailment and resultant chemical spills
  - o Fire
  - o Floods
  - o Shootings
- Reasons for limited involvement in current planning
  - o Information about efforts not provided in translated, visual forms for limited English speakers who may not be literate in their first language
  - o Lack of trust of officialdom, feelings of unease in environments where planning is done
  - o More pressing issues of survival within communities
- How to reduce effects of potential hazards
  - o Hire bi-lingual staff from cultural communities to be part of emergency management and planning teams
  - o Create simple, concise, translated, visual messages on the most important things to do to keep families safe
- Best ways to communicate
  - o Use existing communication channels, such as Somali TV, which streams via the web, and Facebook
- o Mimic the Rochester community ambassador program designed to help tourists downtown with creation of a program of bi-lingual emergency outreach workers who would be trained to deliver emergency messaging within cultural communities
- o Create a separate city/county hub of information and resources for limited English speakers
- How to create an ongoing partnership
  - o Hire bi-lingual staff so language skills/cultural competence are built into the structure of government
  - o Investigate/replicate successful models around the country
  - o Create a roster of key leaders for consulting on planning and emergency management
  - o Include faith communities

## Key Informant Interviews

June, 2014

Following the initial May 19 meeting, ECHO representatives interviewed key Latino, Somali and Cambodian leaders to give them an opportunity to elaborate on ideas quickly expressed in the library meeting, and to engage their help in organizing focus groups. Individuals interviewed included:

- **Mohamoud Hamud** (Mayo Clinic Islamic religious counselor, considered for position as prime

minister of Somalia, Mayor's Hero's Award in 1997 for his work in reducing tensions between Somali and American youth.)

- **Jaylani Abdullah** (Board member Family Service Rochester, employment counselor at Intercultural Mutual Assistance Association.)
- **Kim Sin** (System Administrator at University of Minnesota Rochester, director of Cambodian Association of Rochester Minnesota (CARM), awarded the NAACP George Gibbs Meritorious Community Service Award for Leadership Education.)
- **Ponloeu Chim** (Associate director, Professional Language Services, Intercultural Mutual Assistance Association.)
- **Miguel Valdez Soto** (Multicultural Research Coordinator in the Office for Community-Engaged Research, Mayo Clinic; manager of Smart Rides EcoTaxi, organizer of Pata de Perro Bike Club, a Rochester youth-mentoring group.)

**Informants were eager to have an ongoing relationship with government officials. Their experience is that they are called upon in the middle of a project, asked to contribute their opinions to check off a bureaucratic box, and then ignored.**

- **Miriam Goodson** (Juntos Coordinator, Alliance of Chicanos, Hispanics and Latin Americans, Education Advocate at Family Service Rochester)

Detailed notes on these interviews can be found in the Appendix 2.

#### Key observations:

- There is enthusiasm for focus groups to help deepen input from members of the respective communities. Interviewees were generally quick to offer help finding participants.
- There is markedly less enthusiasm for surveys. Informants cited the difficulty of conducting a survey in translation along with the English

#### Community Leaders

Mohamoud Hamud and Miriam Goodson were among the community leaders who offered their insight during key informant interviews.



version, of getting responses from people who may not be literate in their primary language, and of pulling a valid sample.

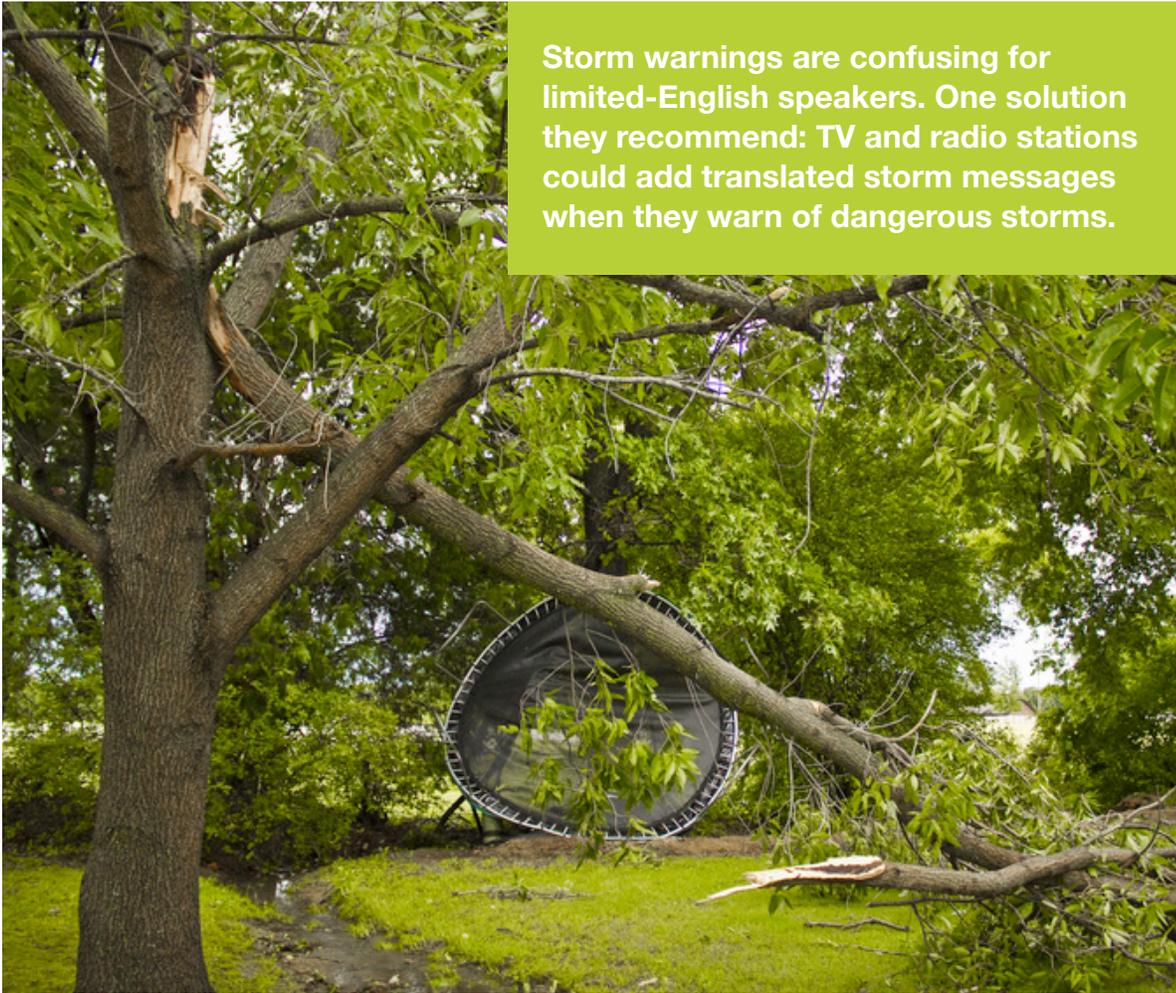
- Informants were eager to have an ongoing relationship with government officials. Their experience is that they are called upon in the middle of a project, asked to contribute their opinions to check off a bureaucratic box, and then — having served their purpose — ignored until the next project that requires their input. So how to do better? Their observations:
  - o Some officials are doing a job that has garnered respect. Rochester Councilman Michael Wojcik's Coffee with Leaders (a regularly scheduled coffee session) was mentioned as a good opportunity to communicate with a public official who is open to input from Rochester's cultural communities. Similarly, MN House members Tina Leibling and Kim Norton were cited as being open and in regular communication with Rochester's non-white population.
  - o Informants frequently observed that a relationship is different than a task. It might involve showing up at community events to participate and observe, not necessarily to conduct official business. It might mean meeting one person who introduces you to another and another. It's a process that evolves over

time, sometimes by encounters at events, other times through an invitation to a casual cup of coffee. It's a way eventually to do business, but in a way that doesn't always look much like business in the moment. Government officials would be welcome guests and could expect gracious introductions from any of our informants.

- o Informants were interested in a local version of ECHO's Cultural Services Unit program, in which volunteers from cultural communities are trained to serve as intermediaries between emergency managers and local populations. They recognized this as a two-way street, in which community members volunteer their time but also receive training and certification. In addition, volunteers become familiar faces to managers who may eventually be in a position to hire and who, as a result of the CSU program, may be more aware of the benefits that bilingual/bicultural staff can bring to a department.

## Focus Groups

**The Agenda:** Separate focus groups were organized for the Somali, Latino and Cambodian communities. Participants were asked:



Storm warnings are confusing for limited-English speakers. One solution they recommend: TV and radio stations could add translated storm messages when they warn of dangerous storms.

- What type of natural and man-made emergencies most worry or concern you?
- What concerns are unique to your cultural community? For example, are there buildings or places that need particular protection? Are there cultural practices or traditions that should be taken into account?
- What are the best and most trusted ways to get helpful information concerning emergencies?
- The conversation expanded, however, to include crime and speeding cars on streets where kids are playing as a type of emergency.

Concerns particular to the Latino community?

- Illicit drug issues (sales and use) were cited as a form of emergency concern that particularly affects the Latino community.

Best ways to get information to Latinos?

- There is no locally generated communication in Spanish. TV, radio and newspapers are for the Twin Cities, and not directed at Rochester.
- Radio and TV messages in Spanish would help get emergency

More detailed reporting on individual focus groups is included in the Appendix 3-5.

**Results Summary: Latino Group**

What types of emergencies are of greatest concern?

- Winter and summer storms

information to Spanish-speaking people.

- Alternatives, such as a Spanish-language smartphone app, or Facebook messaging, might be useful.
- Employers could be used to communicate emergency messages to Spanish-speaking employees.
- The school “Robo-call” system could be used to deliver translated messages to households where Spanish is the primary language.
- Churches and schools are trusted places and locations where more preparedness information could be shared.

### **Results Summary: Cambodian Group**

What type of emergencies are of greatest concern?

- Fires, flood and storms are mentioned, plus poisons and crime.

Concerns particular to the Cambodian community?

- Difficulty communicating with 911 operators was an overwhelming concern. Dispatchers don't speak Cambodian, and many of the focus group participants had limited English. Calling 911 is frustrating and time consuming at exactly the moment when callers perceive time to be of the essence.
- English is difficult to learn. Older Cambodian residents often rely on their children to help in a crisis, or may call IMAA for assistance.
- In an emergency evacuation, it might be best for Cambodian community members not to be obliged to go to a place associated with religion.

**Perception of hazard is different for people coming out of civil disorganization and war. “We come from disaster,” said one participant as he explained how Somalis perceive the relative perils of emergencies in Rochester.**

Best ways to get information?

- Visual information translated to Cambodian would be the greatest help.
- Participants watch local TV, but it is of limited help because of the language barrier.
- Preparedness information in Cambodian, delivered at meetings, on DVD, TV or on tapes would be helpful to reduce anxiety about what to do in an emergency.
- Trusted places to get information are the church or temple, IMAA and from Olmsted County Community Services.

### **Results Summary: Somali Group**

What type of emergencies are of greatest concern?

- Fire, winter storms and extreme cold were all mentioned as concerns.
- Language difficulties related to the 911 system are a recurring problem.

Concerns particular to the Somali community?

- Knowledge and preparedness were named as concerns. The equatorial environment of Somalia means that immigrants have no prior knowledge of the types of storms or extreme cold that might put them at risk here. Similarly, fire risk/prevention in Minnesota housing is different and unfamiliar. Education

- would help increase preparedness and reduce risk.
- The perception of hazard is possibly different for people coming out of civil disorganization and war. "We come from disaster," said one participant as he explained how Somalis perceive the relative perils of emergencies in Rochester.
- In the first moments of a disaster, concerns of Somalis will be no different than those of other residents — safety for their families and for themselves. In later stages, however, cultural considerations such as separation by gender for sleeping, hygiene related to toilet facilities and places for prayer would become significant.

#### Best ways to get information?

- Written communication is less helpful than spoken and/or visually-presented information. Many Somali residents do not read or write Somali.
- Some messages could be presented on Somali TV that streams from a Rochester website. Preparedness DVDs, such as those produced by ECHO, would also be helpful if distributed more widely.
- More bi-lingual Somalis working within government would improve communication
- Information could be presented at the mosque, in ESL classes, at IMAA, at community events. Constant reminders are key.
- Many Somalis use Facebook. Other technology-based solutions such as text messages through Rochester Alert or the school "Robo-call" system would reach a portion of the population.

## Summary Meeting Report Back

Olmsted County Public Health Building  
October 28, 2014  
Details in Appendix 6

**Method:** Attendees at the initial May 19 meeting voiced a desire for reporting on the results from key informant interviews and focus groups. To answer those concerns for reporting back, ECHO organized an evening meeting for October 28. Those attending the May 19 meeting received a written invitation, an email reminder and a phone reminder for the October meeting. The meeting drew one representative of the Cambodian community, five Somali representatives, two Latino representatives, three public officials and ECHO staff.

Attendees were presented a list of findings from key informant interviews and focus groups, and asked to validate these conclusions using an electronic polling system that allowed results to be posted instantly on a screen. Questions were answered by all members of cultural communities in attendance, plus a Rochester Olmsted Planning Department official and one ECHO staff member.

Following this exercise, attendees were asked to fill out a form to identify future hazard mitigation and emergency planning activities in which they would be willing to participate.

#### Response to poll questions:

Written and spoken English does not meet emergency needs of my community

- Agree 89%
- Disagree 11%
- Don't know

Written emergency warnings in native language are not helpful

- Agree 78%
- Disagree 22%
- Don't know

It would be useful to have emergency information in my native language on TV and radio

- Agree 90%
- Disagree 10%
- Don't know

It would be useful to have emergency information in my native language via Rochester Alert

- Agree 100%
- Disagree
- Don't know

It would be useful to have emergency information in my native language via text messaging

- Agree 50%
- Disagree 40%
- Don't know 10%

**“People can’t all be put together in one box,” said participant Miriam Goodson. “There can be a lot of conflict within groups. It takes a lot of work to get into a comfort zone where people are willing to share information.”**

It would be useful to have emergency information in my native language via Twitter

- Agree 20%
- Disagree 60%
- Don't know 20%

It would be useful to create a network of ambassadors to educate and spread emergency information

- Agree 100%
- Disagree
- Don't know

It would be useful to create contact lists of agencies to share information via mosque, church, temple, IMAA

- Agree 80%
- Disagree
- Don't know 20%

**Community Leaders**

Miguel Valdez Soto and Bunly Suy are respected leaders in the Latino and Cambodian communities who helped guide this process.



It would be useful to hire more bi-lingual staff for 911 (and other critical roles)

- Agree 80%
- Disagree 10%
- Don't know 10%

Preparedness education should be conducted before emergencies using materials such as ECHOs translated DVDs

- Agree 100%
- Disagree
- Don't know

It would be useful to hold monthly coffee sessions with city officials and cultural leaders

- Agree 80%
- Disagree
- Don't know 20%

Emergency planning should be included as part of the English class curriculum

- Agree 100%
- Disagree
- Don't know

It would be useful for officials to attend community events to build relationships

- Agree 89%
- Disagree
- Don't know 11%

In a discussion following the polling, participants observed that officials should beware the impulse to believe that it is simple to get opinions within and among cultural groups regarding effective emergency messaging. "People can't all be put together in one box," said participant Miriam Goodson. "There can be a lot of

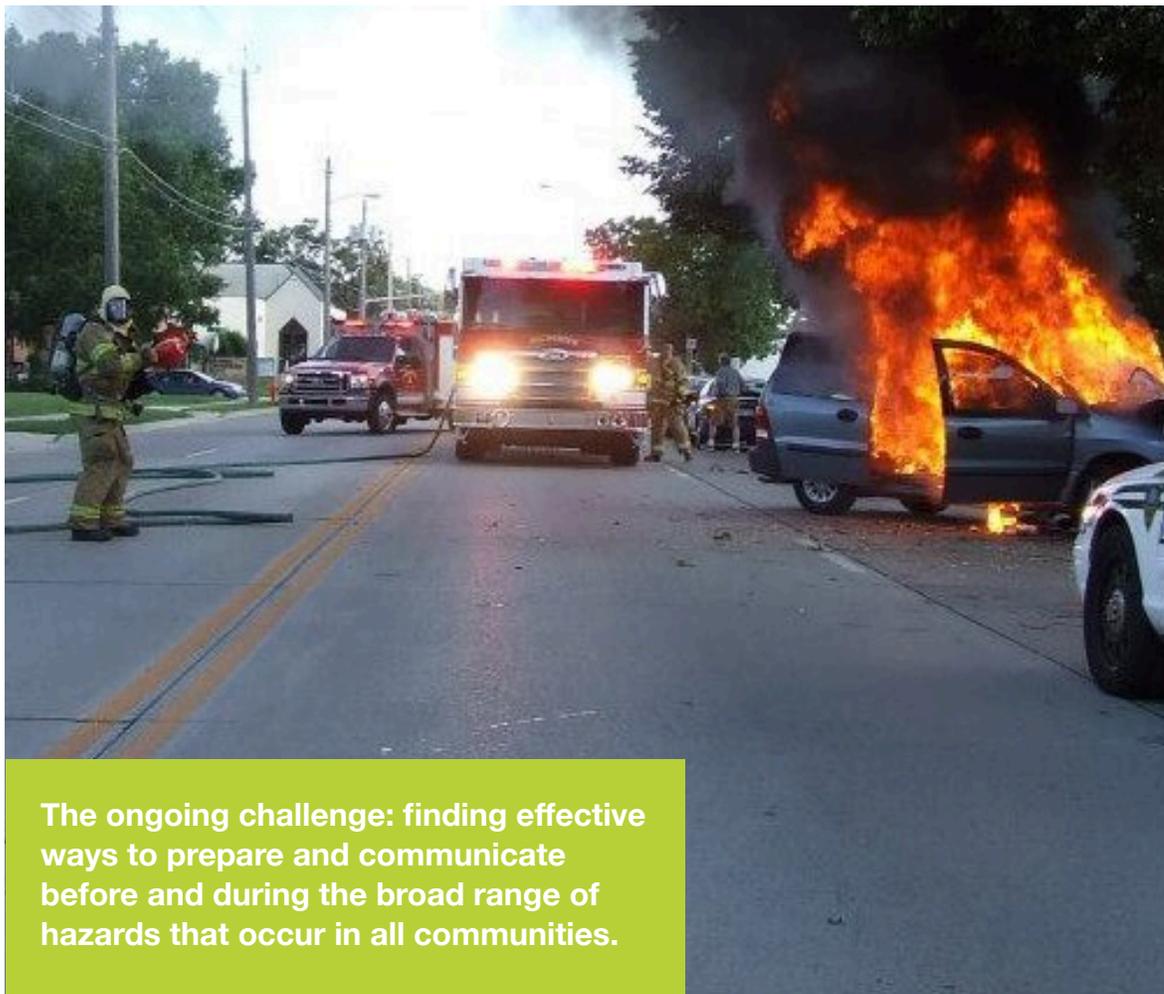
conflict within groups. It takes a lot of work to get into a comfort zone where people are willing to share information."

Participant Mohamoud Hamud noted that meeting simply to meet is not an effective use of time. "We should be meeting about a specific agenda," he said. "Not meeting just to have coffee."

### Participation in Future Activities

To conclude the meeting ECHO distributed sign-up sheets on which attendees could mark future activities in which they would be willing to participate. These options, along with responses, included:

1. Review hazard/mitigation plan (1 participant)
2. Update cultural leader list of cultural advisers to provide support in crisis (1 participant)
3. Support development of a cultural services unit (2 participants)
4. Be included on a Leader List
5. Help to develop media videos on EM topics (1 participant)
6. Provide distribution list contacts (1 participant)
7. Serve as interpreter/liaison in crisis situations (1 participant)
8. Be part of a multi-cultural advisory unit (3 participants)
9. Attend city coffee meetings (2 participants)



The ongoing challenge: finding effective ways to prepare and communicate before and during the broad range of hazards that occur in all communities.

## Recommendations Short and Long Term Strategies

### Underlying Considerations

Our recommendations are based on several considerations that are not always apparent when dealing with traditionally underserved populations.

First, members of cultural communities are frequently studied, surveyed, invited to focus groups and interviewed. There is a wide-spread weariness with these processes, and a general suspicion that official interest serves the immediate need to complete a report, grant application or planning process, but is not part of an authentic effort to

address and resolve problems within the community.

Second, the leaders we identified are the same people who are commonly involved to participate in these processes. There is perhaps a tendency not to realize their stature, importance and the demands upon their time within their communities. To name one example from our key informant cohort, Mohamoud Hamud, now a Mayo employee, was also on a short list for consideration to serve as prime minister of Somalia. He, like others who offered their advice during this process, serves on various community boards, is an obvious source of

advice and assistance for numerous members of the Somali community, and is occupied with his own job and family. Our panel of key informants have at least as many demands upon their time as any public official who hopes to interact with them.

Finally, despite the caveats above, our informants as a group are deeply invested in advancing the interests of their community and in participating in efforts that will make them better prepared to face emergencies and disasters. The key is to devise strategies that make community leaders equal, honored partners, to create planning processes that are respectful of the many demands upon their time, and to follow through with efforts that demonstrate serious commitment to resolving issues — and not simply commitment to completing a report.

### **Recommendation One**

Although this is not directly related to the hazard mitigation planning process, there is nonetheless a deep frustration with the 911 system among limited English speakers. Virtually everyone knows they should call 911 in an emergency. But our focus group participants commonly observed that after they dial, they are stuck. Dispatchers speak English. Their questions are indecipherable. Callers don't know what to do next. Planning for hypothetical disasters pales in comparison to this everyday dilemma. This is not an easily-solved problem. Among the suggestions made by focus group participants included providing cue cards to identify for limited-English speakers key words such as “Medical,” “Fire,” or “Crime,” that could be spoken to dispatchers. But a quickly-noted problem is that many non-English speakers are not literate in their first language. Nonetheless, the work to improve 911 response should begin immediately. This is a necessary step

to assure that the genuine concerns of the communities were heard, and to prove that this exercise was not operating simply off a closely-defined FEMA agenda.

### **Recommendation Two**

Separate follow-up steps into long-term and short-term strategies and begin working on both. Short-term programs will help to demonstrate commitment toward building ongoing relationships. Ongoing relationships will make it possible to develop long-term solutions that assure greater disaster and emergency preparedness within cultural communities.

#### ▪ **Short-term Strategies**

- o **Informal Meetings:** If the outcomes of this process include the development of ongoing relationships, then recognize that such relationships are rarely forged in formal meetings. Set aside time to meet with the leaders identified here to learn more about their lives, about the complexity of their interactions within their communities, and their aspirations for themselves and the members of their communities. Informants also often mentioned that they would be eager to welcome officials to community gatherings if they attended in a personal rather than official capacity. Another option suggested by participants is a monthly coffee meeting at which input and suggestions could be casually exchanged.
- o **Plan Review:** Upon completion of the Hazard Mitigation Plan, invite

- leaders identified in the process to review and critique sections that address the needs of specific cultural communities.
- o **Develop a Leader List:** Identify and secure contact information for cultural advisors who can provide guidance in a disaster/emergency crisis.
  - o **Develop an Interpreter/Liaison List:** Assemble a list of interpreters willing to be on call during crisis response.
- **Long-term Strategies**
    - o **Create a Cultural Services Unit:** Support the development of a 20-member team of bi-lingual workers dedicated to providing outreach and insight to the City of Rochester during crisis response, and to provide preparedness education within cultural communities before disaster strikes.
    - o **Develop Translated Videos on Emergency Topics:** With assistance from members of cultural communities, develop and distribute videos that offer emergency preparedness information to limited English speakers in their own language.
    - o **Get Translated Emergency Info on the Air:** Work with local TV and radio stations to provide translated emergency information during an emergency.
    - o **Develop a Robust List of Channels and Target Audiences:** Create a small group to determine a range of channels for emergency information. (This might include, but not be limited to, web sites, broadcast, social media, print, TV, radio, physical locations such as churches, mosque, temple, IMAA, markets and other places frequented by immigrants.)
    - o **Create a Multi-Cultural Advisory Unit:** Build a group that meets monthly to provide input for health, safety and emergency government services with particular attention to diversity and inclusion.
    - o **Hire Bi-lingual Staff:** Examine whether members of cultural communities are represented in city/county government departments such as 911 dispatch, police, fire, etc. Explore ways of using the expertise of existing bi-lingual staff.

## Conclusion

# Steps Toward Building Relationships

A crucial sentiment expressed by participants in the final meeting of this process was a desire for concrete action. “Tell us what you need and we will do it,” said Somali community leader Mohamed Hamud.

However, it’s fair to think that life is complex and rarely described in its richness during the course of a public meeting. Participants clearly want to see action that addresses their concerns with the 911 system, with translated storm information on TV and radio, and with translated, visual emergency preparation education. They say they are weary of interviews, studies and surveys that lead to no conclusion other than more interviews, studies and surveys. At the same time, leaders in all of Rochester’s communities — business, non-profits, neighborhoods, etc. — all seek relationships with top government officials that are deeper than formal, public meeting interactions. We believe the situation is the same with leaders in Rochester’s cultural communities.

The immediate challenge is to complete the All-Hazard Mitigation Plan. We suggest that upon completion of a draft document, the cultural community leadership group be reconvened to review, edit and approve a final version.

As a subsequent step, we suggest that the list of recommendations above be reviewed

by a cultural community leadership group and relevant city officials, that a priority list be derived, and that an action plan with scheduled deliverables be established.

We suggest finally that a less concrete but equally important step be undertaken to develop personal relationships with members of the cultural communities who have volunteered their time to attend these meetings. Given the social structure of American life, it is more likely that public officials encounter Caucasian leaders of the local business or non-profit communities in social settings. Consequently they develop relationships based on something other than pure business transactions. This is less likely to occur with members of cultural communities. This isn’t an insurmountable barrier, but it does require a more intentional approach. The key informants who participated in this process are engaged, interested and interesting individuals. The business of government would be advanced by knowing more about them personally, and learning more about their views of the challenges and opportunities within their communities. The depth of this information and ideas will never be expressed in a public meeting. It can begin to be explored over lunch, or a late afternoon coffee date. Our final suggestion is amorphous but in our view significant. Pick up the phone. Make a date. See where the conversation goes. Prepare to be amazed.

# Appendix 1

## May 19 Meeting Notes

### Community Leaders Meeting Rochester Public Library May 19, 2014

Sign in sheet attached.

#### Welcome, introductory remarks

Description of emergency management process, role and functions of ECHO — Ken Jones, Sandi Goslee, Lillian McDonald

#### Introductions, participants respond to question about their greatest fear in an emergency

- Fire. Greg Martin, Fire Chief
- Fear is that in emergency community doesn't know what is happening, what the warnings are.. In emergency we are the weakest link, because of language issues and cultural issues, so it is not easy to reach all of us. Mohamed Hamad, IMAA
- Lack of being prepared because people don't understand, say for instance that their medication is in a safe spot in tornado. Chris Surprenant, Public Health Nurse
- Fear that traditional communication systems won't work in emergency and will have to rely on person to person communication. Amy Evans, Olmsted County Public Health
- Fear that information and resources won't go to people who need them. Miguel Valdez Soto, Mayo Clinic, CARE, ACHLA
- Fear lack of information, but also incorrect information — the rumor mill. Ron Buzard, director, IMAA
- Greatest fear is for the lives of our children when something happens in our community. Rebeca Sedarski, Chicano Latino Affairs Council
- Fear that the electricity will be out and I don't be able to do anything. Susan Hansen, public library
- Biggest fear is of shooting, because I have three kids. Leticia Flores, St. Francis of Assisi Church
- Biggest fear is for immigrants, that they don't know how to respond to sirens, that they won't know what to do. Ponloeu Chim, IMAA
- Fear that we have not put together an emergency plan for my family. I want to have a place where we can meet and find each other. Graciela Porraz, Mayo Clinic interpreter
- Not a fear but a fact, how are we going to handle panicking people. What will we do when everybody loses their control. Miriam Goodson, CARE, ACHLA, St. Francis of Assisi church
- Fear that people will not get the right resources, that somebody who needs medical attention won't get what they need quickly, that we can't save a life in time. Kim Sin, Cambodian Association of Rochester MN
- Fear is that I will panic and I won't know what to do. Sam Ouk, Buddhist temple, Rochester Schools
- Fear for people who are not connected to the community, to the

cultural group, for instance the elderly and alone, or people just passing through, who have nobody looking out for them. Julie Nigon, Hawthorne Learning Center

- My fear is for the time after things happen, in the crucial moment when things have gone wrong, will we have anticipated in advance so we are ready to go. Abdullahi Hassan, IMAA
- My fear is for those with disabilities, those who can't move around to get help. Abdirahman Muse, Masjed Abubakr Al-Seddiq
- My fear is that my community will not know what to do in an emergency. Guled Muhamed, Masjed Abubakr Al-Seddiq
- I wonder what happens depending on the time of day, what will the reaction be if a disaster is in the middle of the night. Abdella Mohamed, Masjed Abubakr Al-Seddiq
- Fear everything other people mentioned, but especially for the elderly who have no support because of the language. Jaylani Abdalla, IMAA
- Biggest fear is that the people most directly impacted don't have a safe place to shelter. No basement, no place to get out of a fire. Sandi Goslee, Rochester Olmsted Planning
- Fear is that there will not be plan to communicate in a time of crisis. Mohamed Sheik Nur, IMAA
- Fear is that we won't provide good communication. We want to be able to get emergency messages out so people know what to do. Ken Jones, Emergency Management

- Fear is not being able to help my kids. Efren Maldonado, ECHO

### **What type of emergency worries you the most?**

Members of the group answered:

- Tornados
- Mass shooting
- Severe weather with low temps
- Ice storm that takes power out
- Any type of fire
- Black ice
- A meteor like the one in Russia
- A big blizzard
- A derailment with chemical spills, because we know what to do but don't have resources to solve the problem
- Lightning
- Sinkholes
- Flood,

### **Why aren't you involved in planning now?**

- There is a lack of communication to our communities, not having information in the right language. Leticia Flores
- There should be more use of visual means to communicate, more use of radio in the language.
- There is a lack of knowledge, for example people don't know how to read the weather radar because they don't know what the colors mean. Kim Sin.
- We have to build up trust, because we are not usually involved in decision making. For example, we are only involved with law

- enforcement when there is a problem. Mohamoud Hamud
- It has to do with the environment in which planning takes place. Here there is support (in this room) and we can communicate in a safe environment. A community member who has less language will be even less likely to come to a public meeting. There is a feeling of safety here because we know that other people in the community will also be here. Language is part of it but camaraderie is also part of it. Sam Ouk
- A lot of families have more pressing issues with their family and sometimes the only real issue is survival. We have to go to them if we want them to be involved. Miriam Goodson.
- You can never reach the whole community, but we can come and relay those messages to more people in the community. Mohamoud Hamud
- The way to reach more people in our community it through the churches, through the faith based communities. Miriam Goodson
- part of the emergency management system. Jaylani Abadalla
- It would help if we had simple messages that are easily understood, created and reviewed so people know what you're talking about and can apply it in daily life. Can't be real technical and cover every possibility. Have to study how to simplify messages and and decide what are the few, best things to keep your family safe. It has to work with all groups in town, and we have to make it simple and easy to remember. As soon as you try to deal with every type of crisis, it's not simple anymore. Elderly, poor, non-native speakers — you can't give them a five page document,. Julie Nigon
- Discussion of what the least number of messages on how to deal with crisis might be. Agreement that the basic scenarios are, shelter in place, run, hide, or fight.
- Discussion of effectiveness of messages delivered from school by children to parents. Lillian mentions that she, for example, never delivered messages about bad grades. Amy Evans asks whether messages delivered by children filter through the community. Sam Ouk observes that he doesn't know what kids take back. They might be educated to deliver information more reliably. But messages are more powerful if adults have a conversation with parents.

### **What can we do to reduce the effects of potential hazards?**

- Ken Jones asks whether people have signed up for Rochester Alert. A few raise their hands, but most people have not signed up.
- What would help is if the Somali and other minority communities were part of the city, hired within city departments and part of the city workforce. You have to hire people from the communities to be

### **What is the best way to communicate?**

- Several members of the group suggested social media, Facebook, Somali TV
- Ken Jones mentioned the Do One Thing program, which also has translations of simple emergency tips in translation.
- ,Jaylani Abdalla says that Somali TV is watched in the community, and that if the city and county are willing to work with the channel, programming would reach Somali speakers.
- Kim Sin says that he is working on streaming Cambodian programming via Roku and has one program loaded already.
- Lillian observes that part of the problem is that there is no centralization of information. There are too many channels, and everybody is watching a different one.
- Miguel Valdez Soto promotes the idea of emergency information outreach workers, similar to the community ambassador program in place downtown. We could use the same structure that the Rochester visitors bureau has already created to produce ambassadors for cultural communities. They could be trained to become voices, give people awards for participating, create useful networks for getting information out to people.
- Kim Sin says there should be a separate hub for information from the city. He has tried to get city departments to have booths in the past at community events. When you call you're told you have to talk to this guy and that guy. There should be something closer to one-stop shopping.

### **How can we create an ongoing partnership?**

- Suggestions offered:
  - Hire people from the community so they're built into the structure of government
  - Build an ambassador network
  - Look around for systems to copy.
  - Better to develop something that can be used quickly than to create a long process that may or may not result in an implemented program.
  - Create a key leader roll-a-dex.
  - Any information going to the community should be short enough to fit on the front and back of a card. Julie Nigon says that Hawthorne Learning Center could help develop and deliver monthly messages.
  -

### **What would be good hubs for disseminating information?**

- Suggestions include:
  - Hawthorne Learning Center
  - Public library
  - IMMA
  - Faith based communities, churches, mosque, temple
  - YWCA
  - Somali charter school

- Rochester schools because of the large number of language staff.
- Community college
- Migrant Health Service
- City/county health department, WIC office
- Mayo Clinic
- Chamber of commerce
- Workforce development center
- Channel one
- Headstart
- Good Samaritan Clinic
- Zumbro Valley Mental Health
- Rochester Senior Support Service
- Red Cross
- Employers such as Rochester Meats, Senaca Foods, Reichel Foods, Lake Foods, hotels and restaurants, construction companies, ag companies.

**How to create ongoing effort: what is best way?**

- Ken Jones states that we want to find meaningful things to do regarding emergency messaging,

but we also want this to be an ongoing effort. The trouble is we don't really know how to do it.

- Miriam Goodson responds that what Ken just said is what we have been missing. There are many silent voices — people who are not represented because the grass roots have not been engaged and heard from.
- Mohamoud Hamud says that we don't need ECHO to continue this process, but we have to create a way to keep this effort going within our community.
- Churches and the faith communities are missing.
- Are surveys effective at getting grass root opinion? If questions are short they can work, says Kim Sin. Miriam says that it is very complicated to get a survey back from community.
- General agreement that participants want reports back from this meeting.
- Participants observe that the Sudanese and Vietnamese communities are missing from this meeting.

## Appendix 2

# Key Informant Interviews

### Interviewees:

Hamud Mohamoud  
 Jaylani Abdullah  
 Kim Sin  
 Ponloeu Chim  
 Miguel Valdez Soto  
 Miriam Goodson

Kim Sin and Ponloeu Chim were interviewed together. Other informants were interviewed individually by Efrén Maldonado and Tony Schmitz.

### Key observations:

- There is enthusiasm for focus groups to help deepen input from members of the respective communities. Interviewees were generally quick to offer help finding participants.
- There is markedly less enthusiasm for surveys. Informants cited the difficulty of conducting a survey in translation along with the English version, of getting responses from people who may not be literate in their primary language, and of pulling a valid sample.
- Informants were eager to have an ongoing relationship with government officials. Their experience is that they are called upon in the middle of a project, asked to contribute their opinions to check off a bureaucratic box, and then — having served their purpose — ignored until the next project that requires their input. So how to do better? A few of their opinions:
  - Some officials are doing a job that has garnered

respect. Rochester Councilman Michael Wojcik's Coffee with Leaders (a regularly scheduled coffee session) was mentioned as a good opportunity to communicate with a public official who is open to input from Rochester's cultural communities. Similarly, MN House members Tina Leibling and Kim Norton were cited as being open and in regular communication with Rochester's non-white population.

- Informants frequently observed that a relationship is different than a task. It might involve showing up at community events to participate and observe, not necessarily to conduct official business. It might mean meeting one person who introduces you to another and another. It's a process that evolves over time, sometimes by encounters at events, other times through an invitation to a casual cup of coffee. It's a way eventually to do business, but in a way that doesn't always look much like business in the moment. Our sense is that you would be welcome guests and could expect gracious

- introductions from any of our informants.
- Informants were interested in a local version of ECHO's Cultural Services Unit program, in which volunteers from cultural communities are trained to serve as intermediaries between emergency managers and local populations. They recognized this as a two-way street, in which community members volunteer their time but also receive training and certification. In addition, volunteers become familiar faces to managers who may eventually be in a position to hire and who, as a result of the CSU program, may be more aware of the benefits that bilingual/bicultural staff can bring to a department.

### **Mohamoud Hamud**

Mayo Clinic counselor

To build on the contacts invited to the library meeting, he suggests contacting:

- Somali Community Resettlement Services (Abdullah Hared (Sharif), Executive Director, <http://somalcrs.wix.com/scrs#!>). SCRS also operates the widely viewed Somali TV (<http://rstvonline.net/about.htm>).
- Rochester Math and Science Academy (Abdulkadir Abdalla, Executive Director, <http://www.rmsacademy.org/>)

- Rochester STEM Academy (Mohamoud is a board member, Bryan Rossi, Director, <http://rochesterstemacademy.org/Home-Page.php>)

He observes that the Somali community is rarely at the table from the beginning of any official process. Instead it is called on to comment when necessary. Then officials disappear. "The community has to have ownership and be at the table from the beginning." Also, he says, "There should be something to grease the wheels.

Some paths to participation: sponsor events that are already occurring within the Somali community, go to coffee with community members, "then repeat, like the commercials on TV." Celebrations at the two Rochester mosques at the end of Ramadan (Monday, July 28) would also be an opportunity to meet people at a happy time. A participant at the May meeting, Guled Ahmed Muhamed, is a co-founder of Masjed Abudbakr Al-Seddiq. More information about the Islamic Center of Rochester is here: <http://www.theicr.org/> The board director is Sareer A. Fazili.

Regarding communication: "Written material is a waste of money. (Many people are not literate in Somali or English.) Visual material is much more powerful and useful."

### **Jaylani Abdalla**

IMAA

He says that focus groups are a necessary way to gain additional perspectives in the Somali community, and that he is willing to help organize them. He appreciates that Somali women should be included. "The

problem, however, is not outreach in Rochester, but how to build a relationship. I have lived here 20 years now. It is different than it was 20 years ago. There is now some kind of connection, but it is not solid. The minority community is not satisfied with this connection."

Evidence, he says, is the make-up of the workforce. Three percent of the county workforce is minority, he believes. He believes it's less than one percent of the city workforce. "Maybe in the library, yes, but in public works, no."

Somali TV is important, but even so he's not sure that it reaches 50 percent of the community. It is important, he notes, just to show up at events if your interest is in building relationships. "At the mosques you can show up, and you meet one person and one person and one person, and then over time you have something." Among upcoming events in the end of Ramadan, Eid al-Fitr, on the evening of Monday, July 28. Another useful connection might be through the bilingual staff in the school system. Contact Julie Nigon at Hawthorne Learning Center for details.

The ECHO CSU program might be effective, he allows, but the best way to implement such a program would be through existing Somali programs. The most interested element of the Somali population might be teens, in which case partnerships could be accomplished with the Somali-based charter schools.

### **Miriam Goodson**

Educational Advocate  
Olmsted County Community Services

ACHLA/CARE/St. Francis of Assisi Church

Says there is a paucity of information in Spanish. No TV station, no Spanish language newspaper, radio comes from Austin or Faribault. Robo-calls from schools in Spanish can be confusing for parents with multiple children in multiple schools, who get several calls on some mornings. Miguel Valdez Soto (another participant in the May 19 meeting) used to run a TV show on health issues but gave it up.

Says a common mistake of officials and others attempting outreach to the Rochester Latino community is to assume that it is a homogenous block, rather than Spanish-speaking individuals who may identify most closely with others from their country, with members of their church, etc. Another inclination of outsiders, she says, is to view the Latino community in terms of deficits rather than assets. She repeated a thought she also delivered in the May meeting: In the case of a real emergency, it's the people with very little who will find it easiest to get by and survive.

She says that frequently when comment is required, the usual suspects are rounded up. "You shouldn't stop with me and Miguel." She says she will help set up focus groups to get deeper opinions from a wider range of community members.

To build relationships: "If you really want to be involved, you have to see how people live." Showing up at events, such as the St. Francis Church Car/Mass (an annual carnival), is one opportunity. "Come in regular clothes. Don't show up with an agenda. Ask people to share their expertise. Don't assume that people need things."

She mentioned that Rochester Schools superintendent Michael Muñoz has done a good job of outreach to culturally diverse communities, and would be sensible contact. Also, at St. Francis, Rev. Jose Morales, 507-288-7313, [FrJose@StFrancis-church.org](mailto:FrJose@StFrancis-church.org)

### **Miguel Valdez Soto**

Mayo Clinic  
Center for Clinical and Translational  
Science  
ACHLA/CARE

Observes that relationships take time. "Probably people aren't going to listen to you the first three times. First they want to take care of their needs." To build a relationship you need to have a presence. You can start by attending events, meeting people there, learning who the people and programs are in the community, learning something about the strengths people bring and how they can contribute to the overall well-being of the area. Some events worth considering:

- Latino Fest, August 25
- Day of the Dead, traditionally Nov. 1

Examples of officials who are doing this well:

- Rochester area MN House members Tina Leibling and Kim Horton
- City Council member Michael Wojcik with the Coffee with Leaders sessions

He also mentions Centro Campesino worker Jeff Jurewicz as a worthwhile contact. (Centro Campesino, 2024 S Broadway, (507) 258-4646)

He repeats Miriam regarding communication vehicles, though he points out that ACHLA has a Facebook page that contains some information. Using Facebook's survey function, it would be possible to get responses to single questions from users. More information about ACHLA at <http://www.achla.info/#>, and on Facebook at <https://www.facebook.com/pages/Alliance-of-Chicanos-Hispano-Latino-Americans-ACHLA/129307753827230>

It's worth noting that Miguel runs a Rochester pedicab service, and is also a principal in the Collective Pata de Perro Bike Club, which helps kids get bikes and keep them in repair. <https://www.facebook.com/CollectivePataDePerro>.

### **Ponloeu Chim**

Interpreter Manager, IMAA

### **Kim Sin**

IT Manager, U of MN

Ponloeu mentions that the Cambodia community is somewhat fractured in a dispute that started over religious matters and is now primarily about personalities. She tries to present herself in her work as strictly impartial.

Other worthwhile connections in the Cambodian community include Bunly Suy, Sheena Lot and Sarasarith Chuom, pastor at the Church of the Nazarene. Though he is leaving, Sam Ouk, Ponloeu says, remains a knowledgeable source of insight. Ponloeu is connected to the Church of the Nazarene and its pastor. Sam Ouk is active in the temple and could provide a connection. (The monks have limited

English.) There has also been a Cambodian Cultural School run through the public school system, led by Sam Ouk, that has been a good point of connection. (Though they questioned its future with Sam Ouk's departure.)

Obvious times to participate in Cambodian community events are at Cambodian New Year, celebrated April 13-15. There is also a gathering for the temple anniversary, celebrated July 19/20. Guests are invited on the 20th; contact Sam Ouk for details) and at the downtown open market on the 1st and 3rd Thursdays during the summer.

There's a wide mix of people there, says Ponloeu, who notes that IMAA participates four times during the summer. Another event is Phcum Bun,

Kim says that the elderly are lacking in basic information about hazards and safety. "They don't know what to do in a fire. They don't know how to escape. The sirens, why

they go off, what's the difference between a storm watch and warning, they don't understand these things." He says that working through the temple and church would be an effective way to reach large numbers of the elderly.

Kim is setting up a streaming video/text/music service directed at Rochester Cambodians, which would help fill the information gap within the community. More info on the platform, Roku, here: <http://www.roku.com/> Important to note that the device necessary to use the service costs \$49.95.

Ponloeu offered to help set up a focus group, and also said that she imagined a CSU-like group of local Khmer speakers could be useful in spreading emergency information. She noted that the police are already training a bias/hate crime group organized along similar principles.

# Appendix 3

## Cambodian Focus Group

**July 16, 2014**

**Conducted at IMAA office, Rochester**

### Participants

Horr Yuk

Men Heng

Si Tha

Mony Ten

Sarasarith

Kong Hom

Eang Puy

Sokhan Sam

Yom San

Synat Om

Interpreter: Bunly Suy

### Observers:

Ken Jones, Rochester Emergency Management

Sandi Goslee, Rochester/Olmsted County Planning

**Summary:** The overwhelming concern of participants was communication with 911 personnel. From the conversation it did not seem that transition from a dispatcher to a language line interpreter was smooth or even necessarily expected. In comparison, preparation for natural or man-made disasters seemed secondary.

Church and temple are trusted places to receive information, though finding appropriate times and means to deliver messages will require sensitivity and further information. Language barriers render mass communication vehicles such as TV, radio and newspaper of limited use. Cell phone access and use is common, but

participants depend on children or others for communication outside their community.

### What type of emergency most worries or concerns you?

- Crime
  - "My big concern is that we do not speak English and we are in a panic if something happens. Especially things with a gun. We don't know what to do. We know that we need to call 911, but when we call we are afraid that by the time the police come everything has happened already, and that it is too late.
- Floods and Storms
  - "When I watch TV I see many things that make me worried and concerned. For example, storms and floods. And I don't know how to call for help. That is my concern.
- Fire
  - "This happened in my apartment building. My neighbor had a fire in the kitchen. I didn't know what to do to get help. Later the police came but we didn't know how to communicate with him."
  - "When I see a fire, I do not know what to do. I hear

sirens, see the smoke, and that creates even more panic for me."

- Poisons
  - If you have a sprays and chemicals left around the house, say the sprays for mosquitoes, or to kill bugs, are these poisons? How do I know?"

### **Problems learning and speaking English compound problems calling for emergency assistance.**

- "It is very hard to learn English. It's very difficult to speak."
- "I depend on my children when I am sick. If they are not around, I have a little English to call a taxi, or the hospital, or an ambulance. I depend on my children or I call IMAA to help me. My children gave me a code for the phone, so I can dial one number and my daughter or children call and connect me with another place for help."
- "I speak some English. Sometimes there are pictures that help me understand. For instance, the heater has a poison sign on it."
- "People know how to call 911, but after they do that they are stuck."
- "I know how to call but I don't know how to speak. When you call they ask you many questions."

**In an emergency, are there Cambodian cultural practices that may important to know?** (Example: in an evacuation, is it acceptable to you to take shelter in the temple if you are Christian?)

- "That is not a problem."

- "There might be a conflict. It would be better to go to another place that is not associated with religion."
- "If they ask me where I want to go I will say, but otherwise I will go where I am told to go."
- "But if there is an emergency, how will I know where to go?"

### **What is the best way to communicate with you?**

- "For me it is the TV, because there is a picture there."
- "If there was something in my own language, that would be helpful. In English, it is not so much help."
- "If on TV they had subtitles in Cambodian, that would be helpful." (*Asked for a show of hands, two participants indicated that they did not read Cambodian.*)
- "TV, tapes, DVD, flyers in Cambodian and English."
- "It would be very helpful if someone from ECHO, or the city or the county would call a meeting and educate us on how to prevent fires, or what to do in a tornado. But it is not necessarily a good idea to appear at community events for this purpose. For example, when people come to the temple for Cambodian New Year, they hare there to have a good time, not be be educated. There are too many people, too much noise."
- Six say they have both a land line and a cell phone. Three have a cell phone only. One has only a land line. Two say they speak no English.

### **Is there a TV station, radio station or newspaper that you use the most?**

- KTCC local news is popular.
- TV 6, KALL
- "But the problem is that many of us do not speak English, and the TV is in English."

### **Who do you trust the most in an emergency?**

- "I have my church."
- "I believe in God. In an emergency I pray to god."
- "In the Buddhist temple."
- "IMAA."
- "The county, Olmsted county social service."

### **Further discussion of 911 system, potential work-arounds**

- "Even if they don't know my language, at least they know where I am calling from." Ken Jones clarifies: only if you are calling from a land line.
- Ken Jones asks: "One solution I hear is if I have a problem I call children and they call for me. And so is that one solution that can be expanded on for many other circumstances?"

- "Some people don't have children."
- Ken Jones: "Can we figure out trusted person to call, and that person would make call to 911 for you?"
- Bunly asks: "Who would that designated party be? An agency or a person?"
- "I cannot depend on children all the time. They work, so I can't always depend on them."
- Bunly: "Here in Rochester most people will call someone they know, like me or Sarasarith. But we are not always available."
- Ken Jones: "Would it help to have script so you could say 'medical,' 'fire,' 'police'?"
  - "The trouble is, we don't read English, but we don't all read our own language either."
  - "I am old, and if I am in a panic I might not remember the words."
  - Ken Jones: "Maybe pictures and words?"
  - Bunly: "People can see the picture, but they still can't say the word."

# Appendix 4

## Latino Focus Group

**July 24, 2014**

**Olmsted County Public Health**

### Participants

Leo Flores  
 Nina Campbell  
 Enrique Zavala Sr.  
 Enrique Zavala Jr.  
 Mayte Zavala  
 Alejandro Cruz  
 Juanita  
 Miguel Valdez Soto  
 Maria Cunicruz

### Interpreter

Graciela Porraz

### Observers

Ken Jones, Rochester Emergency Management  
 Sandi Goslee, Rochester/Olmsted County Planning

### What type of emergency most worries you?

- Storms, tornadoes.
- An act of terror in school, a crazy person shooting.
- Snow storms.
- Lack of heat in winter, interruption of electrical service.
- Thunderstorms that damage electric lines. Story about downed line that started a nearby home on fire. Question about lightning rods, use and effectiveness (Mayte).
- High winds that damage trees and electrical service. Story about storm that damaged line, Nina explains that as a result she learned it was

her responsibility to maintain service from the sidewalk to the house

- Discussion of crime as a type of emergency. Enrique Sr. saw a bag of marijuana on the ground as he was working at Rochester Fest. He threw it in the river to get rid of it. Mayte notes that she saw more people at the event that she assumed were there to as part of a drug trade. She also mentions a greater number of panhandlers who look to her healthy and strong, and who would be capable of work. She posits this as something new in Rochester.
- Speeding cars are a hazard. Alejandro mentions that he lives on a street where children ride bikes or play in the street. But because of the nature of the street, drivers tend to speed there. He believes there should be a stop sign or speed bump. *(This subject is expanded upon later in the session. Ken explains that there are two solutions. 1: The short term strategy is to go to police and let them know you are concerned. 2: The long term solution is to talk to your local council person about the need for changes in the road, and traffic calming approaches.)*

### Are there particular concerns emergency concerns for the Hispanic community?

- Drugs. Alejandro feels that people in the community are offering drugs to kids. Nina mentions that it is not only Hispanic kids at risk, but that it

is part of a situation within the schools. Kids are exposed to drugs there.

- Flooding. There are low areas that fill with potentially dangerous levels of water during storms.
- All emergency messaging on radio and TV is in English. Enrique says that shortly after he moved to the Rochester area, before he spoke much English, he heard at work that there was a bomb in the Plainview school that his kids attended. "It was so frustrating! I didn't know what to do. There wasn't communication I could understand. It was a false alarm. But what if it was for real, and parents didn't know what to do?"

**Are there places where you believe you would get helpful information or useful assistance?**

- Church. "That's where people feel safe and comfortable. That is a place they can trust." (Enrique Sr.) "There is a sense of comfort, of family, that we can help each other there." (Leo)

**Are there cultural considerations emergency planners should be aware of?**

- There might be people, for example, who are not willing to receive blood from another person. But that would depend on the religion and the individual, and would not be true of all Latinos. (Juanita)

**What is the best way to distribute emergency information?**

- Radio. There is a radio station here, but nothing is in Spanish. The radio we hear is from Minneapolis. If there were a special hour of Spanish, we would listen to that. If

we listen to a Rochester station it is because of the children. (Alejandro)

- It would be nice if the emergency messages could also be in Spanish. If it's a storm, usually the message is the same: go to the basement, stay away from windows. Maybe there could be a recording in Spanish that is used repeatedly. (Enrique Sr.)
- On television, with the messages along the bottom of the screen, maybe those emergency messages could also be in Spanish and other languages. (*Spanish language TV information is currently from cable stations based in Florida, so of no use.*) (Leo)
- I was trying to gather signatures a few years ago for a radio station in Spanish but we don't know what happened after that. Maybe the radio stations could have a special schedule to deliver the news in Spanish. (Juanita)
- A lot of Latinos work work work, and don't speak much English. They don't have time to go to classes. Those people are more vulnerable. (Alejandro) But people could at least learn a few words related to an emergency. Wherever we go, we have to learn how to speak the language. Even if you learn just a word a day. (Nina)
- Maybe we could download an emergency information phone app, and that could be in Spanish. (Maria)
- There could be Spanish emergency messaging on Facebook. (Leo) (*This draws a laugh from participants, but asked for a show of hands, everyone has a smartphone, and all but one participate in Facebook.*)

- Ken Jones says he understands that the city needs to get emergency information into Spanish, but asks whether participants know the difference between a storm watch and a storm warning. "The ones that don't speak English don't know what that means, and anyway, they are at work. If you just hear the sirens, you don't know whether it's a warning or a watch." (Leo)
- Ken observes that there are two problems: the initial storm warning and then the subsequent updated information. "I'm starting to think of ways to provide that information in Spanish. It's just a matter of being able to get it to you if it's already prepared. The other problem is to be able to get you the bits of updated information. It's a different problem and harder to solve. Enrique Sr. responds: Hispanics hear the tornado alarm and run to the basement if they can. But then we don't get information about the storm's development. Is it moving away? Is it moving closer?"
- Ken: Getting back to those two types of warnings, could I send a phone message to you in Spanish that would tell you what to do?
  - Yes. (Juanita)
  - Most of us can get a message in a Facebook page. We can mention that it is a resource in the Rochester community. (Maria)
  - Then it could be announced in Spanish on the local TV and radio station. (Nina)
  - Most of the Spanish speaking population works in hotels or restaurants. You

have to mention to the employers that they should communicate with their employees. (Enrique Sr.)

- To note: people with children in the schools get phone messages about school cancellations and other information in the language spoken in the home.

#### **Who do you trust to be the messenger and to deliver a reliable message?**

- Charter Communications is good to deliver service. Another is the city. (Alejandro)
- The school system would be good if people could register with them and get information. (Enrique Jr.)
- The more ways we can use the better. (Alejandro)

#### **Is calling 911 effective in an emergency if you don't speak English?**

- Juanita -- Yes, I think it is an issue. Two weeks ago we saw a person who was drunk. He was in the street and we were afraid he would get hit by a car. We got him on the sidewalk and called 911, but they don't speak Spanish. Maybe the police could have somebody who speaks Spanish. (Juanita)
  - Now they tell us to wait while we find somebody who speaks Spanish. The good thing is that they know where you are calling from automatically. It is a good service. (Leo)
  - They are patient, and they try to help us. (Maria)
- For big emergencies, the number is 911. But there are some emergencies that aren't big. We

have to know when to call 911 and when to call the other number. (Maria)

- Graciela observes that she and Miguel Soto used to run a Spanish-language TV show. They worked closely with the fire department and the health department to provide information about vaccinations, other health topics and emergency services. It was on three or four times a week and funded through an Office of Minority Health grant. The Somali community, participants note, have two streaming TV shows, and have a means to announce storms or other emergencies to their community.
- Ken asks if there are other information distribution channels in addition to the school system, Charter Communications, KTCC, Facebook, and phone systems.
  - Juanita notes that information in the grocery stores is usually in both Spanish and English.
- Ken asks about differences between new immigrants who are newly arrived and others who have been here for a much longer period of time. Mayte replies that there are differences depending on the country from which people originate. Alejandro observes that there are many differences among individuals. "Some can be here for years and still not speak a word of English. They are the same as when they arrived." Leo says that for people who have just arrived, a snow storm can be so perplexing

that they will just not go out. They don't know what to do.

### **When Latino people arrive here, where do they make first connections?**

- Church. "At the church we meet, all of us." (Mayte)
- Mostly church but also through the schools. (Juanita)
- "When I arrived I didn't know any English, but I was curious to learn the language. Hawthorne Learning Center was my resource. But a lot of people don't have the will to learn the language. (Maria)

### **Sustainable change**

- Ken says that ultimately he is seeking systems that are sustainable. "It's nice to come here and to listen, that's good. But problems come up all the time. More important is for you to be able to connect, not for somebody to come out to talk to you like this. We need to work on emergency planning to alert you and help you understand the largest threats. But part of emergency planning is working with the planning department and talking about long term planning. We have to make sure that when it comes to streets and speeding cars, or other transportation issues to name just a few examples, that you have a connection to those things that are going on over time. In the end that's more critical than to come here one time to listen."

# Appendix 5

## Somali Focus Group

**August 28, 2014**

**Rochester Public Library**

**Participants:**

Mohamoud Hamud  
 Muse Shiekh  
 Mohamed Sheik Nur  
 Abdulkadir Dalur  
 Jaylani Abdalla  
 Ikar M. Ikar  
 Abdi Deeq  
 Jayani Iama  
 Sahra Ahmed  
 Fadumo Ahmed

**Interpreter**

Shukri Ali

**Observers**

Ken Jones  
 Sandi Goslee

**Summary:** While participants expressed concerns about natural disasters and seasonal challenges that are unfamiliar to equatorial people — snowstorms, tornadoes, thunderstorms — there was also a sense that proportionally these were lesser problems than the past in Somalia. "We came from disaster," one group member observed. Participants observed repeatedly that Somali culture is an oral culture. Spoken messages broadcast via Somali TV on local public access stations are most likely to be heard. Steadily repeated safety messages at public meetings are another favored method of communication. The school network of phone communication in Somali was mentioned as an effective means of spreading information. Cultural

considerations regarding males and females mixing in public spaces were regarded as secondary in the heat of an emergency, but significant in mid- to long-term disaster relief.

**What type of emergency most concerns you?**

- Fire is a concern. There are apartment buildings with concentrations of Somalis where people are, for instance, burning incense and other things that increase the risk of fire. Many times there are false alarms, so people tend to ignore the alarms over time. So if there is a real fire, lives will be at risk.
- Winter storms and heavy snow is a concern, because Somali people come from a place where the weather is always moderate. They are not familiar with flooding, tornadoes, snow and extreme cold. We need to educate them about cold, snow, the need to stay away from windows in a storm and to take shelter. Most of the community does not understand that.
- Jaylani Abdalla offers this example: "Nineteen years ago when I first came here, there was a big winter storm. But we needed food, so we walked to Cub Foods. By the time I got back, my fingers, my ears, my face were all frozen. I had no knowledge of what this was, and so it was very dangerous. It is the same with the people who are arriving today."

### What is the best way for you to get emergency help?

- The first thing is to call 911. That's what we have been told, even before we came to the United States. But is there a better way to get help immediately other than 911? For example, my car stopped on a very cold winter day on 7th Street. I called 911 and they said they would be there in 15 minutes. A lady stopped to help me, but without her it would have been very dangerous. Is there anything else we can do in an emergency except call 911?
- Calling 911 can be hard because the people answering the phones don't speak multiple languages.

### What are some of the complications of communicating with Somalis?

- "We are an oral society. We are good at conveying information by word-of-mouth. Written communication is less favorable, since the Roman-letter version of Somali was officially adopted in 1972. Usually if there is something going on that we don't understand, we call somebody else within the Somali community. One thing that would help is to identify people as leaders who others can contact, and make sure that they are accurately informed so they can transmit information to others."
- A lot of people speak Somali but don't read Somali. Many of the people who arrived here as adults don't read Somali. But then children don't necessarily *speak* Somali.

- *Interpretation and translation can present problems.* "I was translating a piece of medical literature into Somali and Arabic. It was easy in Arabic, but very difficult in Somali. Since 1970, new words have not been added. So when you do the Somali translation there often aren't single words to describe a procedure or situation. It is always wordy in Somali. Because there aren't single words you need to explain.
- A younger woman observes that the problem of emergency communication might have as much to do with culture as language. "People don't see it as a big deal that a tornado is coming. My brothers and sisters know the message, but they don't see it as a big deal. There is a language barrier but also a culture barrier. It's some of both.
- Reshaping the message may help. Instead of talking about the weather, maybe it would be better to talk about dangers in terms of environmental issues. Somali people never had much concern with weather in Somalia. It could be more effective to discuss the dangers that face the Somali community resulting from environmental issues.

### What are the best ways to convey a message to you?

- It would help when something like a thunderstorm happens if the TV alerts were also in other languages, including Somali.

- Some messages could be communicated on Somali TV. It's only on for a couple hours a day, but if it's on, you see it.
- ECHO DVDs on making winter preparations have been useful. That sort of oral/visual information in Somali is a good way to get information to people, provided they are widely available.
- Such videos could provide content for Somali public access TV.
- The mosque, county offices and the Hawthorne Learning Center are also places where information could be effectively presented. Emergency education could be part of the ESL curriculum at Hawthorne. "When I went there for ESL classes they taught us how to prepare for fire, where to find an exit, other important things to know like that."
- It might also be useful to hire actors to deliver messages that are part of a performance at community events.
- Hire Somali speakers so they're integrated with government. "The city needs to have someone who is a Somali speaker who is charged with working with the emergency management group. Hire a Somali liaison or use someone who is working with the city to do outreach to the Somali community."
- There is not just one way. TV. Community events. Leaflets. It is the constant reminder. That's how you sensitize people to these events. So if on TV you see a picture of a truck picked up and flying in a storm, and you match that with the description in the Somali language — that these are the things that can happen in a storm — that's how people learn.
- "The Somali community advertises by putting up leaflets at the mosque, or at the six halal shops (Somali grocery stores) in the city. A lot of people never watch Somali TV."
- "There could be connection centers for people — places where Somali people are in touch with English speakers who can give them information. IMAA is an example. There could be a TV display in their lobby, for example, that displays information. This would be a way to use existing mechanisms of communication."
- "You should make a website about the weather. Also there are a lot of Somalis who use Facebook. You could communicate with them that way."

**Would you participate in a text messaging or voice mail system for emergency messages?**

- When we receive a text alert message, it doesn't help somebody like Moses who has cell phone but who doesn't read English. It would help him if it is a message he can understand.
- *Ken Jones: Would you sign up for a text message alert from the county and let me know that you need the information in Somali?*
  - "It is important to send such information in Somali, because we don't want children to lose native tongue."
  - "Such a system might serve a small group of people, but literacy is an issue. I don't know that the elderly will receive the message if it is

in text. Also when think about translating from English, your message could be very wordy in the Somali language. One line in English might be two lines in Somali.

- "It is better to send messages as spoken words."
- "The school system can send parents a recorded message that tells them know what is happening — whether classes are canceled or school is canceled because of weather. If there is a service like that and people can sign up, they would get that call and would get that message in their own language. That would be another way for people who don't read to get a message."

**What should the city of Rochester know about cultural practices or beliefs that will help it work with the community in a respectful way?**

- "The first thing a female will think of outside of the home is covering up. It's not really necessary from a religious perspective, but it is more of a question of personal preference. If police knock on door and a female opens it and notes that the officer is male, she may run back to get a head covering.
- Is it important to have separate male and female shelters in an emergency? "If it is a matter of life and death, we are not asking who is male and who is female. We will try to safe our loved ones like anyone else."
- "In the case of a disaster the first priority is women and children."
- "When a disaster comes we are all part of the community. When a situation comes that makes us leave our homes, we can all be together, male and female."
- "But I think it would be helpful, because we pray five times a day, to set up a prayer area in the shelter. That would be very important. Also if there are mobile toilets it is good to have water available. We use water all the time. If people are in shelters for extended periods of time, it would be good to have separate sections, even if they are just separated by curtains, to separate male members from female members."
- *Are shelters in Christian churches a problem?*
  - "Yes, that could be a big problem. Somali culture is Islamic. People cannot perform the prayer in a church. They prefer an interfaith area — anywhere that's not a church."
- *Are separate male and female entrances to a shelter important?*
  - "If the problem is something as important as surviving the weather, that wouldn't be an issue."
  - "Somalis are not as conservative as Saudis. In general, people have no issue with one door, but when it comes to living quarters, people would prefer not to sleep in an open space with men and women."
- Mohamoud Hamud observes that the Somali perspective of the threat

from some US disasters is relative.  
"We come from disaster."

### **Who are trusted messengers?**

- People at the mosque.
- "Yes, a teacher at the mosque is good. But also, they have their own schedule, and there is also their idea of faith. What can happen tomorrow, well, only God knows."
- The case managers at organizations that that work with Somalis on a daily basis are trusted. I used to be a social worker in town. Everyone expects you be be in the know. They expect you to have the answers. You

have a group of activists, and if they are at a social function they will convey your message.

- Older people usually have somebody to care take them. That person could inform them of what is going on.

### **Structural problems that impede communication:**

- My aunt works seven days a week for \$8 an hour, and she can't afford internet or cable. I'm the person who informs her. Is there another way she can be informed instead of by me?

# Appendix 6

## October 28 Meeting Notes

### Olmsted County Public Health Building October 28, 2014

**Method:** Attendees at the initial May 19 meeting voiced a desire for reporting on the results from key informant interviews and focus groups. To answer those concerns for reporting back, ECHO organized an evening meeting for October 28. Those attending the May 19 meeting received a written invitation, an email reminder and a phone reminder for the October meeting. The meeting drew one representative of the Cambodian community, five Somali representatives, two Latino representatives, three public officials and ECHO staff.

Attendees were presented a list of findings from key informant interviews and focus groups, and asked to validate these conclusions using an electronic polling system that allowed results to be posted instantly on a screen. Questions were answered by all members of cultural communities in attendance, plus a Rochester Olmsted Planning Department official and one ECHO staff member.

Following this exercise, attendees were asked to fill out a form to identify future hazard mitigation and emergency planning activities in which they would be willing to participate.

#### Response to poll questions:

Written and spoken English does not meet emergency needs of my community

- agree 89%
- disagree 11%
- don't know

Written emergency warnings in native language are not helpful

- agree 78%
- disagree 22%
- don't know

It would be useful to have emergency information in my native language on TV and radio

- Agree 90%
- Disagree 10%
- Don't know

It would be useful to have emergency information in my native language via Rochester Alert

- Agree 100%
- Disagree
- Don't know

It would be useful to have emergency information in my native language via text messaging

- Agree 50%
- Disagree 40%
- Don't know 10%

It would be useful to have emergency information in my native language via Twitter

- Agree 20%
- Disagree 60%
- Don't know 20%

It would be useful to create a network of ambassadors to educate and spread emergency information

- Agree 100%
- Disagree
- Don't know

It would be useful to create contact lists of agencies to share information via masque, church, temple, IMAA

- Agree 80%
- Disagree
- Don't know 20%

It would be useful to hire more bi-lingual staff for 911 (and other critical roles)

- Agree 80%
- Disagree 10%
- Don't know 10%

Preparedness education should be conducted before emergencies using materials such as ECHOs translated DVDs

- Agree 100%
- Disagree
- Don't know

It would be useful to hold monthly coffee sessions with city officials and cultural leaders

- Agree 80%
- Disagree
- Don't know 20%

Emergency planning should be included as part of the English class curriculum

- Agree 100%
- Disagree
- Don't know

It would be useful for officials to attend community events to build relationships

- Agree 89%
- Disagree
- Don't know 11%

In a discussion following the polling, participants observed that officials should beware the impulse to believe that it is simple to get opinions within and among cultural groups regarding effective emergency messaging. "People can't all be

put together in one box," said participant Miriam Goodson. "There can be a lot of conflict within groups. It takes a lot of work to get into a comfort zone where people are willing to take information."

Participant Mohamoud Hamud noted that meeting simply to meet is not an effective use of time. "We should be meeting about a specific agenda," he said. "Not meeting just to have coffee."

### Participation in Future Activities

To conclude the meeting we distributed sign-up sheets on which attendees could mark future activities in which they would be willing to participate. These options, along with responses, included:

1. Review hazard/mitigation plan (1 participant)
2. Update cultural leader list of cultural advisers to provide support in crisis (1 participant)
3. Support development of a cultural services unit (2 participants)
4. Be included on a Leader List
5. Help to develop media videos on EM topics (1 participant)
6. Provide distribution list contacts/resources (1 participant)
7. Serve as interpreter/liaison in crisis situations (1 participant)
8. Be part of a multi-cultural advisory unit (3 participants)
9. Attend city coffee meetings (2 participants)