

# ALL-HAZARD MITIGATION PLAN 2016



**DAKOTA COUNTY  
MINNESOTA**



*Expires January 31, 2022*

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*The Dakota County All-Hazard Mitigation Plan was adopted by the County Board on January 24, 2017 and approved by the Federal Emergency Management Agency on March 7, 2017.*

*This plan is valid until its expiration in January 31, 2022.*

*Cover Photo: Propane Explosion and Fire, 1974 - West Saint Paul (Dakota County Historical Society)*

## CONTENTS

<b>SECTION I – INTRODUCTION .....</b>	<b>1</b>
Planning Authority and Guidance .....	1
Planning Vision and Goals .....	1
Recent Hazard Declarations .....	2
Participating Jurisdictions.....	3
Plan Adoption.....	3
Relationship to Emergency Operations Plan.....	3
2016 Update.....	4
Hazards Profiled in 2016 .....	4
Organization of this Plan .....	5
<b>SECTION II - THE PLANNING PROCESS .....</b>	<b>7</b>
Summary .....	7
Community Participation Events and Findings.....	8
Interagency Participation .....	10
Related Plans, Studies, Reports, and Technical Information .....	14
Plan Implementation.....	15
Plan Evaluation.....	15
Plan Updates .....	15
Continued Public Involvement .....	16
<b>SECTION III - COMMUNITY PROFILE .....</b>	<b>17</b>
Section Overview.....	17
General County Overview .....	18
Physical Characteristics .....	19
Land Cover and Use.....	29
Future Land Use .....	32
Community Infrastructure.....	34
Transportation.....	38
Energy, Utilities, Communication Infrastructure .....	45
Demographic and Economic Conditions .....	47
Public Safety and Emergency Response Capabilities .....	52
Vulnerable Populations .....	55
<b>SECTION IV - HAZARDS FACING THE COMMUNITY.....</b>	<b>57</b>
Dam Failure .....	59
Drought .....	62
Extreme Temperatures.....	65
Flood (Flash and Overland Flood) .....	69
Hazardous Material Incident .....	76
Infectious Disease.....	81
Structural Fire.....	85
Terrorism .....	87
Tornado .....	89
Violent Summer Storms .....	94
Violent Winter Storms.....	100
Wastewater Treatment System Failure .....	101
Water Supply Contamination.....	103

Wildfire .....	105
Cyber-Attack.....	106
Landslide .....	108
<b>SECTION V – DAKOTA COUNTY VULNERABILITIES, STRATEGIES, AND PRIORITIES .....</b>	<b>111</b>
Hazard Rankings.....	111
Community Perception of Hazards .....	112
Vulnerability.....	113
Population Vulnerability.....	113
Structural Inventory and Valuation .....	116
Flood .....	118
Floodplain Structures Countywide .....	121
Potential Dollar Loss - Other Hazards.....	122
Vulnerable Structures.....	124
Vulnerability of Future Structures.....	125
Dakota County Goals and Strategies .....	127
Communication and Education Goals: All Hazards .....	128
Goals for Natural Hazards: .....	129
Violent Storms and Extreme Temperatures.....	129
Flood .....	131
Drought .....	132
Wildfire .....	132
Infectious Disease.....	133
Pandemic Influenza .....	135
Landslide .....	135
Goals for Technological Hazards: .....	136
Structural Fire.....	136
Hazardous Material/Waste .....	137
Dam, Bridge, and Structural Failure .....	139
Water Supply Contamination.....	140
Wastewater Treatment Facility Failure.....	142
Terrorism .....	142
Cyber-Attack.....	143
Implementation .....	144
Incorporation into Planning Mechanisms .....	144
Plan Evaluation.....	145
Continued Public Involvement .....	146
<b>VI: PARTICIPATING CITY RISKS, STRATEGIES, AND PRIORITIES .....</b>	<b>147</b>
Overview .....	147
City Of Apple Valley .....	149
Hazards of Concern .....	149
General Land Use .....	150
Vulnerability .....	151
National Flood Insurance Program Participation .....	152
Strategy Review and Development.....	153
Implementation Resources .....	155



City Of Burnsville.....	156
Hazards of Concern .....	156
General Land Use .....	157
Vulnerability .....	158
National Flood Insurance Program Participation and Compliance .....	159
Strategy Review and Development .....	160
Implementation Resources .....	161
City Of Coates .....	163
Hazards of Concern .....	163
General Land Use .....	164
Vulnerability .....	165
Changes since the 2011 Plan .....	165
National Flood Insurance Program Participation and Compliance .....	166
Strategy Review and Development .....	166
Implementation Resources .....	167
City Of Eagan.....	168
Hazards of Concern .....	168
General Land Use .....	169
Vulnerability .....	170
Changes since the 2011 Plan .....	170
National Flood Insurance Program Participation and Compliance .....	171
Strategy Review and Development .....	172
Implementation Resources .....	174
City Of Farmington.....	175
Hazards of Concern .....	175
General Land Use .....	176
Vulnerability .....	177
Changes Since the 2011 Plan.....	177
National Flood Insurance Program Participation and Compliance .....	178
Strategy Review and Development .....	179
Implementation Resources: .....	180
City Of Hampton .....	182
Hazards of Concern .....	182
General Land Use .....	183
Vulnerability .....	184
Changes since the 2011 Plan .....	184
National Flood Insurance Program Participation and Compliance .....	185
Strategy Review and Development .....	185
Implementation Resources: .....	186
City Of Hastings.....	188
Hazards of Concern .....	188
General Land Use .....	189
Vulnerability .....	190
Changes since the 2011 Plan .....	190
National Flood Insurance Program Participation and Compliance .....	191
Strategy Review and Development .....	192

Implementation Resources: .....	194
City Of Inver Grove Heights .....	196
Hazards of Concern .....	196
General Land Use .....	197
Vulnerability .....	198
Changes since the 2011 Plan .....	198
National Flood Insurance Program Participation and Compliance .....	199
Strategy Review and Development .....	200
Implementation Resources: .....	202
City Of Lakeville.....	203
Hazards of Concern .....	203
General Land Use .....	204
Vulnerability .....	205
Changes since the 2011 Plan .....	205
National Flood Insurance Program Participation and Compliance .....	206
Strategy Review and Development .....	207
Implementation Resources: .....	208
City Of Lilydale .....	210
Hazards of Concern .....	210
General Land Use .....	211
Vulnerability .....	212
Changes since the 2011 Plan .....	212
National Flood Insurance Program Participation and Compliance .....	213
Strategy Review and Development .....	214
Implementation Resources: .....	215
City Of Mendota .....	216
Hazards of Concern .....	216
General Land Use .....	217
Vulnerability .....	218
Changes since the 2011 Plan .....	218
National Flood Insurance Program Participation and Compliance .....	219
Strategy Review and Development .....	220
Implementation Resources: .....	221
City Of Mendota Heights .....	222
Hazards of Concern .....	222
General Land Use .....	223
Vulnerability .....	224
Changes since the 2011 Plan .....	224
National Flood Insurance Program Participation and Compliance .....	225
Strategy Review and Development .....	226
Implementation Resources: .....	228
City Of Miesville .....	230
Hazards of Concern .....	230
General Land Use .....	231
Vulnerability .....	232
Changes since the 2011 Plan .....	232

National Flood Insurance Program Participation and Compliance .....	233
Strategy Review and Development .....	233
Implementation Resources: .....	234
City Of New Trier .....	235
Hazards of Concern .....	235
General Land Use .....	236
Vulnerability .....	237
Changes since the 2011 Plan .....	237
National Flood Insurance Program Participation and Compliance .....	238
Strategy Review and Development .....	238
Implementation Resources: .....	239
City Of Randolph .....	241
Hazards of Concern .....	241
General Land Use .....	242
Vulnerability .....	243
Changes since the 2011 Plan .....	243
National Flood Insurance Program Participation and Compliance .....	244
Strategy Review and Development .....	244
Implementation Resources: .....	245
City Of Rosemount .....	247
Hazards of Concern .....	247
General Land Use .....	248
Vulnerability .....	249
Changes since the 2011 Plan .....	249
National Flood Insurance Program Participation and Compliance .....	250
Strategy Review and Development .....	251
Implementation Resources: .....	252
City Of South St. Paul .....	254
Hazards of Concern .....	254
General Land Use .....	255
Vulnerability .....	256
Changes since the 2011 Plan .....	256
National Flood Insurance Program Participation and Compliance .....	257
Strategy Review and Development .....	258
Implementation Resources: .....	259
City Of Sunfish Lake .....	261
Hazards of Concern .....	261
General Land Use .....	262
Vulnerability .....	263
Changes since the 2011 Plan .....	264
National Flood Insurance Program Participation and Compliance .....	264
Strategy Review and Development .....	265
Implementation Resources: .....	266
City Of Vermillion .....	267
Hazards of Concern .....	267
General Land Use .....	268

Vulnerability .....	269
Changes since the 2011 Plan .....	269
National Flood Insurance Program Participation and Compliance .....	270
Strategy Review and Development .....	271
Implementation Resources: .....	272
City Of West St. Paul .....	273
Hazards of Concern .....	273
General Land Use .....	274
Vulnerability .....	275
Changes since the 2011 Plan .....	275
National Flood Insurance Program Participation and Compliance .....	276
Strategy Review and Development .....	277
Implementation Resources: .....	280
Dakota County Fire Chiefs Association .....	282
<b>Appendix I: City Resolutions of Participation .....</b>	<b>283</b>
<b>Appendix II: Community Engagement Findings .....</b>	<b>305</b>
Dakota County Online Survey .....	305
Dakota County Planning Commission .....	310
Commission Members.....	310
Planning Commission Comments.....	310
Dakota County Fair .....	311
Draft Plan Public Review .....	312
<b>Appendix III - 2016 Progress on 2011 Plan Strategies.....</b>	<b>315</b>
Cities in Dakota County.....	315
Dakota County .....	323

## SECTION I – INTRODUCTION

### Planning Authority and Guidance

Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), 42 U.S.C. 5165, as amended by the Disaster Mitigation Act of 2000 (DMA 2000), Public Law 106-390, requires states, tribes, and local governments to undertake a risk-based approach to reducing exposure to natural disasters through mitigation planning.

As authorized by DMA 2000, the Federal Emergency Management Agency (FEMA) established criteria for state and local hazard mitigation planning through Rule 44, Part 201 of the Federal Code of Regulations (CFR). This plan has been prepared in accordance with CFR 44 requirements. In Minnesota, federal regulatory authority for hazard mitigation planning resides with FEMA Region V.

Guidance developed by the Minnesota Department of Homeland Security and Emergency Management (MN HSEM) and the Federal Emergency Management Agency (FEMA), have been invaluable resources for establishing the scope, planning process, assessment methods, and content of this all-hazard plan.

**Plan Update** CFR 44 §201.6(d)(3) directs the update and re-submittal of Local Mitigation Plans every five (5) years in order to continue eligibility for FEMA hazard assistance programs. First adopted in 2006, this plan was updated in 2011. This update was prepared in 2016.

This plan has been updated under the direction of the Dakota County Board of Commissioners and the Dakota County Manager.

### Planning Vision and Goals

**Dakota County Hazard Mitigation Vision:** Dakota County will work with its jurisdictions, surrounding communities, and relief organizations to create an all-hazard mitigation plan to lessen the impact disasters have on life and property. The update of this plan encompassed three major goals:

- 1. Reduce Hazard Risks and Impacts** – Assess the vulnerability of life and property to a broad range of natural and technological hazards and present a prioritized range of corresponding mitigation strategies to reduce risks and lessen impacts.
- 2. Build on Existing Efforts** – Dakota County’s cities, county departments, townships, school districts, and businesses are already engaged in mitigation, preparedness, and response planning. Maximize these efforts by coordinating and building upon these efforts when possible, and incorporate/reference information and strategies from existing emergency response plans and other relevant efforts.
- 3. Share Information and Raise Awareness** – Seek input from a diverse range of stakeholders including the general public and various municipal, business, and non-profit sector representatives. Mitigation strategies in this plan propose to enhance public awareness of hazards, public mitigation efforts, and individual responsibilities in reducing the risk and impacts of hazards on personal safety and property.

## SECTION I – INTRODUCTION

### Recent Hazard Declarations

One federal disaster has been declared in Dakota County since the 2011 Plan update: severe storms and flooding in 2012. Statewide, disasters between 2000 and 2016 cost nearly \$334 million in Federal Emergency Management Agency (FEMA) public assistance, largely attributable to severe summer storms and flooding.

**MN Major Disaster Declarations 2000-2015**

Declaration #	Date	Event	Minnesota Public Assistance	Dakota County Public Assistance
DR-1333	6/27/2000	Severe Storms	\$11,738,304	\$121,904
DR-1370	5/16/2001	Floods	\$36,227,572	\$4,700,728
DR-1419	6/14/2002	Floods / Severe Storms / Tornadoes	\$26,435,703	N/A
DR-1569	10/7/2004	Severe Storms/ Flooding	\$4,045,561	N/A
DR-1622	1/4/2006	Severe Winter Storm	\$8,177,519	N/A
DR-1648	6/5/2006	Flooding	\$7,012,366	N/A
DR-1717	8/23/2007	Severe Storms/ Flooding	\$31,229,991	N/A
DR-1772	6/25/2008	Severe Storms/ Flooding	\$6,361,369	N/A
DR-1830	4/9/2009	Severe Storms/ Flooding	\$29,675,994	N/A
DR-1900	4/19/2010	Flooding	\$12,764,838	N/A
DR-1921	7/2/2010	Severe Storms/ Flooding	\$13,399,002	N/A
DR-1941	10/13/2010	Severe Storms/ Flooding	\$26,092,574	N/A
DR-1982	05/10/2011	Severe Storms/ Flooding	\$20,678,190	N/A
DR-1990	06/07/2011	Severe Storms/ Tornadoes	\$4,185,337	N/A
DR-4009	7/28/2011	Severe Storms/ Flooding/ Tornadoes	\$11,672,989	N/A
DR-4069	7/6/2012	Severe Storms/ Flooding	\$44,475,991	\$2,383,530
DR-4113	5/3/2013	Severe Winter Storm	\$10,877,669	N/A
DR-4131	7/25/2013	Severe Storms/ Straight-line Winds/ Flooding	\$14,074,708	N/A
DR-4182	07/21/2014	Severe Storms/ Straight-line Winds/ Flooding/ Landslides / Mudslides	\$41,108,909	N/A
MN-2014-002*	06/01–07/11/2014	Severe Storms/ Straight-line Winds/ Flooding/ Landslides / Mudslides		\$1,448,811
<b>Total Public Agency Assistance</b>			<b>\$333,798,883</b>	<b>\$8,654,973</b>

Sources: **MN Homeland Security and Emergency Management**, Public Assistance Disaster Workbook – County Public Assistance Totals; FEMA Online database for remaining information, [www.fema.gov](http://www.fema.gov).

\***State of Minnesota Disaster Assistance Program**. Dates reflect incident period.

## SECTION I – INTRODUCTION

### Participating Jurisdictions

This plan was prepared as a multi-jurisdictional plan to cover Dakota County, Minnesota and the cities and townships located therein. With the exception of Northfield, MN, each municipality participated in the planning process. Northfield (pop. 20k) is predominantly located in Rice County and will be covered under the Rice County All-Hazard Mitigation Plan.

#### Participating Cities

Apple Valley	Burnsville	Coates	Eagan
Farmington	Hampton	Hastings	Inver Grove Heights
Lakeville	Lilydale	Mendota	Mendota Heights
Miesville	New Trier	Randolph	Rosemount
South St. Paul	Sunfish Lake	Vermillion	West St. Paul

#### Unincorporated Townships Covered under the County Plan

Castle Rock	Douglas	Empire	Eureka
Greenvale	Hampton	Marshan	Nininger
Randolph	Ravenna	Sciota	Vermillion
Waterford			

### Plan Adoption

This plan will be considered to be in effect upon adoption by the Dakota County Board of Commissioners, subsequent to approval by the Minnesota Department of Homeland Security and Emergency Management (MN HSEM) and the Federal Emergency Management Agency (FEMA).

As a multi-jurisdictional plan, each participating jurisdiction is also required to adopt the final version of this plan. Please see **Appendix I - Resolutions of Support and Adoption**.

### Relationship to Emergency Operations Plan

Dakota County has prepared an Emergency Operations Plan (EOP), which is updated annually, as part of an overall preparedness strategy. The EOP addresses tactical response and mutual aid at the time of an emergency event. This All-Hazard Mitigation Plan update complements the EOP through seeking to reduce risks and impacts on a pre-event basis in these strategic areas:

- Enhancing structural protection measures for new construction
- Retrofitting of existing facilities for enhanced structural integrity
- Acquisition of repetitive loss structures
- Development of mitigation standards, regulations, policies, and programs
- Review, update, and enforcement of building/zoning codes
- Increasing public awareness and education programs
- Development and improvement of warning systems

## SECTION I – INTRODUCTION

### 2016 Update

This multi-jurisdiction plan is an update of the 2011 All-Hazard Mitigation Plan. New demographic, community profile, and hazard information has been incorporated. Maps and charts have been updated to reflect recent changes in infrastructure, demographics, and land use.

Participating jurisdictions (cities) played a greater role in this update than in the 2006 plan or the 2011 plan update. The County and each city has developed hazard ratings for their own community, evaluated their community's vulnerabilities, and has considered and selected a range of mitigation strategies relevant to their particular situation. The County and participating cities also have identified local resources, programs, and efforts by which mitigation strategies will be implemented. This plan update also reports the progress in local mitigation efforts over the past five years. The status of 2011 action items is reviewed and reported in **Appendix 3 – 2011 All-Hazard Mitigation Plan Progress**.

### Hazards Profiled in 2016

Hazard profiling was a first step in updating this plan. Based on hazard events since the 2011 plan and new concerns, two hazards have been considered in partnership with cities in the County, and included in this update: landslide and cyber-attack.

**Table 1.1 Hazards Profiled**

<b>Hazard</b>	<b>Reason for Identification</b>
Dam Failure	Likely adverse impact, geographic extent
Drought	Likely adverse impact, geographic extent
Extreme Temperatures	Frequency, geographic extent
Flash Flood	Likely adverse impact, frequency,
Hazardous Material Incidents	Likely adverse impact, frequency
Infectious Disease	Likely adverse impact, geographic extent
Overland Flood	Likely adverse impact, geographic extent
Structural Fire	Frequency, likely adverse impact
Terrorism	Likely adverse impact
Tornado	Frequency, likely adverse impact
Violent Summer Storms	Frequency, likely adverse impact, geographic extent
Violent Winter Storms	Frequency, likely adverse impact, geographic extent
Wastewater Treatment Plant Failure	Likely adverse impact, geographic extent
Water Supply Contamination	Likely adverse impact
Wildfire	Frequency
Landslide	Frequency, likely adverse impact, occurrence in 2014
Cyber-Attack	Frequency, likely adverse impact, increasing threat

The following hazards were not profiled in this plan due to the lack of previous occurrences or low potential for damage in the planning area.

**Table 1.2 Hazards Not Profiled**

<b>Hazard</b>	<b>Reason for Omission</b>
Avalanche	Geographic proximity
Coastal Erosion	Geographic proximity
Earthquake	Low occurrence
Expansive Soils	Low vulnerability
Land Subsidence	Low vulnerability
Tsunami	Geographic proximity
Volcano	Geographic proximity



## SECTION I – INTRODUCTION

### Organization of this Plan

This plan is organized into the following sections and content areas:

#### **Section 1 – Introduction:**

Identifies the legal authority under which the plan was prepared, sets forth the planning vision and goals related to hazard mitigation, and identifies the cities actively participating in plan development

#### **Section 2 – Planning Process Overview:**

Describes the overall process used for updating the plan, how the community was engaged, and the relationship of the All-Hazard Mitigation Plan to other existing plans, such as the Emergency Operations Plan; and provides information on how the plan will be evaluated and updated over time

#### **Section 3 – Community Profiles:**

Describes the County through its physical characteristics, land uses, critical community infrastructure, demographic composition, response capabilities, and vulnerable populations

#### **Section 4 – Hazards Facing the Community:**

Describes each natural or manmade hazard of concern in Dakota County and provides a summary of locations and occurrence histories. Evaluates countywide vulnerability to each hazard and provides an overview of existing plans or programs to address each hazard

#### **Section 5 – Dakota County Vulnerabilities, Strategies, and Priorities**

Provides a ranking of hazard concern at a countywide level, describes vulnerable populations and vulnerable infrastructure, establishes County goals and strategies for each hazard area, and discusses implementation processes and roles

#### **Section 6 – Participating Cities Risks, Strategies, and Priorities**

For each of the participating cities, identifies hazards of concern, general land use, vulnerable populations and infrastructure, and key changes since the 2011 plan. Sets forth each city's strategies for addressing hazard vulnerabilities and discusses implementation processes and roles.

#### **Appendix 1 – Resolutions of Support and Adoption from the Participating Cities**

#### **Appendix 2 – Public Survey Results, 2016**

#### **Appendix 3 – 2011 Plan Progress Review for County- and City-Led Strategies**

## SECTION I – INTRODUCTION

## SECTION II - THE PLANNING PROCESS

**Requirement §201.6(c)(1):** [The plan **shall** document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

### Summary

Dakota County staff coordinated this plan update with assistance from the representatives of participating jurisdictions, who provided time, experience, perspective, and expertise. This update completes the prior five year All-Hazard Mitigation planning cycle (2011-2016) and initiates the next five year planning cycle (2016-2021).

Table 1 summarizes the plan update process, which began in late 2015 with organization of the effort (Start-Up). The first half of 2016 focused on engaging participant communities and stakeholders to assess hazards and vulnerabilities, develop mitigation actions, and prepare an the plan document (Update Plan). The third and fourth quarters of 2016 focused on review and adoption.

**Table 2.1 Dakota County All-Hazard Mitigation Planning Process**

Phase	Key Tasks
<b>Start-up</b> 4 <sup>th</sup> Quarter (Sept.-Dec.) 2015	• Organized AHMP Planning Team including municipal participation
	• Identified new FEMA and HSEM requirements
	• Defined tasks and timelines, sought cooperation from participating departments
	• Requested county and city leadership support for planning effort
	• Developed city engagement approach, notified communities of update and timeframes
	• Developed public engagement strategies and project communication plan
	• Solicited Resolutions of Participation from member cities
	• Hosted Outreach Workshops to engage community stakeholders and city staff
	• Updated the County Board of Commissioners and Planning Commission (citizen advisory committee)
<b>Update Plan</b> 1 <sup>st</sup> and 2 <sup>nd</sup> Quarters (Jan.-June) 2016	• Provided plan update information to townships covered under the County Plan
	• Met with County departments to track status of current mitigation actions
	• Updated website, developed-promoted online public survey on concerns, priorities, and preparedness
	• Met with participating jurisdictions and stakeholders to review progress on the 2011 plan.
	• Updated plan data and GIS maps
	• Completed hazard and vulnerability assessments – City and County level
	• Finalized City and County mitigation strategies/actions
	• Finalized City-Level mitigation strategies/actions
	• Updated the County Board and Planning Commission
<b>Plan Review and Adoption</b> 3 <sup>rd</sup> and 4 <sup>th</sup> Quarters (July-Dec.) 2016	• Developed draft plan update document
	• Draft submitted to MN HSEM/FEMA for technical pre-review
	• Draft reviewed by County Planning Commission
	• Informational presentation of AHMP to County Board
	• Public comment period on draft plan: posted on county website, distribute to local libraries and stakeholders; comments sought through local media
	• Revision of draft addressing HSEM, FEMA, and public comments
	• Final submittal to MN HSEM/FEMA
	• Formal adoption of plan by County and Cities

## SECTION II – THE PLANNING PROCESS

### Community Participation Events and Findings

A variety of methods engaged participating cities, townships covered under the County Plan, citizen advisors, people who live or work in the County, and other stakeholders.

### Community/Municipal Stakeholder Meetings

Municipalities played the lead role in reviewing progress made on their strategies from the 2011 plan, assessing hazards and vulnerabilities relevant to their own jurisdictions, developing prioritized strategies to address their concerns, and identifying implementation mechanisms. Through group meetings and workshops, jurisdictions assessed hazards and vulnerabilities and considered and prioritized a range of mitigation strategies.

Mitigation plan requirements developed since the 2011 Dakota County plan update were identified from the current FEMA Mitigation Plan Crosswalk, and built into a template to assist participating cities in developing required plan content for their communities. Templates were sent to the designated project contacts in all participating jurisdictions, requesting the following information.

#### **CITY PLANNING TEMPLATE: Dakota County All-Hazard Mitigation Plan Update 2016**

##### **A] Plan Participation**

1. City Resolution of participation
2. Point of contact from the City to participate in the Plan update

##### **B] Plan Content to Update for the City of \_\_\_\_**

1. Hazard identification and rating for your city using the County's 4 point rating scale for frequency, warning time, geographic extent, likely impact. Matrix included.
2. Identify Changes, Additions to Critical Facilities, such as new public gathering areas, schools, etc. The plan must include descriptions of development in hazard-prone areas since the 2011 Plan update.
3. Rate the Vulnerabilities of Critical Assets to each hazard of concern (Y/N/NA). Matrix included.
4. Include a map of general land use or zoning.
5. Identify mitigation implementation resources: departments, roles, and specific tools such as ordinances and programs.
6. Document participation in the National Flood Insurance Program (NFIP) and how the City maintains compliance.

##### **C] Report Progress on 2011 Plan strategies**

##### **D] Develop New City Strategies for 2016 Plan Update**

1. Identify carryover strategies from 2011 plan with the primary position responsible for implementation.
2. Include strategy that identifies and analyzes a comprehensive range of strategies, which were selected, and the primary position responsible for implementation.
3. Include at least one strategy to reduce risk to buildings and infrastructure.
4. Identify new strategies to address vulnerabilities and concerns.

##### **E] Prioritize Strategies and Identify Implementation Processes**

1. Prioritize strategies using modified County criteria
2. Document how strategies will be implemented.

## SECTION II – THE PLANNING PROCESS

The following table identifies meetings held with cities required to develop or update plan content. One-on-one sessions or calls were held with cities that were not able to participate in the group meetings throughout May and June of 2016. All cities were consulted in the course of the plan update.

**Table 2.2 Participating City Meetings**

<b>Date</b>	<b>City Meeting, Topic, and Recommendations</b>
Dec. 17, 2015	<b>County-wide Domestic Preparedness Committee Meeting:</b> Project Introduction <ul style="list-style-type: none"> <li>Conduct workshops with groups of cities</li> </ul>
Mar. 9, 2016	<b>Workshop One-Large Northern Cities:</b> Review template with new city planning requirements, evaluate hazards <ul style="list-style-type: none"> <li>Add landslide as hazard to address</li> <li>Assist cities with uniform strategy prioritization criteria</li> </ul> <i>Participants:</i> Bill Messerich, Chief of Police, South St. Paul Eric Peterson, Police Sgt, Mendota Heights Mitchell Scott, Chief of Police, Rosemount Bud Shaver, Chief of Police, West St. Paul Mike Schutt, Fire Chief, Hastings Josh Otis, Lieutenant, Inver Grove Heights
Apr. 5, 2016	<b>Workshop One-Large Southern Cities :</b> Review template with new city requirements, evaluate hazards <ul style="list-style-type: none"> <li>Assist cities with uniform strategy prioritization criteria</li> </ul> <i>Participants:</i> Nealon Thompson, Fire Chief, Apple Valley Nick Francis, Captain, Apple Valley Brian Lindquist, Police Chief, Farmington Mike Meyer, Fire Chief, Lakeville
May 18, 2016	<b>Workshop Two-Large Northern Cities:</b> Continue template review with vulnerabilities, progress on last plan strategies, new strategies, and priorities <ul style="list-style-type: none"> <li>Add cyber-attack as hazard to address</li> </ul> <i>Participants:</i> Jeremy Klein, Emergency Manager, Eagan Mike Aschenbrenner, Chief of Police, Mendota Heights Bud Shaver, Chief of Police, West St. Paul Josh Otis, Lieutenant, Inver Grove Heights Bill Messerich, Chief of Police, South St. Paul
May 23, 2016	<b>Work session-City of Rosemount Staff:</b> Continue template review with vulnerabilities, progress on last plan strategies, new strategies, and priorities <i>Participants:</i> Mitchell Scott, Chief of Police, Rosemount
May 24, 2016	<b>Work session-City of Burnsville Staff:</b> Continue template review <i>Participants:</i> Dave Powers, Police EM Coordinator, Burnsville
May 24, 2016	<b>Workshop Two-Large Southern Cities:</b> Continue template review with vulnerabilities, progress on last plan strategies, new strategies, and priorities <i>Participants:</i> Mike Meyer, Fire Chief, Lakeville Nick Francis, Captain, Apple Valley

## SECTION II – THE PLANNING PROCESS

Date	City Meeting, Topic, and Recommendations
May 31, 2016	<b>Work session-City of Farmington Staff:</b> Continue template review <i>Participants:</i> Brian Lindquist, Police Chief, Farmington
Jun. 1, 2016	<b>Workshop-Small Southern Cities:</b> Template completion <i>Participants:</i> Mary Haro, Randolph City Clerk John Knetter, Hampton City Council and Public Works
Jun. 2, 2016	<b>Workshop-Small Northern Cities:</b> Template completion <i>Participants:</i> Mike Aschenbrenner, Chief of Police, Mendota Heights Bud Shaver, Chief of Police, West St. Paul Mary Schultz, Clerk, Lilydale
Jun. 20, 2016	<b>Work session-City of Hastings staff:</b> Continue template review <i>Participants:</i> Mike Schutt, Fire Chief, Hastings

Required plan content received from each city is presented in Section **VI – City Risks, Strategies, and Priorities**.

The draft version of this plan was made available to all cities for review and comment. During the five year planning cycle of this plan, individual jurisdictions will be responsible for evaluating and reporting the status of their own mitigation actions.

### **Township Participation**

Dakota County's unincorporated townships are covered under the County's planning and mitigation efforts. County staff provided an overview of the Hazard Mitigation Plan update at the Rural Township Association meeting on March 19, 2016. Additional information was sent to townships on the draft plan strategies, and the draft plan was made available to all townships during the public review period.

### **Interagency Participation**

A joint powers agreement between Dakota County and its eleven major cities established the Dakota County Preparedness Committee (DPC) for the purpose of maintaining response capability for large-scale disasters and emergencies. The DPC comprises of local government emergency coordinators and representatives from Dakota County's hospitals and clinics (Regina Medical Center, Northfield Hospital, and Allina Clinic). Throughout the planning process, the DPC has served as a forum to discuss potential ways to mitigate risk from natural and man-made disasters.

In addition to emergency preparation, the DPC is also charged with maintaining a Critical Infrastructure Key Resources (CIKR) list of vital assets, systems, and networks located in Dakota County. Because many of these facilities are privately held, the DPC will continue to partner with local businesses to address risk and security.

Updates on the 2016 All-Hazard Plan update were provided to the DPC at several points in the process.

## SECTION II – THE PLANNING PROCESS

### Neighboring Communities, Non-profit, and Business Participation

A draft copy of this plan was made available for neighboring counties to review and provide their comments for the final draft of this plan. Dakota County cooperates with neighboring counties on several on-going mitigation actions including flood monitoring (Rice County, Scott County) and dam safety (Goodhue County).

Draft plan copies were made available to local chambers of commerce to solicit feedback from local business and non-profits for comments to include in the final draft of this plan.

Copies Sent to:
Apple Valley Chamber of Commerce
Burnsville Chamber of Commerce
Dakota County Regional Foundation
Hastings Chamber of Commerce
Lakeville Chamber of Commerce
River Heights Chamber of Commerce

Conversations with representatives of disaster relief organizations were held during the preparation and review of this plan. A vital resource in the event of a disaster, the Red Cross coordinates relief through partnerships with local businesses and government organizations.

- The Red Cross and Dakota County Social Services continue to plan for the provision of emergency shelter should a disaster displace residents from their homes.
- The Red Cross supports Dakota County Public Health and local municipalities in developing plans for the mass dispensing of antibiotics and vaccines.

### Community Engagement

#### 44 CFR Requirement 201.6(b)

An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include: (1) an opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;

Public involvement gives citizens, local businesses, and community organizations the opportunity to learn more about hazard mitigation, voice their concerns, and suggest actions. It also builds strong support for future mitigation activities. For these reasons, public participation was a key component of the AHMP planning processes. Opportunities for involvement are summarized below.

### Website/Newsletters

The county website (see below), municipal websites, and municipal notices promoted ways in which citizens could contribute to the planning process. Chief among these were an online survey and a link to the draft plan. Public comment was accepted throughout the planning process.

## SECTION II – THE PLANNING PROCESS

Figure 2.3



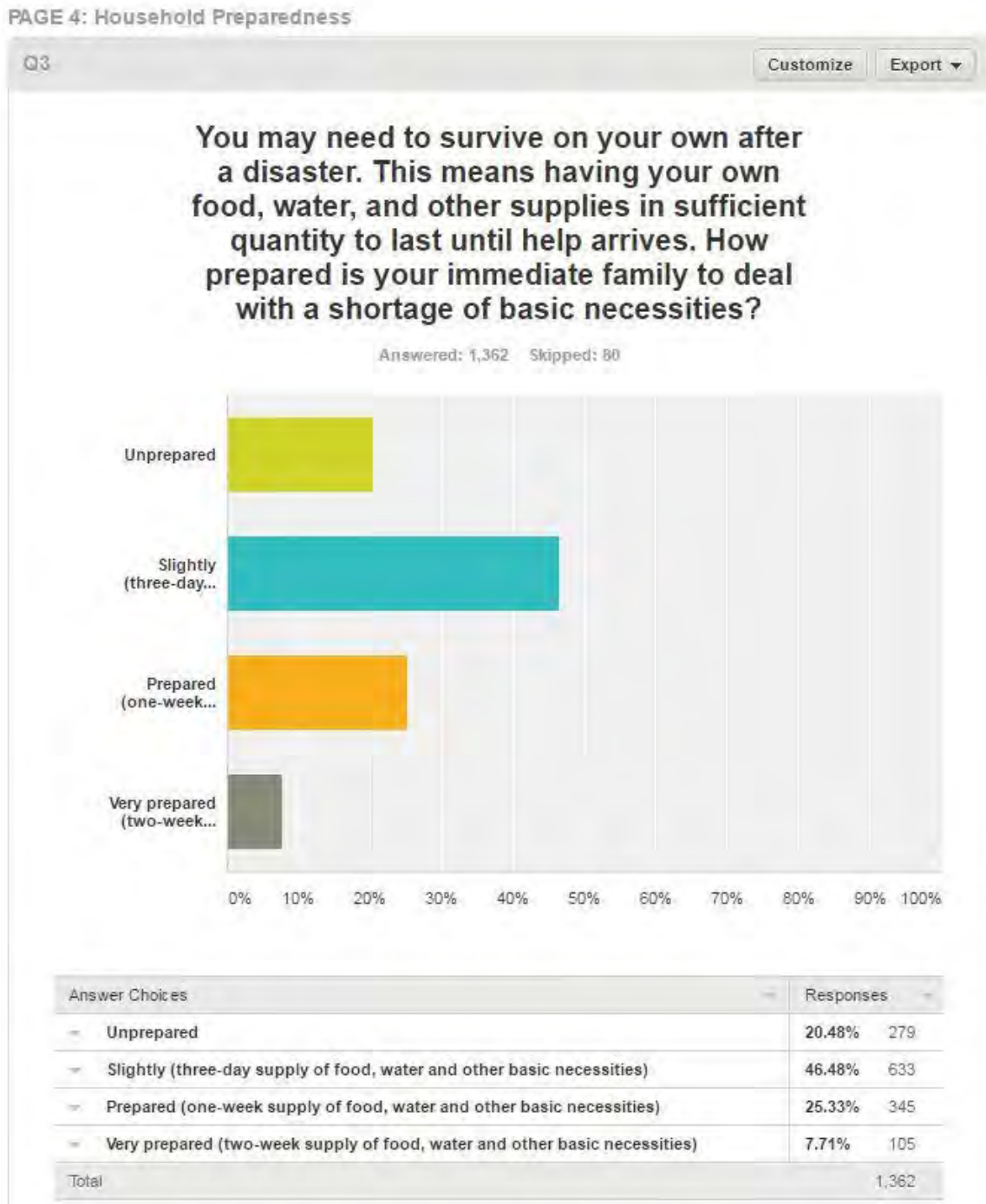
### Online Mitigation Planning Survey (February 2016 – July 2016)

More than 1,400 people who live or work in Dakota County completed an online survey related to mitigation planning. The results provided valuable public feedback on issues such as community priorities, family disaster preparedness, and willingness to spend extra on storm reinforced residences.

Results of the full survey can be reviewed in **Appendix II - Public Survey Results**.



Figure 2.4 Example Survey Question



### Dakota County Planning Commission Meetings

The Dakota County Planning Commission is an appointed citizen advisory body that addresses issues related to the environment, natural resources, land use, and transportation. The AHMP Planning Team provided updates to and sought input on mitigation ideas from the Planning Commission on several occasions. The Commission provided valuable feedback on hazards concerns, mitigation strategies, and ways to enhance implementation of mitigation activities throughout the County.

## SECTION II – THE PLANNING PROCESS

The Planning Commission was engaged on the following plan update issues:

February 25, 2016	Project Introduction, Hazard Discussion
June 23, 2016	Project Update, Draft Strategies and Priorities
August, 2016	Draft Plan Review

### **Public Comment Period (August-September, 2016)**

Comment was accepted throughout the process; however, prior to final submittal to MN HSEM and FEMA, a draft of the updated plan was made available to participating jurisdictions and the general public in order to solicit feedback and recommendations. All feedback was considered by the All-Hazards Planning Team and incorporated, where appropriate, into the final version of this plan. Public engagement events during the draft review period included a booth at the Dakota County Fair, to talk about the project and provide information to fairgoers on emergency preparations people should do at home, including registration for the County's mass notification system.

## **Related Plans, Studies, Reports, and Technical Information**

### **County Level**

The following plans were referenced in the preparation of this plan update, and relevant information has been incorporated where appropriate. In addition to being reference items, many of these regional plans are also being utilized as implementation mechanisms for the action strategies listed in **Section V–Dakota County Vulnerabilities, Strategies, and Priorities**.

#### ***State/Federal Data, Reports, and Plans Utilized***

2015 US Census American Community Survey Data, 2010 Census Data  
US Environmental Protection Agency Datasets  
National Oceanic and Atmospheric Administration and National Weather Service Datasets  
Metropolitan Council Population Estimates  
MN Department of Natural Resources, water and land cover data  
State of Minnesota Hazard Mitigation Plan  
State of Minnesota Climatology Data  
University of Minnesota, 1991 Dakota County Geologic Atlas  
Federal Emergency Management Agency (FEMA) regulations and guidance

#### ***County/Regional Plans, Ordinances, Data Utilized***

Metropolitan Council, waste management and transit data  
Dakota County All-Hazard Mitigation Plan, 2006 and 2011  
Dakota County Emergency Operations Plan, 2016  
Dakota County Comprehensive Plan, 2008  
Dakota County Hazardous Waste Ordinance  
Dakota County Shoreland and Floodplain Ordinance  
Dakota County Indicators, 2015  
Dakota County Office of GIS data  
Local Watershed Plans

## SECTION II – THE PLANNING PROCESS

### **Municipal Level (Record of Review)**

At the municipal level, individual cities use reports, plans, ordinances, enforcement, budget tools, and existing processes to support their planning efforts and implementation goals. Examples include capital improvement budgets, emergency operations plans, building codes, and zoning ordinances. As part of the planning process, each city was asked to update their *Record of Review* detailing resources for implementing mitigation strategies.

### **Plan Implementation**

Dakota County's Office of Risk Management and Homeland Security will work with municipalities and other implementation partners to identify required resources, assign specific responsibilities, and initiate work on each mitigation strategy. Work on the individual strategies will proceed according to priority ranking and available funding.

### **Incorporation into Planning Mechanisms**

Where appropriate, actions will be incorporated into local zoning ordinance, emergency operation plans, and planning studies. Each participating jurisdiction followed a planning process to evaluate how best to incorporate mitigation strategies into action.

At the county level, proposed strategies were reviewed by the Dakota County Risk Management and Homeland Security Manager, the Dakota County Emergency Preparedness Coordinator, Transportation Director, Public Health Director, Environmental Resources Director and the Dakota County Zoning Administrator. Each municipality evaluated how local strategies could best be incorporated into existing planning mechanisms. At both levels, jurisdictions will utilize such appropriate mechanisms as capital improvement budgets, emergency operation plans, and local building codes.

More information on implementation is provided in **Section V– Dakota County Vulnerabilities, Strategies, and Priorities** and in **Section VI – Participating City Risks, Strategies, and Priorities**.

### **Plan Evaluation**

Each county-level mitigation strategy includes a baseline metric for monitoring implementation progress. The Risk and Homeland Security Manager for Dakota County will work with municipalities and other implementation partners to evaluate progress on an annual basis for each mitigation strategy.

### **Plan Updates**

Dakota County's Risk and Homeland Security Manager will coordinate the update of this plan every five years. In addition, staff will review and report the progress made on the mitigation actions listed in **Section VI – Mitigation Goals and Strategies**. Such reports will be distributed on a regular basis to organizations such as the Dakota County Planning Commission and the Dakota County Preparedness Committee (see below).

### **Incorporation into Dakota County Preparedness Committee (DPC) Agenda**

Mitigation action status will be a regular agenda item for the DPC. On at least an annual basis, each member city will be given dedicated time to update the group on strategy progress, funding status, and opportunities for cooperation. Likewise, county staff will keep the group up to date on the status of county-level strategies. (See page 21 for a more detailed description of the DPC.)

### **Review with Responsible Departments (County Level)**

Although Dakota County's Office of Risk Management and Homeland Security Manager is ultimately accountable for the implementation of county-level actions, in many cases the responsibility of execution falls to other county departments (e.g., Dakota County Public Health, Dakota County Environmental Resources, Dakota County Transportation). In order to track progress, the Office of Risk Management and Homeland Security will meet at least annually with these departments to track progress and provide assistance in removing implementation barriers.

### **Five Year Updates**

A reviewed and updated plan will be submitted to the Dakota County Board of Commissioners, MN HSEM, and FEMA every five years, in a process coordinated by the Dakota County Risk and Homeland Security Manager. Newly identified mitigation needs will be addressed through the development of additional goals and strategies as applicable.

### **Continued Public Involvement**

Public outreach and engagement efforts will continue during the five-year effective period of this plan. Future opportunities for public involvement include:

- Many of the capital projects, ordinance changes, and plan updates associated with the mitigation strategies listed in **Section VI** require a formal adoption process which would include the opportunity for public participation. For these types of procedures, it is the responsibility of each associated jurisdiction to provide both notice and opportunity for public comment. This applies to both county-level and city-level mitigation actions.
- Continued evaluation of plan and strategy progress will be presented to the Dakota County Planning Commission (a citizen advisory committee) on a timely basis. Committee meetings follow an open-forum agenda where public input is encouraged.
- Dakota County will continue to maintain an All-Hazard Mitigation Plan website. Concerns, opinions, and new ideas will be forwarded to Dakota County's Office of Risk Management and Homeland Security. In addition, hard copies of the plan will be made available upon request.

## SECTION III - COMMUNITY PROFILE

### Section Overview

This community profile characterizes Dakota County through its key physical and socioeconomic features, including:

- Communities within the County
- Historical Setting
- Climate
- Geology
- Topography and Soils
- Hydrology
- Land Cover and Land Use
- Community Infrastructure
- Schools
- Public Facilities
- Transportation
- Utilities
- Population and Housing
- Demographic Trends
- Economics and Labor
- Emergency Response Resources



Figure 3.1 Dakota County, Minnesota

The profile draws on current data, studies, plans, and other documents from the following sources:

- US Census Bureau
- US National Weather Service
- The Twin Cities Metropolitan Council
- Natural Resource Conservation Service, US Dept. of Agriculture
- MN Department of Natural Resources
- MN Department of Transportation
- MN Department of Employment and Economic Development
- Dakota County Soil and Water Conservation District
- Dakota County Office of GIS
- Dakota County Department of Health
- Dakota County Office of Transit
- Dakota County Office of Planning & Analysis
- Dakota County Risk Management & Homeland Security

The maps used for Dakota County's All-Hazards Mitigation plan were drawn from the Dakota County Office of Geographic Information System, Office of Planning & Analysis, existing county plan documents, the Metropolitan Council, and the State of Minnesota.

### Location

Located in east central Minnesota and south of Minneapolis and St. Paul, Dakota County is one of the seven counties forming the greater Twin Cities metropolitan area.

## General County Overview

### Population

Dakota County is the third most populous county in Minnesota, with a 2015 estimated population of 414,166. Most of the County's population is concentrated in the northern suburban one-third of the county, while the southern two-thirds of the county are largely rural. Dakota County is becoming has been one of the fastest growing counties in the state of Minnesota over the past twenty years. The county is also home to several large employers.

Dakota County comprises 20 incorporated cities and 13 unincorporated townships. Figure 3.2 below highlights the cities, townships, and major roads in Dakota County. The city of Northfield, on the southern border, is located predominantly in Rice County.

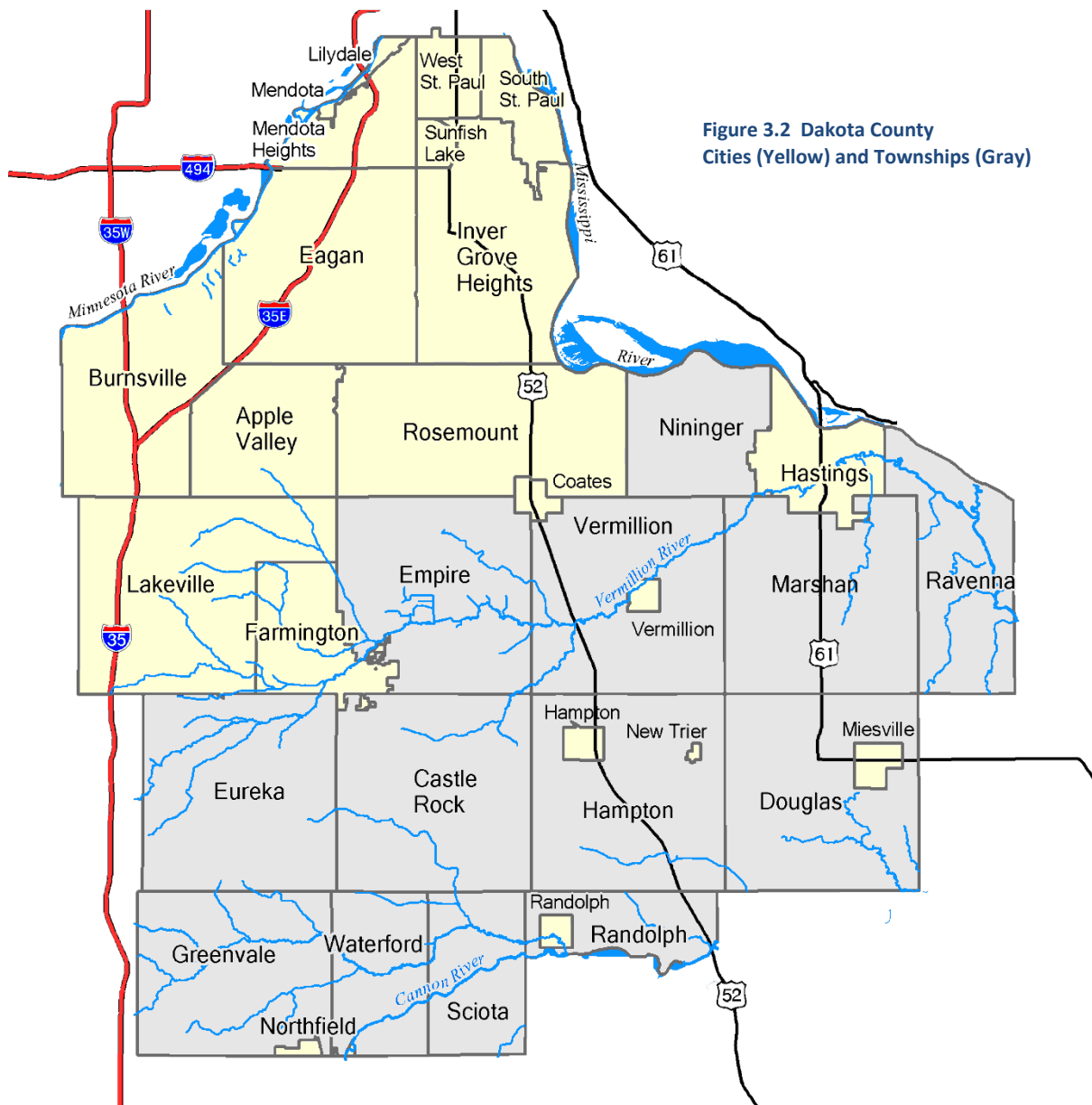


Figure 3.2 Dakota County  
Cities (Yellow) and Townships (Gray)



## Early Historical Setting

Dakota County is 576 square miles in area, originally vegetated with oak savannas, prairies, wetlands, and woodlands. Dakota County lies at the confluence of three of the four major rivers in the State of Minnesota. The Minnesota and Mississippi Rivers form the county's northern and northwestern borders, while the St. Croix River enters the Mississippi River across from the county's northeastern border. The county's development and history have been influenced by its proximity to these rivers.

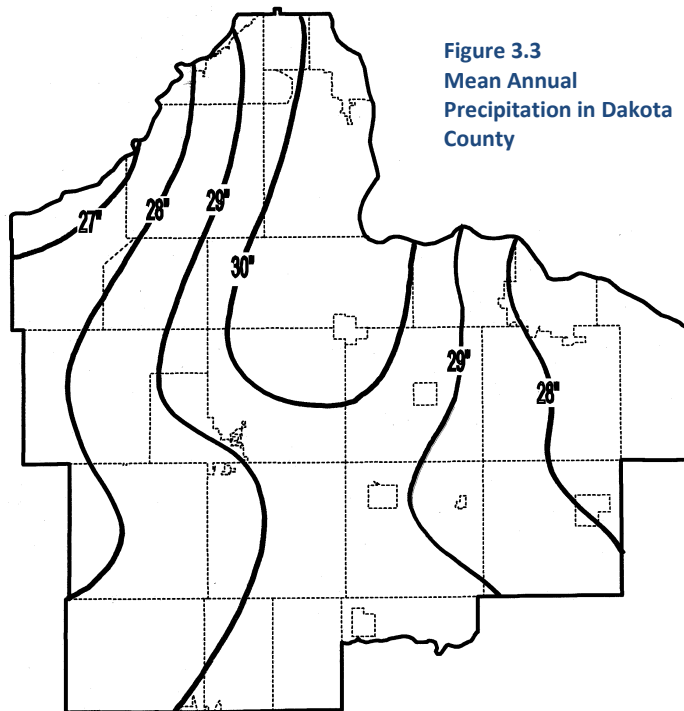
Dakota County was part of an expansive territory of the Dakota tribe of Native Americans. In 1689, Nicholas Perrot, a French fur trader, proclaimed possession of Dakota, Ojibwa, and other Native American lands for the nation of France without the consent of the tribes. With the Louisiana Purchase in 1803, lands west of the Mississippi River were annexed from France to the United States. The City of Mendota, located in northwestern Dakota County, became the first European settlement in Minnesota. The Native peoples, systematically removed from their lands, were forced to move further west.

In 1849, the Minnesota Territory legislature created nine original counties, including Dakota. The county's original boundary extended only as far south as Hastings, but extended west several hundred miles to the Missouri River in what is now South Dakota. Hastings became the county seat in 1857. Minnesota became a state in May 1858, nine years after Dakota County was formed.

## Physical Characteristics

### Climate

Dakota County's climate is continental, with cold, dry winters and warm, sub-humid summers. Winter precipitation is snow or mixed snow and rain. During the warm months, rain occurs when warm moist Gulf air meets cooler air over the region. Heavily urbanized areas in nearby Hennepin and Ramsey Counties and urbanized northern and western suburbs may contribute to local variations in weather patterns. This effect has been described as an "urban heat island" and results from heavily urbanized areas being several degrees warmer than surrounding vegetated land.



**Figure 3.3**  
Mean Annual  
Precipitation in Dakota  
County

Twin Cities' weather typically circulates counter-clockwise, with warm fronts arriving from the southwest and south, and cold fronts arriving from the north and northwest. Weather patterns appear to circulate around the Twin Cities in a "trough" that includes most of the western and northern suburbs of Minneapolis. Another trough is believed to exist along the southern edge of Dakota County, following the Cannon River. Although not well-documented, this area appears to have higher frequency of strong winds, tornadoes, and severe weather than surrounding areas.

Seasonal temperatures cover a broad range. The average daily temperature is

## SECTION III – COMMUNITY PROFILE

44.4 degrees Fahrenheit (°F). Normal average daily temperatures range from 13.7 °F in January to 72.1 °F in July. Last frost is generally between May 6 and May 19. The growing season is approximately 166 days, sufficient to grow corn, soybeans, and other crops. First frost normally occurs between September 25 and October 6. The highest recorded temperature was 110 degrees on July 14, 1936. The lowest recorded temperature of -40 degrees was recorded on January 23, 1935, and again on March 1<sup>st</sup> 1962.

Based on precipitation amounts recorded from 1981 to 2010, the total average annual precipitation in Dakota County is 30.08 inches. Although seasonal and yearly rainfall amounts vary, long-term averages indicate that rainfall typically is higher in the north and central regions of the county (Figure 3.3). Table 3.1 shows mean monthly precipitation at various locations in the county and that 65 to 68 percent of the annual precipitation falls in the summer growing season. Similarly, 50 to 59 percent of the precipitation events occur within this same period.

**Table 3.1 1981-2010 Precipitation Normals in Dakota County (inches)**

Weather Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year
Farmington	0.78	0.75	1.87	2.66	3.56	4.35	3.96	4.60	3.31	2.53	1.80	1.13	31.30
Rosemount	1.04	0.91	2.30	2.92	4.04	4.72	4.50	4.73	3.63	2.86	2.10	1.22	34.97
Hastings	0.86	0.73	1.77	2.95	3.65	4.17	4.34	4.20	3.29	2.55	1.89	1.02	31.42
MSP Airport	0.90	0.77	1.89	2.66	3.36	4.25	4.04	4.30	3.08	2.43	1.77	1.16	30.61

[Source – National Weather Service](#)

The 24-hour maximum rainfall was 10.0 inches on July 23-24, 1987. The maximum snowfall received in a single storm was 28.4 inches on October 31 - November 1, 1991 (the "Halloween Blizzard").

### **Recent Weather: December 10-11, 2010**

The largest snowfall for the Twin Cities since the 1991 Halloween Blizzard occurred December 10-11, 2010, with 17.1 inches of snow at the Twin Cities Airport near the county's northern border. This is the largest snowstorm on record for December in the Twin Cities and the fifth largest snowfall since 1891.

**Table 3.2 Dakota County Monthly Average Temperatures, Precipitation**

Month	Temperature		Precipitation Inches	
	Avg. High	Avg. Low	Avg.	Avg. Snowfall
January	21.6	3.7	0.92	10.3
February	28.4	11.0	0.75	7.3
March	40.7	22.9	1.94	8.8
April	57.8	35.7	2.65	3.1
May	71.2	47.9	3.61	0.0
June	79.4	56.9	4.48	0.0
July	82.8	60.8	4.13	0.0
August	80.2	58.3	4.54	0.0
September	71.7	49.5	3.14	0.0
October	59.5	38.2	2.21	0.2
November	40.2	24.2	2.02	7.9
December	26.2	10.0	1.04	8.5
Annual	55.0	34.9	31.43	46.1

[Source – National Weather Service](#)

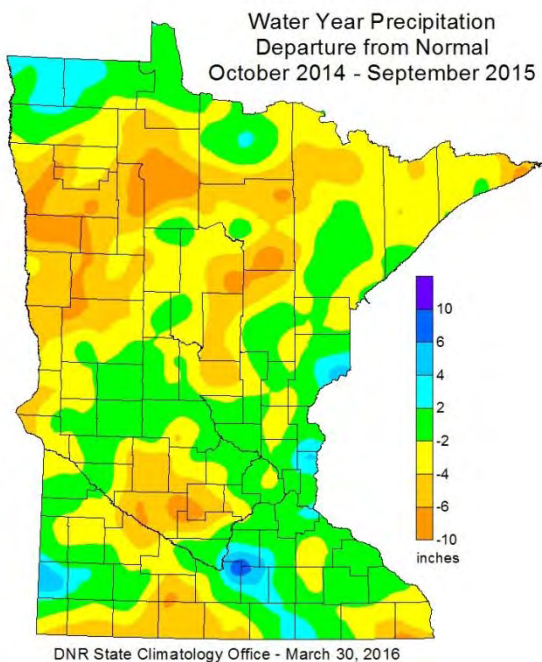


## SECTION III – COMMUNITY PROFILE

The University of Minnesota estimates that 76 percent of precipitation is returned to the atmosphere by evapotranspiration; 22 percent is included as runoff; and 2 percent is available for groundwater recharge (Baker et al, 1979). During an "average year" in Dakota County, 23 inches of precipitation is lost to evapotranspiration, 7 inches is lost to runoff, and less than 1 inch is available for groundwater recharge. In areas with shallow and/or coarsely-textured soils, groundwater recharge may occur more rapidly and less water would be available for runoff.

Precipitation increased during the 1990s, which included some of the wettest years on record. Since 2000, annual precipitation totals have been considered normal seven out of the 14 years, with the remaining years alternating between drier or wetter than normal. Figure 3.4 shows precipitation departure from normal amounts for October 2014-September 2015, which was a normal water year for Dakota County.

**Figure 3.4 Minnesota Precipitation Departures**



Much of the local recharge to aquifers used for drinking water in Dakota County is dependent on rainfall and snowmelt. Water levels in surface or near surface aquifers generally drop quickly during drought periods and rebound quickly when water is available for recharge. Water levels in deeper bedrock aquifers are also affected during periods of drought. Unlike surface or near surface aquifers, deeper bedrock aquifers may take a much longer time to recharge to pre-drought conditions. The impact of drought is compounded by increased water demand. During the drought of 1987-1989, water use by irrigation, municipal and other high-capacity wells more than doubled from 1986 amounts.

### **Geology**

The geology of Dakota County can be described by three major units: Quaternary (surficial) geology, Paleozoic (bedrock) geology, and Proterozoic (basement) geology.

#### Quaternary Geology

Quaternary geology in Dakota County consists of materials that have been deposited by glaciers, outwash, alluvium (river deposits) and lacustrine (lake) deposits within the last two million years. Glacial deposits in Dakota County are mainly sand, gravel, till, and loess. Sand and gravel deposits are associated with glacial outwash, materials deposited beyond the terminal margin of the ice. The well-sorted gravel deposits mined in Dakota County are generally found in glacial outwash. The coarse texture of these deposits allows for the formation of surficial aquifers. Where the outwash is close to the surface, these aquifers are particularly susceptible to contamination.

Glaciers caused other changes not visible on the land surface, including a large ancient river valley that cuts deeply into the bedrock across Dakota County. This valley was filled with fine sand during early periods of glaciation, and is of concern because the buried valley creates a hydrologic connection between the surface and all of the bedrock aquifers used for drinking water supplies in the County.

## SECTION III – COMMUNITY PROFILE

### Paleozoic (Bedrock) Geology

The bedrock beneath Dakota County is part of the Twin Cities Basin that was formed during the Paleozoic Era (225-600 million years ago). All bedrock formations in Dakota County are marine sedimentary rock composed of dolomite, limestone, sands, and shales associated with ancient seas. After their formations, tectonic forces created a series of small folds and faults with displacements of about 100 feet for folds and between 50 and 150 feet for faults. The Empire Fault and the Vermillion Anticline (an upward fold) are the two largest structures known to occur in the County.

### Proterozoic (Basement) Geology

Made up of basalts and crystalline igneous rock, this component of Dakota County's geology has little impact on land use or hazards risk.

### Topography

The highest elevations in Dakota County occur on the northern and western moraines. The highest point in the county is Buck Hill in the City of Burnsville, with an elevation of over 1,195 feet AMSL. The lowest point is roughly 675 feet, where the Mississippi River leaves the county. Apart from the Mississippi and Minnesota River Valleys, the overall slope of the county is towards the southeast with an elevation change of about 200 feet.

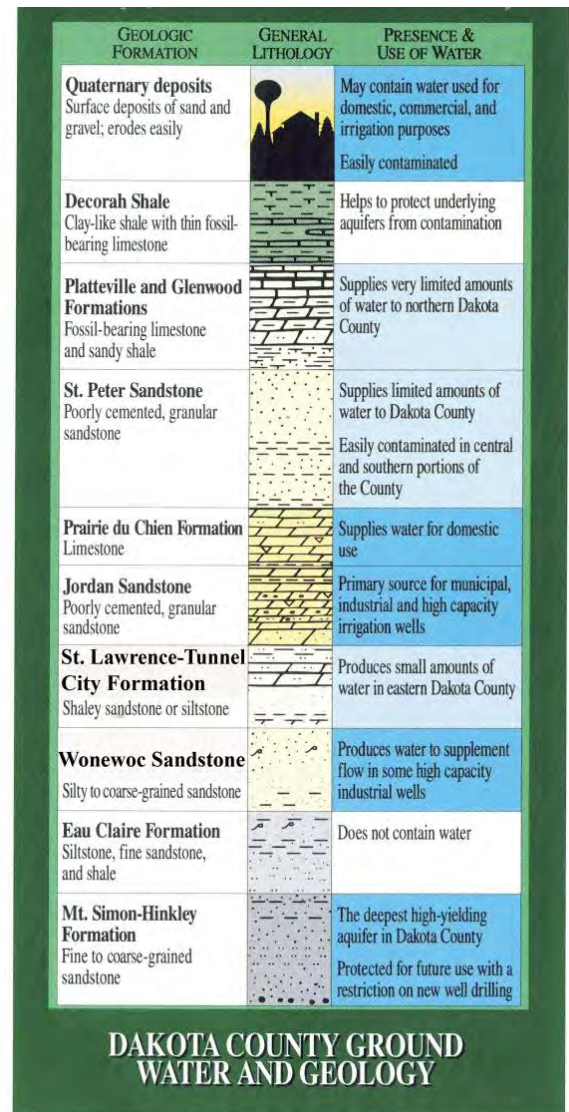
Dakota County's topography is a result of various glacial advances and retreats. Hilly areas in the northern and western parts of the county are glacial moraines, or the terminus of a glacial advance. Flat, sandy areas of the county (central and south central) are outwash plains, created from glacial meltwater reworking glacial debris.

Deep valleys and terraces of the Minnesota and Mississippi Rivers were cut by floodwater released from the Glacial Lake Agassiz. Soils, lakes, and most other surface features in the county can be also attributed to these glacial advances.

Landforms in Dakota County can be divided into four generalized categories:

- Glacial Moraines
- Outwash Plains
- Bedrock Areas
- Fluvial Landforms

**Figure 3.5 Geologic Column of Dakota County  
(1991, Dakota County Geologic Atlas)**



## SECTION III – COMMUNITY PROFILE

### Glacial moraines

The Wisconsin Glaciation began about 75,000 years ago and ended roughly 12,000 years ago. Glacial moraines in northern and western Dakota County mark the furthest advance of its two most recent lobes, the Superior Lobe and the Des Moines Lobe. An earlier glacial advance created moraine found in Hampton and Douglas Townships in the south-central portion of the county.

Moraine topography is hilly and irregular with many deep, poorly drained depressions. Most of the county's natural lakes and wetlands are found in these areas. Moraine soils are a mix of sand, gravel, boulders, and clay, so perched water tables are also found in these areas. The relief of the glacial moraines ranges from 5 to 200 feet from hill base to hilltop. Slopes vary from 1-6% in gently rolling areas, to 12-18% or more in parts of the cities of Eagan, Apple Valley, Burnsville, and Inver Grove Heights, and Hampton and Douglas Townships. Suburban housing is the predominant land use in much of the county's moraine areas.

### Outwash plains

Outwash plains were formed by deposition of glacial materials from meltwaters draining away from terminal moraines. Outwash plains are found throughout the central portion of the county and contain some of the richest gravel deposits in the metropolitan area. Most outwash plain soils tend to be droughty, but with irrigation these soils can become some of the most productive cropland in the state.

### Bedrock areas

The county's lightly glaciated south-southeastern areas include bedrock outcrops at or near the surface amid glacial deposits. Visible bedrock is generally the St. Peter Sandstone or Platteville Formation. The Prairie du Chien Formation, generally covered by a thin layer of overburden, is visible in some ravines and road cuts. The county's karst topography (Figure 3.7) with fractured bedrock is found in the bedrock area, and can include sinkholes, disappearing streams, and underground drainage. Karst areas provide conduits that directly connect surface water to the ground water and are particularly susceptible to ground water contamination.

The predominant land use in the bedrock areas of the county is agriculture. Although soils in these areas are not considered "prime agricultural," irrigation and other practices produce good crop yields.

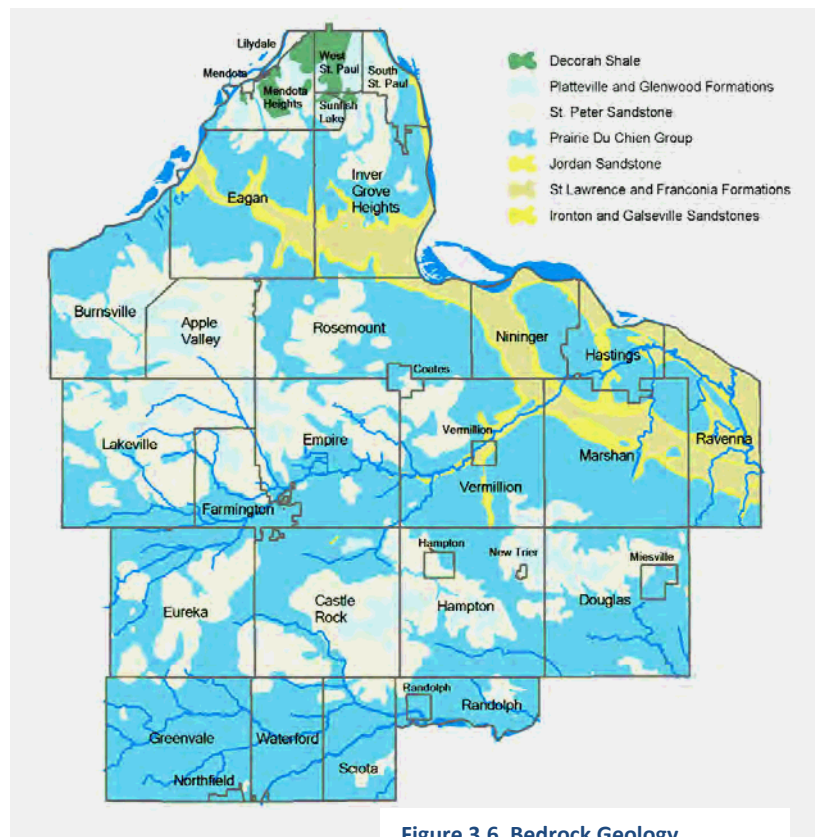
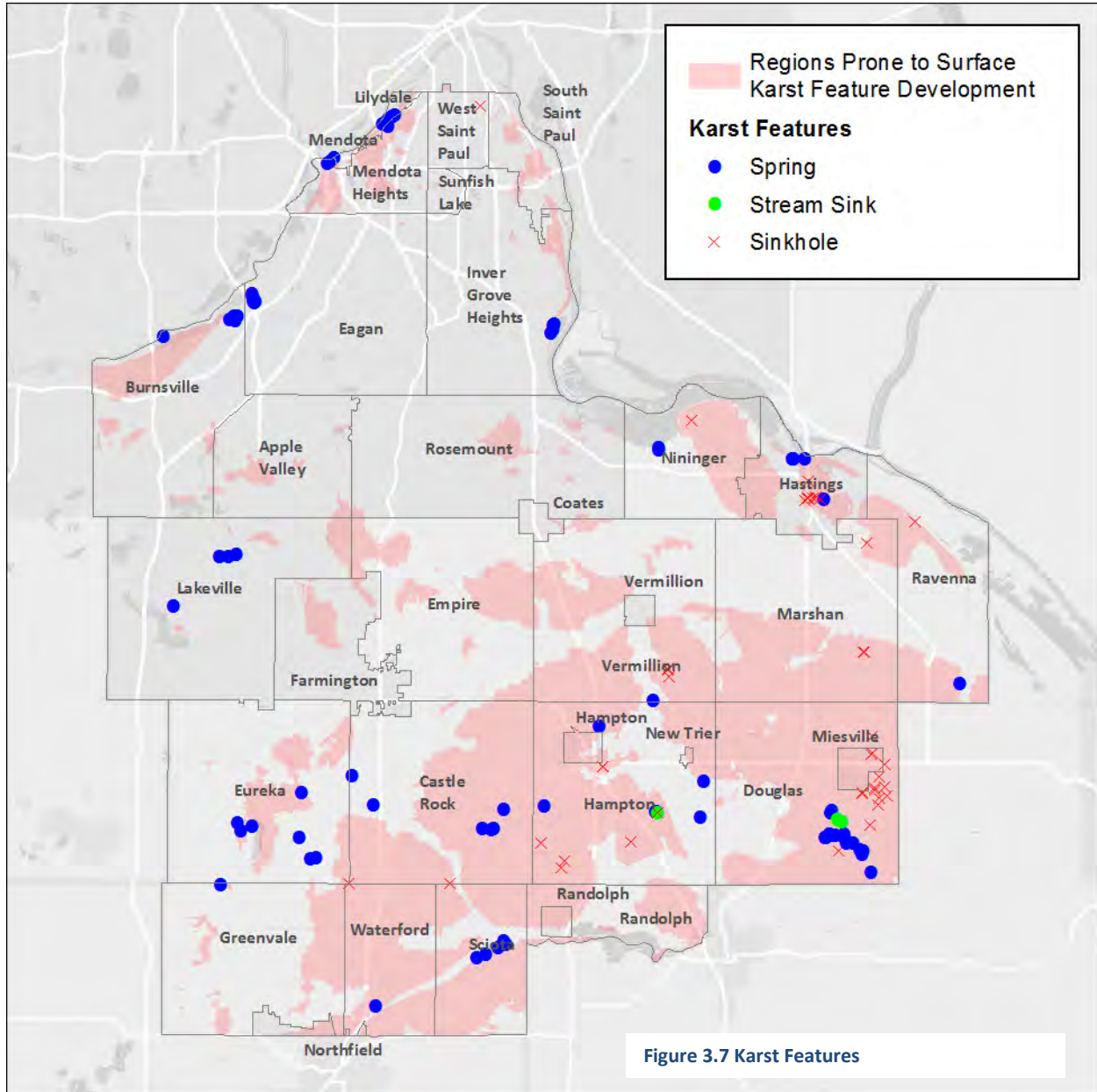


Figure 3.6 Bedrock Geology



### SECTION III – COMMUNITY PROFILE

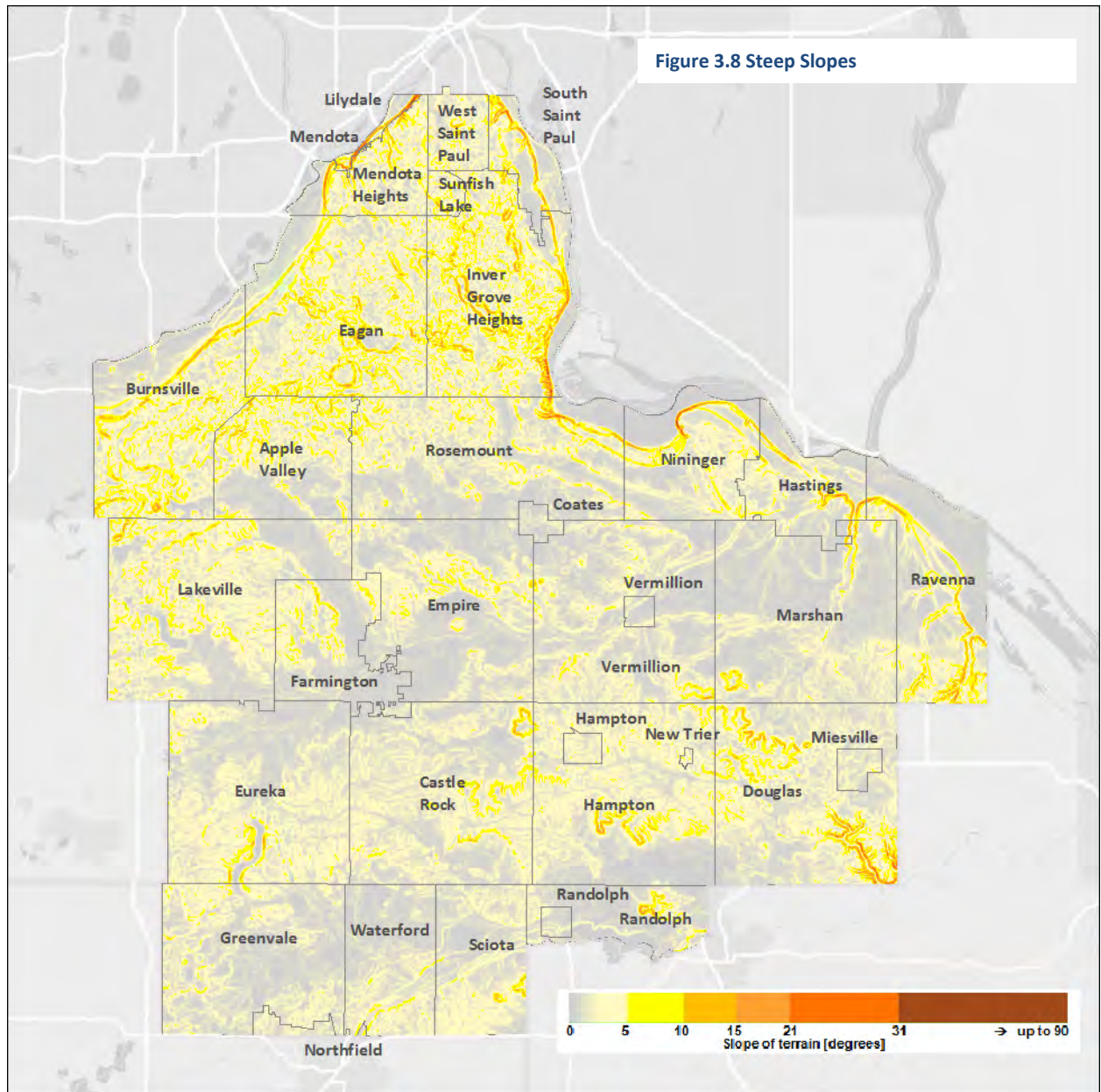


#### Fluvial landforms

Floodplains are the most common fluvial landform and are found in major and tributary river valleys. The Mississippi and Minnesota rivers contain the most expansive floodplains in the county, with a complex network of lakes, wetlands, sandbars, chutes, and sloughs. Smaller floodplains border the Cannon and Vermillion Rivers, with floodplain forests, shrubland, cropland or pastureland, and some riverine wetlands. Floodplain materials include fine silts and clays, although large peat deposits exist within the Minnesota River floodplain. Most floodplains in the county are in a natural state or an altered natural state. Development was allowed to occur within floodplains in the past, although current state law and local ordinances prohibit new development.

### SECTION III – COMMUNITY PROFILE

Well-developed natural terraces exist along the Minnesota and Mississippi River valleys. Terraces are floodplains formed in the past when the river flowed at a higher elevation than the present. Terraces represent periods of stability separated by periods of the river cutting deeper in its channel. Three distinct terraces line the county's major river valleys -- an upper, middle and lower terrace. Of the three, the middle terrace is the most extensive and the best defined. Terraces support a wide range of land uses. Parts of Burnsville, Eagan, Hastings, Mendota, Mendota Heights, South St. Paul, Nininger Township, and Ravenna Township are located on river terraces. Pronounced river bluffs are part of the river terrace system in the major river valleys, and include some of the county's steepest terrain. (Figure 3.8)





## SECTION III – COMMUNITY PROFILE

### Soils

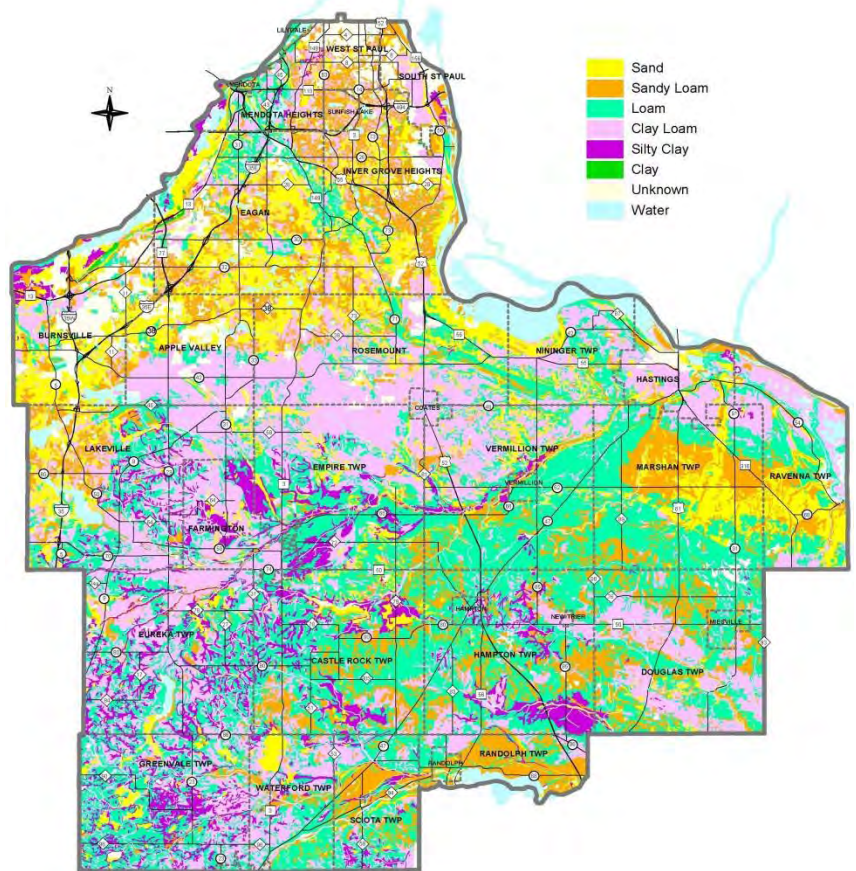
Figure 3.9 is a generalized soil map with the 10 major soil mapping units in Dakota County. Soil properties reflect the following:

- Physical and mineral properties of its parent material
- Climate under which the soil formed
- Climate since soil formation
- Plant and animal life on the soil
- Local topography

Most of the county's soils were formed from glacial material, loess, river sediments, and bedrock materials.

Clays, loams, organic soils, and fine textured soils tend to hold water and help slow the rate of contaminant entry into ground water. As soils become coarser, their water-holding capacity lessens and contaminants travel through them faster. Soils along the Mississippi and Minnesota Rivers and in flood plains along the Vermillion River and Chub and Pine Creeks tend to be loamy, silty, and clayey. These soils are fairly level and are poorly drained. Soils in the remainder of the county are well drained to excessively well drained and occur on gentle to steep slopes. Soils tend to become more shallow to the east and southeast of the county.

**Figure 3.9 Dakota County Soils**  
(1991, Dakota County Geologic Atlas)



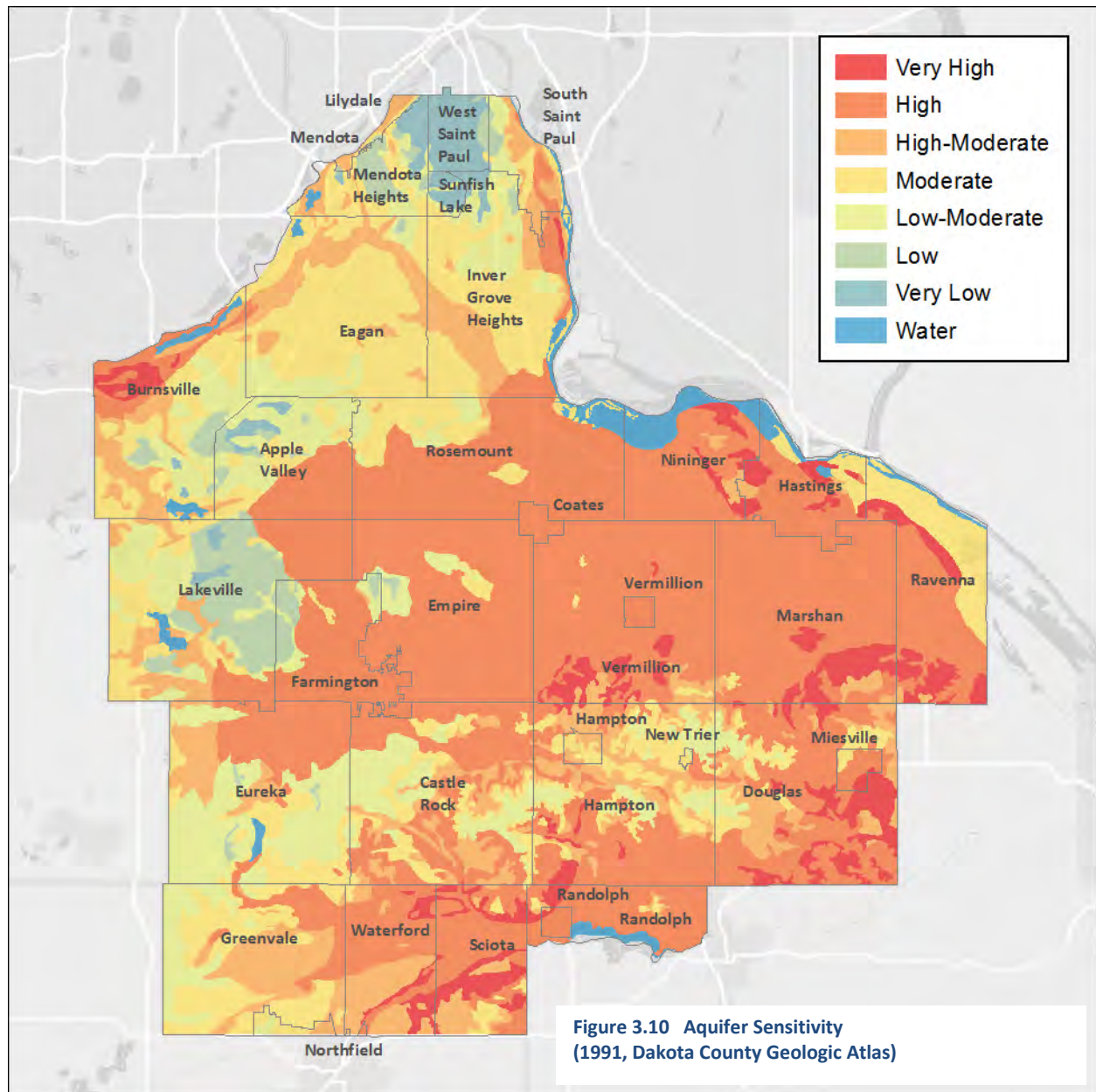
### Groundwater

Most of the drinking water in Dakota County is sourced from groundwater. Six major aquifers lie beneath Dakota County and five of these are used for municipal wells. The six major aquifers in depth-descending order are the Platteville, St. Peter, Prairie du Chien and Jordan, St. Lawrence-Tunnel City, Wonowoc, and the Mt. Simon-Hinckley. The Prairie du Chien and Jordan aquifers extend through most of the metropolitan area and are commonly used for domestic and municipal supplies.

Dakota County's major drinking water aquifers are in limestone or sandstone bedrock formations or glacially derived gravel deposits. The limestone formations in the county, in addition to having considerable vertical fracturing, have zones of weakness between bedding planes that allows for the easy lateral movement of water. In some cases these vertical fractures and the bedding planes have become cavernous as water has dissolved the surrounding limestone; thus permitting a relatively unchecked downward and lateral flow of contaminants.

### SECTION III – COMMUNITY PROFILE

Much of Dakota County is sensitive to groundwater contamination through movement of surface or near-surface contaminants into groundwater. Figure 3.10 shows the relative sensitivities to contamination of the Prairie du Chien aquifer.



#### Rivers

Major rivers in the county are shown in the Watershed Map in Figure 3.12. The **Mississippi River** borders the northeastern edge of the county. Drainage from most of the county finds its way either directly to the Mississippi River or indirectly via the Vermillion or Cannon River. The Twin Cities is the head of commercial navigation on the Upper Mississippi River, and Dakota County includes one navigation lock and dam (Lock and Dam No. 2) and several river terminals.

## SECTION III – COMMUNITY PROFILE

The Mississippi River in Dakota County is part of the 72-mile federal Mississippi National River and Recreation Area (MNRRA). The MNRRA Comprehensive Management Plan prescribes a two-tier implementation approach. The first tier incorporates planning and regulatory requirements and standards in place as part of the state Critical Areas Act, the Shorelands Management Act, and other state and regional land use programs. The second tier, which is voluntary, consists of additional land, water use, resource protection, and open space concepts, policies, and guidelines that were developed as part of the MNRRA plan. Local governments within the MNRRA boundary are encouraged to incorporate these policies.

The **Minnesota River** borders the northwestern edge of the county and receives surface drainage from portions of the cities of Burnsville, Apple Valley, Eagan, Mendota Heights, Lilydale, and West St. Paul. A segment of the Minnesota River from the I-494 Bridge in Mendota Heights to the confluence with the Mississippi River in Lilydale, is included in the MNRRA river corridor. Like the Mississippi River, the Minnesota River supports commercial navigation.

The **Vermillion River** drains central Dakota County and its watershed encompasses about 350 square miles in Dakota and Scott Counties. The Vermillion River, a tributary to the Mississippi River, originates in Scott County and flows northeast 38 miles through Dakota County, dropping 90 feet at its falls in the City of Hastings. In Hastings, the River splits and enters the Mississippi River at two separate points.

The **Cannon River** drains extreme southern Dakota County, which is well-dissected by streams and rivers. Glacial deposits are thin and the bedrock outcropping is more visible. The Cannon River is a state-designated Wild and Scenic River for part of its course through the county. Lake Byllesby is a 4.5-mile long impoundment on the Cannon River, formed by construction of a hydroelectric dam in 1910. Northern States Power Company donated the dam and adjacent lands to Dakota and Goodhue Counties in 1969. Dakota County undertook sole management of the dam in 2010.

### Watersheds

Dakota County includes seven watersheds: the Credit River, Lower Minnesota River, Gun Club Lake, and Black Dog Watersheds flow to the Minnesota River; the Lower Mississippi River, North Cannon River, and Vermillion River Watersheds flow to the Mississippi River. Formation of watershed management organizations was authorized through the Metropolitan Surface Water Management Act of 1982. Watershed management organization boundaries do not exactly match the watershed hydrologic boundaries of the individual watersheds. The seven managing organizations and their boundaries are shown in Figure 3.12:

- Black Dog Watershed Management Organization
- Eagan Inver Grove Heights Watershed Management Organization
- Lower Minnesota River Watershed Management Organization
- Lower Mississippi River Management Organization
- Minnesota River Watershed District
- North Cannon River Watershed Management Organization
- Vermillion River Watershed Joint Powers Organization

Each watershed organization leads the development and implementation of policies, programs, and projects that protect, preserve, and restore water resources within its borders.



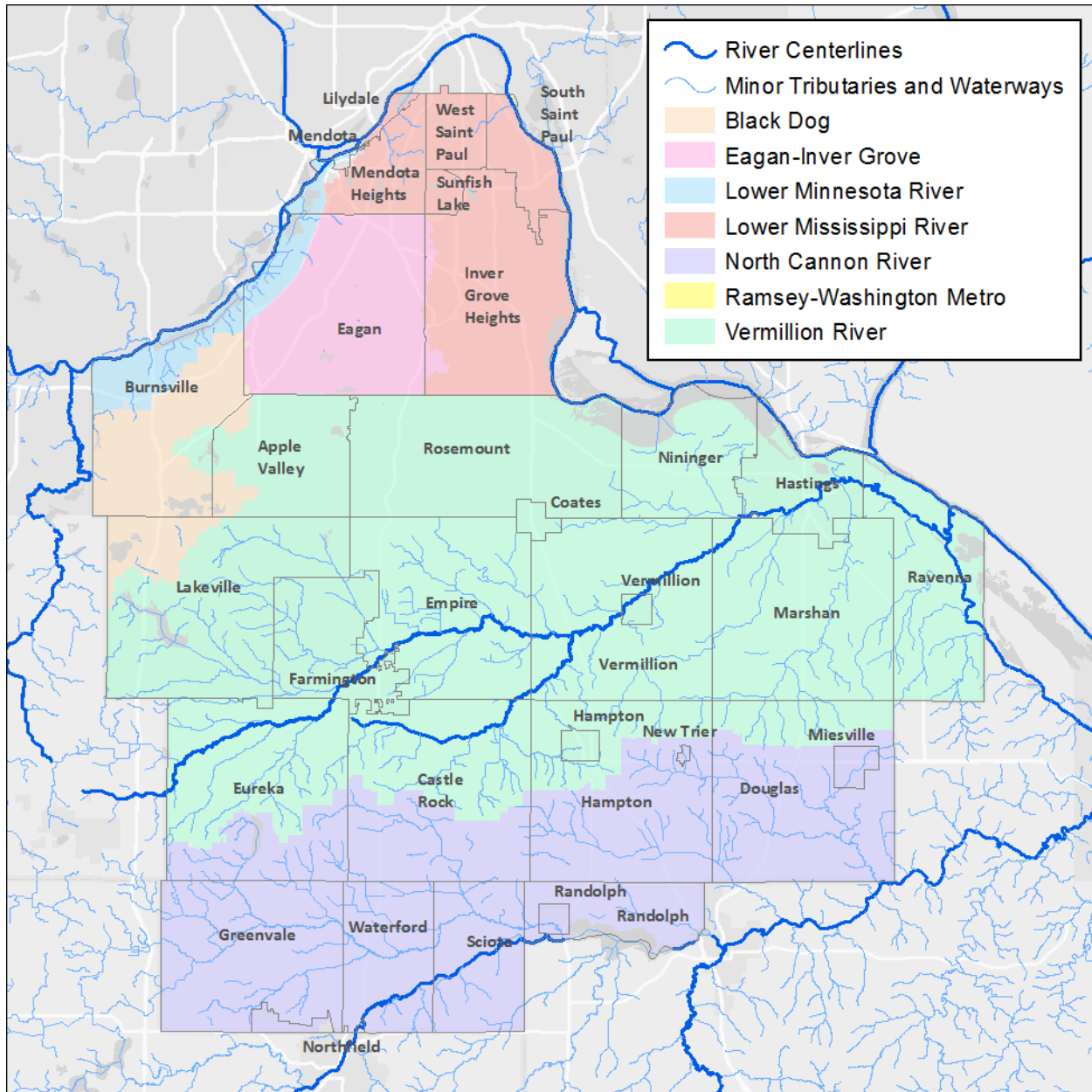


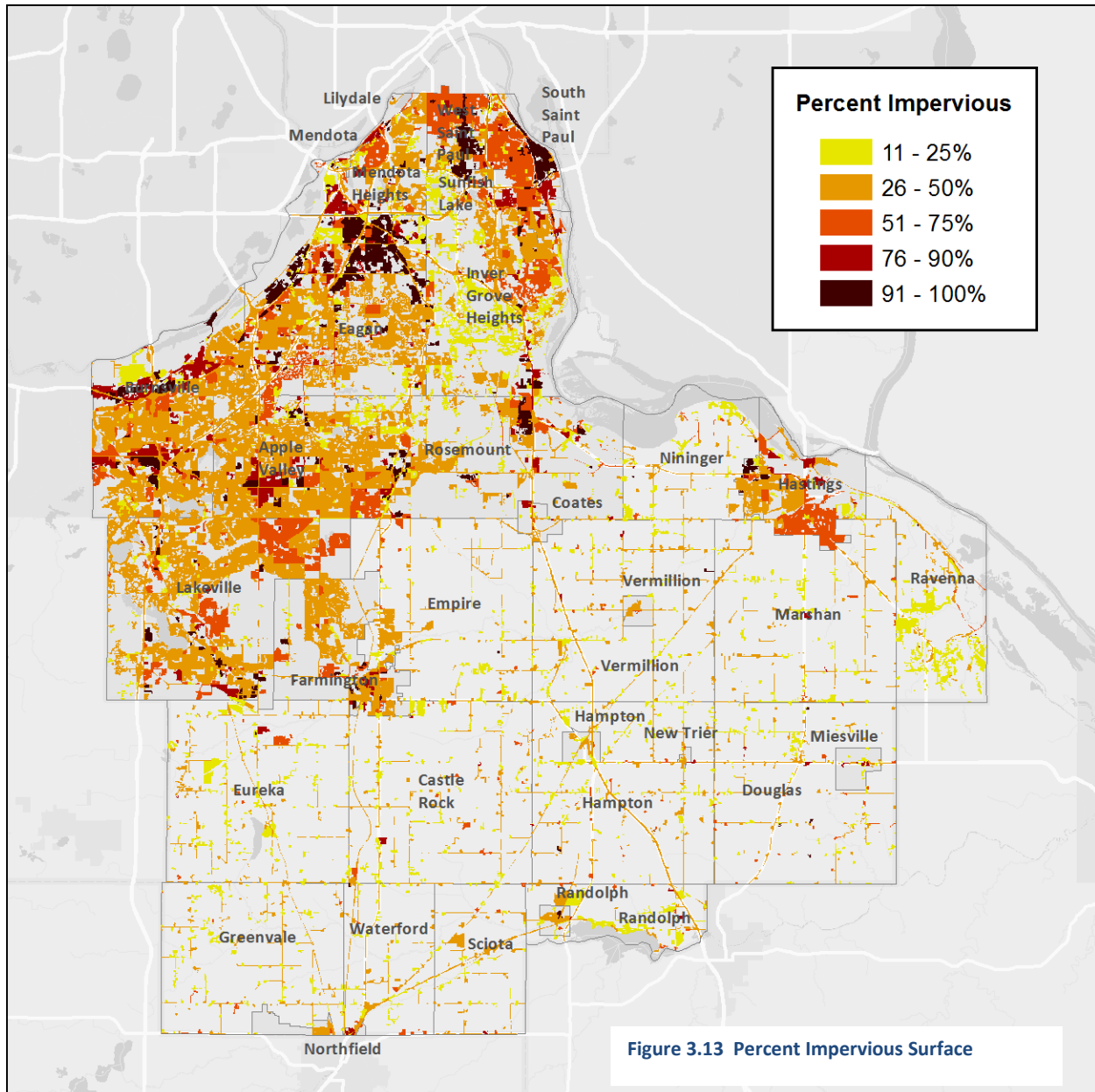
Figure 3.12 Watershed Management Organizations

## Land Cover and Use

### Land Cover

The most recent land cover data compilation by the Metropolitan Council in 2010 indicates that Dakota County is 64.6 percent agricultural or otherwise undeveloped land, and 35.4 percent urban or suburban development. Since 2005, nearly 10,000 acres have transitioned out of agriculture or an undeveloped state to a developed use, a change of nearly 4 percent. The Minnesota Landcover Classification System is a hierarchical mapping system that maps land according to predominant native vegetative communities. It also includes information on development and the extent of impervious surface, such as rooftops and paved surfaces. Figure 3.13 displays the range of impervious surface throughout the county.

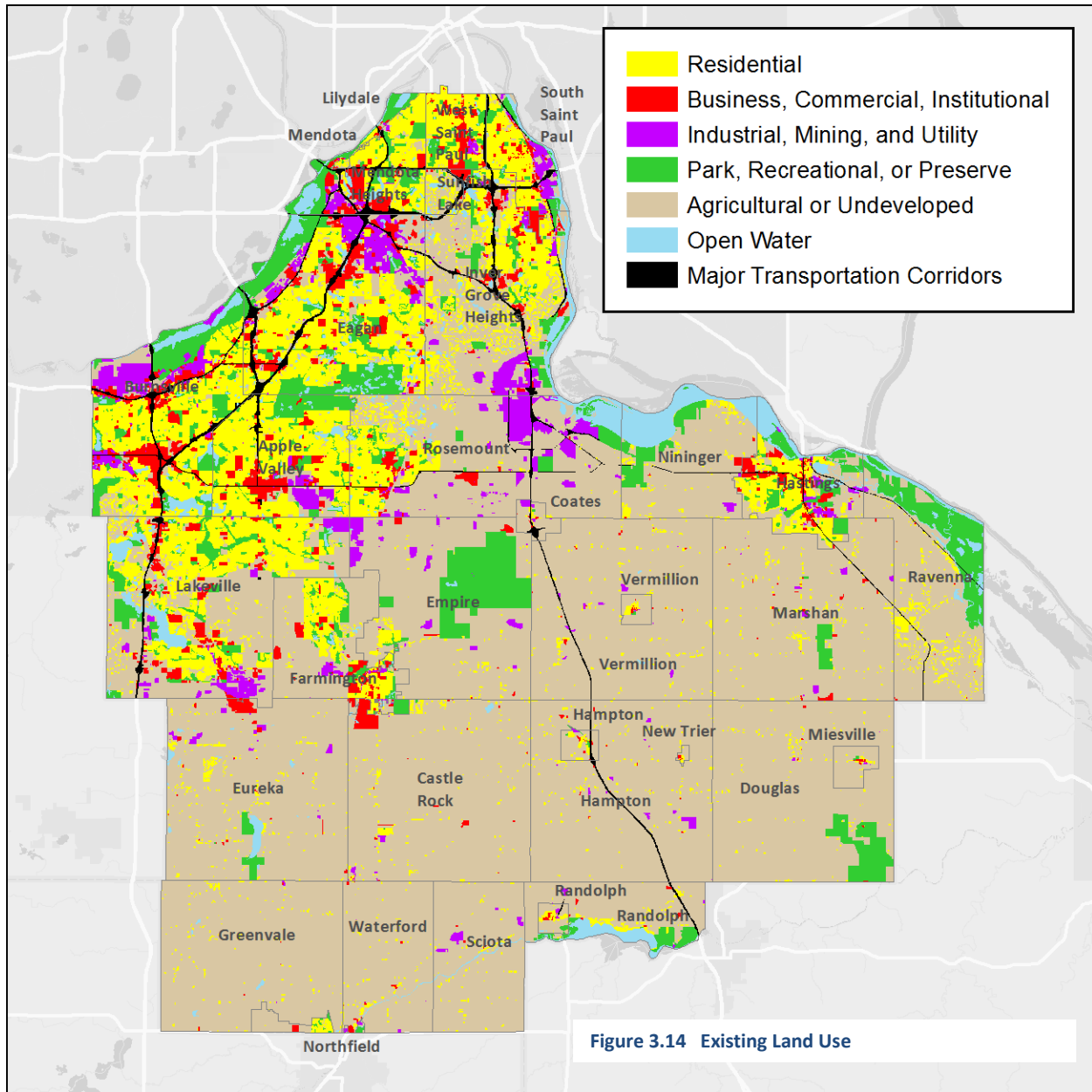
## SECTION III – COMMUNITY PROFILE



### Land Use

Dakota County was primarily agricultural prior to World War II. Suburban growth in Dakota County, like much of the United States, has its roots in the federal highway and home mortgage credit programs developed in the 1950s. New highways made it possible for developers to create subdivisions in locations that were formerly too remote to develop. In the 1970s and 1980s, a pattern of dispersed single-family homes from the previous era began to give way to infill development. Major transportation improvements, including the completion of Interstate 494, Interstate 35 East, and the Cedar Avenue Bridge, brought more intense land use to the county. During the 1990s, Dakota County continued evolving from suburbs of “bedroom communities” to more diversified patterns of land use. The Metropolitan Council, a regional government and planning body, forecasts that Dakota County’s population will grow by over 9% between 2010 and 2020, and nearly 29% between 2010 and 2040.

## SECTION III – COMMUNITY PROFILE



### Residential Development Trends 1990 - 2016

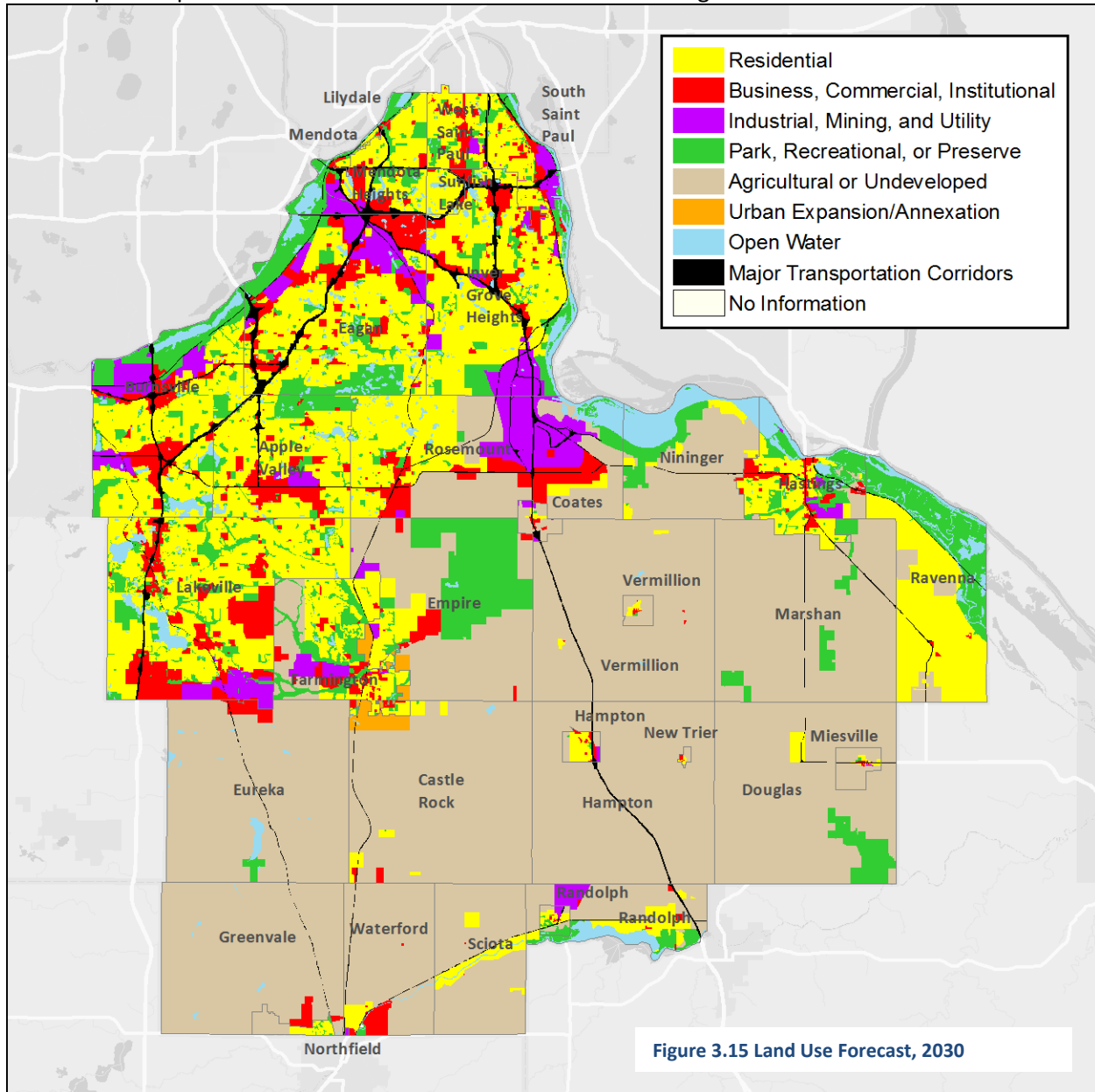
In the mid-1990s through 2008, more than 3,000 housing units per year were built in the county's urban areas at densities of approximately 2-3 units per acre. This pattern consumed over 1,000 acres of land per year. During the same period, roughly 100 houses per year were constructed in the county's townships and rural cities at much lower densities. Although the number of new houses built in rural areas was much lower than in urban areas, lot sizes of 5 to 20 acres meant that a comparable amount of acreage was converted to residential use. Taken together, roughly 2,000 to 3,000 acres of land were converted from agricultural use to residential suburb each year.

With the Great Recession that began in 2008, rates of development in the county slowed from a peak of 4,200 housing units/year in 2004 to 609 housing units/year in 2009. New housing permits have slowly increased with the economic recovery in recent years, reaching 1,084 new housing permits in 2014.

## SECTION III – COMMUNITY PROFILE

### Future Land Use

Figure 3.15 shows projected land use in the year 2030. Lakeville, Farmington, Rosemount, and Empire Township are expected to receive most of the forecast residential growth.



**Residential:** land identified by the Metropolitan Council as single-family or multifamily residential.

**Rural Residential:** contains a building or portion used for residential purposes, including one-family homes. Cannot exceed 1 housing unit per 2.5 acre and no less than 1 housing unit per 40 acres.

**Agricultural:** used for farming, dairying, pasturage, horticulture, floriculture, viticulture, and animal and poultry husbandry and accessory uses; provided that such accessory uses shall be incidental to the agricultural activities.

**Park and Recreation:** used primarily for public recreation activities improved with playing fields, playground or exercise equipment and associated structures. May include building(s) developed and maintained for recreational activities.

**Commercial:** use primarily in the provision of goods or services for an unspecified market area.

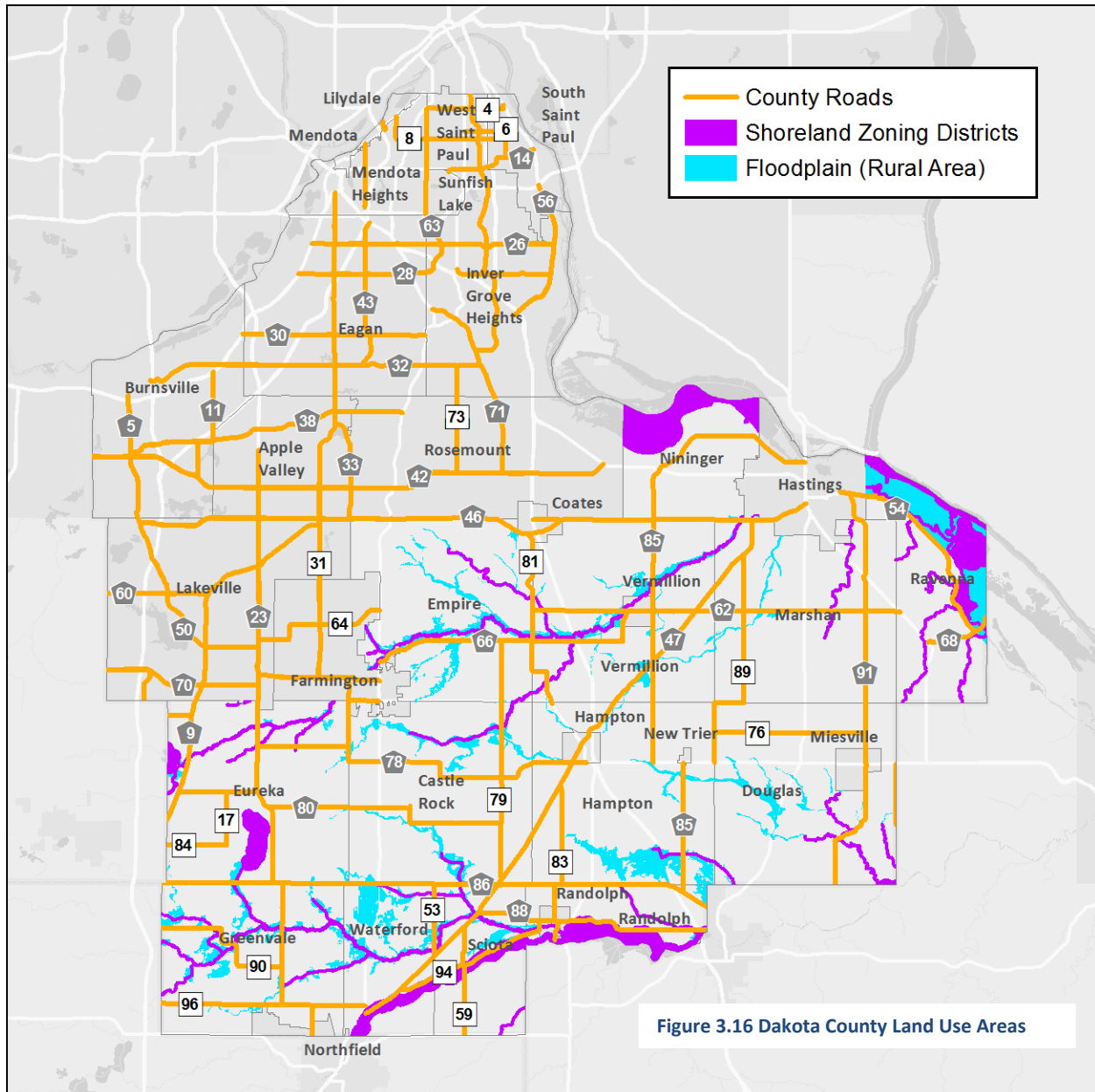
**Industrial:** used primarily in manufacture and/or processing of products; could include light or heavy industrial land use, large warehouse facilities, or utilities land use.

**Institutional:** used for primarily religious, governmental, educational, social or health care facilities excluding clinics.

**Mixed Use:** contains a building with significant amounts of residential, industrial, commercial and/or office uses.

### Land Use Authority

Land use authority mostly rests with the individual cities and townships of Dakota County. Cities independently manage their own comprehensive plans, zoning classifications, and subdivision ordinance. Their decisions are influenced by Dakota County (road network), regional agencies such as the Metropolitan Council (metro sewer district), and watershed management organizations. Dakota County's direct land use authority is limited to shoreland/floodplain areas of the rural townships, and County Road right-of-way, shown in Figure 3.16



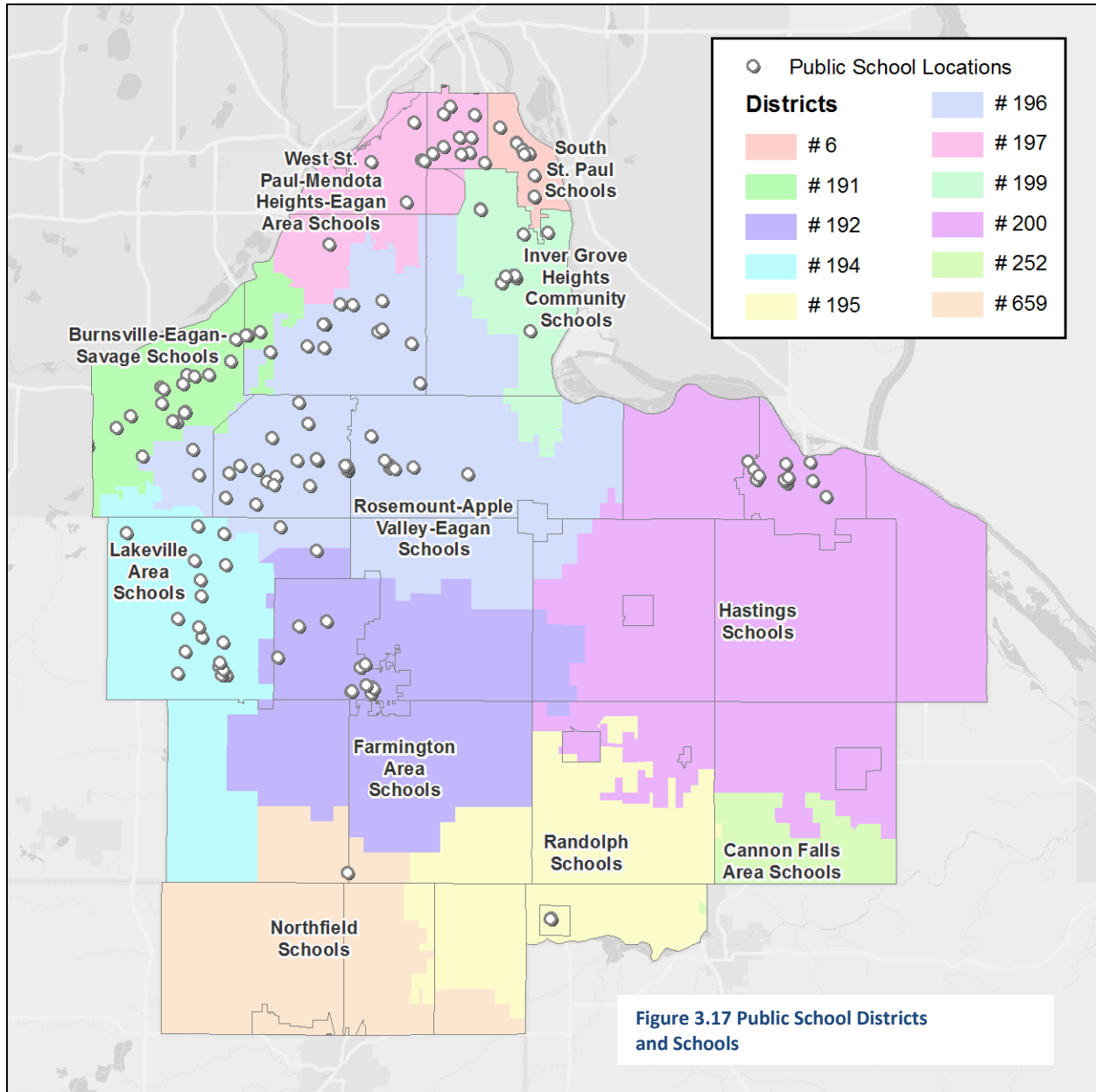


## Community Infrastructure

Important public facilities include school districts, city and county public buildings, and a range of other areas where people congregate.

### Schools

Dakota County has nine public school districts, a county-wide intermediate district for special education students, and several private institutions. Figure 3.17 shows the public school district boundaries; Table 3.3 indicates the number of schools in each district. Dakota County has two public colleges: Dakota Technical College in Rosemount and Inver Hills Community College in Inver Grove Heights.



## SECTION III – COMMUNITY PROFILE

**Table 3.3 Dakota County School Districts: Number of Schools**

District	Communities Served	Schools
SD 6	South St. Paul	4
ISD 191	Burnsville Savage Eagan	14
ISD 192	Farmington	8
ISD 194	Lakeville	15
ISD 195	Randolph	2
ISD 196	Rosemount Apple Valley Eagan	28
ISD 197	West St. Paul, Mendota Heights, Eagan	8
ISD 199	Inver Grove Heights	5
ISD 200	Hastings	6
	Public Charter Schools	5
	Private Schools	30

### **County Public Facilities**

Dakota County owns and/or operates more than 64 buildings with 1,700,000 square feet of space, including office space for county services, criminal justice facilities, park visitor centers and shelters, libraries, and maintenance buildings. All major buildings incorporate severe weather shelter facilities. County facilities are shown in Figure 3.18

Dakota County operates nine public libraries. A tenth library in Dakota County is owned and operated by the City of South St. Paul. All of the Dakota County libraries are either new or newly remodeled. Area libraries provide a full range of services and typically serve between 35,000 to 55,000 residents.

The Dakota County Park System has seven parks: Lebanon Hills Regional Park, Lake Byllesby Regional Park, Whitetail Woods Regional Park, Spring Lake Park Reserve, Miesville Ravine Park Reserve, and Thompson County Park. Combined annual use of the park system is over one million visits.

County facilities are listed below by geographic quadrant:

#### ***Eastern Locations***

- Administration Center, Hastings (County Seat)
- Judicial Center, Hastings
- Law Enforcement Center, Hastings
- Juvenile Center, Hastings
- Spring Lake Park Reserve, Nininger: Gathering Center, Retreat Center, and Maintenance Shop
- Highway Maintenance Shop, Hastings
- Pleasant Hill Library, Hastings

#### ***Western Locations***

- Western Service Center, Apple Valley
- Galaxie Library, Apple Valley
- Highway Maintenance Shop, Rosemount
- Highway Shop, Empire
- Lebanon Hills Regional Park, Eagan: Visitor Center, Camp Sacajawea, Maintenance Shop
- Wescott Library, Eagan

## SECTION III – COMMUNITY PROFILE

Burnhaven Library, Burnsville  
Heritage Library, Lakeville

### ***Northern Locations***

County Historical Society and Museum, South St. Paul  
Northern Service Center, West St. Paul  
Wentworth Library, West St. Paul  
Thompson County Park, West St. Paul: Dakota Lodge Visitor/Senior Center  
Inver Glen Library, Inver Grove Heights  
South St. Paul Library (city owned)

### ***Southern Locations***

Farm Extension Building, Farmington  
Lake Byllesby Regional Park Maintenance Building, Randolph Township  
Highway Maintenance Shop, Farmington  
Farmington Library  
Robert Trail Library, Rosemount  
Whitetail Woods Regional Park, Empire: camper cabins and showers

### **Other Large Parks and Natural Areas in Dakota County**

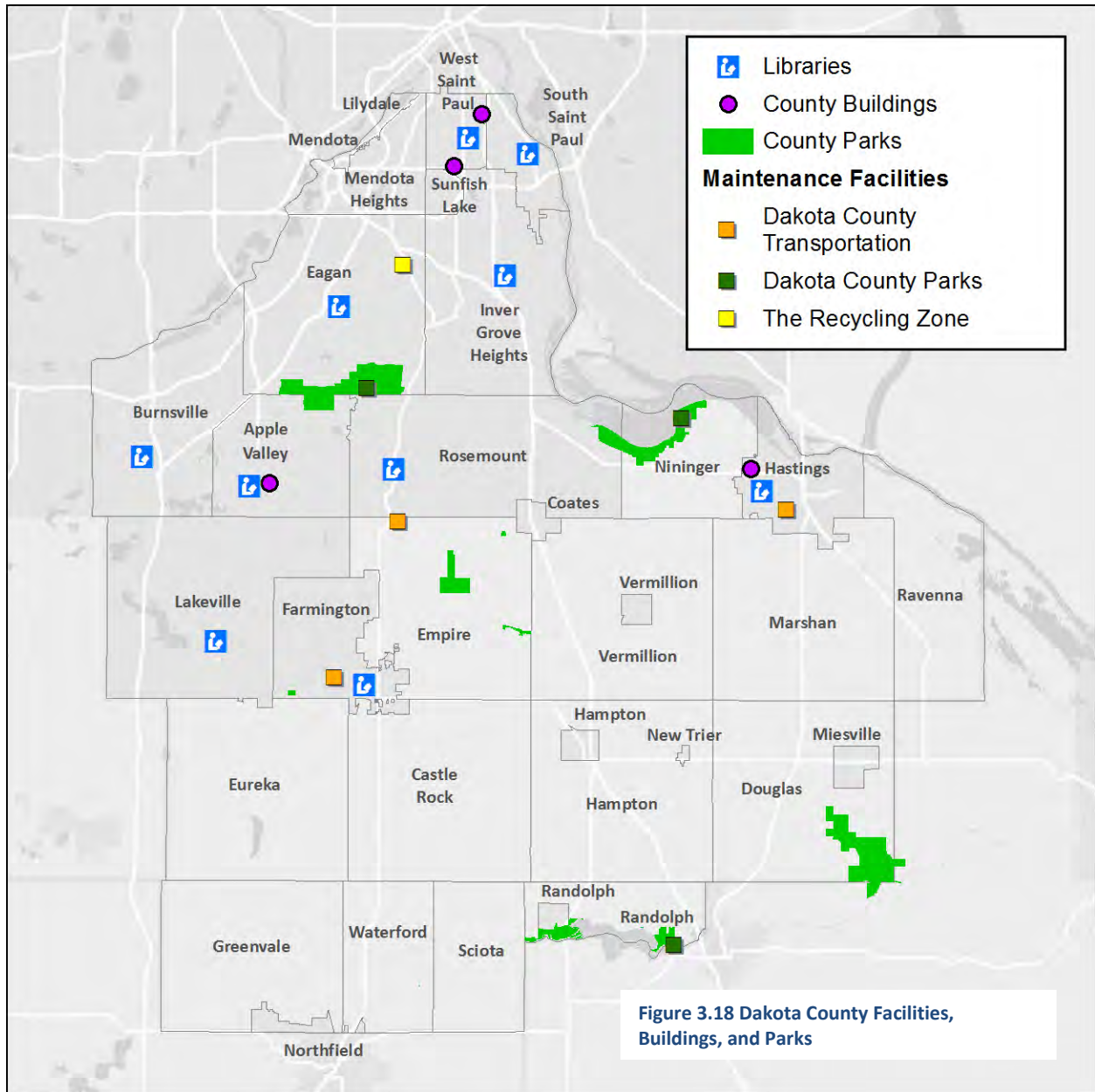
***Fort Snelling State Park*** (3,460 acres): Located in Dakota, Ramsey and Hennepin counties overlooking the confluence of the Mississippi and Minnesota Rivers. The park includes two state historic sites administered by the Minnesota Historical Society: Historic Fort Snelling and Camp Coldwater. With approximately 500,000 visits per year, Fort Snelling State Park is the second most-visited state park.

***Minnesota Zoological Gardens*** (500 acres): Located in Apple Valley. Outdoor facilities include five walking trails featuring a variety of plants and animals in their natural setting, a monorail, children's zoo, playground, 1,500-seat outdoor amphitheater, and 200 seat indoor theater.

***Minnesota Valley National Wildlife Refuge*** (9,583 acres): Located in several counties. The Refuge stretches 34 miles along the Minnesota River from Fort Snelling State Park to Jordan and is administered by the United States Fish and Wildlife Service. Facilities include a visitor center and several trails.



## SECTION III – COMMUNITY PROFILE



### Historical Resources

Dakota County has more than 650 properties on the Minnesota State Historical Preservation Organization database, and more than 90 individual properties or structures listed on the National Register of Historic Places. More than one-half of these National Register-listed structures are located within the City of Hastings. Dakota County includes three National Register-listed historic districts:

- Mendota Historic District, located in the Village of Mendota
- Hastings East Second Street Commercial Historic District, in downtown Hastings
- Hastings West Second Street Residential Historic District, in Hastings

## SECTION III – COMMUNITY PROFILE

The Dakota County Historical Society maintains its archives and a museum in the City of South St. Paul. Most of Dakota County's historic properties could be considered vulnerable to natural and manmade disasters.

### **Regional Destinations**

In addition to the city and county public facilities listed above, there are several sites that are regional attractions that draw a large number of visitors on a seasonal or year-round basis:

- Buck Hill Ski Area, Burnsville
- Burnsville Mall, Burnsville
- Twin Cities Premium Outlets
- Dakota County Fairgrounds and Dakota City Heritage Village, Farmington

## **Transportation**

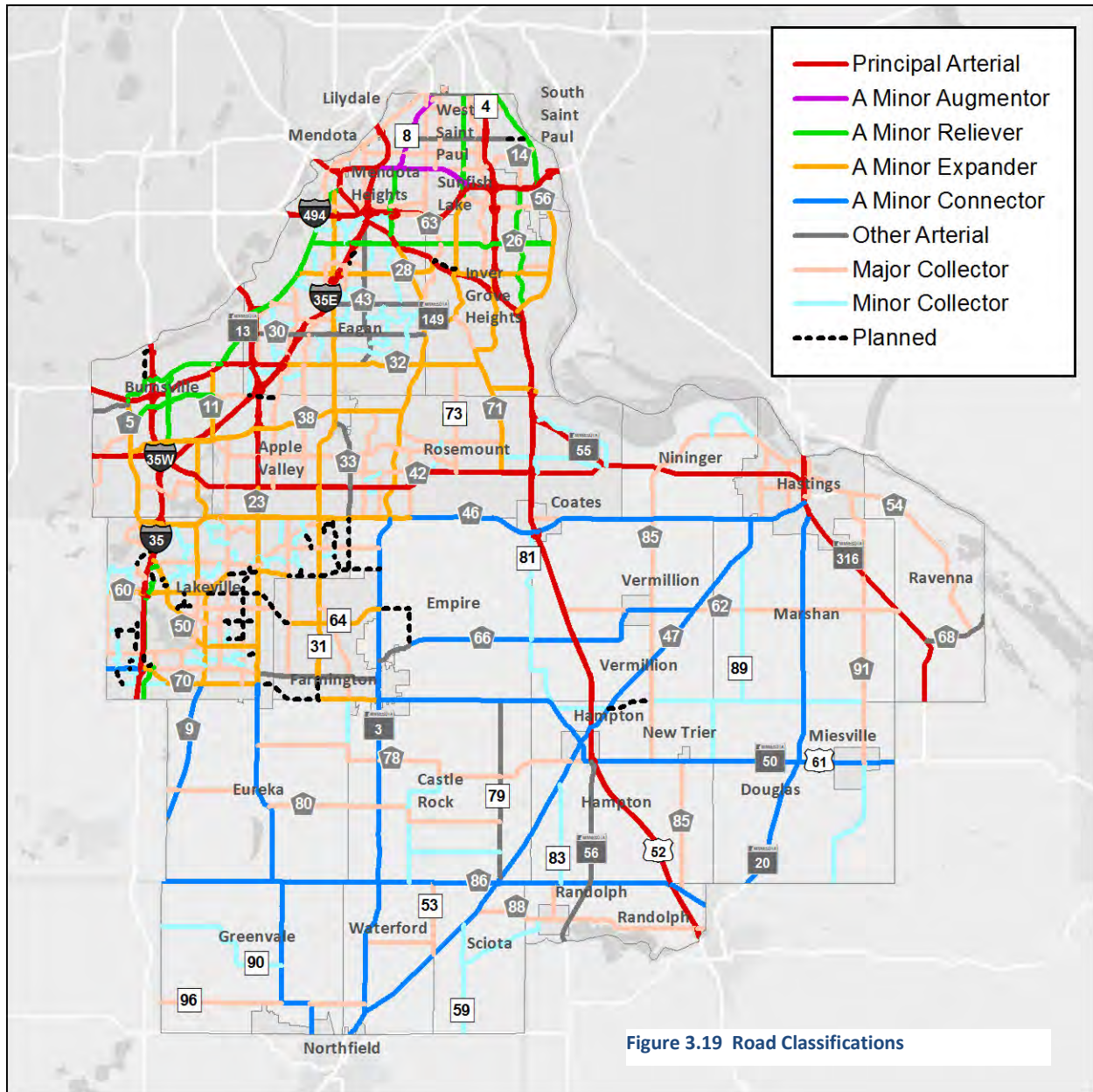
### **Roads**

The existing Dakota County highway system has a total of 420 centerline miles, with approximately 364 paved and 56 gravel-surfaced. The highway system also has 80 bridges, 250 traffic signals, and 25,000 signs for which Dakota County has oversight and maintenance responsibility. Dakota County coordinates its roadway efforts with those of city, state and federal governments.

A highway functional classification system groups highways based on the type of trips they are intended to serve. The Metropolitan Council and the Transportation Advisory Board (TAB), functioning together as the Metropolitan Planning Organization for the Twin Cities Region, have adopted a series of functional classification system criteria for the Twin Cities region. Figure 3.19 shows Dakota County's road system and connections to adjacent counties in terms of roadway functional classes.

More residents are driving significantly more miles each year on County highways and the rate of increase is greater than the rate of population growth. The county experienced a 54 percent increase in miles driven between 1990 and 2000, compared with 29 percent population growth in the same period. Between 2000 and 2020, vehicle miles traveled is estimated to grow 40 percent, compared with an estimated 28 percent population growth. Vehicle miles driven are a measure of highway demand, especially when compared to growth.

## SECTION III – COMMUNITY PROFILE



### Major Bridges

The Minnesota and Mississippi Rivers frame the north and northeastern boundaries of Dakota County, from Burnsville to Ravenna Township. Dakota County's rapid development in the 1980s is directly related to the completion of major river crossings. Major bridge crossings of the Minnesota and Mississippi Rivers are shown in Figure 3.20, and include:

1. I-35W Bridge over the Minnesota River linking Burnsville and Bloomington.
2. Cedar Avenue Bridge (TH 77) linking Eagan and Bloomington.
3. I-494 Bridge connecting Eagan/Mendota Heights with Bloomington.
4. Mendota Bridge (TH 55) from Mendota/Mendota Heights to the International Airport Area.
5. I-35E Bridge (Lexington Avenue) from Mendota Heights to St. Paul.
6. I-494 (Wakota) Bridge from South St. Paul to Newport.
7. Hastings Bridge (TH 61) from Hastings to Washington County.
8. US Highway 52 Bridge over the Vermillion River



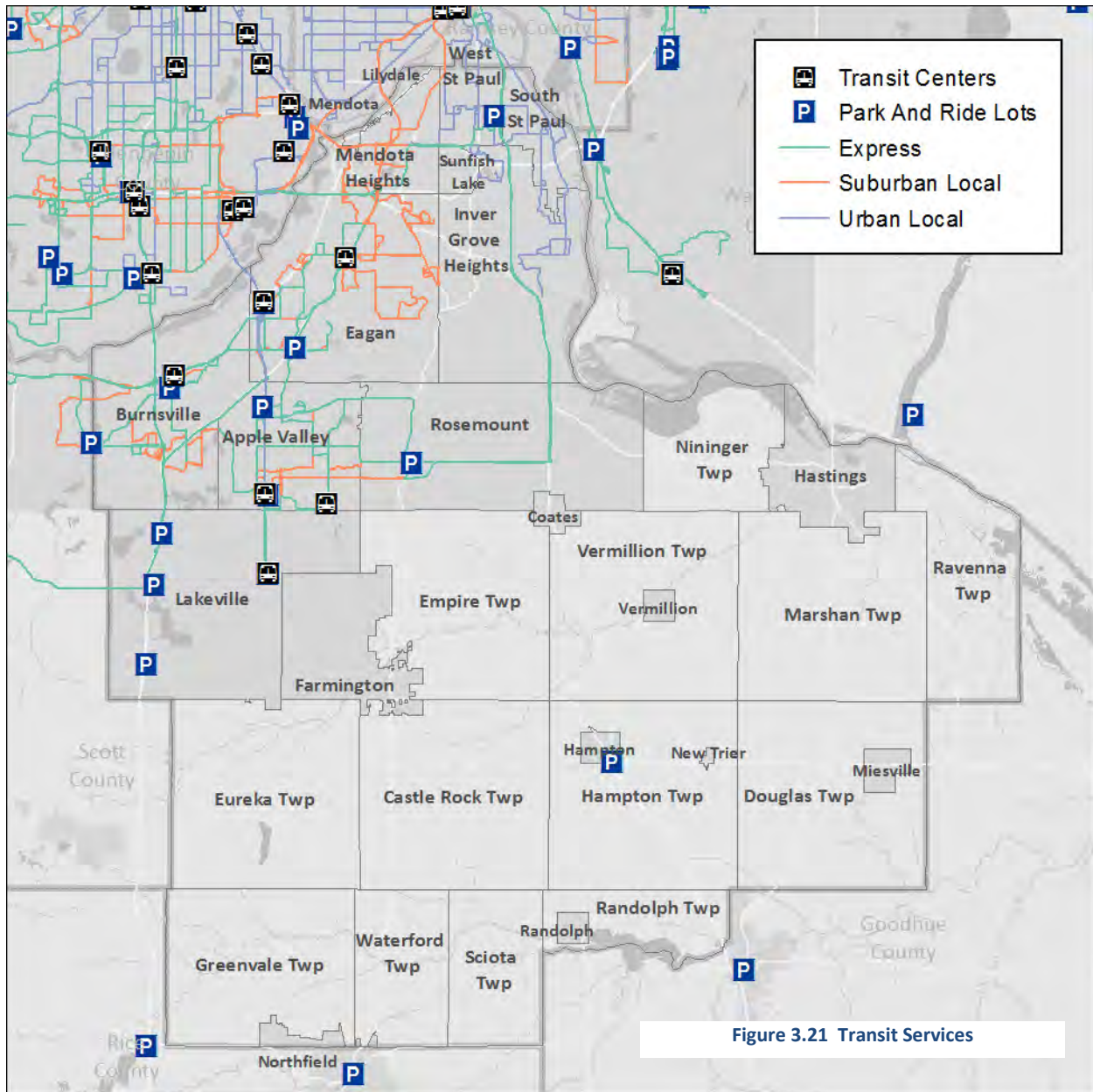
**Figure 3.20 Major Bridge Crossings**

## Transit

DAKOTA COUNTY, MN, ALL-HAZARD MITIGATION PLAN, page 40

### SECTION III – COMMUNITY PROFILE

older fully developed communities to minimal or none in the southern rural areas. Figure 3.21 shows current transit routes.



Dakota County benefits from having multiple transit providers. Metro Transit provides regional services in northeastern Dakota County, including the Cities of Mendota Heights, Inver Grove Heights, West St. Paul, and South St. Paul. Transit service in this area is characterized as “local radial service,” with five regular routes connecting northern Dakota County with downtown St. Paul. The Minnesota Valley Transit Authority (MVTA) provides predominately peak hour express service from the cities of Eagan, Burnsville and Apple Valley to downtown Minneapolis and downtown St. Paul.

In 2013, the Metro Red Line, the first bus rapid transit (BRT) service in the Twin Cities metro area, began operations on an 11-mile route between Apple Valley and the Mall of American transit station. BRT is enhanced bus service with faster travel and higher reliability through frequent service, shoulder lane

## SECTION III – COMMUNITY PROFILE

operation, off-board fare collection, traffic signal priority and improved passenger information. Future plans for the Red Line include extending the line to Lakeville. The MVTA operates the Red Line.

In addition to existing transit services in Dakota County, local and regional plans have identified several transit corridors within the County for expanded and enhanced transit service. These corridors include:

***I-35W BRT Corridor:*** Bus rapid transit on I-35W from Lakeville to downtown Minneapolis

***Red Rock Corridor:*** Commuter rail from Hastings and St. Paul and Minneapolis downtowns

### ***Transit stations***

Dakota County currently has four transit stations and several park and ride locations.

Table 3.4 Transit Stations and Park& Rides		
Operator	Station	Capacity
Minnesota Valley Transit Authority (MVTA)	157th St P&R	258
	Palomino Hills P&R	318
	Apple Valley TS	768
	Heart of City P&R	343
	Burnsville TS	1428
	Cedar Grove TS	166
	Blackhawk P&R	370
	Eagan TS	719
	Lakeville-Cedar P&R	190
	Rosemount P&R	102
Metro Transit	West St. Paul Sports Complex	100
	I-35/Kenrick	750

### **Railroads**

Railroads are a significant element in the county's transportation system for movement of freight to and between ports and major urban areas. Railroads have an impact on land use, the physical environment of the county, and other components of the transportation system. Two Class I rail carriers operate in Dakota County: the Canadian Pacific Railway and the Union Pacific Railroad.

The Union Pacific Railroad operates four to nine trains per day on most of its routes in Dakota County. A segment between Northfield and Cannon Falls carries a maximum of three trains per day, while a line between Inver Grove Heights and St. Paul averages from 10 to 19 trains daily. Union Pacific operates a major classification yard in South St. Paul, where 500 cars are received and dispatched daily. The Canadian Pacific Railway operates an average of three trains per day on each of its Dakota County routes.

A shared mainline between St. Paul and Hastings runs along the far side of the Mississippi River, just outside the county's borders, with a high volume of daily traffic south through Wisconsin to Chicago. Figure 3.21 shows the major rail lines in Dakota County.

## Air Transportation

The two airports in Dakota County are part of a regional airport system. Both serve as reliever airports to reduce congestion at Minneapolis-St. Paul International Airport and to provide increased aviation access to nearby communities. See Figure 3.22 for airport locations.

- **South St. Paul Municipal Airport** (SGS, Fleming Field): under the jurisdiction of the City of South St. Paul. Classified as a minor airport in the regional system, it has one 4,000-foot runway. It has limited development potential and therefore, no major expansion is planned. The airport has more than 60,000 takeoffs and landings annually.
- **Airlake Airport** (LVN): under the jurisdiction of the Metropolitan Airports Commission (MAC). Similar to South St. Paul, it is classified as a minor airport, with a 4,100-foot runway. The airport annually has more than 39,000 takeoffs and landings. Future plans include new hangars in the southwest corner of the airfield, expanding the primary runway to 4,600 feet, and developing a 2,500-foot crosswind runway.

The following two metropolitan airports are in close proximity to Dakota County. Each has the potential for safety and environmental impacts on nearby residential areas.

- **St. Paul Downtown Airport** (STP, Holman Field): Located in the City of St. Paul on the south side of the Mississippi River just north of South St. Paul. The airport is under the jurisdiction of the MAC and is the primary reliever for the Minneapolis-St. Paul International Airport (MSP). Three runways, of 6,500, 4,000, and 3,640 ft. length, accommodated 53,373 takeoffs and landings in 2015. Roughly 100 aircraft are based at the facility.
- **Minneapolis-St. Paul International Airport** (MSP): MSP is located in Hennepin County, northwest of the Dakota County cities of Mendota Heights and Eagan. Under the jurisdiction of the MAC, it primarily serves scheduled air passenger and cargo services. In 2014, MSP served 32.4 million passengers and accommodated 411,760 landings and takeoffs making it 11th in North America for the number of travelers served and the 13th busiest airfield in the United States. MSP has four runways of 11,000, 10,000, 8,200, and 8,000 ft. length. Busy southern runway approaches cut across a large portion of Dakota County.

## Commercial River Navigation

Commercial navigation continues to be an important part of the transportation system serving Dakota County. The most recent study (1984) undertaken by the Metropolitan Council reported that nearly 1,000 jobs in the county were related to commercial navigation. In 2009, Dakota County's terminals handled over 14% of the region's river freight (1.7 million net tons.) From an organizational standpoint, the City of Rosemount is the only community in the county with a municipal port authority. Barge facilities are mapped in Figure 3.22.

**Table 3.5 Major terminals in/near Dakota County**

Terminal	Location
U.S. Salt	Burnsville
CF Industries and Flint Hills Resources	Rosemount
Dakota Bulk	South St. Paul
Cargill East, Cargill West, Superior Minerals, Mosaic	Savage (Scott County)
Crop Nutrients, CHS	

## SECTION III – COMMUNITY PROFILE

### Trucking

Trucking of freight contributes to the economic vitality of the county and region. Trucks are the choice for most regional and short-haul trips. Future economic competitiveness will depend in part on a transportation system that allows efficient movement of freight.

Three major truck terminals (i.e., terminals with 1,000 to 1,600 trucks) are located in Dakota County. One facility is in Eagan on Lone Oak Road (CSAH 26) between I-35E and TH 55. A second is located in Inver Grove Heights south of TH 55. The third is in Burnsville west of I-35W and north of TH 13. See Figure 3.21 for truck depot locations.

Airlake Industrial Park, located along CSAH 70 in Lakeville, is the second largest industrial park by acreage in the Twin Cities metropolitan area, and one of the major generators of truck trips in the region. The park includes Airlake Airport, performing reliever functions for Metropolitan Airports Commission. Businesses in the industrial park are also served by both freight and short line regional service via the Canadian Pacific Rail.

Because of the high number of commercial operations (barge terminals, truck terminals, manufacturing operations, etc.), a number of state trunk highways and interstate highways exceed 3,000 truck trips per day. The following table summarizes heavy truck traffic areas in the county:

**Table 3.6 Heavy Truck Traffic Areas in Dakota County**

Location	Heavy commercial vehicles per day
Highway 13 near Yosemite and Vernon ( CHS, Cargill West, Bunge)	4,150
Highway 13 near Lynn Avenue ( Cargill)	4,200
Highway 13 at 35W	3,650
35W at Highway 13 (Interstate Thru Traffic)	7,300
Highway 52 at Highway 55 ( Flint Hills Refinery)	4,100
Highway 55 near Highway 52 ( CF Industries)	1,150
Highway 56 (Concord Street in So. St Paul near Dakota Bulk Terminal)	2,000



## Energy, Utilities, Communication Infrastructure

### Telecommunication Facilities

Use of community cable television, local weekly newspapers, and broader electronic and print media in the general seven-county Twin Cities area are a critical part of Dakota County's existing emergency response plan. Media locations, contact information, and preferred methods of receiving information are noted in the emergency response plan and are maintained and updated regularly by the Dakota County Communications Department.

In addition to a variety of cable programming, local-access or community cable television operations are located in five Dakota County cities: Apple Valley (also serves Farmington and Rosemount), Burnsville/Eagan, Hastings, Lakeville, and Inver Grove Heights (Town Square TV, which serves seven northern Dakota County cities.)

### Power Facilities

Publicly- and privately-owned energy suppliers operate in Dakota County. Detailed information on power generation and distribution facilities is not provided within this version of the plan.

### Pipelines

The County has more than 600 miles of pipeline, transporting natural gas, crude oil, refined petroleum products (gasoline, jet fuels) and other products. Detailed information is not provided within this plan.

### Public Water Supply Systems

Fifteen public water supply systems serve the county, all operated by individual municipalities and regulated by the Minnesota Department of Health. Thirteen cities rely on groundwater for their drinking water source. Two cities, West St. Paul and Mendota Heights, use surface water supplied by the City of St. Paul. Unincorporated areas of the county are served mostly by private well systems.

### Wastewater Treatment Systems

For most of the county, provision of wastewater treatment facilities adequate to sustain projected population growth is the responsibility of the Metropolitan Council Environmental Services Division (MCES). The Council manages a series of complex collector systems and central treatment plants.

#### ***Metropolitan Wastewater Treatment Facilities***

Metropolitan Council Environmental Services manages seven regional wastewater treatment facilities in the Twin Cities region, with four plants serving Dakota County. The capacity of the Empire treatment facility was doubled (12 to 24mgd) in 2008, allowing the closure of MCES's Rosemount facility. A new pumping station and 10 miles of new pipe ensure that Rosemount residents continue to be served. Plants are shown on Figure 3.23.

**Table 3.7 Met Council Wastewater Treatment Plants**

MCES Plant	Capacity (MGD)
Metro Plant, St. Paul	251
Seneca Plant, Eagan	34
Hastings Plant, Hastings	2.3
Empire Plant, Empire	24

Source: Metropolitan Council Environmental Services (2016)

## SECTION III – COMMUNITY PROFILE

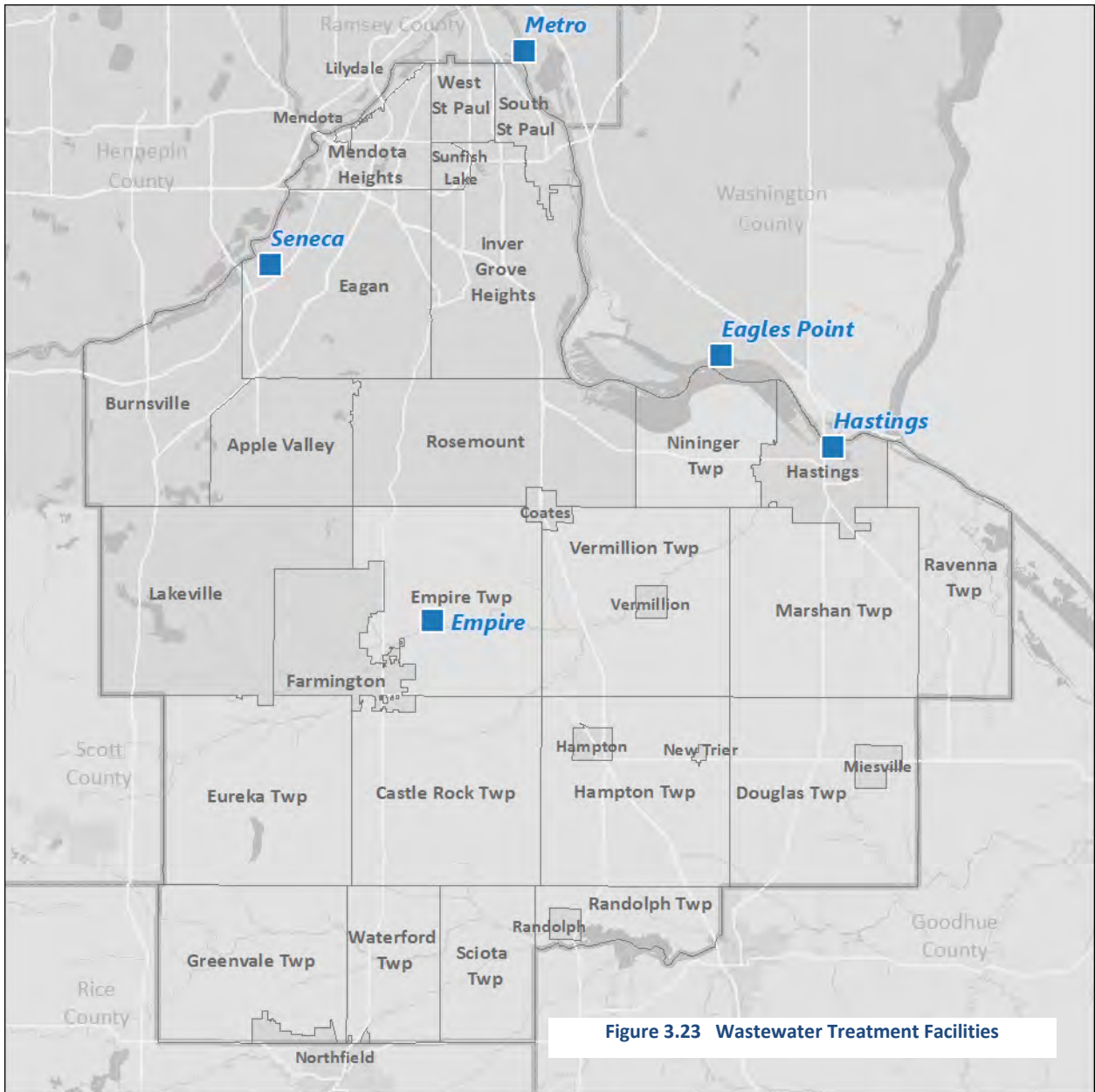


Figure 3.23 Wastewater Treatment Facilities

### ***Municipal Treatment Facilities***

Two cities in Dakota County own and manage separate wastewater treatment facilities, Vermillion and Hampton. Both facilities have additional capacity to handle additional growth. See Figure 3.23.

Table 3.8 Rural Municipal Wastewater Plants

City	Capacity (Gallons per Day)
Vermillion Plant	54,000
Hampton Plant	101,000

## SECTION III – COMMUNITY PROFILE

### ***Individual Sewage Treatment Systems (SSTS - subsurface treatment systems)***

More than 8,000 individual sewage treatment systems serve rural residences in Dakota County. In accordance with Dakota County Ordinance No. 113, the County is responsible for the construction, design, and inspection of septic systems within shoreland areas of the unincorporated townships. Outside of these areas, each community is responsible for the septic systems within their jurisdiction.

## Demographic and Economic Conditions

### Population

Dakota County is the third most populous county in Minnesota, with an estimated 2014 population of 411,507 (Metro Council). The county has added 30,596 people since 2005. The State Demographer projects the county will be home to almost half a million people by 2035. Lakeville, Rosemount and Farmington are expected to lead this growth on the urban fringe. Eagan is Dakota County's most populous city, followed by Burnsville, Lakeville, and Apple Valley. The following table includes city and township populations from the 2010 and 2000 Census, with 2014 estimates from the Metro Council.

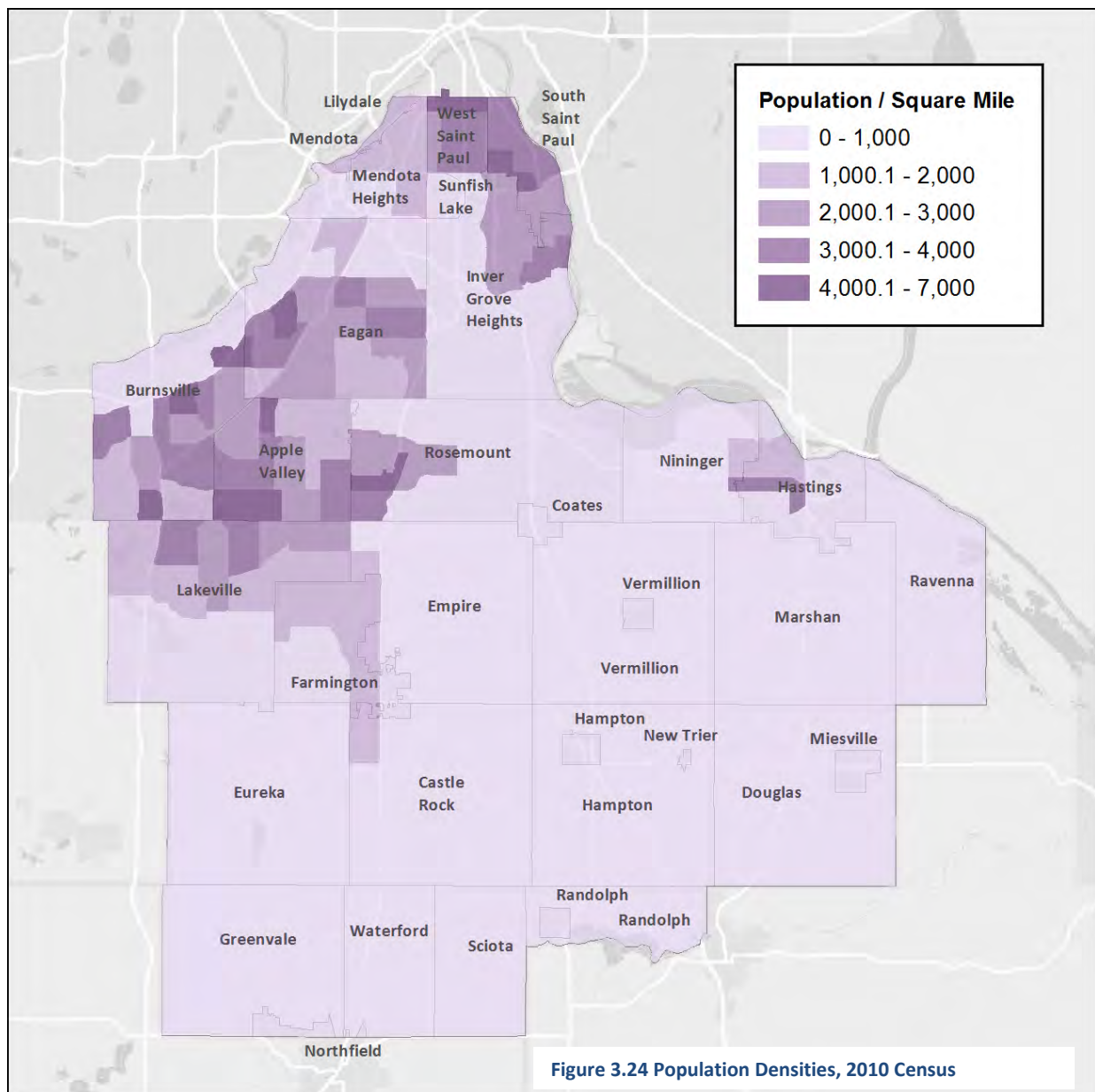
**Table 3.9 Dakota County Population 2000 – 2010**

City or Township	2000 Census	2010 Census	2014 Metro Council Estimate	% Change
Apple Valley	45,527	49,084	50,330	7.8%
Burnsville	60,220	60,306	61,747	0.1%
Castle Rock Township	1,495	1,342	1,329	-10.2%
Coates	163	161	157	-1.2%
Douglas Township	760	716	716	-5.8%
Eagan	63,557	64,206	66,810	1.0%
Empire Township	1,638	2,444	2,718	49.2%
Eureka Township	1,490	1,426	1,434	-4.3%
Farmington	12,365	21,086	22,386	70.5%
Greenvale Township	684	803	822	17.4%
Hampton	434	689	697	58.8%
Hampton Township	986	903	917	-8.4%
Hastings (part)	18,201	22,172	22,489	21.8%
Inver Grove Heights	29,751	33,880	34,831	13.9%
Lakeville	43,128	55,954	59,361	29.7%
Lilydale	552	623	948	12.9%
Marshan Township	1,263	1,106	1,114	-12.4%
Mendota	197	198	202	0.5%
Mendota Heights	11,434	11,071	11,124	-3.2%
Miesville	135	125	130	-7.4%
New Trier	116	112	121	-3.4%
Nininger Township	865	950	924	9.8%
Northfield (part)	557	1,147	1,156	105.9%
Randolph	318	436	465	37.1%
Randolph Township	536	659	674	22.9%
Ravenna Township	2,355	2,336	2,341	-0.8%

### SECTION III – COMMUNITY PROFILE

Rosemount	14,619	21,874	22,490	49.6%
Sciota Township	285	414	422	45.3%
South Saint Paul	20,167	20,160	20,416	0.0%
Sunfish Lake	504	521	516	3.4%
Vermillion	437	419	429	-4.1%
Vermillion Township	1,243	1,192	1,268	-4.1%
Waterford Township	517	497	493	-3.9%
West Saint Paul	19,405	19,540	19,800	0.7%
<b>Dakota County Total</b>	<b>355,904</b>	<b>398,552</b>		<b>12.0%</b>

The following map (Figures 3.24) shows population concentrations in Dakota County, with the highest densities in the older communities of West St. Paul, South St. Paul, and Hastings. Newer high density housing areas are also found in parts of Burnsville, Apple Valley, and Eagan.



## Diversity

Data from the 2014 American Community Survey show almost 83,200 persons in Dakota County, or about 20% of the population, identified themselves as members of a demographic minority group other than “White alone.” Since 2000, racial and ethnic diversity has doubled in Dakota County.

School children in Dakota County are more diverse than the overall countywide ACS data suggest, because families with parents who are of child-bearing ages are more diverse than older families. Data from the Minnesota Department of Education (MDE) show 31.5% of students enrolled in schools in Dakota County were from Communities of Color in the 2015-2016 school year, statistically similar to the state as a whole and much lower than the Metropolitan Area average of 41%. School children in Dakota County, according to MDE’s most recent data, speak 128 languages other than English as their primary language at home.

## Housing

Beginning in the 2008 Recession, the average and median sales prices of housing in Dakota County dropped significantly from the highs of the mid-2000s, but began to rise again in 2011-2012 with the economic recovery. Figure 3.25 illustrates these trends.

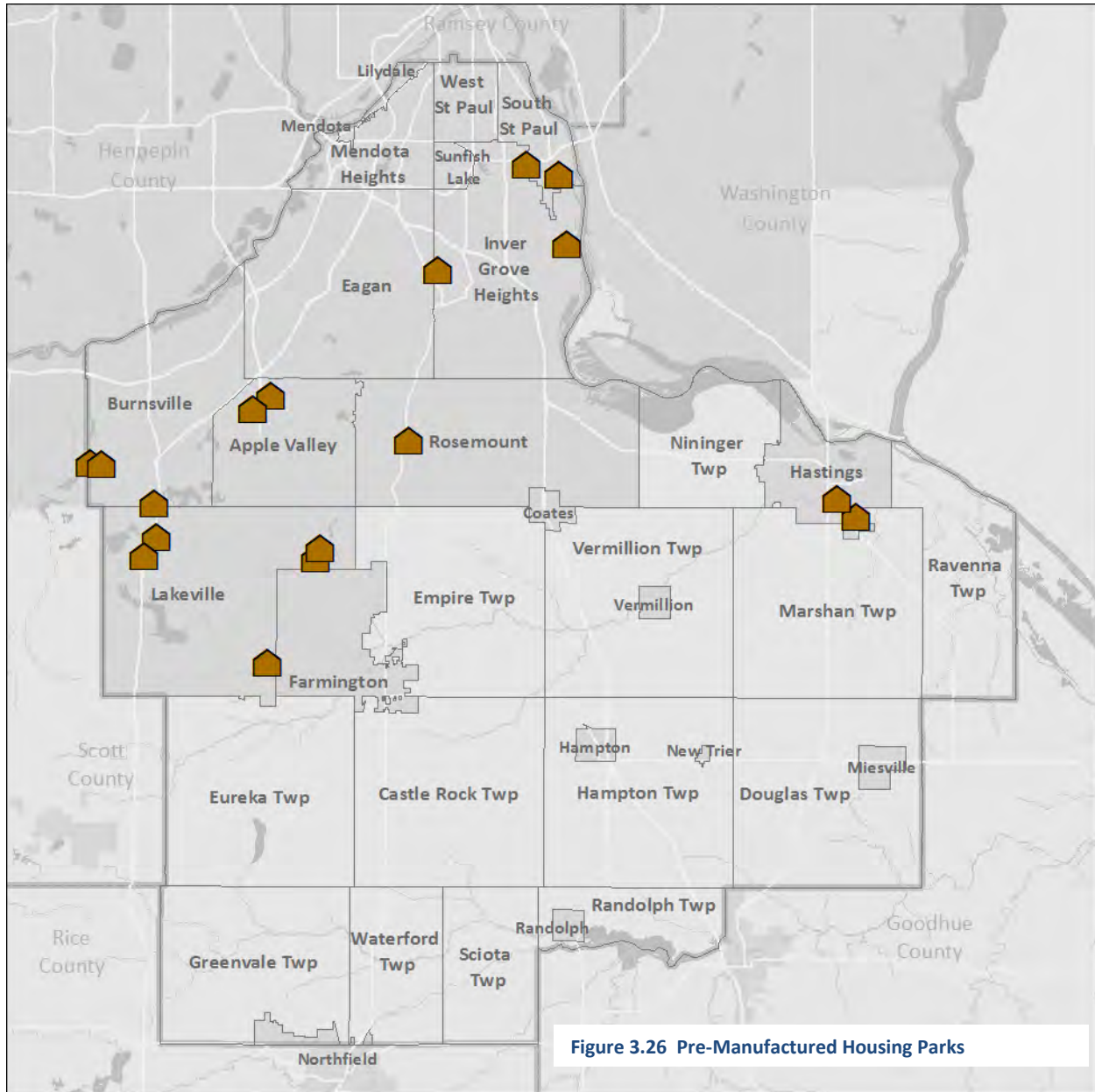
Figure 3.25 Median Sales Price of Residential Property for Dakota County



Most of Dakota County’s housing stock is of free-standing single-family dwellings, which comprise about 71 percent of the residential structures. Multi-unit or attached dwellings constitute roughly one-fifth of the county’s housing. Seventeen manufactured housing parks are located within the incorporated northern cities of the county, and account for 3,800 units, or about 3 percent of the total housing stock. Pre-manufactured housing parks are shown in Figure 3.26.



## SECTION III – COMMUNITY PROFILE



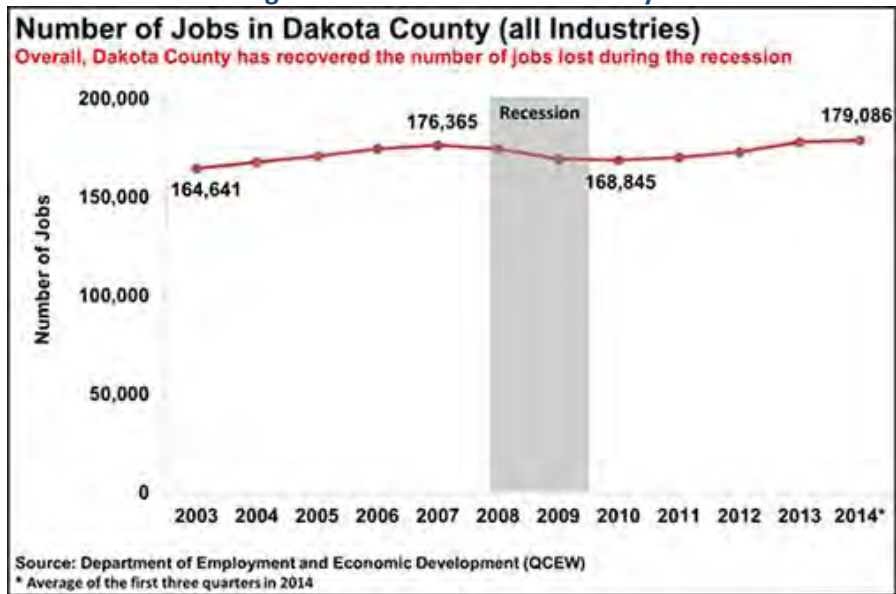
### Labor Statistics

In 2009, Dakota County had a monthly average of 232,204 residents in the labor force. The number of people in Dakota County's labor force has consistently grown, however the rate of growth has been less than one percent annually since 2004. Roughly 41% of residents travel elsewhere for work, with Hennepin County, MN being the most likely destination.

179,086 jobs were located in Dakota County in 2014. Between 2007 and 2008 the number of jobs in Dakota County decreased by 1 percent. Approximately 46% of workers commute in from other counties. Figure 3.27 shows changes in the job market in Dakota County over time.

## SECTION III – COMMUNITY PROFILE

Figure 3.27 Jobs in Dakota County



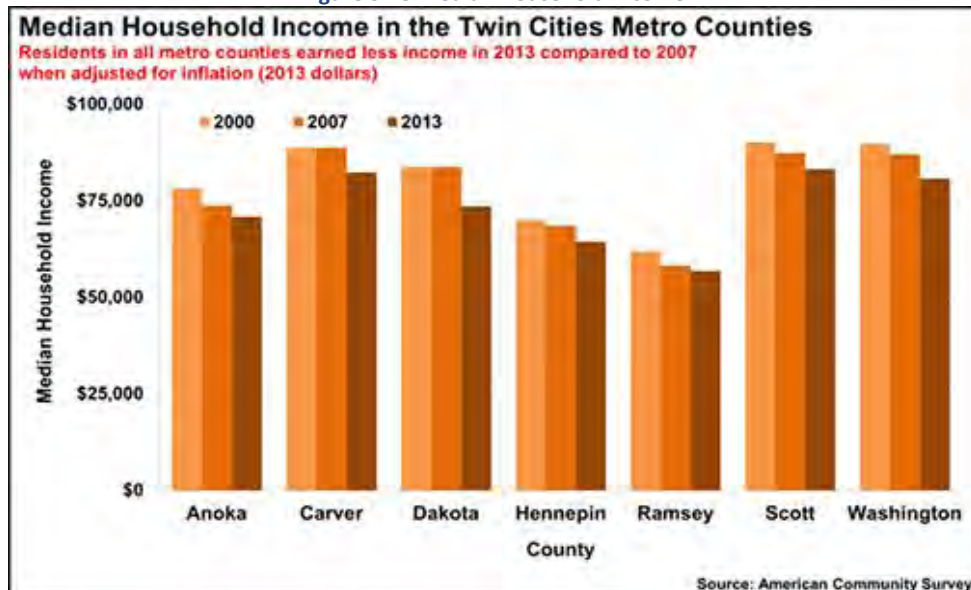
Source: MN Department of Employment and Economic Development

### Income Levels

Without adjusting for inflation, Dakota County's median household income rose from \$71,883 in 2008 to \$76,213 in 2014 (half of all households earned less and half earned more.) Dakota County ranks fourth out of the seven Twin Cities Metropolitan Area (TCMA) counties, behind Scott (\$92,107), Carver (\$83,594), and Washington (\$83,545). (U.S. Census, American Community Survey)

After adjusting for inflation, most TCMA counties saw neutral or declining median household income between 2000 and 2013.

Figure 3.28 Median Household Income

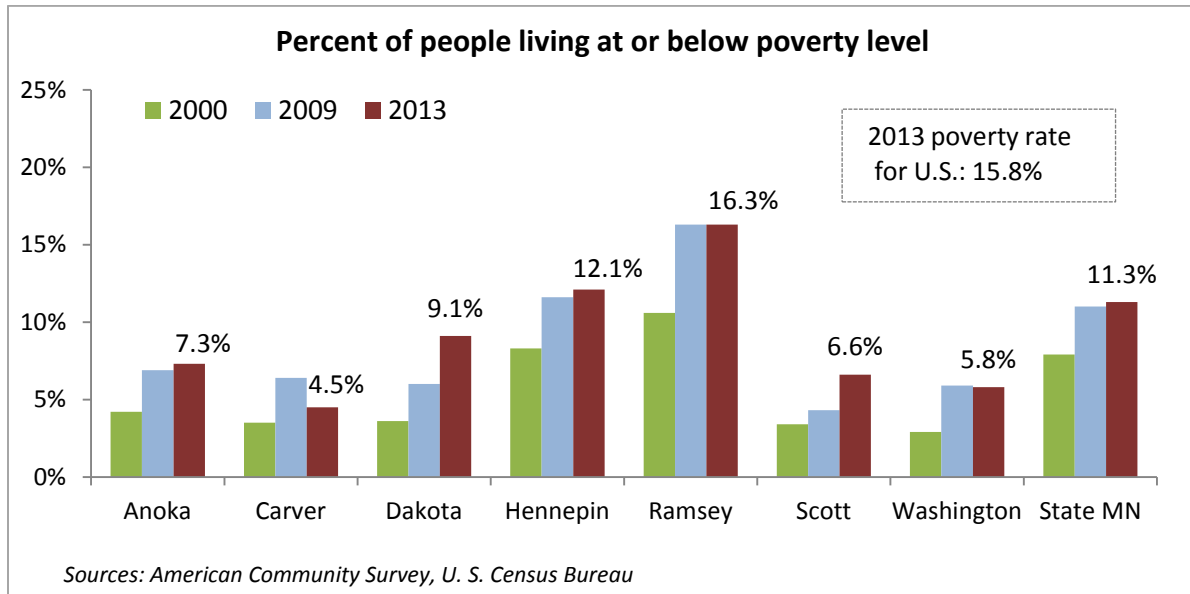


The American Community Survey reports that in 2014 Dakota County had the lowest percentage of families with children younger than 18 living in poverty in the seven-county metro area.

## SECTION III – COMMUNITY PROFILE

Dakota County's overall poverty rate of 7.4% ranks in the middle of metropolitan counties, but has increase over the past seven years.

**Figure 3.29 Poverty in Dakota County**



### Public Safety and Emergency Response Capabilities

Collectively, Dakota County and its jurisdictions have equipment and the trained response personnel to cover most disaster situations. Existing facilities and equipment are intended to address local requirements, as well as support regional needs. Dakota County is considered a mutual aid county that provides and receives support from adjacent counties. This section summarizes emergency response capability.

#### Medical Facilities

Medical facilities in Dakota County include 37 primary medical health care clinics and three hospitals:

- Fairview Ridges in Burnsville
- Regina Medical Center in Hastings
- Northfield Hospital in Greenvale Township

Total acute-care inpatient capacity among these three hospitals is 244 beds. Each of these three hospitals has emergency room facilities. Although Dakota County has no designated trauma centers within its boundaries, the metro area is served by three level one trauma centers, each with air transport capability.

- Hennepin County Medical Center, Minneapolis (Hennepin County)
- North Memorial Medical Center, Robbinsdale (Hennepin County)
- Regions Hospital, St. Paul (Ramsey County)



## SECTION III – COMMUNITY PROFILE

### **Fire Service**

Dakota County has three full-time, one partial full-time, and ten volunteer fire departments. Mutual aid agreements ensure coverage throughout the rural areas of Dakota County. Each department has the capability to respond to rescue, hazardous materials, and natural disaster incidents.

### **Police Departments**

Eleven municipal police departments and the County Sheriff's Office provide law enforcement services in Dakota County. As with fire departments, city and county law enforcement agencies provide assistance to other jurisdictions as needed.

The County Sheriff is the chief law enforcement officer for Dakota County. The Sheriff's Department provides police services to 13 townships and eight cities, for a coverage area of 355 square miles. The Sheriff's Department is headquartered in Hastings.

### **Emergency Warning Systems**

The Dakota Communications Center serves as the Dakota County Warning Point. The Warning Point has 24-hour capability and is responsible for the receipt and proper dissemination of all notifications received. The established Warning Point notification procedure is as follows:

1. Notify key county government officials
2. Notify all affected municipalities
3. Activate the Emergency Alert System/Emergency Broadcast System for a:
  - a. Weather Emergency
  - b. Hazardous Materials Emergency
  - c. Radiological Incident at Prairie Island Nuclear Plant
4. The municipalities in Dakota County are responsible for relaying any warning information they receive to their own public officials and residents.

### ***Outdoor Warning Sirens***

In the recent past, Dakota County's outdoor warning siren system activated by the Dakota Communications Center during tornado warnings and severe thunderstorms warnings with sustained wind speeds of 58 miles per hour or greater. Recent policy changes elevated the system activation wind speed for severe storms to 70 mph. The Dakota Communications Center is responsible for activating outdoor warning sirens for communities based on tornado warnings issued by the National Weather Service. On a regular basis, the Dakota County Emergency Preparedness Coordinator and emergency managers from each city review the outdoor warning siren activation policy and communicate any changes with the Dakota Communications Center. Severe weather warnings and recommended actions are listed below:

*Tornado or Severe Thunderstorm Watch:* Weather conditions are such that there is a very good chance for the development of either severe thunderstorms or tornado producing thunderstorms in the watch area. The watch usually covers a large area. This information is available via NOAA Weather Radio, and local radio and television broadcasters.

Actions: Citizens are advised to:

- Monitor weather information sources and the weather itself for any changes that could endanger them. Check shelters and associated equipment.
- Consider avoiding any outdoor activities.

### SECTION III – COMMUNITY PROFILE

- If in a manufactured home, travel trailer, or recreational vehicle consider moving to a shelter as storms move into the area, before warnings are issued, especially if the storms are moving fast.

**Tornado Warning:** A tornado has been seen or a thunderstorm is exhibiting characteristics that would indicate the possibility of a tornado forming. This information will be available via NOAA Weather Radio, and local radio and television broadcasters. Outdoor sirens will sound in targeted areas identified by the National Weather Service.

**Actions:** Citizens are advised to:

- If in the affected area, take shelter immediately.
- If outside and not being immediately threatened by the severe weather, move indoors quickly.
- If outside and immediately threatened, take cover by lying on the ground, preferably in a low area, safe from flying objects and flooding.
- Do not drive in the area of a tornado or severe straight-line winds. Under most circumstances, inside a vehicle is one of the most dangerous places to be during a tornado or severe thunderstorm.

**Severe Thunderstorm Warning:** A severe thunderstorm is associated with wind speeds of 70+ miles per hour, hail  $\frac{3}{4}$  inch in diameter or larger, and heavy rain. This information will be available via NOAA Weather Radio, and local radio and television broadcasters. Dakota County's outdoor sirens will sound in targeted areas identified by the National Weather Service.

**Actions:** Citizens are advised to:

Treat this like a tornado warning. Seek shelter as recommended for a tornado.

#### **Community Notification System**

The Dakota Communications Center controls the activation of a Mass Telephone Notification System (MTNS) or "reverse-911" system. The system is used at the direction of local police, fire and government officials to notify the public of situations requiring protective action, such as a hazardous material spill, or requiring the public's assistance, such as a missing child or vulnerable adult.

**Register Your Number:** Residents and people working in Dakota County can use the Dakota Communications Center Website to self-register their cellular telephone numbers, adding these to the MTNS telephone number database.

**Actions:** Citizens are advised to self-register their cellular phone numbers so that they can be notified of an emergency that effects their location.

#### **Emergency Operations Center**

Direction and control of the Dakota County emergency response will be carried out at Dakota County's designated Emergency Operations Center (EOC), which has a 24-hour per day operational capability. Certain types of disaster response operations may require the Dakota Emergency Operating Center to be co-located with local jurisdictions.

## **Vulnerable Populations**

### **Nursing Homes**

Our older population represents a demographic group that is very vulnerable to the hazards described in this document. Nursing homes warrant special consideration with respect to emergency planning. The Minnesota Department of Human Services licenses and inspects nursing homes. According to the department's website, Dakota County has:

- 10 nursing homes with a total capacity of 967 beds (2016)

### **Child Daycare**

Young children represent a demographic group that is very vulnerable to the hazards described in this document. Typically, young children are concentrated in daycares during the day. Like nursing homes, daycare facilities require specific emergency plans. The Minnesota Department of Human Services licenses and inspects commercial child care centers in Dakota County. Individual child care services (in-home) are licensed and inspected by the Dakota County Social Service Department. In Dakota County there are currently:

- 138 Child care centers with a capacity of 11,637 children (2016)
- Approximately 650 actively licensed family child care providers with a total capacity of roughly 7,286 children

### **Homeless Populations**

On any given night in Dakota County, an estimated 800+ people are experiencing homelessness, including people who are sheltered in emergency or transitional housing, people facing imminent homelessness, and people who are unsheltered and living on the street or in a car. Three shelters serve homeless populations in Dakota County with a facility for families, one for adult males, and one for youth.

### **Temporary Shelter**

Temporary shelters are defined here as overnight lodging supplying beds and basic sanitary facilities and designed for stays of short duration. These shelters include permanent facilities, such as motels, and short-term facilities, such as those that might be utilized by the Red Cross for emergency shelter. Temporary shelters become important in emergencies and disasters when a significant number of people have been displaced from their normal places of residence. The Red Cross currently has 55 agreements with various public and private facilities to temporarily house displaced persons in Dakota County. Total sleeping capacity represented within these agreements is 7,900. Total feeding capacity is 16,000.

### SECTION III – COMMUNITY PROFILE

## SECTION IV - HAZARDS FACING THE COMMUNITY

### 44 CFR Requirement §201.6(c) (2) (i):

[The risk assessment shall include a] description of the ... location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

Developing effective hazard mitigation strategies for Dakota County first requires an inventory and description of hazardous events that are most likely to occur. The All-Hazard Mitigation Planning Team identified the following potential natural and man-made hazards to be most relevant for the purposes of this plan.

**Table 4.1 Hazards Profiled**

Hazard	Reason for Identification
Cyber Attack*	Frequency, likely adverse impact
Dam Failure	Likely adverse impact, geographic extent
Drought	Likely adverse impact, geographic extent
Extreme Temperatures	Frequency, geographic extent
Flood (Flash and Overland)	Frequency, likely adverse impact
Hazardous Material Incidents	Frequency, likely adverse impact,
Infectious Disease	Likely adverse impact, geographic extent
Landslide*	Change in frequency, likely adverse impact
Structural Fire	Frequency, likely adverse impact
Terrorism	Likely adverse impact
Tornado	Frequency, likely adverse impact
Violent Summer Storms	Frequency, likely adverse impact, geographic extent
Violent Winter Storms	Frequency, likely adverse impact, geographic extent
Wastewater Treatment Plant Failure	Likely adverse impact, geographic extent
Water Supply Contamination	Likely adverse impact
Wildfire	Frequency

\*Added to the 2016 plan update due to increased risk concerns and recent occurrence in the Twin Cities Metropolitan Area.

The following hazards were not profiled in this plan due to geographic location, low occurrence, or low potential for damage.

**Table 4.2 Hazards Not Profiled**

Hazard	Reason for Omission
Avalanche	Geographic proximity
Coastal Erosion	Geographic proximity
Earthquake	Low occurrence
Expansive Soils	Low vulnerability
Land Subsidence	Low vulnerability
Tsunami	Geographic proximity
Volcano	Geographic proximity

Hazard profiles in this section were developed from information provided by:

## SECTION IV – HAZARDS FACING THE COMMUNITY

- Federal Emergency Management Agency (FEMA)
- National Oceanic and Atmospheric Administration (NOAA)
- National Weather Service (NWS)
- National Severe Storms Laboratory (NSSL)
- National Climatic Data Center (NCDC)
- FEMA Flood Insurance Study and Flood Insurance Rate Maps (2011)
- U.S. Geological Survey
- U.S. Army Corps of Engineers (USACE) data on dams
- Local media, library and historical records
- Dakota County and participating communities

Geographic location information is provided for each profiled hazard based on the impact areas of previous occurrences. For many hazards including drought, extreme temperatures, and violent summer and winter storms, the geographic extent of vulnerability is county-wide.

A common set of definitions was established to estimate vulnerability and rank hazards based on:

- Future frequency of occurrence
- Likely warning time
- Typical geographical scope
- Likely adverse impact

**Figure 4.1 Hazard Definitions/Classifications**

**Frequency of Occurrence:** Probability - How often hazard can be expected to occur.

- |                  |   |
|------------------|---|
| 1= Unlikely      | <1% probability of occurrence in the next 100 years.                                |
| 2= Occasionally  | 1-10% probability of occurrence per year, or at least one chance in next 100 years. |
| 3= Likely        | >10% but <100% probability per year, at least one chance in next 10 years.          |
| 4= Highly Likely | 100% probable in a year.  |

**Warning Time:** How much time to alert people to hazard conditions

- |   |                      |
|---|----------------------|
| 1 | = More than 12 hours |
| 2 | = 6-12 hours         |
| 3 | = 3-6 hours          |
| 4 | = None - Minimal     |

**Geographic Extent:** How large of an area would likely be affected

- |   |                          |
|---|--------------------------|
| 1 | = Localized              |
| 2 | = Community-wide         |
| 3 | = County-wide or greater |

**Likely Adverse Impact:** Magnitude/Severity/Extent of damage and disruption

- |                  |   |
|------------------|---|
| 1 = Negligible   | Isolated occurrences of minor property damage; minor disruption of critical facilities, and/or potential for minor injuries       |
| 2 = Limited      | Isolated occurrences of moderate to severe property damage; brief shutdown of critical facilities and/or potential for injuries   |
| 3 = Critical     | Severe property damage on a neighborhood scale; temporary shutdown of critical facilities, and/or injuries or fatalities          |
| 4 = Catastrophic | Severe property damage on metropolitan or regional scale; shutdown of critical facilities, and/or multiple injuries or fatalities |



## SECTION IV – HAZARDS FACING THE COMMUNITY

### **44 CFR Requirement §201.6(c) (2) (ii):**

[The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazard described in paragraph (c) (2) (i) of this section. This description shall include an overall summary of each hazard and its impact on the community.

The following hazard profiles include a description, the geographic extent of susceptibility, information regarding previous occurrences, and an assessment of future vulnerability. Overall vulnerability is based on the common set of definitions/classifications outlined above. Hazard profiles are organized alphabetically for ease of reference and do not infer relative importance.

### **Dam Failure**

#### **Hazard Description**

Dams are storage or diversion barriers that impound water in reservoirs. Dam failure is a collapse, breach or overtopping of the structure. Most dams have storage volumes small enough that failures have relatively minor repercussions, although dams with large storage volumes can cause significant flooding downstream.

Dam failure can result in injuries, loss of life, and damage to property and environment. While levees are built solely for flood protection, dams often serve multiple purposes such as hydroelectric generation, flood control, and recreation. Dams are usually engineered to withstand a flood with a calculated risk of occurrence. Severe flooding can increase the potential of dam failure as a result of the physical force of the flood waters or overtopping. Failed dams can create floods that are catastrophic to life and property, in part because of the tremendous energy of the released water.

Hazard potential for dam failure is classified according to the following definitions accepted by the Interagency Team on Dam Safety:

- Low Hazard Potential—Failure or misoperation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.
- Significant Hazard Potential—Failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or other impacts. Significant hazard potential dams are often located in mostly rural or agricultural areas but could be located in areas with population and significant infrastructure.
- High Hazard Potential—Failure or misoperation will probably cause loss of human life.

Dam failure can be caused by simple structural failure, or any combination of the following factors:

- flood conditions leading to overtopping
- internal erosion
- inadequate spillway capacity
- improper operation or maintenance
- sabotage
- failure of upstream dams

Warning time for dam failure varies widely and depends on the causal factors. Dam failure can occur in as little as a few minutes or slowly over the course of months. Catastrophic failure of a large dam would result in short evacuation times for locations directly downstream. Topography and floodplain characteristics determine warning time for locations further downstream.

## SECTION IV – HAZARDS FACING THE COMMUNITY

### Geographic Location

Several dams in the county are in the USACE National Inventory of Dams (NID), which documents dams meeting the following criteria:

- 1) High Hazard classification – loss of one human life is likely if the dam fails
- 2) Significant hazard classification – possible loss of life and likely significant property or environmental destruction
- 3) Height equals or exceeds 25 feet and storage exceeds 15 acre-feet
- 4) Storage equals or exceeds 50 acre-feet storage and height exceeds 6 feet

**Table 4.3 Dams in Dakota County**

Dam Name	NID I.D.	Primary Purpose	NID Height (Ft.)	NID Storage (Acre-Feet)
Blackdog Lake	MN00349	Other	25	3,550
Blackdog Lake West	MN01595	Other	20	1,000
Vermillion River	MN00389	Hydroelectric	12	75
Lake Byllesby	MN00514	Hydroelectric	75	24,000
Lake Byllesby Perimeter Embankment	MN00514	Hydroelectric	9	24,000
Lake Byllesby	MN00514	Hydroelectric	68	16,000
Lock and Dam #2	MN00594	Navigation	42	787,000
Kaposia Park	MN00675	Other	79	180
Sunset Lake	MN01012	Flood Control	21	200
Empire Lake (Butler Pond)	MN01588	Fish and Wildlife Pond	11	165

Source: National Inventory of Dams

Probable maximum flood event studies and dam breach scenarios are required on High Hazard Dams, as defined by the Federal Energy Regulatory Commission (FERC). Potential failure mode analyses and inundation maps for high hazard dams are accompanied by Emergency Operation Plans, periodic exercise, and annual safety inspections by the FERC. The details of probable maximum flood studies and the regulatory requirements of the FERC go beyond the scope of this Hazard Mitigation Plan.

Levees along the Minnesota River and dikes around a Burnsville quarry and other industries in the floodplain (upstream of Interstate 35-W) provide a limited degree of flood protection. Flood-proofing measures also protect Northern States Power's Black Dog plant, downstream of Interstate 35-W.

A series of levees along the Mississippi River in South St. Paul and Inver Grove Heights Flood provide flood protection. In 1969, a 4,100-foot levee averaging 14 feet in height was built to protect a low-lying residential and business area along the Mississippi River. The upstream end of the levee connects with the flood barrier provided for South St. Paul.

In 1968, the United States Army Corp of Engineers completed 2.5 miles of permanent flood barrier along the Mississippi River to provide protection for the packing plants and the South St. Paul sewage plant. The barrier is designed with closures that require local action to maintain the 1-percent annual chance flood frequency protection. The project has two pumping stations with about 7,300 feet of interceptor and storm sewers to provide interior drainage.

Following the April 1965 flood in the Vermillion River, the city of Hastings constructed a levee along the left bank of the Vermillion River upstream of the County Highway 47 bridge to prevent direct overbank flow in that area. The levee effectively prevents overbank flow, although the reach is influenced by floodwaters from downstream. Because of this, the levee does not provide 1-percent annual chance

## SECTION IV – HAZARDS FACING THE COMMUNITY

flood protection. In 1968, the county constructed a new County Highway 47 bridge to pass greater flood flows on the Vermillion River.

### Previous Occurrences

There are no prior incidents of partial or full dam failure of dams or levee breach in Dakota County.

### Vulnerability

The following table summarizes the overall vulnerability to dam failure:

Frequency of Occurrence:	Unlikely
Warning Time:	6-12 hours
Geographic Extent:	Community-wide
Likely Adverse Impact:	Limited

### Plans and Programs for Dam or Levee Failure

Dams and levees in Dakota County are maintained according to federal specifications. The Dakota County Water Resources Department maintains the Byllesby Dam according to Federal Energy Regulatory Commission (FERC) requirements. The City of Hastings maintains a hydroelectric plant at Lock and Dam #2, while the U.S. Army Corps of Engineers has responsibility for the adjacent lock and dam. The cities of South St. Paul and Inver Grove Heights maintain and monitor their levees.

**Lake Byllesby Dam.** As a FERC-regulated hydropower facility, the dam undergoes rigorous inspection for structural stability and integrity. Required actions include development of an Emergency Action Plan (EAP), periodically tested through exercises. The downstream community of Cannon Falls has participated in development of warning systems and system tests.

**Byllesby Dam Security & Structural Enhancement.** The Dakota County Environmental Resources Department has enhanced the security of the Byllesby Dam and the hydropower facility. In 2008, the Federal Energy Regulatory Commission (FERC) required Dakota County to increase spill capacity over the dam, which was completed by adding a new \$7.5 million crest gate spillway in 2014. In 2015, Dakota County allocated \$3.5 million toward major structural repair and rehabilitation, gate inspection and refurbishment, and facility-related enhancements to the dam structure. Dakota County is exploring the potential to replace the existing 100+ year old turbines with new, more efficient equipment to continue power production, which assists in offsetting costs associated with the operations of Byllesby Dam.



High Water 2010 - Byllesby Dam (Dakota County Water Resources)

## Drought

### Hazard Description

The NOAA Weather Service defines drought as "a period of abnormally dry weather sufficiently prolonged for the lack of water to cause serious hydrologic imbalance in the affected area." The severity of the drought depends upon the degree of moisture deficiency, the duration, and the size of the affected area. Drought is not an abrupt disaster, but rather the cumulative result of a persistent period of low precipitation. The effects of drought may not be noticed immediately but only become apparent after weeks or months. The effect to the water table may take up to a year or more to be realized.

Short term drought effects include excessively dry soil, causing plant stress and crop failure. When rainfall is less than normal for several weeks, months, or years, the following may occur: stream and river flow declines, water levels in lakes and reservoirs fall, and water tables drop. Economic impacts include lost revenue from crops or loss of livestock. Non-irrigated croplands are most susceptible to moisture shortages. Grazing land and irrigated agricultural lands are not impacted quickly as the non-irrigated, cultivated acreage, but their yields can also be greatly reduced. Reductions in yields due to moisture shortages are often aggravated by wind-induced soil erosion. Under extreme drought conditions, lakes, reservoirs, and rivers can be subject to severe water shortages, greatly restricting their use for municipal water supplies.

### Geographic Location

Drought is a part of virtually all climatic regimes, including areas with high and low average rainfall. Minnesota generally and Dakota County, specifically, are vulnerable to drought. In Dakota County, agricultural irrigators and municipal water supplies are primarily dependent on groundwater resources. As severe droughts can affect the groundwater table, risks associated with drought are countywide and not confined to any particular community or geographic region of the county.

### Previous Occurrences

Minnesota has experienced occasional severe drought conditions. Some counties have experienced agricultural droughts, leading to severe soil-moisture decreases with serious consequences for crop production.

Tracking drought is challenging due to the numerous definitions and measurement protocols. The website *Drought Monitor*; a partnership between Federal agencies and the National Drought Mitigation Center at the University of Nebraska- Lincoln has been tracking drought conditions across the country and provides drought information maps at a county level. The Drought Monitor is an attempt to synthesize multiple drought related indices and impacts which represents a consensus of federal and academic scientists. Some of those indices include: the Palmer Drought Severity Index, the Climatic Prediction Center's Soil Moisture Model, the USGS weekly stream flow map (based on an average of daily stream flow), the National Climatic Data Center's Standardized Precipitation Index and the NOAA/NESDIC Vegetation Health Index.

Table 4.4 illustrates the Drought Monitor's intensity rating of "abnormally dry", "moderate drought", "severe drought", "severe drought", "extreme drought", and "exceptional drought" followed by a description of possible impacts. Five of the indices referenced above are also included on the Drought Monitor Severity Classification.

## SECTION IV – HAZARDS FACING THE COMMUNITY

**Table 4.4 Drought Monitor: Drought Severity Classification**

Description	Possible Impacts	Palmer Drought Index	CPC Soil Moisture Model (Percentiles)	USGS Weekly Streamflow (Percentiles)	Standardized Precipitation Index (SPI)	Satellite Vegetation Health Index
Abnormally Dry	Going into drought, short-term dryness slowing planting, growth of crops or pastures; fire risk above average. Coming out of drought; lingering water deficits; pastures or crops not fully recovered.	-1.0 to -1.9	21-30	21-30	-0.5 to -0.7	36-45
Moderate Drought	Some damage to crops, pastures; fire risk high; streams, reservoirs, or wells low, water shortages developing or imminent, voluntary water use restrictions requested.	-2.0 to -2.9	11-20	11-20	-0.8 to -1.2	26-35
Severe Drought	Crop or pasture losses likely; fire risk very high; water shortages common; water restrictions imposed.	-3.0 to -3.9	6-10	6-10	-1.3 to -1.5	16-25
Extreme Drought	Major crop/pasture losses; extreme fire danger; widespread shortages or restrictions	-4.0 to -4.9	3-5	3-5	-1.6 to -1.9	6-15
Exceptional Drought	Exceptional widespread crop/pasture losses; exceptional fire risk; water shortages in reservoirs, streams and wells, creating water emergencies.	-5.0 or less	0-2	0-2	-2.0 or less	1-5

Source: Drought Monitor <http://drought.unl.edu>

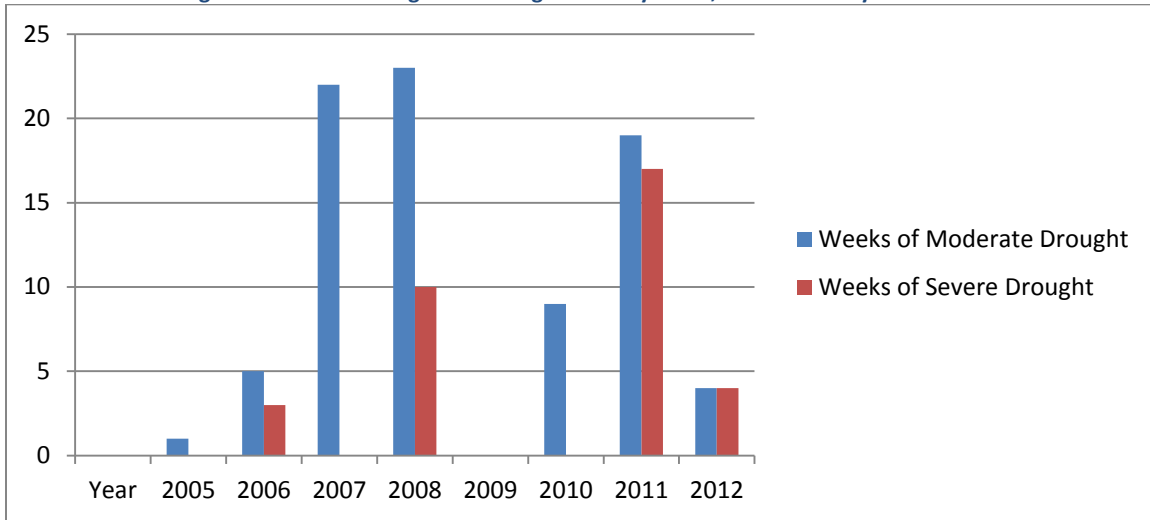
The Palmer Drought Severity Index (PDSI) measures moisture depletion or abundance on a regional scale. Using PDSI data for Dakota County between 2005 and 2015, Figure 4.2 shows extended periods of moderate and/or severe drought in 2007, 2008, 2009, 2012, and 2013. In the decade shown in the chart, Dakota County experienced 83 weeks of “moderate” drought and 34 weeks of “severe” drought.

Climate data from the closest weather station (Twin Cities International Airport) was used to create Table 4.5, showing the top 10 driest years recorded since 1891 with the greatest departure from “normal” annual precipitation. The “normal” annual precipitation at the Twin Cities International Airport (from 1971-2000) is 29.41 inches.

Drought regularly occurs in Dakota County. The goal of a hazard mitigation plan is to anticipate potential hazards and devise strategies to lessen the impacts. Tracking drought is challenging due to the numerous definitions and measurement protocols. Using the *Drought Monitor* data sets detailed above as the best available, there is nearly a 12-percent chance of drought in any given growing season.

## SECTION IV – HAZARDS FACING THE COMMUNITY

**Figure 4.2 Palmer Long Term Drought Severity Index, Dakota County 2005-2015**



Source: National Weather Service Climate Prediction Center,  
[http://www.cpc.noaa.gov/products/monitoring\\_and\\_data/drought.shtml](http://www.cpc.noaa.gov/products/monitoring_and_data/drought.shtml)

**Table 4.5 Top Ten Driest Years at Twin Cities International Airport Since 1891**

Year	Yearly Total Precipitation	Departure From Normal*
1910	11.54 inches	-17.87 inches
1958	16.20 inches	-13.21 inches
1976	16.50 inches	-12.91 inches
1948	16.95 inches	-12.46 inches
1936	18.47 inches	- 10.47 inches
1988	19.08 inches	-10.33 inches
1974	19.11 inches	-10.30 inches
1969	19.29 inches	-10.12 inches
1925	19.41 inches	-10.00 inches
1963	19.57 inches	-9.84 inches

Source: Minnesota Climatology Working Group.

\*Normal annual precipitation from 1971-2016 (29.41 inches).

### Vulnerability

The following table summarizes the overall vulnerability to drought:

Frequency of Occurrence	Likely
Warning Time	More than 12 hours
Geographic Extent	County-wide
Likely Adverse Impact	Negligible

### Plans and Programs for Drought

**Water plan.** The current Dakota County Comprehensive Plan, Water Resources section, identifies the major and minor aquifers serving the county and has mapped them.

**Watering Restrictions.** All municipalities in Dakota County have ordinances in place that allow them to enforce watering restrictions and bans.



## SECTION IV – HAZARDS FACING THE COMMUNITY

### Extreme Temperatures

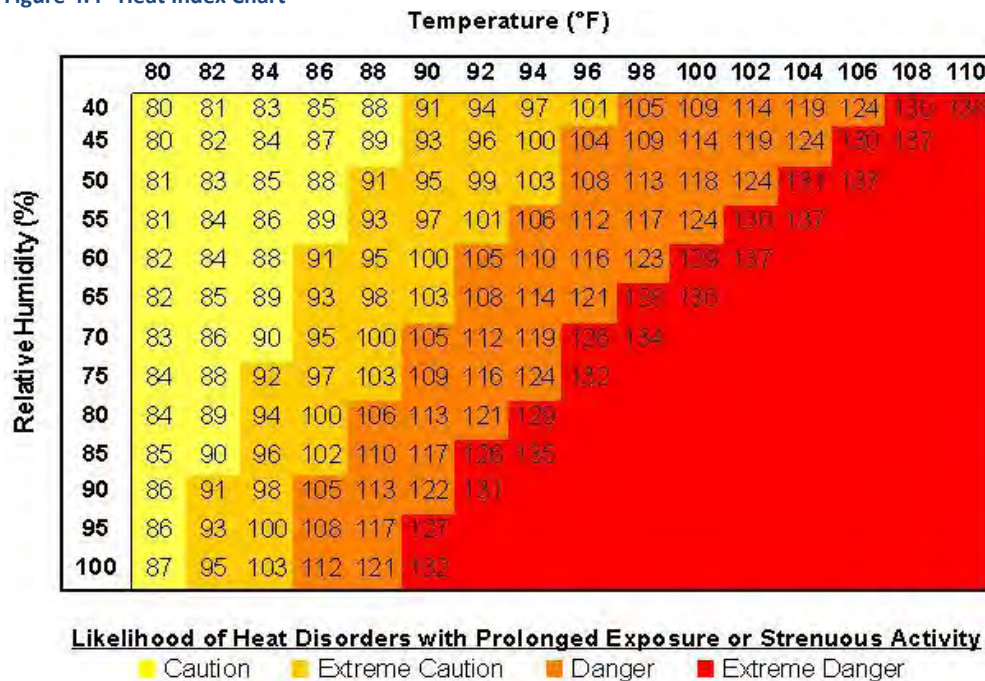
#### Hazard Description

Extreme heat is a persistent period of temperatures significantly above normal, often accompanied by high humidity. Extreme heat can cause heat-induced hyperthermia, better known as “heat stroke.” Heat stroke affects the ability to maintain proper body temperatures and in severe cases may result in death. Children, elderly people, persons without air conditioning, the sick, disabled and the overweight are at greatest risk of heat stroke, although anyone may be affected. Extreme heat can stress agricultural crops and livestock thus reducing yields and can cause widespread power outages as a result of increased demand for electricity to power air-conditioning systems.

Heat Index (HI) measures the effect of the combined elements of heat and humidity on the human body. HI is an accurate measure of how hot it really feels when the relative humidity (RH) is added to air temperature. An Excessive Heat Warning is issued 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 by the National Weather Service when heat indices in excess of 105°F (41°C) during the day combined with nighttime low temperatures of 80°F (27°C) or higher are forecast to occur for two consecutive days.

The National Weather Service’s Heat Index Chart shown below (Figure 4.4) shows the relationship of ambient air temperature and relative humidity to the likelihood of heat disorder and health risk.

Figure 4.4 Heat Index Chart



Source: National Weather Service

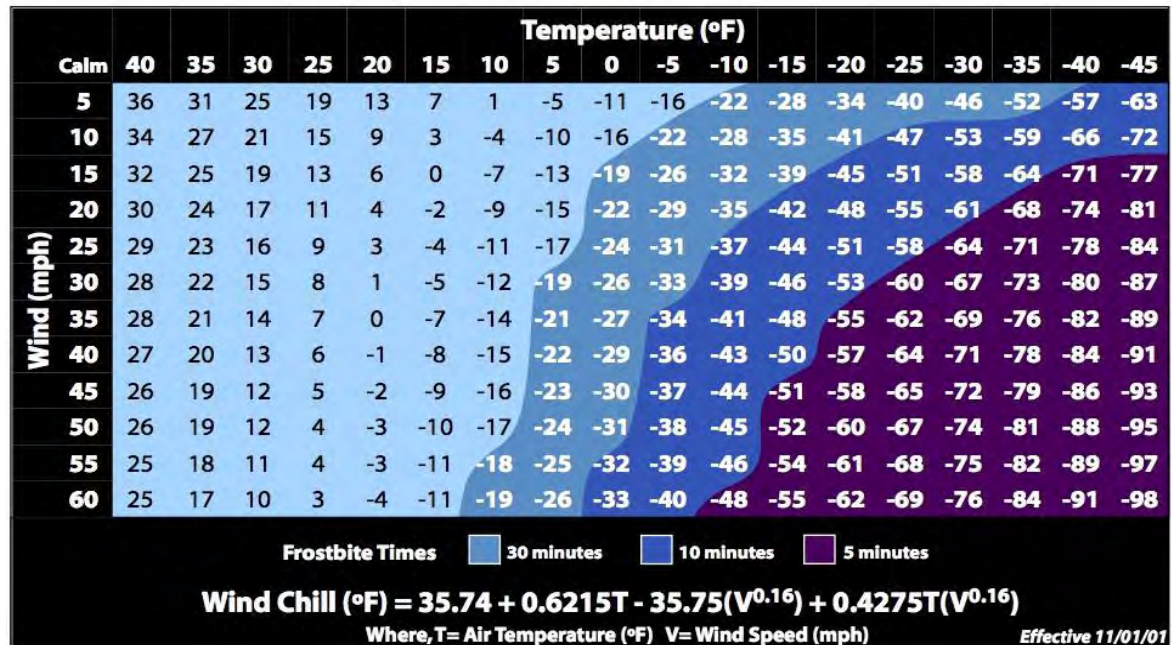
Dew point is the temperature to which the air must be cooled at constant pressure for it to become saturated. The higher the dew point is, the more uncomfortable people feel. According to the Minnesota Climatology Working Group, summer dew points in the Twin Cities region are trending slightly higher over the past century, roughly .46 of a degree from 1902 – 2010.

## SECTION IV – HAZARDS FACING THE COMMUNITY

Extreme cold is a persistent period of low winter temperatures typically accompanied with moderate to strong winds resulting in dangerous wind chill temperatures. Exposure to extreme cold can lead to life-threatening frostbite, hypothermia or death.

The National Weather Service updated the Wind Chill Temperature index in 2001, shown as Figure 4.5 below, to describe the discomfort/danger resulting from the combination of wind and temperature. Wind chill is based on the rate of heat loss from exposed skin caused by wind and cold. As the wind increases, it draws heat from the body, lowering skin temperature and the internal body temperature.

**Figure 4.5 National Weather Service Wind Chill Chart**



Source: National Weather Service, [www.nws.noaa.gov/om/windchill/index.shtml](http://www.nws.noaa.gov/om/windchill/index.shtml)

### Geographic Location

Located in the center of the continent, Dakota County experiences the extremes of summer heat and winter cold. Summer temperatures in Dakota County have exceeded 105 ° F, while winter temperatures have been as cold as 38° F below zero. Heat and cold pose risks for people, animals, and infrastructure.

### Previous Occurrences

**Summer Heat History** - July is the warmest month in Dakota County with an average high temperature of 83 ° F. The county typically experiences 11 days of 90 degree or warmer temperatures in summer. The all-time high of 107 ° F occurred in 1977, during a five-day run of temperatures exceeding 100 ° F. On average, Dakota County can expect at least one day over 100 ° F every three to four years.

The closest permanent weather station with the longest data history is located in Minneapolis. The following table illustrates dates the maximum temperature was at or exceeded 105° (F) in Minneapolis.

## SECTION IV – HAZARDS FACING THE COMMUNITY

**Table 4.6 Temperatures at or above 104° (F) in Minneapolis, MN Since 1872**

Max. Daily Temperature	Years
108° (F)	1936
106° (F)	1934, 1936 (3x)
105° (F)	1934 (3x), 1936, 1988
104° (F)	1902 (5x), 1924, 1930 (2x), 1951 (2x), 1954, 1962, 2000

Source: National Weather Service

1936 had five consecutive days with temperatures over 100 degrees and 14 consecutive days over 90 degrees. The National Weather Service compiles annual fatality statistics for several natural hazards. Between 2005 and 2015 in Minnesota, one heat-related fatality occurred in 2011 and 3 heat-related fatalities occurred in 2012.

**Winter Cold History** - January is typically the coldest month in Dakota County, with average daytime highs of 22° F and average nighttime lows of 4° F. Maximum temperatures in January have been as high as 66°F and minimums as low as -38° F (*Farmington 3NW Station*.) The winter season typically produces 33 days averaging 0° F or lower, with 5 days averaging -20°F or lower. Temperatures below zero have occurred October through April. The closest permanent weather station with the longest data history is in Minneapolis. Table 4.7 summarizes dates with a minimum air temperature at or below -33°F in Minneapolis.

**Table 4.7 Temperatures at or below -33°F in Minneapolis, MN Since 1872**

Year	Max. Daily Temperature
1888	-41° (F)
1879	-39° (F)
1888	-37° (F)
1885, 1887	-36° (F)
1886, 1887, 1936, 1970	-34° (F)
1904	-33° (F)

Source: National Weather Service

The following table illustrates the number of consecutive days at or below temperatures of zero or below, -10 degree or below, or -20 degrees or below in Minneapolis.

**Table 4-8 Consecutive Days below 0°F or colder since 1872 in Minneapolis**

0° (F) or Below		-10° (F) or Below		-20° (F) or Below	
Days	Year	Days	Year	Days	Year
36	1936	20	1963	6	1899
23	1976-1977	12	1895	6	1996
21	1963	10	1899	5	1977
20	1966	9	1965	4	1899
-	-	-	-	4	1936

Source: National Weather Service

Low temperatures with strong winds create wind chills that put people and livestock at risk. A -15° F air temperature with wind speeds of 10 mile per hour creates a wind chill of -35°F. In the open under these conditions, frostbite can occur in minutes on exposed skin. The local National Weather Service office issues an advisory when wind chills of -25°F are expected. A Wind Chill Warning is issued when wind chills of -35°F are expected.

## SECTION IV – HAZARDS FACING THE COMMUNITY

Over the decade 2005-2015, the National Weather Service recorded 21 cold-related fatalities in Minnesota – one in 2015, six in 2014, two in 2012, one in 2011, four in 2009, three in 2008, one in 2007 and three in 2005. The National Climate Data Center recorded three extreme cold weather events for the winter of 2013-2014:

1/5-7/14: Wind chills in Dakota County reached -55 ° F, one cold-related fatality in Dakota County  
1/23/14: Wind chills in Dakota County reached -41 ° F  
1/27-28/14: Wind chills in Dakota County reached -44 ° F

### Vulnerability

The following table summarizes the overall vulnerability to extreme temperatures:

Frequency of Occurrence	Likely
Warning Time	More than 12 hours
Geographic Extent	County-wide
Likely Adverse Impact	Negligible

### Plans and Programs for Extreme Temperatures

The following programs and projects address extreme temperatures in Dakota County:

**School closings.** The county's school districts have a policy of closing schools when wind chills exceed 40 ° F below, low visibility creates unsafe driving conditions, or heavy snow makes travel difficult. Local radio stations partner with school districts to make sure announcements are out by 6:00 am or earlier. In addition, many schools send out warnings via email.

**Heat advisories.** The local National Weather Service office issues a Heat Advisory when the heat index maximum reaches 105° or greater, with a minimum nighttime heat index of 75° or greater for at least 48 hours.

**Wind chill warnings.** The local National Weather Service office issues a Wild Chill Advisory when wind chills of -25° are expected. A Wind Chill Warning is issued when wind chills of -35° are expected.

**Automated weather stations.** Some of the school districts have automated weather stations. This enables school personnel to monitor current weather conditions like wind, temperature and humidity on a real-time basis to provide up-to-the-minute information in case conditions change rapidly and action is required.



## SECTION IV – HAZARDS FACING THE COMMUNITY

### Flood (Flash and Overland Flood)

#### Hazard Description

A flood is defined as the inundation of land by the rise and overflow of a body of water. Floods most commonly occur as a result of heavy rainfall causing a river system or stream to exceed its normal carrying capacity. Flooding is one of the most pervasive natural hazard threats in Minnesota, with public safety, housing, property, and infrastructure all potentially impacted by flooding.

There are two types of flooding that can impact Dakota County: riverine (overland) flooding and flash floods. Riverine flooding occurs when a waterway exceeds its 'bank full' capacity and inundates adjacent floodplain. According to common usage, a floodplain is that area that is inundated by the 100-year flood (a flood that has a 1 percent chance in any given year of being equaled or exceeded). Riverine flooding is affected by the intensity and distribution of rainfall, soil moisture, seasonal variation in vegetation, and water-resistance of the surface areas caused by urbanization. Flash flooding is a localized flood that results from a short duration of intense rainfall across a limited geographic area. During extended periods of intense rainfall, storm water conveyance systems can be overwhelmed and flooding of surrounding neighborhoods can result.

In 1969, the Minnesota Legislature enacted the State Floodplain Management Act (Minnesota Statutes, Chapter 103F). This Act stresses the need for a comprehensive approach to solving flood problems by emphasizing nonstructural measures, such as floodplain zoning regulations, flood insurance, flood-proofing, and flood warning and response planning. By law, Minnesota's flood prone communities are required to: 1) adopt floodplain management regulations when adequate technical information is available to identify floodplain areas; and 2) enroll and maintain eligibility in the National Flood Insurance Program (NFIP) so that the people of Minnesota may insure themselves from future losses through the purchase of flood insurance.



Flooding 1965, South St. Paul Stockyards (Dakota County Historical Society)

In 1987, the Floodplain Management Act was amended to establish a state cost-sharing grant program to help local government units plan for and implement flood hazard mitigation measures. The Department of Natural Resources (DNR) is the state agency with overall responsibility for implementation of the State Flood Plain Management Act.

Local floodplain regulatory programs, administered by county government for the unincorporated areas and by municipal government for the incorporated areas, must be compliant with federal and state

## SECTION IV – HAZARDS FACING THE COMMUNITY

floodplain management standards. Both federal and state standards identify the 100-year floodplain as the minimum area necessary for regulation at the local level. These regulations are intended to protect new development and modifications to existing development from flood damages when locating in a flood prone area cannot be avoided.

Dakota County formally adopted a shoreland zoning and floodplain management ordinance in 1973 in response to Minnesota Statute 103G and Minnesota Rule 6120. The purpose of the ordinance is to regulate use and orderly development of shorelands within the unincorporated areas of the County, to promote the interests of public health, safety, and welfare, and to protect, preserve, and enhance natural resources.

The purpose of floodplain management is to regulate the use and development of floodplain areas within the unincorporated areas of the county in a manner which will result in minimum loss of life, threat to public health and safety, and reduce private and public economic loss caused by flooding. In addition, the floodplain provisions of this ordinance are adopted to comply with the rules and regulations of the National Flood Insurance Program codified as 44 CFR Parts 59-78, so as to maintain the county's eligibility in the National Flood Insurance Program. Participating cities administer their own floodplain management ordinance.

### Geographic Location

Flooding can occur almost anywhere in Dakota County. One method for identifying geographic locations of flood prone areas is FEMA Flood Insurance Rate Maps (FIRMs). Table 4.10 below gives descriptions of the various flood zone areas as defined on the Flood Insurance Rate Maps for Dakota County.

**Table 4.10 Flood Zones Included in Flood Insurance Rate Maps, Dakota County**

Zone	Flood Hazard Description
A	No Base Flood Elevations Determined
AE	Base Flood Elevations Determined
AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding; velocities not determined
A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
D	Areas in which flood hazards are undetermined,

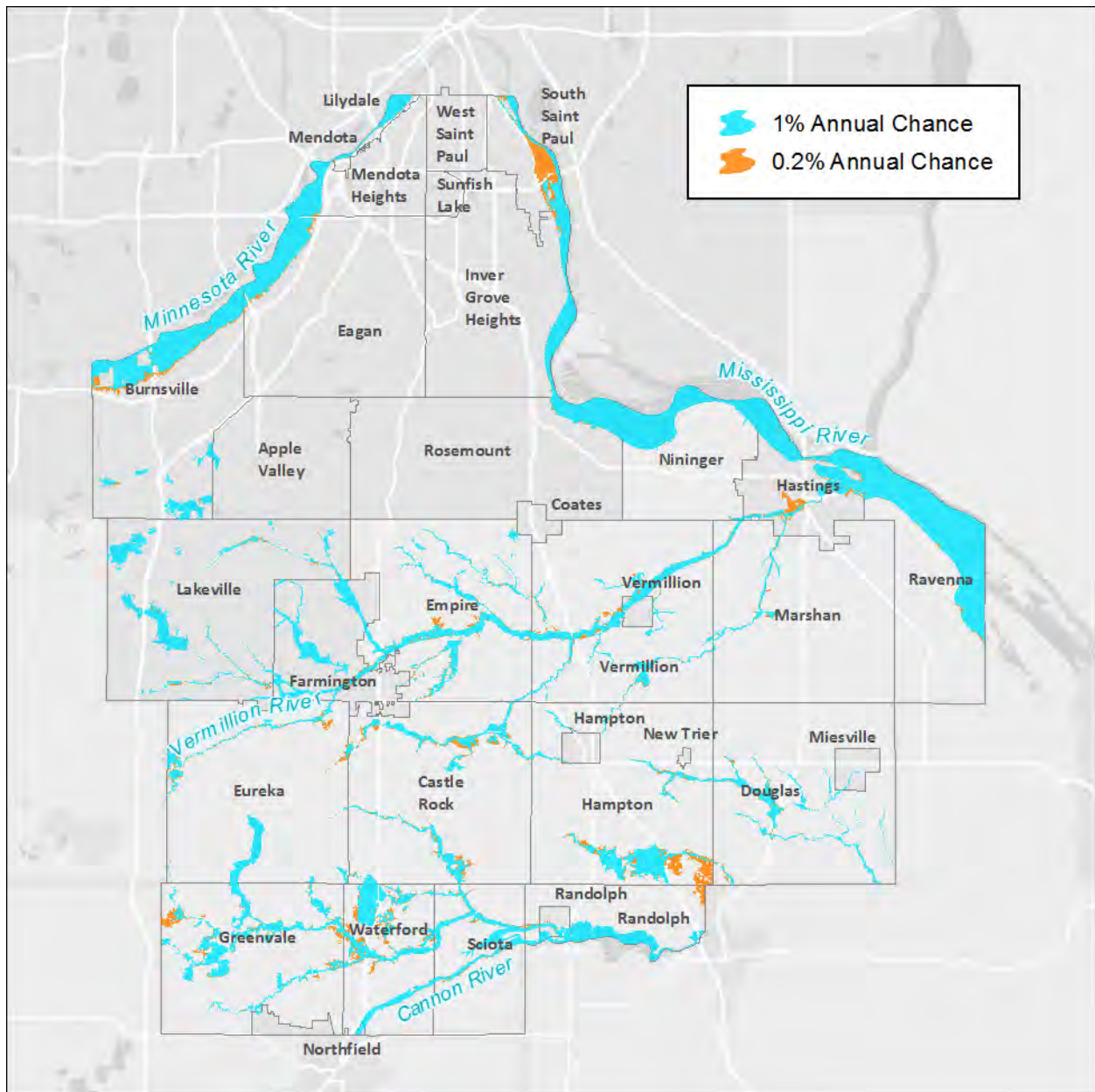
Source: FEMA Flood Insurance Rate Map FIRM panel for Dakota County Effective Date 12/2/2011.

The following map (Figure 4.8) illustrates flood prone areas and is a generalization of the combined Flood Insurance Rate Map flood boundaries. The map does illustrate the general flooding sources within the county, most notably the floodplain of the county's four major rivers: the Mississippi, the Minnesota, the Vermillion, and the Cannon.



## SECTION IV – HAZARDS FACING THE COMMUNITY

Figure 4.8 Dakota County Flood Prone Areas



Dakota County's Flood Insurance Study describes the major flooding issues in the county:

**Minnesota River:** in Burnsville, Eagan and Mendota Heights. Draining over 16,000 square miles above Burnsville, the river is subject to wide variations in stage and discharge, causing frequent flooding. Notable flood years include April 1965, when peak flow reached 117,000 cubic feet per second, and April 1969, when peak flow reached 84,600 cubic feet per second.

Protection measures include dikes around a Burnsville floodplain quarry and other industries. Flood-proofing measures also protect the Northern States Power Company's Black Dog plant.

## SECTION IV – HAZARDS FACING THE COMMUNITY

**Mississippi River:** flows through a well-defined channel during normal flow. Discharges north of Hastings are regulated by the USACE Lock and Dam No. 2 in Hastings, and discharges south of Hastings are regulated by the USACE Lock and Dam No. 3 in Goodhue County. The lock and dam system was constructed to maintain navigation depths. During flooding, dam gates are open and the river generally flows unrestricted. Floods occur mostly in spring from snowmelt. Damage from past floods has been restricted to a few residential, commercial, and municipal areas located in the low-lying floodplain immediately adjacent to the river.

Protection measures include a series of levees in South St. Paul and Inver Grove Heights. In 1968, the USACE completed 2.5 miles of permanent flood barrier to protect packing plants and the South St. Paul sewage plant. In 1969, a 4,100-foot section of was constructed, averaging 14 feet in height. The upstream end of the levee connects with the flood barrier provided for South St. Paul.

**Vermillion River:** the river main stem flows from southeastern Scott County northeast across Dakota County in a clearly defined channel through Farmington, Empire, and Vermillion to Hastings. In Hastings, the river drops approximately 90 feet over a small dam and natural waterfall, continuing to the Vermillion Slough and to the Mississippi River. During flood periods the river overflows its banks and floods a major portion of the valley upstream of Hastings. Major past floods on the Vermillion River occurred in Farmington in September 1938, April 1952, April 1965, March 1967, and March 1969. Several tributaries have potential flooding impact to the cities of Farmington, Hampton, Hastings, Lakeville, Miesville and Randolph.

Protection measures include a levee along the left descending bank of the river upstream of the County Highway 47 Bridge to prevent direct overbank flow. The levee prevents overbank flow, although this reach is also influenced by floodwaters from downstream, with the result that the levee does not provide 1-percent annual chance flood protection. A 1978 USACE flood project provides 1-percent annual chance flood protection to a residential area along the Vermillion River from Peavey Mill to an area immediately upstream of the County Highway 47 Bridge.

**Cannon River:** About 14 miles of the Cannon River either flow through Dakota County or form its boundary with Goodhue County. Randolph is the only city in Dakota County that is vulnerable to flooding from the Cannon River and Lake Byllesby, an impounded reservoir on the Cannon River.

**Keller Lake and Crystal Lake:** in Burnsville. The lakes drain to the Minnesota River through storm sewer and pond systems, and have experienced sustained high water levels in the recent past. Flooding occurs after heavy thunderstorms, when runoff enters lake storage.

Protection Measures: In 1974, an equalizer pipe was added to ensure that the two lakes are at the same level during periods of high water, and an outlet structure was added. New development has been accompanied by construction of stormwater storage ponds.

**Lake Marion:** in Lakeville. Flooding generally results from extended runoff events. High-water levels were recorded on Lake Marion in 1947, 1952, 1953, 1975, 1976, and 1993, and have caused damage to homes around the lake that are below the elevation of the lake's outlet, 983.2 feet NAVD.

Protection Measures: An outlet control structure and a 30-inch culvert were installed in 1985. The normal water level on Marion Lake is limited to the elevation on the outlet.

## SECTION IV – HAZARDS FACING THE COMMUNITY

Specific flood depths, velocities and volumes are available at the local level through the individual Flood Insurance Rate Maps (FIRMs) and the community specific Flood Insurance Study (FIS) through the local floodplain administrator.

### Previous Occurrences

The NOAA National Climatic Data Center (NCDC) Severe Storm Event database includes 19 flood events in Dakota County between 2000 and 2016, with 15 deaths and property damage exceeding \$220 million (Table 4.11).

**Table 4.11 Summary of Flood Events for Dakota County, 2000-2015**

Location	Date	Flood Type	Property Damage
Eagan	7/7/2000	Flash Flood	\$20,000,000
Region	4/1/2001	Flood	\$200,000,000
Region	5/1/2001	Flood	\$0
Countywide	8/3/2002	Flash Flood	\$0
Countywide	10/4/2005	Flash Flood	\$0
Northern County	10/4/2005	Flood	\$0
Eagan	8/8/2009	Flash Flood	\$0
South St. Paul	6/25/2010	Flash Flood	\$0
Burnsville/Lakeville	6/26/2010	Flash Flood	\$0
Farmington	8/10/2010	Flash Flood	\$0
Rosemount	8/13/2010	Flash Flood	\$0
Southern County	9/23/2010	Flood	\$0
Miesville	6/14/2012	Flash Flood	\$1,000,000
Burnsville	7/13/2013	Flash Flood	\$150,000
Eagan	6/1/2014	Flash Flood	\$0
Burnsville	6/18/2014	Flood	\$0
Miesville	8/17/2014	Flash Flood	\$5,000
Hampton	8/17/2014	Flash Flood	\$5,000
Mendota	9/17/2015	Flash Flood	\$0
<b>Total</b>			<b>\$221,160,000</b>

Source: National Climatic Data Center, NOAA.

Note: Zero (0) values may indicate missing data

### Vulnerability

The following table summarizes the overall vulnerability to overland and flooding.

	<b>Overland Flood</b>	<b>Flash Flood</b>
Frequency of Occurrence	Likely	Highly likely
Warning Time	6-12 hours	None-minimal
Geographic Extent	Community-wide	Localized
Likely Adverse Impact	Limited	Limited

### Plans and Programs for Flood

**Dakota County's Shoreland and Floodplain Management Ordinance (Ordinance 50).** Local governments have authority to adopt regulations designed to minimize flood losses. Dakota County's Shoreland and Floodplain Management Ordinance (hereafter referred to as "the ordinance") applies to the unincorporated areas of the county (cities have jurisdiction over incorporated areas). The purpose of the ordinance is "...to promote the public health, safety, and

## SECTION IV – HAZARDS FACING THE COMMUNITY

general welfare and to minimize ...losses [life, property, health and safety, disruption of commerce and governmental services, extraordinary public expenditures of flood protection and relief, and impairment of the tax base]...”

Dakota County’s authority in administering the National Flood Insurance Program is within the 13 unincorporated townships covering the lower two-thirds of the County. The participating cities have their own floodplain ordinance modeled on the DNR minimum standards and administer their own floodplain program within their municipal boundaries. FEMA designated floodplain as identified on the Flood Insurance Rate Maps have been digitized and incorporated into the County’s GIS coverage available to all communities.

In 2003, Dakota County entered into a Cooperating Technical Partnership with the Federal Emergency Management Agency (FEMA) to modernize the Flood Insurance Rate Maps and accompanying Flood Insurance Study (FIS) to a countywide digital format. FEMA issued its final letter of map determination in June 2011 with an effective date of Dec. 2, 2011 for the Flood Insurance Rate Maps. NFIP participating communities in the county amended their respective floodplain management ordinances and adopted the new FIS and digital flood insurance rate maps.

**County flood area map and controls.** In response to the State Floodplain Management Act, Dakota County adopted a shoreland zoning and floodplain management ordinance in 1972. The floodplain management portion of the ordinance mirrors the requirements in the MN Department of Natural Resources’ model floodplain ordinance. The ordinance includes specific land use and zoning regulations related to floodplain development. The Flood Insurance Study (FIS) and accompanying Flood Insurance Rate Maps (FIRMS) guide staff in determining floodplain location and elevation.

**National Flood Insurance Program (NFIP).** In 1968, Congress created the National Flood Insurance Program in response to the rising costs of taxpayer funded disaster relief. The Federal Emergency Management Agency (FEMA), Mitigation Division manages the NFIP and oversees the floodplain management components of the program, with state coordination through the Minnesota Department of Resources, Waters Division. Dakota County’s authority in administering the NFIP as it pertains to FIRMS, the FIS and the Dakota County Shoreland and Floodplain Management Ordinance is within the 13 unincorporated townships covering the lower two-thirds of the County.

The following cities within Dakota County have participated in the National Flood Insurance Program: Apple Valley, Burnsville, Coates, Eagan, Farmington, Hampton, Hastings, Inver Grove Heights, Lakeville, Lilydale, Mendota, Mendota Heights, Miesville, Randolph, Rosemount, South St. Paul, and Vermillion. The communities of New Trier, Sunfish Lake and West St. Paul also participate, although these three communities do not have any Special Flood Hazard Areas identified within their corporate boundaries.

**City flood map and controls.** NFIP participating communities administer their own floodplain ordinance modeled on the DNR minimum standards and administer their own floodplain program within their municipal boundaries. FEMA-designated floodplain as identified on the Flood Insurance Rate Maps has been digitized and incorporated into the County’s GIS coverage available to all communities.

## SECTION IV – HAZARDS FACING THE COMMUNITY

**Department of Natural Resources (DNR), Division of Waters.** The Minnesota Department of Natural Resources, Division of Waters has an advanced flood forecast and warning system. In addition, the DNR provides technical floodplain assistance through their local area hydrologists.

**Emergency Operations Plan.** The *Dakota County Emergency Operations Plan* outlines procedures for the County in response to a variety of hazards. During the course of a flood event in Dakota County, the Emergency Management Director and Emergency Preparedness Coordinator works with local officials to ensure public health and maintain transportation routes.

**National Weather Service.** The National Weather Service provides many storm prediction and flood monitoring applications.

**The Severe Storm Spotters Network.** This program, sponsored by the National Weather Service (NWS), enlists the help of trained volunteers to spot severe storm conditions and report this information to the NWS. No tornado warning is given unless the storm has been spotted by someone or is confirmed by NWS radar reports. Dakota County has 100 trained severe weather spotters who report directly to their respective public safety answering points (PSAP's) when severe weather is observed.

**Severe Weather Awareness Week.** Each spring Dakota County Emergency Management personnel conduct a severe weather training workshop for school, hospital and nursing home personnel.

**Severe Weather Shelters.** The County recommends that all communities require shelters for manufactured home park residents or provide information on evacuation routes to safe shelters elsewhere per state ordinances.

**Severe Weather Warning System.** The county and cities have emergency sirens to warn residents in the event of severe summer weather. Each of the six county public safety answering points (PSAP's) activates the siren system for either weather or hazardous materials incidents.

**U.S. Army Corps of Engineers.** The Corps of Engineers monitors flood gauges at their lock and dam facilities (Lock and Dam No. 2 in Hastings) and employ policies and procedures during flood events.



Flooding 1965. South Saint Paul Stockyards (Dakota County Historical Society)

### Hazardous Material Incident

#### Hazard Description

FEMA provides the following description for hazardous materials:

“Chemicals are found everywhere. They purify drinking water, are used in agriculture and industrial production, fuel our vehicles and machines, and simplify household chores. But chemicals also can be hazardous to humans or the environment if used or released improperly. Hazards can occur during production, storage, transportation, use, or disposal. The community is at risk if a chemical is used unsafely or released in harmful amounts.

Hazardous materials in various forms can cause fatalities, serious injury, long-lasting health effects, and damage to buildings, homes, and other property. Many products containing hazardous chemicals are used and stored in homes routinely. These products are also shipped daily on the nation's highways, railroads, waterways, and pipelines.

Chemical manufacturers are one source of hazardous materials, but there are many others, including service stations, hospitals, and hazardous materials waste sites. Varying quantities of hazardous materials are manufactured, used, or stored at an estimated 4.5 million facilities in the United States--from major industrial plants to local dry cleaning establishments or gardening supply stores.”

Hazardous materials include explosives, flammable and combustible substances, poisons, and radioactive materials. Hazardous material incidents are technological (non-natural) events that involve large-scale releases of chemical, biological or radiological materials. Hazardous materials incidents involve releases at fixed-site facilities that manufacture, store, process or handle hazardous materials or along transportation routes such as major highways, railways, navigable waterways and pipelines.

The U.S. Environmental Protection Agency requires industry to report information on toxic chemical releases through the Toxics Release Inventory (TRI) Program. In the previous decade, TRI reporting requirements were reduced; thereby limiting available data on chemical releases and disposal. In 2009, the federal government reinstated stricter reporting requirements for industrial and federal facilities that release toxic substances with potential to threaten human health and the environment.

#### Geographic Location

Roads, rails, aircraft, and pipelines all convey hazardous materials, with each presenting differing levels of risk from the release of hazardous materials. The road system in Dakota County provides a network to transport both hazardous and non-hazardous material throughout the region and between local communities. Risk of hazardous material exposure varies, based on the classification of the road and its proximity to people and property. Public safety consequences would be most severe in the more populated urban portions of the county and along state highways. According to the most recent findings at the Minnesota Department of Transportation, more than half of all accidents involving hazardous materials have occurred on state roadways. Due to the lack of information available regarding what is traveling on the system on a daily basis, roads are a major concern in Dakota County.

Rail transportation poses additional risk. According to MN DOT statistics, approximately 11 percent of all 2002 statewide transportation hazardous material incidents involved rail transport. Valve leakage and safety valve releases can be sources of material spills on pressurized and general service tank cars, covered hoppers, and inter-modal trailers/containers. These leaks can manifest themselves as odors or vaporous clouds from tanker top valves, spraying or splashing from tanker top valves, wetness on the



## SECTION IV – HAZARDS FACING THE COMMUNITY

side of a car, or drainage from the bottom outlet valve. Depending on the type of rail car involved, a leak could result in hundreds to thousands of gallons/pounds of a substance being released. Dakota County's pipelines carry natural gas, crude oils, and gasoline, and jet fuels to local and remote users through several routes. Release from any of these lines could create significant hazards.

A variety of hazardous materials exist in fixed facilities throughout Dakota County. They range from flammable liquids to radioactive materials to biological agents. Facilities storing or using hazardous materials above minimal amounts must develop and file a risk management plan with the State Emergency Response Commission and the Environmental Protection Agency. Each plan identifies the significant hazards for the facility, likely release scenarios, the estimated population impacted by any release, and the specific steps to take to protect that population in the event of a release. In addition, the Prairie Island nuclear power facility in Goodhue County (located roughly 20 miles southeast of the Dakota County seat of Hastings) also maintains a Nuclear Emergency Plan with the Nuclear Regulatory Commission. This plan lays out contingency actions in the event of a radioactive release.

Compared to the majority of states in the U.S., Minnesota ranks lower than many states for the number of hazardous materials processing and handling facilities. Minnesota ranks 34<sup>th</sup> in the nation for the number of pounds of on and off site releases from industrial and federal facilities at 22,229,740 pounds and 30<sup>th</sup> in the nation for total number of pounds of production-related waste managed at 154,695,994.

The most concentrated and potentially hazardous materials in the planning area are at fixed industrial facilities including oil and gas processing and storage facilities, pipelines, large and small industrial complexes that use or process chemicals or petroleum products, highways, and railroads. Other sources are also present across the planning area, including storage areas for insecticides, herbicides, and fertilizers, wrecking yards, retail fueling stations, and abandoned industrial facilities.

### ***Dakota County businesses or facilities housing hazardous materials are on file.***

For security considerations, detailed location information is not described for hazardous materials handling and transport facilities in this plan. The EPA's Toxic Release Inventory database lists 26 fixed-site facilities in Dakota County, although the TRI should not be considered an exhaustive list but rather a subset of facilities that fall in a specific classification.

510 fixed-site facilities filed reports with the TRI statewide. The following table provides data ranking Dakota County against the 71 Minnesota counties that contain facilities tracked by the TRI pertaining to disposal and release of chemicals.

**Table 4.13 Toxic Release Inventory Ranking by Category, Dakota County**

Release Category	State Rank of 70	Pounds Released
Total On-Site and Off-Site Disposal or Other Releases	3rd	926,148
Fugitive Air Emissions	6th	70,615
Point Source Air Emissions	4th	502,446
Release to Surface Waters	1st	302,395

Source: TRI Explorer, U.S.EPA. Release year 2014 National Analysis data set related to public March 2016.

## SECTION IV – HAZARDS FACING THE COMMUNITY

### Previous Occurrences

The Environmental Protection Agency (EPA) maintains the Emergency Response Notification System (ERNS), a national computer database of oil and hazardous substance releases. The ERNS is a cooperative effort among EPA Headquarters, the Department of Transportation, the National Transportation Systems Center, the ten EPA Regions, the U.S. Coast Guard and the National Response Center. The ERNS provides the most comprehensive data on release notifications of hazardous substances in the U.S.

**Table 4.14 Annual ERNS Incidents Reported, State of Minnesota 2000-2015**

Year	Incidents Reported	Fatalities Reported	Hospitalizations Reported	Injuries Reported	People Evacuated	Property Damage
2000	284	6	18	19	2,138	\$1,584,400
2001	278	17	11	12	515	\$1,806,500
2002	247	15	11	13	127	\$1,121,266
2003	205	18	10	14	388	\$737,400
2004	232	19	16	20	236	\$356,001
2005	194	14	34	34	349	\$2,643,041
2006	228	20	12	18	161	\$250,000
2007	223	20	12	14	84	\$1,347,800
2008	220	16	31	33	294	\$500,500
2009	228	15	39	40	397	\$932,000
2010	221	8	66	68	1,766	\$430,000
2011	217	14	14	19	192	\$764,000
2012	209	22	19	31	265	\$668,000
2013	243	14	17	19	452	\$811,000
2014	185	15	32	32	191	\$1,255,000
<b>TOTALS</b>	<b>3414</b>	<b>233</b>	<b>342</b>	<b>386</b>	<b>7,555</b>	<b>\$15,206,908</b>
<b>Average</b>	<b>227</b>	<b>16</b>	<b>23</b>	<b>26</b>	<b>504</b>	<b>\$1,013,793</b>

Source: [www.rtknet.org](http://www.rtknet.org)

Table 4.14 shows 3,414 hazardous material release incidents in Minnesota reported from 2000 through 2014, resulting in an average of 16 deaths, 23 hospitalizations, 26 injuries and 504 people evacuated each year. Property damage averaged over \$1 million annually.

The U.S. Coast Guard maintains a comprehensive dataset available through the National Response Center (NRC), the sole national point of contact for reporting all oil, chemical, radiological, and biological discharges into the environment anywhere in the United States and its territories. According to the NRC, 190 hazardous materials spills were reported in Dakota County from 2011 through 2015.

### Vulnerability

The following table summarizes the overall vulnerability to hazardous material incidents:

Frequency of Occurrence	Highly Likely
Warning Time	None-Minimal
Geographic Extent	Localized
Likely Adverse Impact	Limited

### Plans and Programs for Hazardous Material Incidents

**State agency cooperation.** Dakota County works directly with the Minnesota Pollution Control Agency (MPCA) and Minnesota Department of Health to address needs for responding to and

## SECTION IV – HAZARDS FACING THE COMMUNITY

mitigating the impacts of a hazardous event. The MPCA maintains a 24-7 Emergency Response Team on call. The team provides containment and cleanup expertise to local first responders.

**Emergency Operations Plan.** The Dakota County Emergency Operations Plan outlines procedures for dealing with hazardous material accidents, spills or releases.

**Hazardous chemicals data collection.** Dakota County's Emergency Preparedness Coordinator works with the Department of Public Safety's Emergency Response Commission to collect data on hazardous chemicals stored in the county so that local emergency officials can prepare for incidents.

**Nuclear Emergency Plan.** The Prairie Island Nuclear Generating Plant works with the County to annually review and update the Nuclear Emergency Plan, evaluate evacuation procedures, address land use issues for nearby property and update mutual aid agreements with communities.

**Groundwater Program.** The majority of Dakota County residents rely on groundwater for their drinking water, whether they get their water from a public supplier or a domestic well. Hazardous materials incidents can put drinking water wells at risk of contamination, and unused, unsealed wells can provide a conduit for contamination at the surface to reach deeper aquifers. Dakota County's Delegated Well Program inspectors continually add information about new and existing wells to the Minnesota Well Index and the County's own well database. In case of a spill or release, this information can help responders prevent drinking water contamination. In addition, Dakota County's Groundwater Protection Program recognizes that the county's ground water is impacted by agricultural fertilizer and pesticide applications, and provides for testing of individual potable water wells.

**Environmental health regulations.** Dakota County has worked to develop environmental health regulations through its Environmental Resources and Public Health Departments.

**Dakota County Office of GIS.** The Office of GIS coordinates a county-wide GIS Users Group, and participates in regional preparedness planning initiatives.

**Training of emergency personnel.** All county and local emergency response personnel are trained to, at a minimum, the Hazardous Materials Awareness level. All first responder groups conduct the required Occupational Health and Safety Administration training on a yearly basis.

**Wakota CAER.** Wakota CAER is a coalition of industry and public agency partners that provides planning, training, and community awareness activities for natural disasters, potential fires and explosions, chemical release emergencies, and mitigation of other major hazards. Wakota CAER serves communities in Washington and Dakota counties.



**Anhydrous Ammonia Leak 2010, Randolph**

#### SECTION IV – HAZARDS FACING THE COMMUNITY

**Hazardous Waste Ordinance (Ordinance No. 111** establishes rules, regulations, and standards for hazardous waste management in Dakota County for identification, labeling, classification, handling, collection, transportation, storage, treatment, processing and/or disposal of hazardous waste.

## Infectious Disease

### Hazard Description

Infectious diseases are caused by organisms that can be spread by humans, animals, food, water, and the environment. These diseases are contagious or communicable, meaning they can be spread from person to person. Infectious diseases can affect and cause serious illness in healthy individuals of all ages though the very young, older adults and persons with underlying health conditions are at increased risk for the most serious consequences. Despite advances in medical technology, vaccine development, and treatment modalities, infectious diseases continue to pose an important public health problem globally and locally.

The emergence of previously-unknown infectious diseases, such as MERS, the spread of diseases beyond traditional geographic locations, such as Zika Virus, the spread of diseases from animals to humans, such as Ebola, and the re-emergence of diseases eliminated or significantly reduced, such as tuberculosis and measles, are at the forefront of public health concern. Lastly, bioterrorism, or the intentional spread of infectious diseases, poses an additional threat for which the county is required by federal agencies (HHS and the CDC) to develop response plans.

Many infectious diseases are preventable and controllable with accurate diagnosis, collection of accurate assessment data (such as surveillance data for specific conditions), outbreak detection and investigation, and development of appropriate control strategies (short- and long-term) based on epidemiologic data. These activities require close collaboration among public health professionals at the state and local levels, medical practitioners, and clinical laboratories. The prevention of infectious diseases also requires the involvement of researchers, regulatory agencies, educational systems, community-based organizations, and volunteer and private groups.

Significant infectious disease hazards identified by the Dakota County Public Health Department include:

### Tuberculosis

Tuberculosis (TB) is a potentially serious infectious disease caused by *Mycobacterium tuberculosis* bacteria and is spread from person-to-person through the air. TB usually affects the lungs, but it can also affect other parts of the body, such as the brain, the kidneys or the spine. TB bacteria enter the air when a person with TB of the lungs or throat coughs or sneezes. When a person inhales air that contains TB bacteria, he or she may become infected. Most people who become infected with the TB bacteria do not develop symptoms of disease. TB infection is usually treated with 9 months of one antibiotic, and TB disease is generally treated with multiple antibiotics for a period of 6 months or longer. Infected contacts of TB cases are encouraged to receive treatment to prevent development of TB, and those found to have TB disease are treated and are also investigated.

Much of the tuberculosis occurring in Dakota County and elsewhere in Minnesota is in foreign-born persons from areas of the world where TB is common. Proper screening of newly-arrived foreign-born persons and others with risk of tuberculosis, along with appropriate treatment, is crucial for TB control. Dakota County conducts contact investigations on all active infectious TB cases which can sometimes result in large numbers of people exposed in settings such as worksites and schools. The following table illustrates the number of active TB cases in Dakota County.

**Table 4.15 Number of Active TB Cases/ Year Residing in Dakota County**

Year	2011	2012	2013	2014	2015
Cases	2	13	8	15	11

## SECTION IV – HAZARDS FACING THE COMMUNITY

### Pandemic Influenza

A pandemic is a global outbreak. Pandemic influenza is a virulent human flu that causes a global outbreak of serious illness. A flu pandemic occurs when a new influenza virus emerges for which people have little or no immunity and for which no vaccine exists, such as the H1N1 influenza in 2009-2010. While it did not cause as severe morbidity and mortality as predicted, it infected normally healthy children and young adults at much higher rates than seasonal flu as well as pregnant women and people with chronic health conditions. Dakota County Public Health provided 12,494 H1N1 vaccinations, the department's largest vaccination program ever and total number vaccinated by all providers in Dakota County was 89,276 or 23% of the population. There were 6 deaths and 85 hospitalizations in the County, with 61 deaths and 1,821 hospitalizations in the state. Nationally, there were an estimated 89 million infected with H1N1 and 18,300 deaths.

Substantial effort went into developing pandemic flu response plans in the years preceding the H1N1 epidemic. Federal funding from the CDC to support and enhance the public health infrastructure and response was critical in supporting DCPH's planning and response efforts. Stockpiles of antivirals helped reduce the severity of disease and numerous large and small community-based clinics were held though vaccine supply shortages prevented much advance planning of clinics as well as rationing of vaccine to those most at risk. The department continues to learn from the H1N1 response, especially strategies for reaching marginalized and special needs populations during emergencies. While the next pandemic is an unknown, public health pandemic flu preparedness is a priority at the federal, state and local levels.

### Seasonal Influenza

Types A and B influenza viruses cause epidemics of disease almost every winter and can vary in severity. In the United States these epidemics can cause illness in 5 to 20 percent of the population. The CDC estimates that between 1976 and 2007 influenza-related deaths in the United States ranged from a low of 3,000 to a high of 49,000 and on average 200,000 people are hospitalized for conditions associated with influenza yearly. Annual influenza vaccination can prevent illness from A and B influenza. Each winter's flu vaccine is formulated to protect against the A and B strains that are expected to be circulating that season. Flu vaccination is now recommended for all populations and especially children to reduce the spread of influenza. DCPH offers free flu vaccine to eligible uninsured children and adults each flu season as well as at walk-in and appointment clinics.

### Pertussis

Dakota County has been experiencing a resurgence of pertussis, (also known as whooping cough) since 2004. Pertussis is caused by the *Bordetella pertussis* bacteria and infects the lungs, causing a severe cough that lasts 4-6 weeks. Pertussis can be severe and even fatal in young infants. Pertussis is a vaccine-preventable disease and primary vaccination rates are high in the county. However, waning immunity in school age children and adults who have not yet received a pertussis booster (or Tdap) continue to be a source of pertussis disease with numerous outbreaks especially in school settings. Use of antibiotics early in the disease reduces transmission with exclusion from school or work for 5 days. Use of prophylactic antibiotics in those exposed is another control measure. In certain settings, vaccination with Tdap is beneficial for reducing outbreaks. New federal guidance has also expanded the use of Tdap vaccine for adults and pregnant women in an effort to reduce pertussis disease in our community. The following table illustrates the number of Pertussis cases in Dakota County.

Table 4.16 Number of Pertussis Cases Per Year in Dakota County

Year	2011	2012	2013	2014	2015
Cases	53	277	65	62	133



## SECTION IV – HAZARDS FACING THE COMMUNITY

### Anthrax

Preparedness planning for a possible bioterrorist event is a local public health responsibility. Dakota County Public Health receives funding from the Centers for Disease Control via the MN Department of Health to develop and exercise plans for mass dispensing of antibiotics or vaccine depending on the agent released. Response plans that specifically address an anthrax attack of the general population or of the United States Postal Service are well-developed and exercised. Inhalational anthrax is caused by spores produced by *Bacillus anthracis* bacteria.

The first symptoms of inhalational anthrax are similar to cold or flu symptoms and can include a sore throat, mild fever and muscle aches. Later symptoms include cough, chest discomfort, shortness of breath, and eventually pulmonary edema and death. Anthrax is not known to spread from person-to-person. Exposed individuals need certain antibiotics within 48-72 hours or before onset of symptoms for best outcomes.

Anthrax is classified as a Category A agent and can be used as a bioterrorism weapon. This happened in the United States in 2001. Anthrax was deliberately spread through the postal system by sending letters with powder containing anthrax. The level of risk of an anthrax attack is determined by state and federal authorities.

### Previous Occurrences

Dakota County has experienced clusters of infectious disease which has recently included measles, mumps and a pertussis outbreak. Dakota County's full population is susceptible to exposure to infectious diseases. Only those who are immune as a result of vaccination or prior infection or who are receiving preventive treatment for known/anticipated exposure will be protected. Large population concentrations and sites with large numbers of susceptible persons are at particular risk for outbreaks in the event of an introduction of an infectious disease in the community.

### Vulnerability

The following table summarizes the overall vulnerability to Infectious Disease and specifically a pandemic event.

	Infectious Disease	Pandemic Influenza
Frequency of Occurrence	Likely	Occasional
Warning Time	More than 12 hours	More than 12 hours
Geographic Extent	Community to County-wide	County-wide or Greater
Likely Adverse Impact	Critical	Catastrophic

### Plans and Programs for Infectious Disease and Public Health All Hazards

**Emergency Operations Plan.** The *Dakota County Emergency Operations Plan* outlines procedures for the County in response to a variety of hazards. Included is a public health annex that provides guidelines and strategies for dealing with infectious disease outbreaks.

**DPC Common Activity Framework.** The Dakota County Public Health Department works collaboratively with the Minnesota Department of Health to address reportable infectious diseases that are listed in Chapter 4605.7040 Disease and Reports and to plan for public health emergencies.

**Regional infectious disease response collaborative planning.** The local public health departments in the Twin Cities metro region coordinate regional infectious disease planning through various

## SECTION IV – HAZARDS FACING THE COMMUNITY

workgroups, to address public health emergencies. This collaboration focuses on response activities, including activation of mass dispensing sites for distribution of vaccines and/or antibiotics.

**Regional All-Hazards Health and Medical Response and Recovery Plan.** This regional plan describes a Minnesota Department of Health led regional response plan with public health responses. Many Regional partners collaborated on the development of this plan (6/23/2011).

**Health Alert Network system.** The Dakota County Public Health Department receives health alerts from the Minnesota Department of Health about disease outbreaks or infectious disease threats that could have an impact locally or elsewhere. Health department staff, in turn, forwards these alerts to appropriate community partners in settings such as healthcare, public safety, schools, local government, etc.

**Consultation and training for local healthcare providers.** Dakota County Public Health Department staff provide consultation services regularly to large clinics located within the County and on an as-needed basis for these and other clinics. Staff also provide training and networking opportunities for local healthcare providers on a routine basis. Much of the training and consultation focuses on infectious disease, infectious disease reporting, and emergency preparedness issues.

**Media outreach.** The Dakota County Public Health Department works with local media to provide information to the public in the event of an infectious disease outbreak or impending threat.

**Public information.** The Dakota County Public Health Department posts information about current infectious disease threats and prevention and control of infectious disease on its website. The Public Health Department contributes to Emergency and Community Health Outreach (ECHO), which broadcasts public health advisories and emergency alerts for Minnesota's refugee and immigrant populations via Twin Cities Public Television in six languages besides English.

**Vaccination program.** The Dakota County Public Health Department offers a variety of vaccinations for children and adults. The department participates in the Minnesota Vaccines for Children program to provide low-cost vaccinations for children with financial need.

**Isolation and quarantine plan.** The Dakota County Public Health Department has an isolation and quarantine plan in accordance with state laws and guidelines. The plan outlines the process and responsibilities necessary to keep persons ill with specified diseases isolated and persons exposed to specified diseases quarantined to prevent further spread of disease. The plan will assure that these persons are provided with health care, outside communication, and necessary supplies.

**Environmental health program.** The Dakota County Public Health Department has a limited capacity to respond to environmental health hazards. We primarily provide consultative services to citizens regarding indoor air, radon, and mold and provide inspection services for childhood lead and public health nuisances. We work collaboratively with state agencies to mitigate, respond and recover from environmental emergencies.

## Structural Fire

### Hazard Description

Structural fires regularly pose danger to life and destruction to property. They include any instance of uncontrolled burning which results in structural damage to residential, commercial, industrial, institutional or other properties. Fires can occur in any community and pose a threat year round.

### Previous Occurrences

Statewide in 2009, cooking accidents caused the largest percentage of structure fires (49%), with heating and open flame as the second and third leading causes. Together they accounted for 70% of all structural fires. Residences are particularly vulnerable as they represent 76% of all structural fires and account for 94% of all structural fire deaths. Commercial and industrial structures are also vulnerable. Table 4.17 lists recent fire statistics for the County.

**Table 4.17 Recent Fire Data for Dakota County**

Year	Fire Runs	Damage (\$ millions)	Deaths	Avg. Loss/Fire
2014	759	\$9.7	3	\$13,009
2013	759	\$10.2	1	\$14,945
2012	974	\$14.8	0	\$16,875
2011	826	\$8.7	0	\$11,506
2010	794	\$16.8	0	\$22,680
2009	918	\$9.8	2	\$11,052
2008	827	\$16.3	0	\$21,816
2007	958	\$9.7	1	\$12,163
2006	944	\$12.3	3	\$14,366
2005	912	\$8.7	0	\$10,485

\* As reported to the Minnesota State Fire Marshal (Rosemount not reporting 2005)

### Vulnerability

The following table summarizes the overall vulnerability to Structural Fire.

Frequency of Occurrence	Highly Likely
Warning Time	None-Minimal
Geographic Extent	Localized
Likely Adverse Impact	Critical

### Plans and Programs for Structural Fire

**Fire departments.** Local fire departments have the primary response role for structural fires. Each department is responsible for fires within their district boundaries. However, they often work together on larger fires.

**Fire educational services.** Fire departments in Dakota County provide many educational services to county residents, including:

- Business inspections
- Woodstove inspections
- Fire safety education presentations at schools, churches, civic groups and the county fair
- CPR training
- Coordination of education programs with other agencies, hospitals and schools
- Education on fire prevention to businesses within the business district

## SECTION IV – HAZARDS FACING THE COMMUNITY

- Chimney inspections
- Youth education at schools
- Fire prevention week
- Booth at the fair

**Zoning.** City zoning departments, which include building inspectors, regulate the development of new housing. These departments are in charge of enforcing safety restrictions including setbacks, lot coverage, building materials and fire suppression systems. Once built, city fire marshals inspect commercial structures for fire hazards routinely.

**State training.** Firefighters in Dakota County participate in mandatory firefighting training classes offered by the state.



Propane Explosion and Fire 1974, West Saint Paul – Dakota County Historical Society

## SECTION IV – HAZARDS FACING THE COMMUNITY

### Terrorism

#### Hazard Description

FEMA defines terrorism as the use of force or violence against persons or property in violation of criminal laws of the United States for purposes of intimidation or coercion, related to a specific cause (political, religious, social). Terrorists often use threat to generate fear among the public, convince citizens that their government is powerless to prevent terrorism, or gain immediate publicity for their causes. Acts of terrorism include terroristic threats; assassinations, kidnappings, hijackings, bomb scares and bombings; cyber-attacks; and the use of chemical, biological, nuclear and radiological weapons.

Threat assessment, mitigation, and response to terrorism are federal and state directives, and agencies work primarily with local law enforcement. The Office of Infrastructure Protection within the federal Department of Homeland Security leads the coordinated national program to reduce and mitigate risk within 18 national critical infrastructure and key resources (CIKR) sectors from acts of terrorism and natural disasters and to strengthen sectors' ability to respond and quickly recover from an attack or other emergency. This is done through the National Infrastructure Protection Plan (NIPP).

Under the NIPP, a Sector-Specific federal agency is assigned to lead a collaborative process for infrastructure protection for each of the 18 sectors. The Office of Infrastructure Protection provides coordination and collaboration needed to set national priorities, and goals. The NIPP framework integrates a broad range of public and private CIKR protection activities. Sector-Specific Agencies provide guidance about the NIPP framework to state, tribal, territorial and local homeland security agencies and personnel. They coordinate NIPP implementation within the sector, which involves developing and sustaining partnerships and information-sharing processes, as well as assisting with contingency planning and incident management.

The Office of Infrastructure Protection has Sector-Specific Agency responsibility for six CIKR sectors:

- Chemical
- Commercial Facilities
- Critical Manufacturing
- Dams
- Emergency Services
- Nuclear Reactors, Materials and Waste

Sector-Specific Agency responsibility for the other 12 CIKR sectors is held by other Department of Homeland Security components and other federal agencies:

- Agriculture and Food – Department of Agriculture; Food and Drug Administration
- Banking and Finance – Department of the Treasury
- Communications – Department of Homeland Security
- Defense Industrial Base – Department of Defense
- Energy – Department of Energy
- Government Facilities – Department of Homeland Security
- Information Technology – Department of Homeland Security
- National Monuments and Icons – Department of the Interior
- Postal and Shipping – Transportation Security Administration
- Healthcare and Public Health – Department of Health and Human Services
- Transportation Systems – Transportation Security Administration; U.S. Coast Guard
- Water – Environmental Protection Agency

## SECTION IV – HAZARDS FACING THE COMMUNITY

The NIPP requires that each Sector-Specific Agency prepare a Sector-Specific Plan, review it annually, and update it as appropriate. According to the Department of Homeland Security, it leverages resources within federal, state and local governments, coordinating the transition of multiple agencies and programs into a single, integrated agency focused on protecting the public.

### Geographic Location

Probable high risk-targets for acts of terrorism include military and civilian facilities, international airports, large cities, and high-profile landmarks. Terrorists might also target large public gatherings and events, water and food supplies, utilities, and corporate centers.

**Table 4.18 Recent Terrorist Incidents in the United States (2006-Present)**

Date	Incident	City, State	Fatalities	Wounded
3/3/06	Mass shooting of 9 civilians	Chapel Hill, NC	0	9
8/2/08	Incendiary attack by animal rights activists	Santa Cruz, CA	0	4
5/31/09	Armed attack on medical doctor	Wichita, KS	1	0
6/1/09	Military base armed attack	Little Rock, AR	1	1
6/10/09	Armed attack by suspected white supremacist	Washington, DC	1	0
11/5/09	Soldier Readiness Center mass shooting	Fort Hood, TX	13	43
8/5/12	Sikh Temple shooting	Oak Creek, WI	5	3
4/15/13	Boston Marathon bombing	Boston, MA	3	180
4/13/14	Jewish Community Center shooting	Overland Park, KS	3	0
6/17/15	Emanuel African Methodist Church mass shooting	Charleston, SC	9	1
7/16/15	Military installation shooting	Chattanooga, TN	5	2
11/27/15	Planned Parenthood shooting	Colorado Springs, CO	3	9
12/2/15	Inland Regional Center mass shooting	San Bernardino, CA	14	22
6/12/16	Pulse Nightclub mass shooting	Orlando, FL	49	53
<b>Totals</b>			<b>107</b>	<b>327</b>

### Previous Occurrence

There are no prior incidents of terrorism in Dakota County.

### Vulnerability

The following table summarizes the overall vulnerability to Terrorism.

Frequency of Occurrence	Occasional
Warning Time	None - Minimal
Geographic Extent	Community-wide
Likely Adverse Impact	Critical

### Plans and Programs for Terrorism

**Cooperation with state and federal officials.** Dakota County officials work with state and federal officials on domestic preparedness efforts, such as the Minnesota Department of Homeland Security and Emergency Management, and the Department of Health. The details of these efforts go beyond the scope of this plan.



## SECTION IV – HAZARDS FACING THE COMMUNITY

### Tornado

#### Hazard Description

The National Weather Service defines a tornado as a “violently rotating column of air extending from a thunderstorm to the ground.” Tornadoes are the most violent of all atmospheric storms and are capable of tremendous destruction. Wind speeds can exceed 250 mph, and damage paths can be more than one mile wide and 50 miles long. In an average year, more than 900 tornadoes are reported in the United States, resulting in approximately 80 deaths and more than 1,500 injuries.

Although tornadoes are documented on every continent, they occur most frequently in the central U.S. east of the continental divide. Atmospheric and topographic conditions cause warm and cold air masses to meet in the center of the country, creating unstable, fast moving air at high pressure that can cause a tornado to form. Tornadoes occur most frequently from April to June. While most tornadoes occur between 3:00 and 9:00 p.m., a tornado can occur at any time of day. Prior to 2007, tornado intensity was measured by the Fujita (F) scale shown below.

**Table 4.19 Fujita Scale**

<b>Fujita Scale</b>	<b>Wind Estimate (Mph)</b>	<b>Typical Damage</b>
F0	< 73	Light damage. Some damage to chimneys; branches broken off trees; shallow-rooted trees pushed over; sign boards damaged.
F1	73-112	Moderate damage. Peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos blown off roads.
F2	113-157	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars overturned; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
F3	158-206	Severe damage. Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off ground and thrown.
F4	207-260	Devastating damage. Well-constructed houses leveled; structures with weak foundations blown away some distance; cars thrown and large missiles generated.
F5	261-318	Incredible damage. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 meters (109 yards); trees debarked; incredible phenomena.

Source: National Oceanic and Atmospheric Administration Storm Prediction Center, [www.spc.noaa.gov/faq/tornado/f-scale.html](http://www.spc.noaa.gov/faq/tornado/f-scale.html)

The Fujita scale has been updated to the Enhanced Fujita scale. Both scales estimate wind speed based on the degree of damage. The new scale provides more damage indicators for different structures, and takes into account construction type and materials. The Enhanced Fujita Scale is shown in Table 4.20.

**Table 4.20 Enhanced Fujita Scale (EF)**

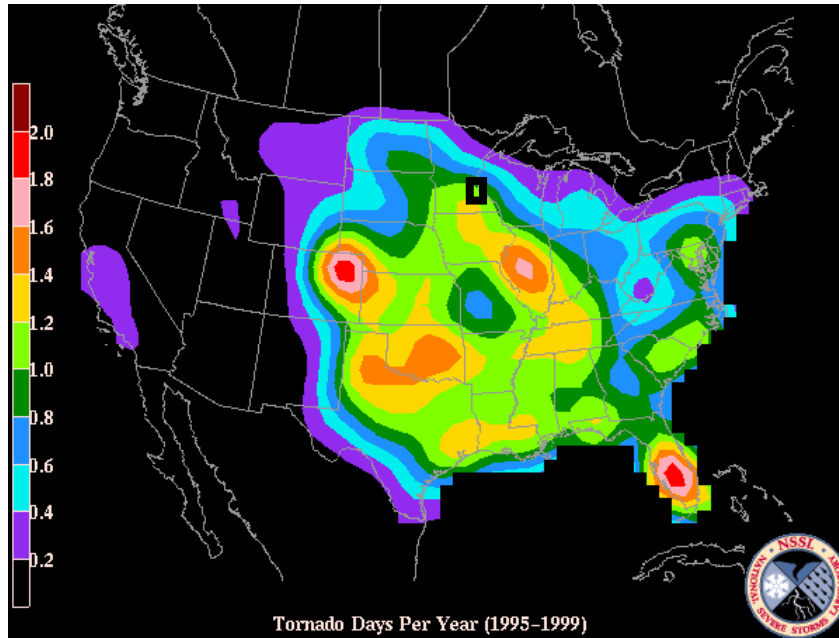
<b>Enhanced Fujita Scale (EF)</b>	<b>EF Wind Estimate (MPH)</b>
EF0	65-85
EF1	86-110
EF2	111-135
EF3	136-165
EF4	166-200
EF5	Over 200

Source: National Oceanic and Atmospheric Administration Storm Prediction Center, [www.spc.noaa.gov/faq/tornado/ef-scale.html](http://www.spc.noaa.gov/faq/tornado/ef-scale.html)

### Geographic Location

As a weather-based phenomenon, tornados can occur and impact any portion of the planning area. Based on analysis by the National Severe Storms Laboratory, Dakota County is located in a region of the U.S. that experiences a moderate frequency of tornado occurrences. Figures 4.10 shows 'Significant' ( $\geq F1$ ) tornados from 1995-1999.

**Figure 4.10 Significant Tornado Occurrences by Location, 1995-1999**



Source: National Oceanic and Atmospheric Administration (NOAA), National Severe Storm Laboratory (NSSL)

Note: Black rectangle indicates approximate location of Dakota County

### Previous Occurrences

The National Weather Service compiles annual fatality statistics for natural hazards. Over a ten year period (2005-2015), seven tornado fatalities occurred in Minnesota – one in 2011, three in 2010, one in 2008, and two in 2006. A review of historical tornado events from 1965 to 2015 is presented in Table 4.21, with 28 recorded tornadoes. Property damage was estimated at nearly \$9 million.

**Table 4.21 Dakota County Tornado Events 1965-2015**

Location	Date	Magnitude (Fujita Scale)	Property Damage
Dakota	6/05/1965	F1	\$3,000
Dakota	6/15/1967	F0	\$25,000
Dakota	5/15/1968	F2	\$250,000
Dakota	7/13/1969	F1	\$25,000
Dakota	7/15/1969	F1	\$3,000
Dakota	7/14/1971	F0	\$25,000
Dakota	5/09/1973	F1	\$250,000
Dakota	6/28/1979	F0	\$25,000
Dakota	4/29/1981	F1	\$250,000
Dakota	7/15/1982	F1	\$25,000
Dakota	5/13/1987	F1	\$3,000
Dakota	5/13/1987	F0	\$0
Dakota	7/27/1987	F1	\$250,000
Hastings	7/06/1996	F0	\$0

## SECTION IV – HAZARDS FACING THE COMMUNITY

Location	Date	Magnitude (Fujita Scale)	Property Damage
Castle Rock	3/29/1998	F2	\$0
Hastings	3/29/1998	F0	\$0
Castle Rock	8/12/1999	F0	\$0
Northfield	5/09/2001	F2	\$7,000,000
Lakeville	9/09/2001	F0	\$0
Empire	7/10/2008	F0	\$0
New Trier	8/19/2009	F1	\$25,000
Northfield	7/14/2010	F0	\$20,000
Waterford	7/14/2010	F0	\$1,000
Waterford	7/14/2010	F1	\$50,000
Farmington	8/13/2010	F1	\$750,000
Burnsville	11/10/2012	F0	\$150,000
Mendota Heights	11/10/2012	F0	\$50,000
Eagan	11/10/2012	F0	\$100,000
<b>Total</b>			<b>\$9,280,000</b>

Source: National Climatic Data Center (NCDC)

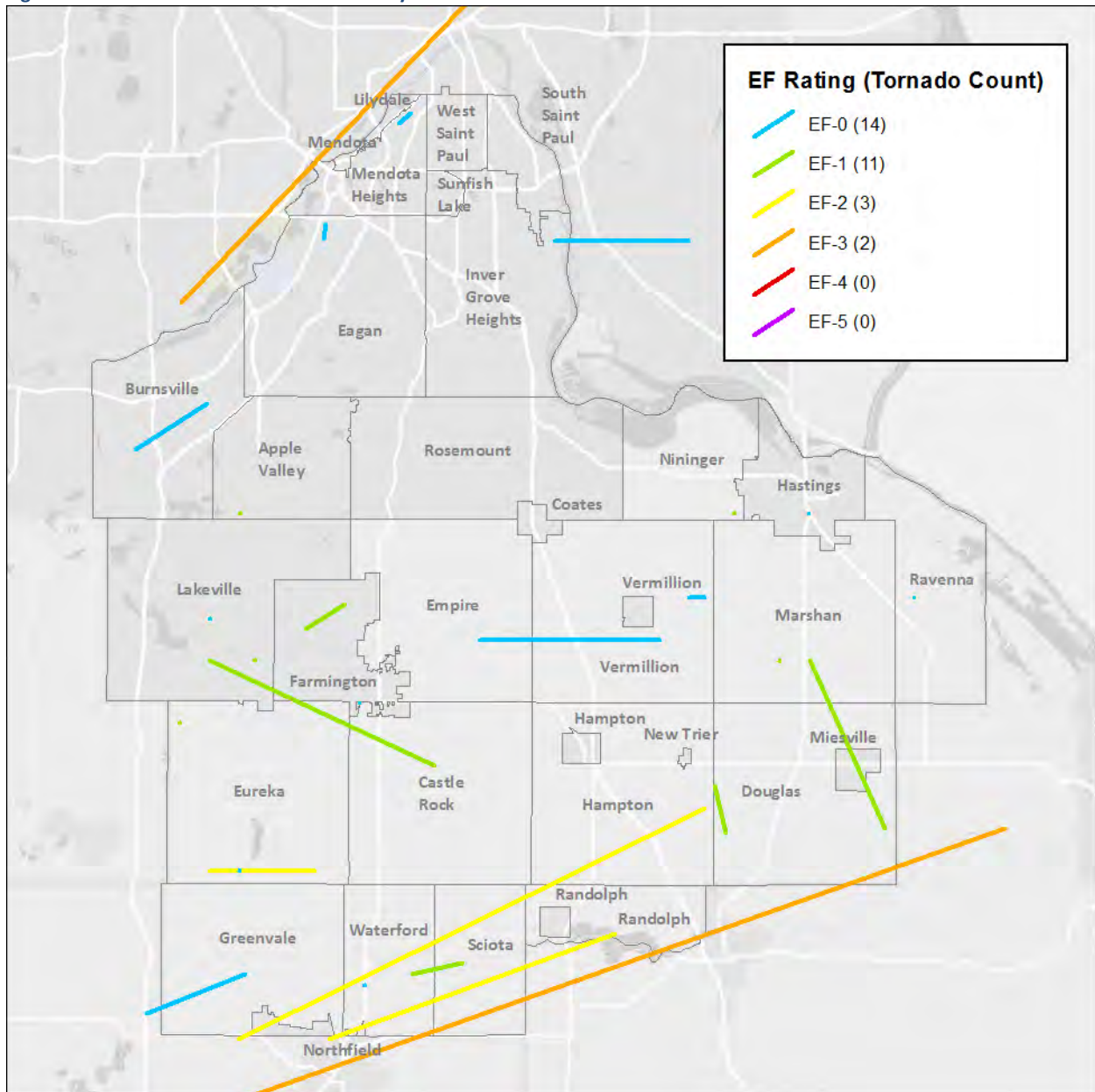


Figure 4.11 Castle Rock Tornado 1920, Dakota County Historical Society

## SECTION IV – HAZARDS FACING THE COMMUNITY

A map of significant tornado events in Dakota County is illustrated below.

**Figure 4.12 Tornado Events in Dakota County**



### Vulnerability

The following table summarizes the overall vulnerability to tornadoes.

Frequency of Occurrence	Likely
Warning Time	None-Minimal
Geographic Extent	Community-wide
Likely Adverse Impact	Critical

## SECTION IV – HAZARDS FACING THE COMMUNITY

### Plans and Programs for Tornadoes

**The Severe Storm Spotters Network.** This program, sponsored by the National Weather Service (NWS), enlists the help of trained volunteers to spot severe storm conditions and report this information to the NWS. No tornado warning is given unless the storm has been spotted by someone or is confirmed by NWS radar reports. Dakota County has 100 trained severe weather spotters who report directly to their respective public safety answering points (PSAP's) when severe weather is observed.

**Severe Weather Awareness Week.** Dakota County, its cities, and local media all provide information to the general public and to target audiences on severe weather awareness.

**Severe Weather Shelters.** The County is recommending that all communities require shelters for manufactured home park residents or provide information on evacuation routes to safe shelters elsewhere per state ordinances.

**Severe Weather Warning System.** The county and cities have emergency sirens to warn residents in the event of severe summer weather. Each of the six county public safety answering points (PSAP's) activates the siren system in Dakota County for either weather or hazardous materials incidents.

## Violent Summer Storms

### Hazard Description

Violent summer storms include thunderstorms, lightning, hailstorms and windstorms. The disturbance is a result of warm, humid air moving upward because of unequal surface heating, lifting of warm air along a frontal zone or diverging upper-level winds (these diverging winds draw air up beneath them). There are three types of thunderstorms: air mass, dry, and severe.

Air mass thunderstorms (also called scattered thunderstorms) typically develop in the warm, humid air of summer months and develop during the afternoon in response to insolation (solar heating) and dissipate quickly after sunset. Air mass thunderstorms are generally less severe than other types of thunderstorms, but can produce downbursts, brief heavy rain, and hail over 3/4 inch in diameter.

Dry thunderstorms are generally high-altitude storms where lightning is observed, but little if any precipitation reaches the ground. Most of the rain produced by the thunderstorm evaporates into relatively dry air beneath the storm cell.

Severe thunderstorms produce winds of at least 58 mph (50 knots) and/or hail at least 3/4" in diameter. Structural wind damage may imply the occurrence of a severe thunderstorm.

Components of thunderstorms include lightning, high wind and hail as described below:

**High Wind:** Severe thunderstorms form in areas with a strong vertical wind shear that forces the updraft into the mature stage, the most intense stage of the thunderstorm. Wind speed is generally measured in knots (1 knot = 1.15 mph). Table 4.22 below shows an appended Beaufort Wind Scale and the relationship of wind speed in knots, miles per hour, and typical effects on land.

**Table 4.22 Appended Beaufort Wind Scale**

Wind Speed (Knots)	Wind Speed (MPH)	Typical Wind Effects on Land
Less than 1	Less than 1.15	Calm, smoke rises vertically
1 to 4	1.15 to 4	Smoke drift indicates wind direction, still wind vanes
4 to 7	4 to 8	Wind felt on face, leaves rustle, vanes begin to move
7 to 11	8 to 13	Leaves and small twigs constantly moving, light flags extended
11 to 17	13 to 20	Dust, leaves, and loose paper lifted, small tree branches move
17 to 22	20 to 25	Small trees in leaf begin to sway
22 to 28	25 to 32	Larger tree branches moving, whistling in wires
28 to 34	32 to 39	Whole trees moving, resistance felt walking against wind
34 to 41	39 to 47	Whole trees in motion, resistance felt walking against wind
41 to 48	47 to 55	Slight structural damage occurs, slate blows off roofs
48 to 56	55 to 64	Seldom experienced on land, trees broken or uprooted, "considerable structural damage"
56 to 64	64 to 74	Substantial structural damage
64+	74+	Potentially major structural damage

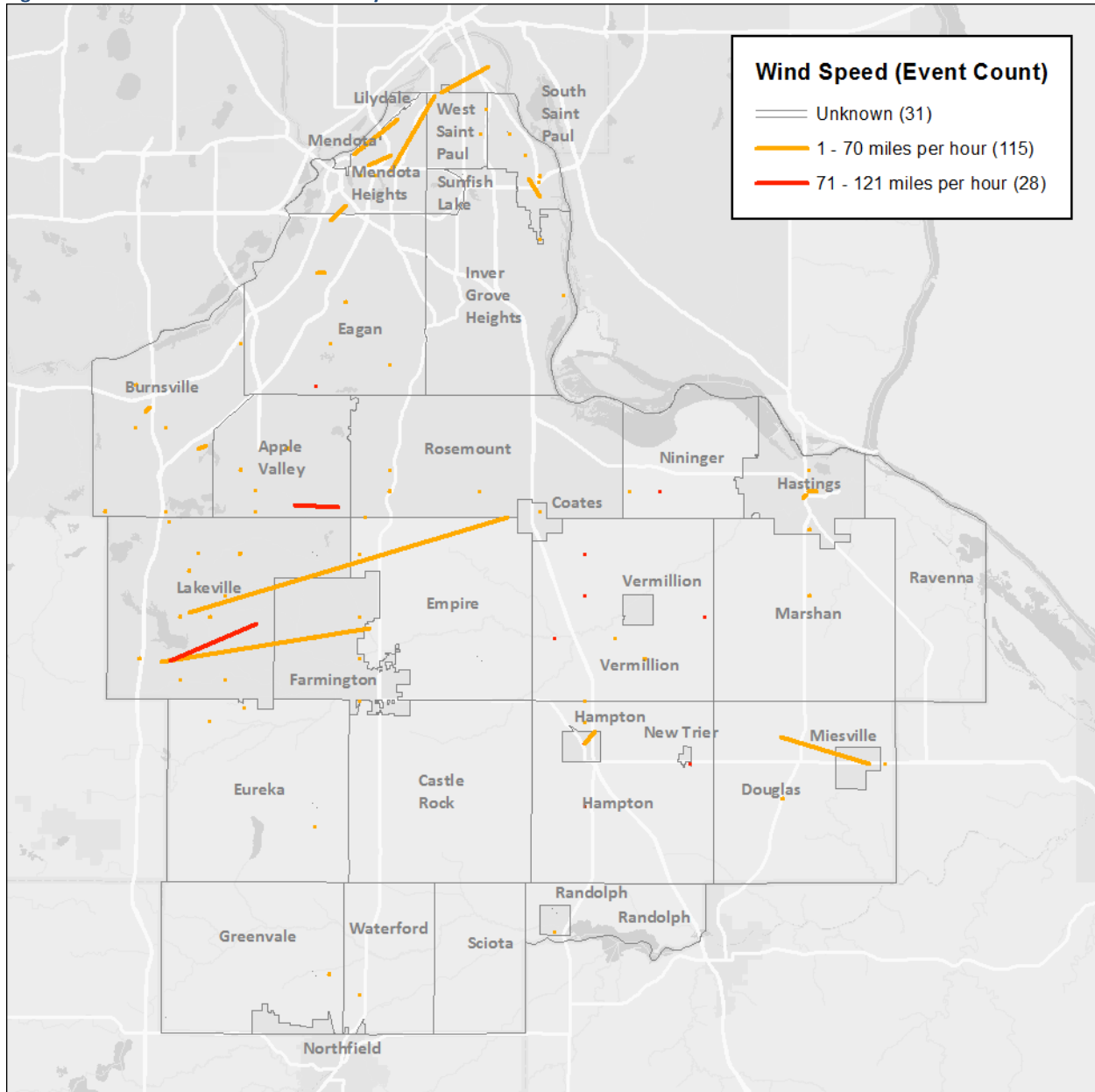
Source: NOAA

A county-wide map on the following page illustrates strong wind events (straight line) that have occurred in Dakota County (Figure 4.13).



## SECTION IV – HAZARDS FACING THE COMMUNITY

Figure 4.13 Wind Events in Dakota County



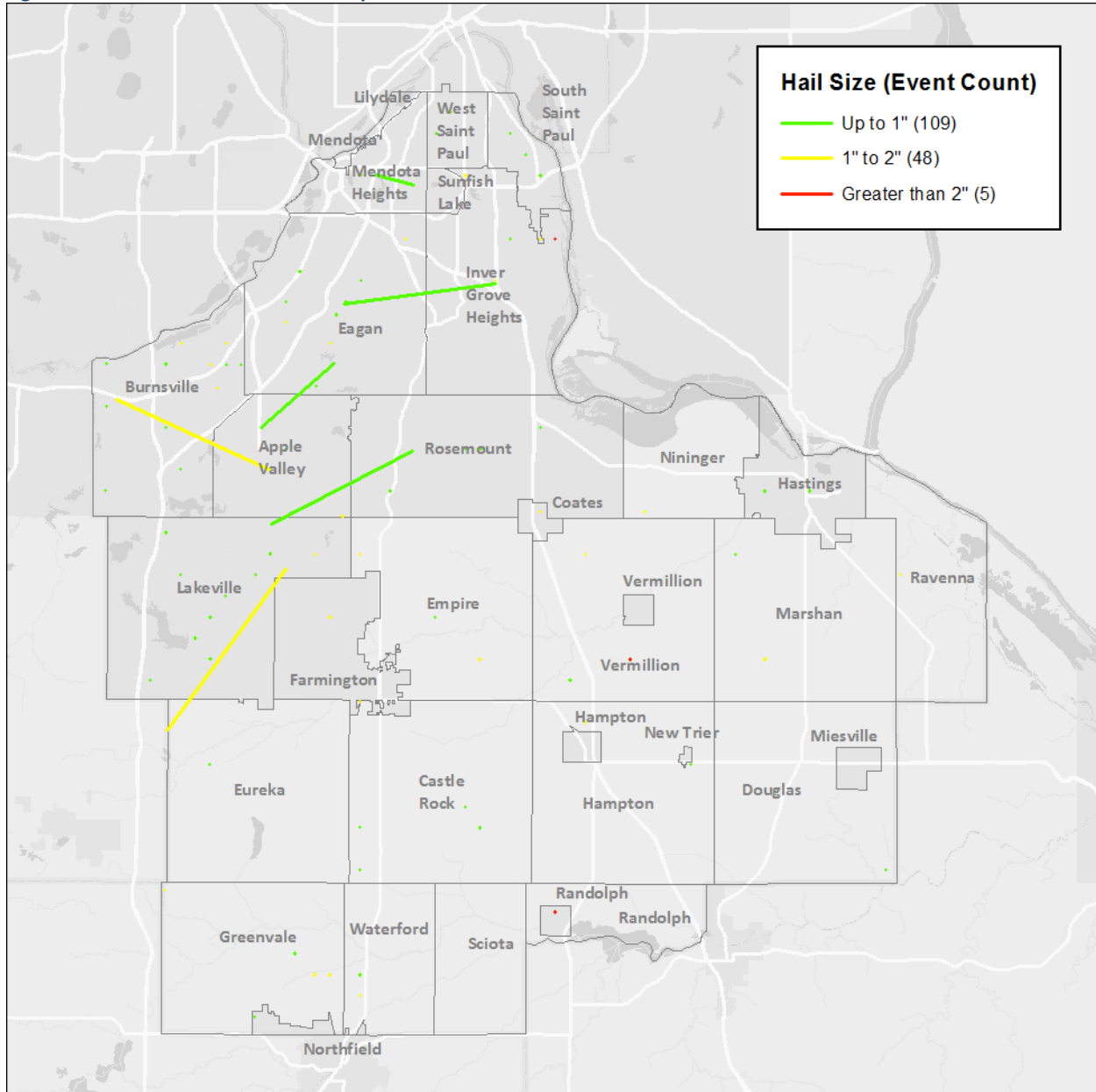
**Lightning:** Rising and descending air in the thunderstorm separates positive and negative charges, with lightning the result of the buildup and discharge of energy between positive and negative charge areas. Lightning poses extreme hazards. According to NOAA, an average of 20 million cloud-to-ground lighting flashes is detected every year in the continental United States. About half of all flashes have more than one ground strike point, so at least 30 million points on the ground area struck in an average year. Lightning is the second most deadly natural hazard in the U.S., behind floods and flash flood events, causing approximately 100 deaths and 500 injuries annually.

**Hail:** Hail is defined as ice precipitation with a diameter of 5 to 190 millimeters (0.2 inch to 7.4 inches). Hail develops in the upper atmosphere as ice crystals bounced about by high velocity updraft winds. The ice crystals accumulate frozen droplets and fall after developing enough weight. Hailstorms are most common in the middle latitudes and are generally brief in duration. Large downdrafts in mature

## SECTION IV – HAZARDS FACING THE COMMUNITY

thunderstorm clouds provide the mechanism for hail formation. A hailstorm ordinarily occurs in mid to late afternoon during the passage of a cold front or during a thunderstorm. The severity of hailstorms depends on the size of the hailstones, the length of time the storm lasts, and whether it occurs in developed areas. Hailstorms can cause widespread damage to homes and other structures, automobiles, and crops. While the damage to individual structures or vehicles is often minor, the cumulative costs to communities, especially across large metropolitan areas, can be significant. Figure 4.14 shows locations of significant hail events in Dakota County. Hail size and potential impact from hailstorms is outlined in the following scale provided by NOAA in Table 4.23.

**Figure 4.14 Hail Events in Dakota County**



## SECTION IV – HAZARDS FACING THE COMMUNITY

**Table 4.23 Combined NOAA/TORRO Hailstorm Intensity Scales**

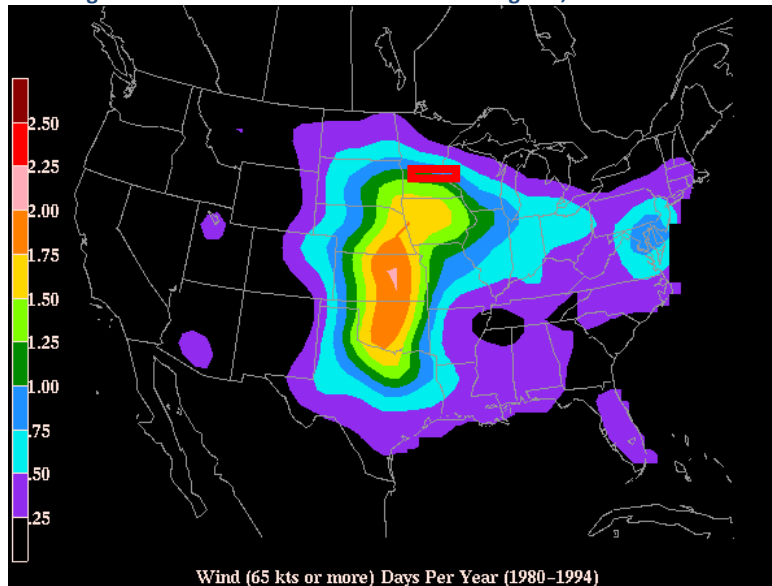
Size	Intensity	Diameter	Comparative Size	Typical Impacts
H0	Hard Hail	up to 0.33"	Pea	No damage
H1	Potentially Damaging	0.33-0.60"	Marble or Mothball	Slight damage to plants, crops
H2	Potentially Damaging	0.60-0.80"	Dime or grape	Significant damage to fruit, crops, vegetation
H3	Severe	0.80-1.2"	Nickel to Quarter	Severe damage to crops, glass and plastic structures; paint and wood scored
H4	Severe	1.2-1.6"	Half Dollar to Silver Dollar	Widespread glass damage, vehicle bodywork damage
H5	Destructive	1.6-2.0"	Silver dollar to Golf Ball	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	2.0-2.4"	Lime or Egg	Aircraft bodywork dented, brick walls pitted
H7	Very destructive	2.4-3.0"	Tennis ball	Severe roof damage, risk of serious injuries
H8	Very destructive	3.0-3.5"	Baseball to Orange	Severe damage to aircraft bodywork
H9	Super Hailstorms	3.5-4.0"	Grapefruit	Extensive structural damage. Risk of severe-fatal injuries to persons caught in the open
H10	Super Hailstorms	4+"	Softball and larger	Extensive structural damage. Risk of severe-fatal injuries to persons caught in the open

Sources: National Oceanic and Atmospheric Administration (NOAA), Tornado and Storm Research Organization.

### Geographic Location

Thunderstorms occur across a broad region of the U.S. that includes all areas of Dakota County. As shown in Figure 4.15 below, the planning area is located along a band of the northern U.S. that experiences winds  $\geq 65$  knots on roughly an annual basis. The red rectangle indicates approximate location of Dakota County.

**Figure 4.15 Intense Thunderstorm Wind Regions, U.S. 1993-2009**



Source: National Severe Storms Laboratory (NSSL),

[http://www.nssl.noaa.gov/users/brooks/public\\_html/bigwind.gif](http://www.nssl.noaa.gov/users/brooks/public_html/bigwind.gif)

## SECTION IV – HAZARDS FACING THE COMMUNITY

### Previous Occurrences

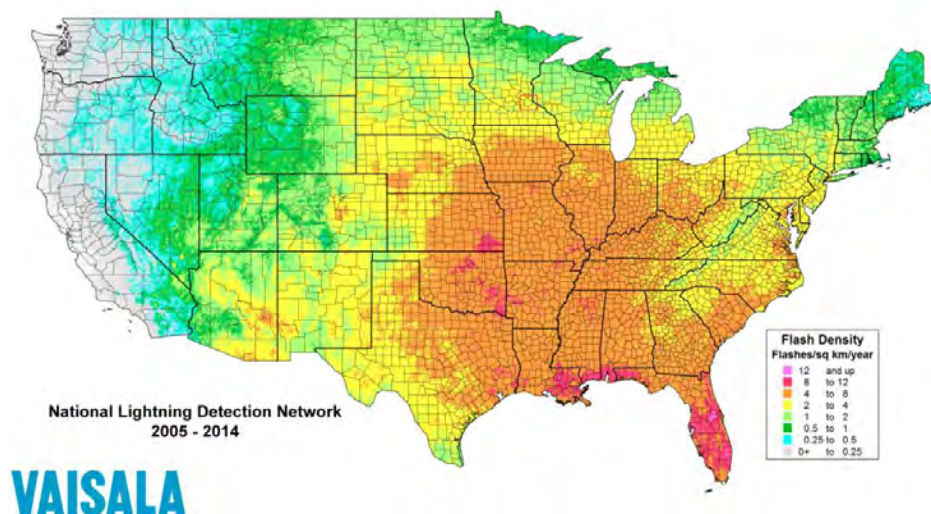
According to the National Climatic Data Center, 187 thunderstorms were reported for Dakota County from 1960 through 2015, with nineteen injuries and \$181 million in property damages. In twenty of these events, wind gusts exceeded 70 knots (estimated).

Since 2000, Dakota County has received federal public assistance funds after two federally declared disasters related to severe storms: DR-1333, declared on June 27, 2000, paid \$122,000 to Dakota County, and DR-4069, declared on July 6, 2012, paid Dakota County \$2.4 million for storm-related damages. Dakota County received \$1.4 million from the State of Minnesota for storm-related damages that occurred in June and July of 2014.

Lightning impacts all regions of the planning area. Fifteen reported lightning strikes occurred from 1960 through 2015, with a total of \$2.43 million in property damages.

The following map shows Minnesota with a low to moderate frequency of lighting occurrences. The flash density of lightning for Dakota County is 1 to 4 flash occurrences per square kilometer per year.

Figure 4.17 Lightning Flash Density per Square Kilometer per Year



Note: Approximate location of Dakota County indicated by red rectangle

Based on NCDC records from 1960 through 2010, there were 97 hail events of at least 0.75" in diameter: on at least 40 occasions, hail 1.75" or larger in diameter has occurred, and on 5 occasions hail 2.50" or larger has occurred. Five of these events reported damage, cumulatively totaling \$123.5 million. This damage assessment is most likely under reported. The figure on the following page highlights selected hailstorm occurrences.

### Vulnerability

The following table summarizes the overall vulnerability to violent summer storms.

Frequency of Occurrence	Highly Likely
Warning Time	3-6 hours
Geographic Extent	Community-wide
Likely Adverse Impact	Critical

## SECTION IV – HAZARDS FACING THE COMMUNITY

### Plans and Programs for Violent Summer Storms

**The Severe Storm Spotters Network.** This program, sponsored by the National Weather Service (NWS), enlists the help of trained volunteers to spot severe storm conditions and report this information to the NWS. No tornado warning is given unless the storm has been spotted by someone or is confirmed by NWS radar reports. Dakota County has 100 trained severe weather spotters who report directly to their respective public safety answering points (PSAP's) when severe weather is observed.

**Severe Weather Awareness Week.** Dakota County, its cities, and local media all provide information to the general public and to target audiences on severe weather awareness.

**Severe Weather Shelters.** The County is recommending that all communities require shelters for manufactured home park residents or provide information on evacuation routes to safe shelters elsewhere per state ordinances.

**Severe Weather Warning System.** The Dakota Communications Center serves as the Dakota County Warning Point. The Warning Point has 24-hour capability and is responsible for the receipt and proper dissemination of all severe weather notifications issued by the National Weather Service or called for directly by first responders in the field based on direct observations. Recent policy changes elevated the system activation wind speed for severe storms to 70 mph be consistent with other jurisdictions in the metro region.



Dakota County Historical Society



## Violent Winter Storms

### Hazard Description

Violent winter storms can include sleet, ice, freezing rain, heavy snow, or blizzards (high winds and blowing snow). Event severity depends on the amount and extent of snow or ice, temperature, wind speed, and duration. Severe winter weather can disrupt essential systems such as utilities, transportation, and telecommunications. In Minnesota, a heavy snow event is generally defined as 6 or more inches in a 12-hour period, and 8 or more inches in a 24-hour period. Snow is considered heavy when visibilities drop below one-quarter mile regardless of wind speed.

Ice storms produce damaging accumulations of ice during freezing rain situations. Significant ice accumulations (1/4 inch or greater) pull down trees and utility lines resulting power and communication outages, and make walking and driving extremely dangerous. Extreme cold often accompanies or follows a winter storm, especially from December to February. Exposure to extreme cold can lead to life-threatening frostbite, hypothermia or illness. *See Extreme Temperatures earlier in this section.*

### Geographic Location

Dakota County is in the upper mid-continent region known for severe winter conditions, and usually experiences at least one of each of the above types of winter storms at least annually. Winter storms are nearly always large scale, frequently with statewide or region-wide impact.

### Previous Occurrences

From 1995 to 2015, the National Climatic Data Center recorded the following severe winter events:  
19 heavy snow events, occurring in 1996 (5 events), 1999, 2000, 2001, 2005, 2008, and 2008  
2 blizzards, occurring in 2009 and 2010  
3 ice storms, occurring in 1996 (2 events) and 1998  
47 winter storm events, occurring nearly every year over the two decades

### Vulnerability

The following table summarizes the overall vulnerability to violent winter storms.

Frequency of Occurrence	Highly likely
Warning Time	More than 12 hours
Geographic Extent	Community-wide
Likely Adverse Impact	Critical

### Plans and Programs for Violent Winter Storms

The following programs and projects are in addition to the ones already mentioned for violent storms:

**School closings.** School districts close schools when wind chills are lower than -40° F, low visibility creates unsafe driving conditions, or heavy snow makes travel difficult. Local radio stations partner with school districts to make sure announcements are aired by 6:00 am or earlier.

**Wind chill warnings.** The local National Weather Service office issues a Wild Chill Advisory when wind chills of -25°F are expected. A Wind Chill Warning is issued for wind chills of -35°F.

**Automated weather stations.** Some school districts have automated weather stations. This enables staff to monitor current conditions like wind and temperature on a real-time basis to provide up-to-the-minute information in case conditions change rapidly and action is required.



## Wastewater Treatment System Failure

### Hazard Description

Wastewater Treatment System Failure is the intentional release or failure of part or all of wastewater treatment system whereby septic effluent is released into surface waters. All wastewater treatment plants are monitored regularly to meet National Pollutant Discharge Elimination System (NPDES) Permit requirements. Biological and chemical contaminants are evaluated in the effluent discharged to local rivers. Chemical characteristics of groundwater in the vicinity of Metropolitan Council wastewater treatment plants are measured through a network of monitoring wells.

Facilities are in noncompliance if they have had effluent violations, compliance schedule violations, permit schedule violations, single event violations (for example, violations found during inspections), or reporting violations (such as failure to report) during the fiscal year.

### Geographic Location

**Met Council Facilities.** For most of the County, the provision of wastewater treatment is the responsibility of the Metropolitan Council Environmental Services Division (MCES.) Dakota County is served by four MCES facilities: the Metro plant in Saint Paul (Ramsey County), the Seneca plant in the west, the Hastings plant in the east, and the Empire Township plant in south. The Council also manages a complex collector system. For a detailed explanation of the facilities, please see the Community Profile Section of this plan.

**Municipal Treatment Facilities.** The cities of Vermilion and Hampton own and manage wastewater treatment facilities. Both cities each serve small urban areas with limited capacity plants. As these cities evaluate growth options, the future capacity and maintenance of their treatment facilities will be critical elements.

**Individual On-site Sewage Treatment Systems.** The County is responsible for the inspection and enforcement of septic systems within shoreland and floodplain areas of the 13 unincorporated townships, Randolph Township, and the cities of Randolph and New Trier. Systems are regulated in accordance with the standards for construction, design, maintenance, and inspection identified in Dakota County Ordinance No. 113. Cities and townships that have enacted a local septic system ordinance are responsible for the enforcement of septic system compliance within their own jurisdiction.

### Previous Occurrences

There are no known incidents of wastewater treatment plan failures in Dakota County.

### Vulnerability

The following table summarizes the overall vulnerability to wastewater treatment plant failure.

Frequency of Occurrence	Occasional
Warning Time	6-12 hours
Geographic Extent	Community-wide
Likely Adverse Impact	Limited

## SECTION IV – HAZARDS FACING THE COMMUNITY

### Plans and Programs for Wastewater Treatment Plant Failure

**Emergency Preparedness and Response.** Metropolitan Wastewater Treatment Plant management and staff have long understood the need for planned and prepared responses to the possibility of an emergency at a facility. Although the majority of responses are channeled into preventative measures and actions, emergency preparedness has received additional attention recently. Metropolitan Wastewater Treatment Plant management has developed comprehensive procedures and notification strategies pertaining to:

- Emergency Response Notification Procedures
- Media Relations
- Evacuation and Muster Procedures
- Management Response Documentation
- Computerized Material Safety Data Sheet Access
- Metro Plant Alarm Systems
- Chlorine Release and/or Alarm
- Sulfur Dioxide Release and/or Alarm
- Severe Weather Procedures
- Emergencies in Tunnels
- Metropolitan Council – Business Closing, Weather
- Shutdown Procedures
- Civil Emergencies

**Hazardous Material or Chemical Spill Procedures.** Met Council Environmental Services has reporting procedures for hazardous material or chemical spills.

**Industrial Waste Spill Procedures.** Met Council Environmental Services has reporting procedures for industrial waste spills into the treatment facility.

**State Duty Officer Contact.** The State Duty Officer is contacted in the event of spills or releases.

**Wastewater or Sludge Spill Procedures.** Met Council Environmental Services has reporting procedures for wastewater or sludge spills.

## Water Supply Contamination

### Hazard Description

Water supply contamination is the introduction of point and non-point source pollutants into public ground water and/or surface water supplies. Microbiological and chemical contaminants can enter water supplies. Chemicals can leach through soils from leaking underground storage tanks, feedlots and waste disposal sites. Human wastes and pesticides can also be carried to lakes and streams during heavy rains or snow melt.

The Clean Water Act establishes the structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. Under the Clean Water Act, the EPA has implemented the National Pollution Discharge Elimination System (NPDES) permit program to control pollutant discharges.

The EPA also is the federal authority charged with protecting the quality of drinking water, in accordance with the Safe Water Drinking Act. The law focuses on water actually or potentially designated for drinking use, whether from surface or underground sources. The Act authorizes the EPA to set minimum standards to protect public water supplies and requires all owners or operators of public water systems to comply with these primary health-related standards.

### Geographic Location

Dakota County has 15 public water supply systems operated by individual municipalities and regulated by the Minnesota Department of Health. These systems predominantly rely on groundwater. St. Paul Regional Water Services provides water (treated Mississippi River water occasionally supplemented with well water) to Lilydale, Mendota, Mendota Heights, and West St. Paul. The unincorporated areas of the county are primarily served by private well systems.

Monitoring is the critical element of compliance activities under the Safe Drinking Water Act (SDWA) of 1974. Under provisions of the act, public water supply systems are required to sample treated—or “finished”—water on a regular basis, and submit the samples to the Minnesota Department of Health laboratory for analysis. Samples are tested for a broad range of potential contaminants. If unacceptable levels of contaminants are found, the water supply owner or operator is legally responsible for informing the people who use the water and for taking steps to eliminate potential health hazards.

Minnesota’s community water supply systems are monitored for pesticides, industrial contaminants, bacteria, nitrates, inorganic chemicals, radioactive elements, disinfection by-products, lead, and copper.

### Previous Occurrences

Since 2001, only one municipal system in Dakota County has exceeded maximum contaminant levels as defined by the EPA:

- City of Hampton (pop. 434) – Bacterial Contamination: 2001 and 2002

### Vulnerability

The following table summarizes the overall vulnerability to water supply contamination.

Frequency of Occurrence	Occasional
Warning Time	None-Minimal
Geographic Extent	Community-wide
Likely Adverse Impact	Limited

### **Plans and Programs for Water Supply Contamination**

**Drinking water standards, requirements.** The U.S. Environmental Protection Agency (EPA) sets uniform nationwide minimum standards for drinking water. State public health and environmental agencies have primary responsibility for ensuring that each public water source meets these federal drinking water standards, and in some cases, more stringent MN standards.

**Public water supply monitoring.** The EPA requires an ongoing water quality-monitoring program to ensure public water systems are working properly. Local officials work with the Minnesota Department of Health (MDH) and the EPA to ensure that all public water supplies are safe. The EPA requires all local suppliers to promptly inform the public if their supply becomes contaminated.

**Emergency Plans.** For water systems serving more than 3,000 people, the EPA requires completion of an Emergency Response Plan in the event of contamination.

**Wellhead protection program.** Dakota County, working with the MDH, assists municipal water suppliers in developing and implementing wellhead protection plans.

**Well construction and testing.** Since 1974, public and private wells constructed in Minnesota must meet the location and construction requirements of the Minnesota Well Code. Community supply wells and environmental borings are regulated by the MDH. Through a Delegation Agreement with the MDH, Dakota County has authority for regulating construction and sealing for all other water wells in the County in accordance with Mn. Statute 103I, Minnesota Rules Chapter 4725, and Dakota County Ordinance No. 114, "Well and Water Supply Management." In Dakota County, private drinking water wells must meet standards for nitrate and coliform bacteria at the time of construction and at the time of property transfer. In addition, the County Environmental Resources Department recommends and facilitates regular, voluntary testing of private wells for nitrate, coliform bacteria, and other potential contaminants, and provides homeowners with information on preventative maintenance measures.

**Well sealing promotion, enforcement, and grants.** Unused, unsealed wells can serve as conduits for surface contamination to flow to the underlying groundwater. By Minnesota Statute, unused wells must be sealed, brought back into use, or permitted with an annual maintenance permit and fee. The Dakota County Environmental Resources Department reviews well disclosure documents during property sales and continually researches other, potential unused, unsealed wells. When unsealed wells are located, County staff carry out enforcement measures as needed. The department promotes well sealing with cost-share grants to well owners, using federal Community Development Block Grant funding through the Dakota County Community Development Agency (CDA) and County levy funding.

**Dakota County Comprehensive Plan,** The 2008 Dakota County Comprehensive Plan includes a subsection on Water Resources that addresses the need for sufficient, sustainable, high quality water resources and a better understanding of the interaction and interdependence between surface water and groundwater.

**Feedlot pollution prevention.** Several steps are being taken to protect ground water sources from feedlot runoff. County ordinance requires all feedlots adhere to state feedlot compliance rules. The Dakota County Soil and Water Conservation District promotes best management practices to minimize agricultural runoff into local streams and rivers. The Feedlot program is administered by the Minnesota Pollution Control Agency.

## Wildfire

### Hazard Description

A wildfire is uncontrolled fire spreading through vegetative fuels. Wildfires often begin unnoticed, spread quickly, and are often signaled by dense smoke. Natural causes, such as lightning strikes, can initiate wildfires. Human activities can also cause wildfire through debris burns, arson or carelessness.

Wildfire behavior is based on fuel supply, topography and weather conditions, especially dryness. Topography affects the movement of air and fire over the ground surface. The slope and shape of terrain can change the rate of speed at which fire travels.

### Geographic Location

Due to the volume of brush, the risk of wildfire is highest along the river bottoms of the Minnesota River, in Eagan and Burnsville, and the Vermillion River, south of Hastings. Land adjacent railroad tracks is another concern, as sparks from trains can ignite grass fires.

### Previous Occurrences

According to the Minnesota State Fire Marshal, there are more than 1,600 annual wildfires with an estimated loss of more than \$13 million dollars statewide. Several small wildfires have occurred in Dakota County over the past two decades, in the Minnesota River bottoms and other natural areas.

### Vulnerability

The following table summarizes the overall vulnerability to wildfire.

Frequency of Occurrence	Occasional
Warning Time	None-Minimal
Geographic Extent	Localized
Likely Adverse Impact	Negligible

### Plans and Programs for Wildfire

**Fire districts/departments.** Dakota County is served by various city and rural fire departments, which often assist each other on larger fires, including wildfires.

**DNR information and training.** The Minnesota Department of Natural Resources (DNR) seasonal wildfire risks statewide. Firefighters in Dakota County participate in annual wildfire training classes offered by the DNR. The DNR also works with firefighters in promoting their “Fire Smart” program, which is a fire prevention program involving local public schools.

**State land management.** The DNR manages Fort Snelling State Park and the Minnesota Valley State Recreation Area, which are both partly within Dakota County. DNR has established procedures to address wildfires within these areas.

**Federal land management.** The US Fish and Wildlife Service manages the Minnesota Valley National Wildlife Refuge along the Minnesota River corridor, with wildfire control procedures.

**County land management.** Dakota County Parks manages more than 5,000 acres of natural area, and uses controlled burns as a prairie maintenance tool, under DNR permitting. Prescribed burns temporarily reduce vegetative fuel loads.

## SECTION IV – HAZARDS FACING THE COMMUNITY

Dakota County and its participating cities have added two hazards to this plan that were not addressed in the 2011: *Cyber Attack* and *Landslide*. Both have been added due to increases in observed frequency and potential severity of impacts.

### Cyber-Attack

#### Hazard Description

Cyber-attacks are malicious activities employed by individuals or organizations that target computer information systems, infrastructure, computer networks, and/or personal computer devices to steal, alter, or destroy data by unauthorized access (hacking) into a susceptible system.

The threat level has never been higher. As recent headlines attest, no company, organization or government agency is immune to targeted attacks by persistent and skilled adversaries. Being prepared requires using a multi-layer strategy in which early detection, attack containment and recovery measures are considered together. For the past several years the previous year was declared as the "year of the breach," overtaking prior years in the numbers and impact of breaches. Data reported through the third quarter of 2015 has revealed a 29% increase in the number of breaches. 2015 made its mark not only in the absolute numbers but equally as troubling in the expanded scope and impact of breaches and exploits. Victims included nearly every segment of the population including consumers, government employees, and children. Going beyond credit card data, recent breach targets have included insurance, medical, voter and political interest data. Some examples of the attacks included:

- The Office of Personnel Management (OPM) breach contained over 21 million records including security clearance applications with social security numbers, employment history and fingerprints, placing government employees and contractors at risk far beyond that of a typical credit card compromise.
- VTech, a multinational toy company experienced a breach impacting 6.3 million children, including their names, home addresses, passwords, and even selfies and chat logs.
- In the mobile sector, a T-Mobile breach exposed some 15 million customers, in another incident 70 million inmate phone calls were compromised, putting at risk attorney-client privilege, and topping the charts was the Anthem breach of 78.8 million health records.
- Over 191 million American citizens' voter data including their political party affiliation and voting record.

#### Geographic Location

The risk of cyber-attack exists County-wide for government agencies, institutions, businesses, and individuals.

#### Previous Occurrence

Numerous attempts to access County data occur on a daily bases, although successful attempts are rare.

#### Vulnerability

The following table summarizes the overall vulnerability to cyber-attack.

Frequency of Occurrence	Highly likely
Warning Time	None-Minimal
Geographic Extent	Localized
Likely Adverse Impact	Critical



## SECTION IV – HAZARDS FACING THE COMMUNITY

### **Plans or Programs for Cyber Attack**

Securing cyber systems requires a layered defense that accounts for the range of security challenges facing organizations, including logical and physical threats to cyber-based systems.

**Network Monitoring.** Dakota County uses a variety of tools to monitor county networks for cyber threats. The tools are evaluated and modified to address different methods of attack.

**Mobile Device Management.** Dakota County requires authentication to unlock a device, locking out a device after a predetermined number of failed attempts, using encrypted data communications/storage and remote wiping of devices if it becomes lost or stolen.

**Staff Training.** A series of on line courses have been deployed to all staff to increase the awareness of cyber security threats and steps they can take to protect data and devices.

**Cyber Security Policies.** Dakota County has implemented several policies that support cyber security and data protection. These include Policy 6001 Acceptable Use of Technology Resources, 1013 Data Practices; 3500 HIPAA; 6004 Information Security; 6005 Records Retention and Disposition; 6007 Mobile Devices.

**Staff and Community Awareness.** A Cyber Security Month Campaign for public and staff awareness is completed on an annual basis.

**Continuity of Operations Planning.** The Dakota County COOP plan includes protocols on the recovery of information technology systems and is updated and exercised on a regular basis.

## SECTION IV – HAZARDS FACING THE COMMUNITY

### Landslide

#### Hazard Description

Landslides in Minnesota are often associated with steep slopes and lighter erodible soils. As rainfall intensities and runoff increase, soils are more likely to become saturated and more prone to subsidence. Landslides were not addressed in previous version of this plan, but were added after recent occurrences in Dakota County.

#### Geographic Location

Landslides in Dakota County are a concern in limited locations with steep slopes, typically in the bluff areas along major rivers.

#### Previous Occurrence

Dakota County received 12 to 13 inches of rain in the month of June, 2014, which created saturated soil conditions and generated mudslides in bluff areas along the Minnesota and Mississippi Rivers in the Twin Cities. Portions of State Highway 13 in Mendota Heights were closed after landslides covered a section of road with mud several feet deep. A portion of Dakota County's Big Rivers Regional Trail was closed until slopes were stabilized and repairs were made. In the City of Mendota, Upper D Street experienced two failures. On the upside slope of Upper D Street, a significant landslide buried the road and a stretch of approximately 75 feet of road sank and was falling away due to saturated ground on a river bluff. If this area slipped, it would destroy as many as six homes. Residents were notified to evacuate during engineering evaluation of the area for further slide potential.

The heavy rain that contributed to the landslides in Dakota County also caused additional landslides at the University of Minnesota Hospital and Scott County. Many areas of widespread flooding occurred in southern and southeastern Minnesota along the Mississippi and Minnesota Rivers, for which Minnesota requested and received a presidential disaster declaration in July 2014.

A serious landslide occurred in the Ramsey County portion of this river bluff area in 2013, north of the boundary and Dakota counties. Two children on a school field trip to the Lilydale Regional Park fossil beds were killed when saturated soils and gravel on the slope above them collapsed.



June 2014 Mudslide, Big Rivers Regional Trail, Dakota County

## SECTION IV – HAZARDS FACING THE COMMUNITY

### Vulnerability

The following table summarizes the overall vulnerability to landslide.

Frequency of Occurrence	Occasional
Warning Time	None-Minimal
Geographic Extent	Localized
Likely Adverse Impact	Limited

### Plans or Programs for Landslide

**Trail Protection Program.** Dakota County Facilities Maintenance Staff (Grounds Maintenance) works with Transportation staff, consultants and the Dakota County Soil and Water Conservation District during the design of trails to mitigate the potential for erosion and landslides.

**Roadway Protection Program.** Dakota County Transportation works with outside engineering consultants and the Dakota County Soil and Water Conservation District during the design of road projects to mitigate the potential for erosion and landslides.

## SECTION IV – HAZARDS FACING THE COMMUNITY

## SECTION V – DAKOTA COUNTY VULNERABILITIES, STRATEGIES, AND PRIORITIES

**44 CFR Requirement §201.6(c) (2) (ii):** [The risk assessment **shall** include a] description of the jurisdiction’s vulnerability to the hazards described in paragraph (c) (2) (i) of this section. This description **shall** include an overall summary of each hazard and its impact on the community.

This section provides hazard rankings developed for Dakota County, MN, as a whole, including the unincorporated townships automatically covered under this plan. Also provided are hazard vulnerabilities and goals, strategies, priorities, and implementation resources to address these vulnerabilities. Section VI includes parallel information developed by each of Dakota County’s participating jurisdictions.

### HAZARD RANKINGS

Table 5.1 displays rankings for each hazard profiled in Section IV, based on hazard frequency, probable warning time, likely geographic extent, and likely adverse impact.

**Table 5.1 Dakota County Ranking of Hazards**

Hazards Facing the County	Frequency	Warning Time	Geographic Extent	Likely Adverse Impact	Total
Violent Summer Storms*	4	3	2	3	12
Tornado	3	4	1	4	12
Structural Fire	4	4	1	3	12
Cyber Attack^	4	4	1	3	12
Pandemic Influenza	2	1	3	4	11
Hazardous Material Incidents	4	4	1	2	11
Flash Flood	4	4	1	2	11
Violent Winter Storms**	4	1	2	3	10
Infectious Disease	3	1	3	3	10
Water Supply Contamination	2	4	2	2	10
Terrorism	2	4	1	3	10
Overland Flood	3	2	2	2	9
Landslide^	2	4	1	2	9
Wastewater Treatment Plant Failure	2	2	2	2	8
Wildfire	2	4	1	1	8
Drought	3	1	3	1	8
Extreme Temperatures	3	1	3	1	8
Dam/Levee Failure	1	2	2	2	7

\*Violent Summer Storms = Thunderstorms, hail, lightning, straight-line winds

\*\*Violent Winter Storms = Ice, sleet, snow

^ Hazards identified in the 2016 planning process. Cyber-attack identified after public survey was initiated.

Hazard rankings used the following scoring system:

**Frequency of Occurrence:** How often is this hazard expected to occur?

- |                 |  |
|-----------------|--|
| 1=Unlikely      | <1% probability in the next 100 years                                  |
| 2=Occasional    | 1-10% probability in the next year, at least one in the next 100 years |
| 3=Likely        | >10% but <100% probability in the next year, at least once in 10 years |
| 4=Highly Likely | 100% probable in the next year   |

## SECTION V – DAKOTA COUNTY VULNERABILITIES, STRATEGIES, AND PRIORITIES

**Warning Time:** How much time will there likely be to alert people to hazard conditions?

- 1=More than 12 hours
- 2=6-12 hours
- 3=3-6 hours
- 4=None-minimal

**Geographic Extent:** How large an area would likely be affected?

- 1=Localized
- 2=Community-wide
- 3=County-wide or greater extent

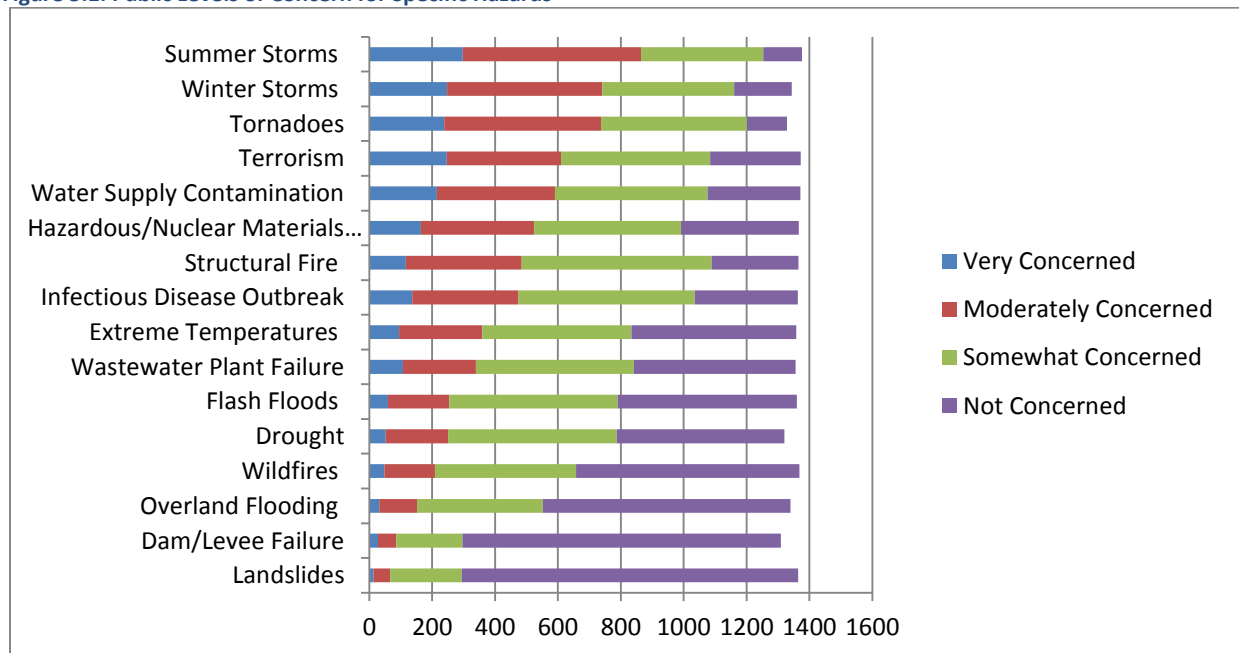
**Likely Adverse Impact:** on people, critical facilities, housing, businesses, and environment

- 1=Negligible
- 2=Limited
- 3=Critical
- 4=Catastrophic

### Community Perception of Hazards

An online survey asked people who live and work in Dakota County to indicate their degree of concern over potential hazards that could occur in Dakota County. More than 1,400 respondents participated in the survey in 2016. Figure 5.1 provides a ranking of citizen concern related to potential hazards. The results of the full survey are provided in **Appendix II**.

**Figure 5.1: Public Levels of Concern for Specific Hazards**



As with online surveys conducted for the 2005 and 2011 plans, people expressed the greatest concern about severe summer storms, tornadoes, and severe winter storms. Although the survey is not scientifically sampled and cannot be considered statistically representative of County residents, changes were noted in the hazard rankings between 2010 and 2016, notably an increase in concern related to terrorism, water supply contamination, and hazardous material incidents.



## VULNERABILITY

Likely risk describes the community's susceptibility to hazards based on assessments that consider likely frequency of occurrence, estimated amount of warning time, geographic extent likely to be affected, and severity of impact from a worst case scenario. The locations of vulnerable populations, emergency response facilities, and critical infrastructure were also important factors in evaluating risk potential.

### Population Vulnerability

The U.S. Census Bureau estimated Dakota County's population at 412,529 in 2014, an increase of 3.4 percent since 2010, and 13.7 percent over the 2000 U.S. Census total.

**Table 5.2 Population Growth in Dakota County**

County	2000 Census Population	2010 Census Population	2014 Population Estimate	2000-2014 % Change	2010-2014 % Change
Dakota	355,904	398,552	412,529	13.7%	3.4%

*Source: U.S. Census Bureau and the American Community Survey*

Vulnerable populations can be defined as persons who may not be able to assist themselves during an emergency. Mitigation efforts that consider the needs and location of these populations are important. FEMA defines vulnerable populations as persons meeting one or more of these conditions:

- under five (5) years of age
- over 65 years of age
- having a disability
- living in poverty

Table 5.3 summarizes information on these potentially vulnerable populations for Dakota County. Data are from the 2009-2014 American Community Survey five-year estimates.

**Table 5.3 Vulnerable Populations, Dakota County, 2014 American Community Survey**

Dakota County	Number (#)	Percentage (%)	U.S. (%)	Dakota County - U.S. Difference (%)
Total Population	405,521*	100	N/A	N/A
Under Age 5	27,248	6.7	6.4	.3
Over Age 65	44,943	11.1	13.7	(2.6)
Income Below Poverty Level	31,284	7.8	15.5	(7.7)
Having a Disability	33,381	8.3	12.3	(4.0)

\*Note: 2009-2014 American Community Survey Data.

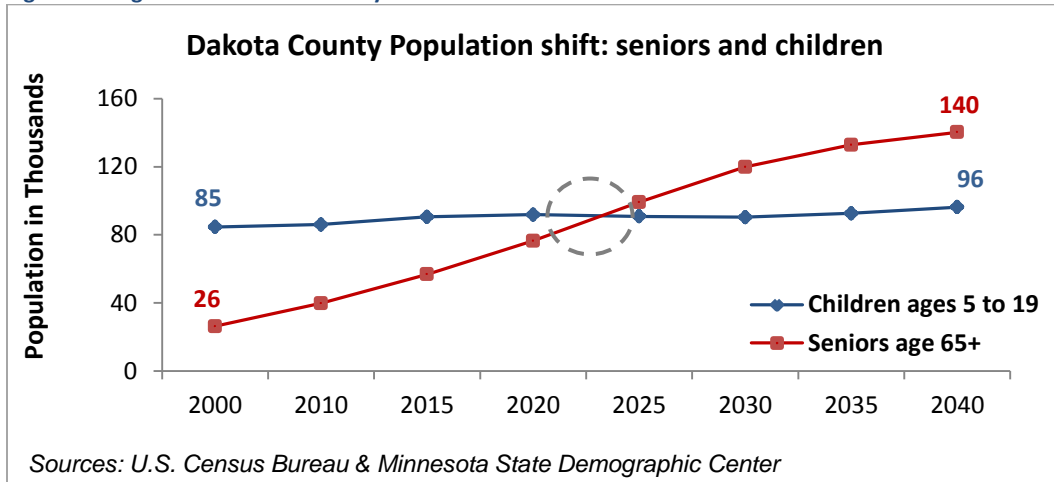
## Demographic Trends

Three significant demographic trends in Dakota County provide context for considering population changes and likely growth in some vulnerable populations.

**1. Slow Continued Growth:** Dakota County experienced strong population growth in the decade from 2000 to 2010 (1.2 percent annually, 12 percent over the decade). Since 2010, annual growth rates typically have been slower, steady, and less than one percent. This slowing in growth is not unique to Dakota County, but is seen throughout the Twin Cities Metropolitan Area and Minnesota.

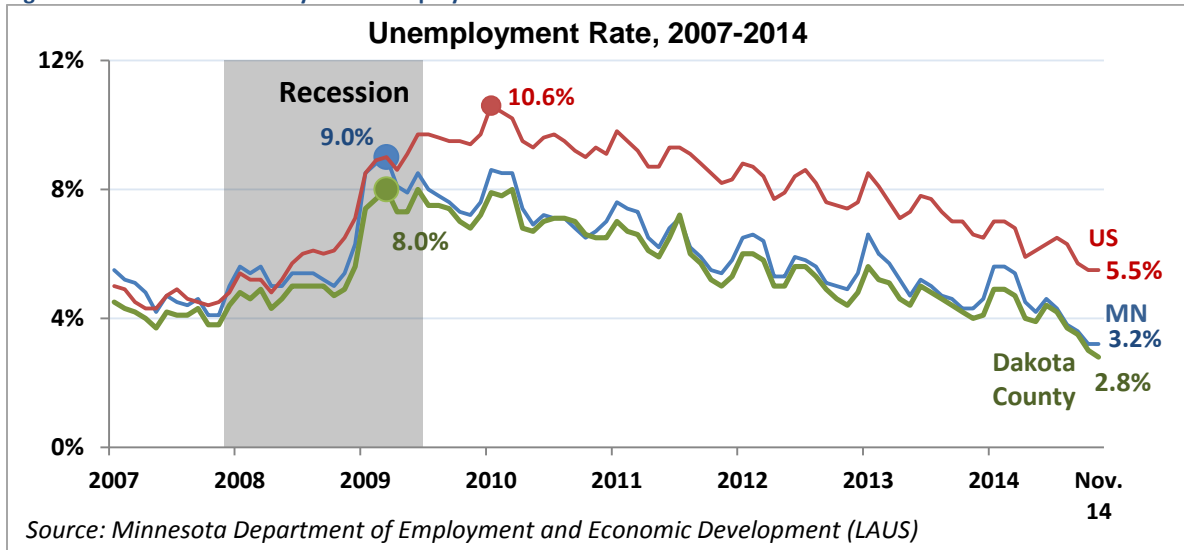
**2. Aging of the Population:** Since Dakota County’s rapid suburbanization in the 1980s, children have outnumbered seniors. This trend is reversing as the baby-boomer generation ages into retirement, according to the State Demographers Office. Within a few years, the number of seniors will continue to increase and surpass the number of children, which will remain relatively constant.

Figure 5.2: Age Shift in Dakota County

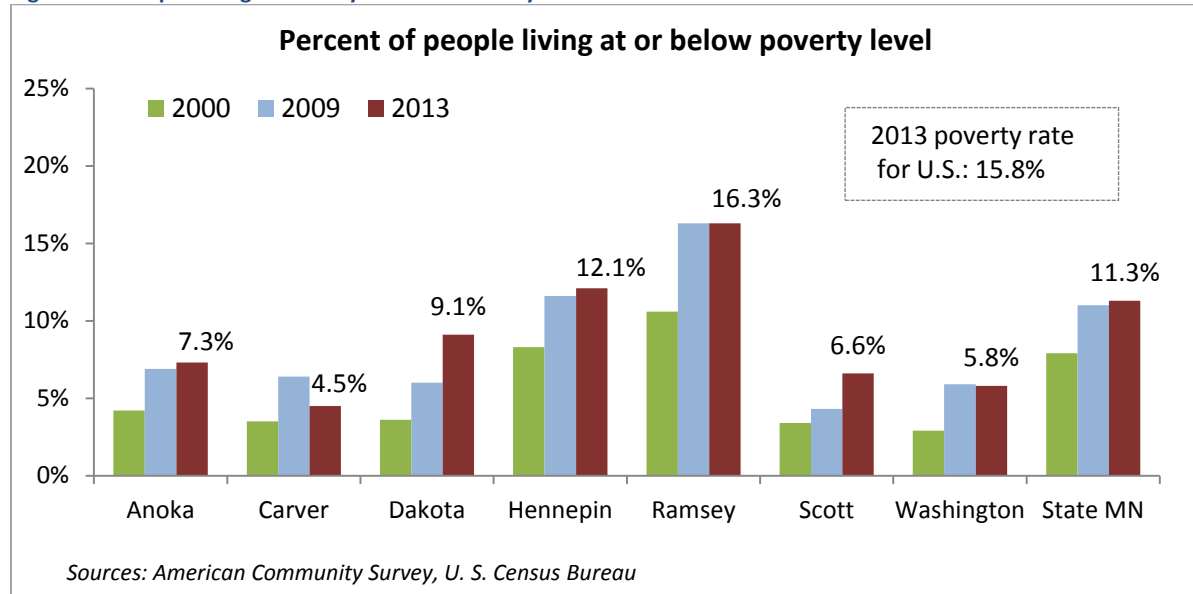


**3. Economic recovery has been slow, but steady.** Dakota County’s population age 16 and older in the labor force during 2013 was 79.4 percent, which is about the same as in pre-recession 2007.

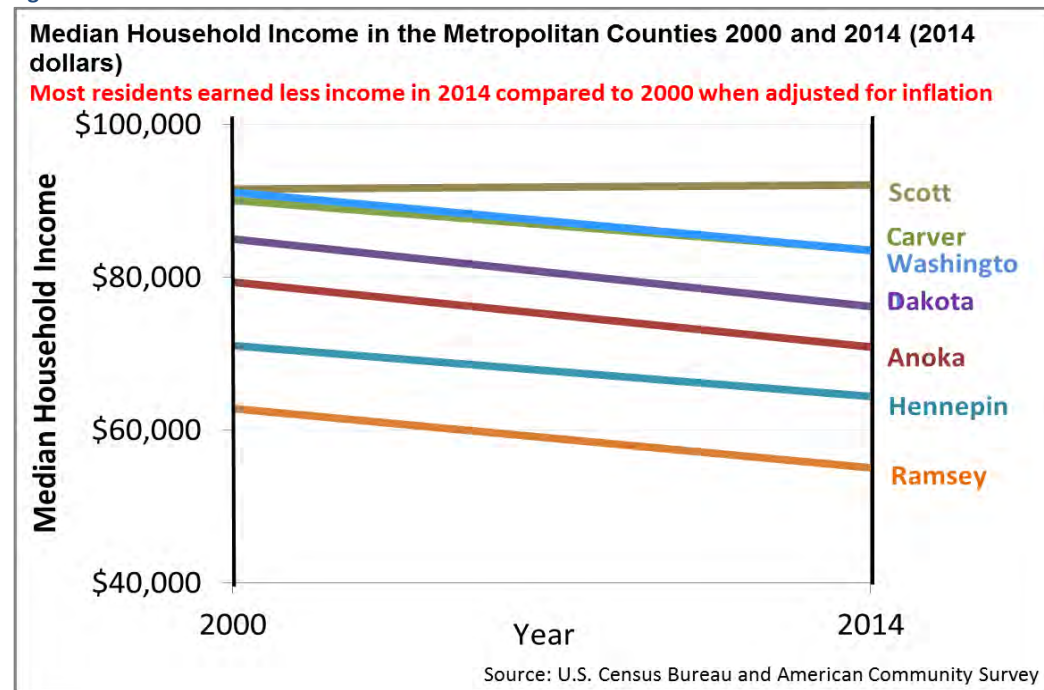
Figure 5.3: Economic Recovery and Unemployment Rates



While recovery has been steady, if slow, not everyone has experienced an improvement in economic conditions. Dakota County’s poverty rate increased from six percent in 2009 to 9.1 percent in 2013.

**Figure 5.4: People Living in Poverty in Dakota County**

Although the median household income level has gradually increased in recent years, Figure 5.5 shows that when adjusted for inflation, Dakota County households actually have less to spend now than before the economic recession began, which is also true for six of the seven Twin Cities Metropolitan Area counties. In Dakota County, the median household income was \$85,048 in 2000. Dakota County's inflation-adjusted median household income for 2014 was \$76,213.

**Figure 5.5 Median Household Income**

## Structural Inventory and Valuation

**44 CFR Requirement §201.6(c) (2) (ii) (B):** [The plan **should** describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c) (2) (ii) (A) of this section and a description of the methodology used to prepare the estimate ....

An important element of the County's hazard mitigation approach is estimating potential structural losses related to hazards. The first part of this section estimates total building value by type for the County as a whole and for townships covered under the County Plan. The calculated potential loss projections can be considered as the 'likely worst case scenario' for any hazard where physical damage would be anticipated. Since flooding is the most likely hazard to occur, and has a generally defined area of impact, a potential flood loss assessment is also provided later in this section. Parallel information for cities is provided in Section 6.

### Total Structures Countywide

Table 5.4 lists the total number and value of all structures county-wide and in the townships. Data are from the Dakota County's Offices of Assessor Services and Geographic Information Services. Structures identified as residential, commercial, industrial, and agricultural have the types of structures associated with those land uses. "Exempt" includes all buildings not subject to property taxes, such as government buildings, schools, and places of worship. "Utilities" includes fixed sites with infrastructure for electricity, sewer, and water. "Other" includes structures that do not fall into preceding categories.

**Table 5.4 Structure Value Inventory, Dakota County 2016**

Community	Total Structures	Estimated Structure Value	Estimated Land Value	Total Value
<b>Dakota County (all)</b>				
Agricultural	5,959	\$227,360,700	\$1,514,290,200	\$1,741,650,900
Commercial	4,253	\$2,873,679,304	\$1,995,111,300	\$4,868,790,600
Exempt	4,074	\$2,182,693,900	\$1,281,312,000	\$3,464,005,900
Industrial	1,597	\$666,719,400	\$512,616,400	\$1,179,335,800
Other	290	\$10,543,000	\$4,408,100	\$14,951,100
Residential	146,398	\$25,808,088,700	\$8,801,173,000	\$34,609,261,700
Utilities	547	\$274,796,800	\$53,579,700	\$328,376,500
<b>Dakota County Total</b>	<b>163,118</b>	<b>\$32,043,881,804</b>	<b>\$14,162,490,700</b>	<b>\$46,206,372,500</b>
<b>Castle Rock Township</b>				
Agricultural	466	\$22,728,000	\$137,542,600	\$160,270,600
Commercial	36	\$5,825,900	\$3,065,200	\$8,891,100
Exempt	72	\$3,837,100	\$2,813,200	\$6,650,300
Industrial	42	\$1,622,200	\$754,000	\$2,376,200
Residential	816	\$76,877,500	\$26,598,600	\$103,476,100
Utilities	0	\$156,600	\$21,700	\$178,300
<b>Castle Rock Total</b>	<b>1,432</b>	<b>\$111,047,300</b>	<b>\$170,795,300</b>	<b>\$281,842,600</b>
<b>Douglas Township</b>				
Agricultural	526	\$20,255,900	\$127,920,500	\$148,176,400
Commercial	9	\$859,000	\$2,025,700	\$2,884,700
Exempt	12	\$12,600	\$13,286,100	\$13,298,700
Other	7	\$0	\$0	\$0
Residential	458	\$40,395,200	\$17,346,900	\$57,742,100
<b>Douglas Total</b>	<b>1,012</b>	<b>\$61,522,700</b>	<b>\$160,579,200</b>	<b>\$222,101,900</b>

SECTION V – DAKOTA COUNTY VULNERABILITIES, STRATEGIES, AND PRIORITIES

Community	Total Structures	Estimated Structure Value	Estimated Land Value	Total Value
<b>Empire Township</b>				
Agricultural	260	\$9,657,600	\$73,305,800	\$82,963,400
Commercial	26	\$3,160,300	\$3,173,200	\$6,333,500
Exempt	85	\$33,585,000	\$44,291,800	\$77,876,800
Industrial	8	\$716,000	\$8,255,100	\$8,971,100
Other	2	\$9,000	\$77,300	\$86,300
Residential	1,146	\$178,660,600	\$70,006,700	\$248,667,300
Utilities	2	\$683,500	\$152,800	\$836,300
<b>Empire Total</b>	<b>1,529</b>	<b>\$226,472,000</b>	<b>\$199,262,700</b>	<b>\$425,734,700</b>
<b>Eureka Township</b>				
Agricultural	540	\$27,665,100	\$126,590,900	\$154,256,000
Commercial	12	\$1,510,300	\$955,800	\$2,466,100
Exempt	112	\$7,485,800	\$8,530,500	\$16,016,300
Industrial	1	\$396,400	\$588,100	\$984,500
Residential	855	\$93,082,500	\$40,949,400	\$134,031,900
Utilities	5	\$358,700	\$67,800	\$426,500
<b>Eureka Total</b>	<b>1,525</b>	<b>\$130,498,800</b>	<b>\$177,682,500</b>	<b>\$308,181,300</b>
<b>Greenvale Township</b>				
Agricultural	407	\$18,085,800	\$104,150,200	\$122,236,000
Commercial	7	\$261,700	\$393,300	\$655,000
Exempt	2	\$396,200	\$824,400	\$1,220,600
Residential	474	\$48,022,600	\$18,321,800	\$66,344,400
<b>Greenvale Total</b>	<b>890</b>	<b>\$66,766,300</b>	<b>\$123,689,700</b>	<b>\$190,456,000</b>
<b>Hampton Township</b>				
Agricultural	601	\$25,141,900	\$138,249,800	\$163,391,700
Commercial	31	\$788,900	\$1,007,500	\$1,796,400
Exempt	1	\$0	\$435,000	\$435,000
Industrial	3	\$283,700	\$311,200	\$594,900
Residential	463	\$51,029,200	\$22,151,100	\$73,180,300
Utilities	0	\$126,900	\$11,300	\$138,200
<b>Hampton Total</b>	<b>1,099</b>	<b>\$77,370,600</b>	<b>\$162,165,900</b>	<b>\$239,536,500</b>
<b>Marshan Township</b>				
Agricultural	438	\$21,769,500	\$129,441,200	\$151,210,700
Commercial	25	\$2,500,500	\$4,617,300	\$7,117,800
Exempt	6	\$1,493,900	\$2,787,300	\$4,281,200
Industrial	10	\$1,824,900	\$1,115,600	\$2,940,500
Other	4	\$311,300	\$235,900	\$547,200
Residential	643	\$80,707,100	\$31,920,000	\$112,627,100
Utilities	1	\$1,970,700	\$160,600	\$2,131,300
<b>Marshan Total</b>	<b>1,127</b>	<b>\$110,577,900</b>	<b>\$170,277,900</b>	<b>\$280,855,800</b>
<b>Nininger Township</b>				
Agricultural	349	\$8,219,900	\$42,655,600	\$50,875,500
Commercial	6	\$580,100	\$3,033,600	\$3,613,700
Exempt	53	\$1,977,400	\$8,372,100	\$10,349,500
Industrial	0	\$0	\$37,200	\$37,200
Residential	673	\$59,197,000	\$29,298,800	\$88,495,800
Utilities	3	\$2,970,300	\$920,400	\$3,890,700
<b>Nininger Total</b>	<b>1,084</b>	<b>\$72,944,700</b>	<b>\$84,317,700</b>	<b>\$157,262,400</b>

## SECTION V – DAKOTA COUNTY VULNERABILITIES, STRATEGIES, AND PRIORITIES

Community	Total Structures	Estimated Structure Value	Estimated Land Value	Total Value
<b>Randolph Township</b>				
Agricultural	80	\$4,570,000	\$33,306,100	\$37,876,100
Commercial	24	\$9,303,200	\$4,991,400	\$14,294,600
Exempt	20	\$3,503,200	\$2,889,900	\$6,393,100
Industrial	0	\$1,525,400	\$1,258,100	\$2,783,500
Other	0	\$0	\$98,200	\$98,200
Residential	450	\$59,356,500	\$33,584,500	\$92,941,000
Utilities	3	\$1,758,100	\$170,200	\$1,928,300
<b>Randolph Total</b>	<b>577</b>	<b>\$80,016,400</b>	<b>\$76,298,400</b>	<b>\$156,314,800</b>
<b>Ravenna Township</b>				
Agricultural	157	\$3,912,200	\$31,735,800	\$35,648,000
Commercial	6	\$322,600	\$191,100	\$513,700
Exempt	1	\$148,900	\$2,978,400	\$3,127,300
Other	2	\$0	\$0	\$0
Residential	1,558	\$159,599,300	\$71,341,000	\$230,940,300
<b>Ravenna Total</b>	<b>1,724</b>	<b>\$163,983,000</b>	<b>\$106,246,300</b>	<b>\$270,229,300</b>
<b>Sciota Township</b>				
Agricultural	260	\$10,908,600	\$60,466,000	\$71,374,600
Exempt	2	\$342,000	\$201,900	\$543,900
Industrial	1	\$0	\$564,600	\$564,600
Residential	213	\$24,205,100	\$11,773,900	\$35,979,000
<b>Sciota Total</b>	<b>476</b>	<b>\$35,455,700</b>	<b>\$73,006,400</b>	<b>\$108,462,100</b>
<b>Vermillion Township</b>				
Agricultural	551	\$23,757,400	\$137,712,000	\$161,469,400
Commercial	11	\$1,024,300	\$777,700	\$1,802,000
Exempt	4	\$312,300	\$1,420,500	\$1,732,800
Industrial	2	\$14,400	\$496,000	\$510,400
Other	8	\$0	\$0	\$0
Residential	609	\$74,527,700	\$28,435,100	\$102,962,800
Utilities	0	\$3,826,400	\$553,100	\$4,379,500
<b>Vermillion Total</b>	<b>1,185</b>	<b>\$103,462,500</b>	<b>\$169,394,400</b>	<b>\$272,856,900</b>
<b>Waterford Township</b>				
Agricultural	220	\$7,713,300	\$54,856,800	\$62,570,100
Commercial	39	\$3,077,500	\$2,407,100	\$5,484,600
Exempt	3	\$43,300	\$839,200	\$882,500
Industrial	4	\$305,100	\$138,600	\$443,700
Residential	405	\$28,048,400	\$13,546,200	\$41,594,600
<b>Waterford Total</b>	<b>671</b>	<b>\$39,187,600</b>	<b>\$71,787,900</b>	<b>\$110,975,500</b>

### Flood

#### Repetitive Loss Properties

**44 CFR Requirement §201.6(c) (2) (ii):** [The risk assessment] **must** also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods.

As noted in the flood hazard profile in Section IV, Dakota County has experienced flood events over time, threatening public safety and damaging property and infrastructure. The purpose of the National



## SECTION V – DAKOTA COUNTY VULNERABILITIES, STRATEGIES, AND PRIORITIES

Flood Insurance Program (NFIP) is to eliminate or reduce the damage to property and the disruption of life caused by repeated flooding of the same properties.

A property is considered a repetitive loss property when there are two or more insured losses (flood insurance claims) reported which were paid more than \$1,000 for each loss. The two losses must be within ten years of each other and be at least ten days apart. A property is considered a severe repetitive loss (SRL) property either when there are at least four losses each exceeding \$5,000 or when there are two or more losses where the building payments exceed the property value.

### Dakota County Repetitive Loss Information

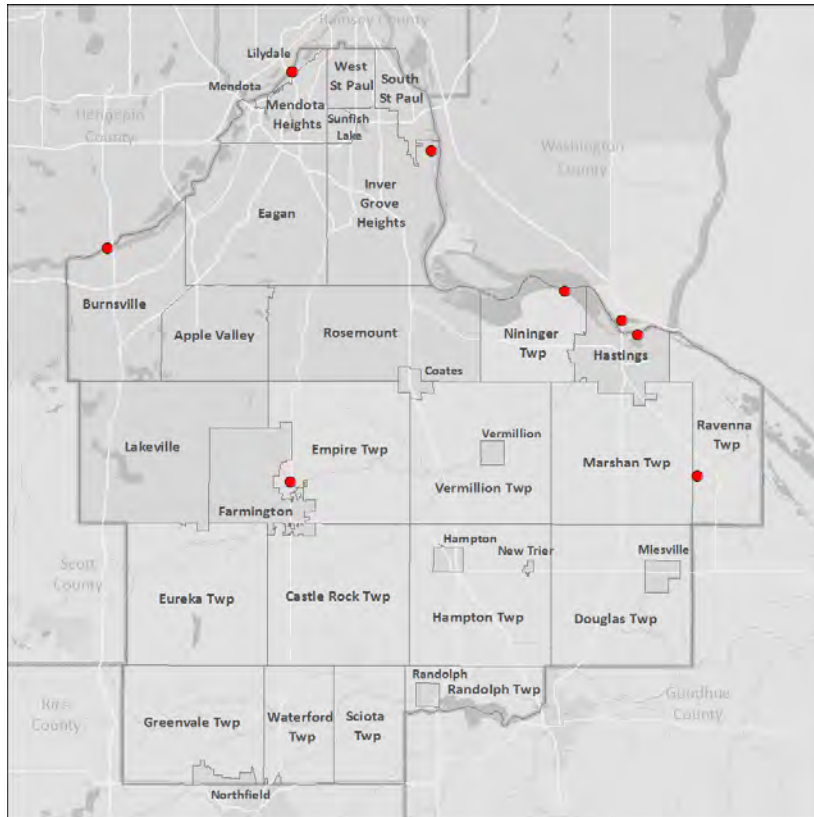
Based on information reported by the Minnesota Department of Natural Resources (MNDNR) as of June 2016, eight properties in Dakota County have flood loss histories that meet the definition of repetitive loss. MNDNR identifies four as non-residential, two as single family residential, and three as multi-family or condominium. Table 5.5 summarizes numbers of losses and amounts paid in insurance claims by category. Figure 5.6 shows the general location of the repetitive loss structures.

**Table 5.5 Summary of Repetitive Loss Flood Claims, Dakota County**

Repetitive Loss Properties	Losses	Total Building Payments	Total Content Payments	Total Payments
8	28	\$1,158,575	\$260,071	<b>\$1,418,646</b>

Source: Dakota County Repetitive Loss Report, through the Minnesota Department of Natural Resources, 2016

**Figure 5.6 Repetitive Loss Properties, Dakota County**



### Community Participation in the National Flood Insurance Program

The following table lists the National Flood Insurance Program (NFIP) participating communities in Dakota County, with the current map date, the number of policies in force, and the total insurance in force. In 2003, Dakota County modernized the Flood Insurance Rate Maps and Insurance Study to a county-wide digital format. FEMA issued its final letter of map determination with an effective date of Dec. 2, 2011. NFIP communities amended their floodplain ordinances and adopted the new FIS and digital flood insurance rate maps.

**Table 5.6 Participating Communities in the NFIP, Dakota County, 2016**

Community	CID Number	Current Effective Map Date	Policies In Force	Insurance In Force
Dakota Co.	270101	12/2/11	32	\$7,438,800
Apple Valley	270050	12/2/11	27	\$6,119,000
Burnsville	270102	12/2/11	32	\$9,305,300
Eagan	270103	12/2/11	55	\$14,319,500
Farmington	270104	12/2/11	7	\$1,699,100
Hastings	270105	3/16/16	19	\$3,340,800
Inver Grove Heights	270106	12/2/11	24	\$5,649,100
Lakeville	270107	12/2/11	70	\$18,384,500
Lilydale	275241	12/2/11	4	\$1,225,900
Mendota	270109	12/2/11	-	-
Mendota Heights	270110	12/2/11	9	\$2,790,000
Randolph	270112	12/2/11	-	-
Rosemount	270113	12/2/11	8	\$1,750,000
South St. Paul	270114	12/2/11	20	\$13,637,100
Vermillion	270115	12/2/11	2	\$700,000
West St. Paul	270729	(NSFHA)	12	\$3,024,000

Source: FEMA NFIP Community Status Report Book, FEMA BureauNetNFIP as of 5/4/2016

Note: NSFHA = No Special Flood Hazard Area – All Zone C

Table 5.7 summarizes NFIP claim activity for the County and participating communities. A total of 136 claims have been filed, with a total \$2,130.834 in payments since 1978.

**Table 5.7 Flood Insurance Claims and Payments, Dakota County and Communities (1978 to 4/30/2016)**

Community	Total Losses	Total Payments
Dakota County	29	\$286,161.24
Burnsville	15	\$177,717.32
Eagan	13	\$45,485.40
Farmington	2	\$5,518.96
Hastings	24	\$178,133.49
Inver Grove Heights	6	\$31,224
Lakeville	11	\$15,970.21
Lilydale	23	\$1,327,191.75
Mendota Heights	2	\$6,851.12
Rosemount	3	\$25,576.66
South St. Paul	6	\$4,271.80
West St. Paul	2	\$26,637.44
	<b>136</b>	<b>\$2,130,834.43</b>

Source: BureauNetNFIP through FEMA.

### Floodplain Structures Countywide

The following table provides a the total number and value of all structures within the digital flood insurance rate maps boundaries (DFIRM), at a County level and for individual townships covered under the County plan. Breakdowns by participating cities are provided in Section 6. The data used to support the potential loss projections are from the Dakota County Assessor's Office and Office of GIS. Note: building analysis calculated tax-valued buildings within defined FEMA floodplain shape polygons and may represent lower totals than reported in the 2011 County plan.

This building analysis was established for general risk analysis purposes. To gain a more accurate count of buildings located within the floodplain, a specific site-by-site analysis would be required, using lowest adjacent grade and lowest floor elevations; and then comparing those elevations to known one-percent annual chance flood elevations and cross-sections within the respective Flood Insurance Study. The dollar totals listed below should not be interpreted as estimates of potential damage for any one event.

**Table 5.8 Total Floodplain Structure and Value Inventory, Dakota County**

Structure Type	Total Structures	Estimated Land Value	Estimated Building Value	Total Value
Agricultural	60	\$10,739,800	\$5,159,100	\$15,898,900
Commercial	43	\$7,442,400	\$7,513,900	\$14,956,300
Exempt	152	\$35,242,100	\$53,469,000	\$88,711,100
Industrial	58	\$16,125,500	\$14,238,800	\$30,364,300
Other	2	\$0	\$0	\$0
Residential	522	\$85,189,000	\$117,695,700	\$202,884,700
Utilities	120	\$13,120,900	\$132,173,900	\$145,294,800
<b>Total</b>	<b>957</b>	<b>\$167,859,700</b>	<b>\$330,250,400</b>	<b>\$498,110,100</b>

**Table 5.9 Total Floodplain Structure and Value Inventory, Dakota County Townships**

Structure Type	Total Structures	Estimated Land Value	Estimated Building Value	Total Value
<b>Castle Rock Township</b>				
Agricultural	7	\$1,300,100	\$366,900	\$1,667,000
Industrial	17	\$159,200	\$350,100	\$509,300
<b>Castle Rock Total</b>	<b>24</b>	<b>\$1,459,300</b>	<b>\$717,000</b>	<b>\$2,176,300</b>
<b>Douglas Township</b>				
Agricultural	2	\$1,179,300	\$746,500	\$1,925,800
Exempt	1	\$368,900	\$0	\$368,900
<b>Douglas Total</b>	<b>3</b>	<b>\$1,548,200</b>	<b>\$746,500</b>	<b>\$2,294,700</b>
<b>Empire Township</b>				
Agricultural	1	\$7,800	\$16,900	\$24,700
Other	1	\$0	\$0	\$0
Residential	35	\$1,713,200	\$3,828,400	\$5,541,600
<b>Empire Total</b>	<b>37</b>	<b>\$1,721,000</b>	<b>\$3,845,300</b>	<b>\$5,566,300</b>
<b>Eureka Total</b>	<b>0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Greenvale Township</b>				
Agricultural	1	\$15,700	\$89,600	\$105,300
<b>Greenvale Total</b>	<b>1</b>	<b>\$15,700</b>	<b>\$89,600</b>	<b>\$105,300</b>
<b>Hampton Township</b>				
Agricultural	2	\$1,336,500	\$268,200	\$1,604,700
Residential	2	\$108,900	\$401,700	\$510,600

## SECTION V – DAKOTA COUNTY VULNERABILITIES, STRATEGIES, AND PRIORITIES

Structure Type	Total Structures	Estimated Land Value	Estimated Building Value	Total Value
<b>Hampton Total</b>	<b>4</b>	<b>\$1,445,400</b>	<b>\$669,900</b>	<b>\$2,115,300</b>
<b>Marshan Township</b>				
Agricultural	3	\$315,200	\$694,400	\$1,009,600
Residential	3	\$209,500	\$605,600	\$815,100
<b>Marshan Total</b>	<b>6</b>	<b>\$524,700</b>	<b>\$1,300,000</b>	<b>\$1,824,700</b>
<b>Nininger Township</b>				
Exempt	8	\$481,800	\$87,400	\$569,200
Residential	5	\$298,100	\$92,600	\$390,700
<b>Nininger Total</b>	<b>13</b>	<b>\$779,900</b>	<b>\$180,000</b>	<b>\$959,900</b>
<b>Randolph Township</b>				
Agricultural	9	\$974,800	\$288,800	\$1,263,600
Exempt	1	\$560,900	\$1,925,500	\$2,486,400
Residential	5	\$298,900	\$411,900	\$710,800
<b>Randolph Total</b>	<b>15</b>	<b>\$1,834,600</b>	<b>\$2,626,200</b>	<b>\$4,460,800</b>
<b>Ravenna Township</b>				
Residential	4	\$160,800	\$333,400	\$494,200
<b>Ravenna Total</b>	<b>4</b>	<b>\$160,800</b>	<b>\$333,400</b>	<b>\$494,200</b>
<b>Sciota Township</b>				
Agricultural	3	\$1,767,500	\$626,100	\$2,393,600
Residential	2	\$73,200	\$115,300	\$188,500
<b>Sciota Total</b>	<b>5</b>	<b>\$1,840,700</b>	<b>\$741,400</b>	<b>\$2,582,100</b>
<b>Vermillion Township</b>				
Agricultural	12	\$2,127,200	\$1,136,100	\$3,263,300
Exempt	1	\$267,400	\$0	\$267,400
Residential	10	\$744,700	\$1,154,800	\$1,899,500
<b>Vermillion Total</b>	<b>23</b>	<b>\$3,139,300</b>	<b>\$2,290,900</b>	<b>\$5,430,200</b>
<b>Waterford Township</b>				
Agricultural	2	\$674,500	\$48,900	\$723,400
Exempt	1	\$60,900	\$0	\$60,900
Residential	2	\$101,600	\$117,000	\$218,600
<b>Waterford Total</b>	<b>5</b>	<b>\$837,000</b>	<b>\$165,900</b>	<b>\$1,002,900</b>

Source: Dakota County Assessor's Office

### Potential Dollar Loss - Other Hazards

Property losses were estimated for the 'most likely worst case scenario' for each hazard and are subjective and hypothetical. For potential dollar loss to structures, no differentiation is made for variable impacts across the development types (e.g., residential, commercial, industrial). Potential loss projections are calculated under what is considered 'most likely worst case scenario' for each hazard type from which physical structural damage would be anticipated. As such, damage assessments are based on the potential geographic extent of a worst-case event. For example, an F-4 or F-5 tornado might destroy nearly all structures within its path; however, it is improbable for even a series of F-4 and F-5 tornadoes to destroy more than one percent of all structures within the 640+ square miles of Dakota County. A static percentage for estimated losses is therefore used with the total replacement value within each category. Table 5.13 outlines potential dollar losses to structures for a range of identified hazard types.

## SECTION V – DAKOTA COUNTY VULNERABILITIES, STRATEGIES, AND PRIORITIES

Several hazards profiled in this plan (infectious disease, water supply contamination, wastewater treatment plant failure, drought, and extreme temperatures) did not warrant building damage assessments.

For dam failure, the Byllesby Dam located in Randolph Township is the only dam within the county which could pose a threat to life and property. As noted in the dam failure hazard profile in Section IV, the details of potential failure mode analyses, probable maximum flood events, inundation maps, and Emergency Action Plans (EAPs) go beyond the scope of this Hazard Mitigation Plan. Damage assessments to downstream structures were not included in this plan. The Byllesby Dam, as a FERC-regulated hydropower facility, undergoes rigorous inspection for structural stability and integrity. Strategies specific to the Byllesby Dam are listed later in this section.

Table 5.13 categorizes structures as residential, commercial, industrial, and agricultural. “Exempt” includes all buildings not subject to property taxes, such as government buildings, schools, and places of worship. “Utilities” includes fixed sites with infrastructure for electricity, sewer, and water. “Other” includes structures that do not fall into preceding categories.

**Table 5.13 Estimated Potential Dollar Loss to Building Inventory by Disaster Type, County-wide Damage**

Structure Type	Total Building Value	Violent Summer Storm (1% total damage)	Tornado (1% total damage)	Terrorism (1% total damage)	Hazardous Material Incident (0.1% total damage)
Agricultural	\$227,360,700	\$2,273,607	\$2,273,607	\$2,273,607	\$227,361
Commercial	\$2,873,679,304	\$28,736,793	\$28,736,793	\$28,736,793	\$2,873,679
Exempt	\$2,182,693,900	\$21,826,939	\$21,826,939	\$21,826,939	\$2,182,694
Industrial	\$666,719,400	\$6,667,194	\$6,667,194	\$6,667,194	\$666,719
Other	\$10,543,000	\$105,430	\$105,430	\$105,430	\$10,543
Residential	\$25,808,088,700	\$258,080,887	\$258,080,887	\$258,080,887	\$25,808,089
Utilities	\$274,796,800	\$2,747,968	\$2,747,968	\$2,747,968	\$274,797
<b>County Total</b>	<b>\$32,043,881,804</b>	<b>\$320,438,818</b>	<b>\$320,438,818</b>	<b>\$320,438,818</b>	<b>\$32,043,882</b>

Source: Dakota County Hazard Mitigation Team, 2016

Structure Type continued	Structural Fire (0.1% total damage)	Violent Winter Storm (0.01% total damage)	Wildfire (0.01% total damage)
Agricultural	\$227,361	\$22,736	\$22,736
Commercial	\$2,873,679	\$287,368	\$287,368
Exempt	\$2,182,694	\$218,269	\$218,269
Industrial	\$666,719	\$66,672	\$66,672
Other	\$10,543	\$1,054	\$1,054
Residential	\$25,808,089	\$2,580,809	\$2,580,809
Utilities	\$274,797	\$27,480	\$27,480
<b>County Total</b>	<b>\$32,043,882</b>	<b>\$3,204,388</b>	<b>\$3,204,388</b>





### **Vulnerability of Future Structures**

Growth in Dakota County's communities will be a factor in considering vulnerability to hazards (see Figure 5.7). Implementation of mitigation strategies, as well as existing ordinances and land use controls, will reduce vulnerability to certain hazards (e.g., wildfire, flood). Additional considerations include:

#### **Residential Growth**

Development in the county slowed from a peak of 4,200 housing units/year in 2004 to 609 in 2009 but has been slowly increasing with recovery from the Recession. Most of the predicted residential growth is expected in the jurisdictions of Lakeville, Farmington, Rosemount, and Empire Township.

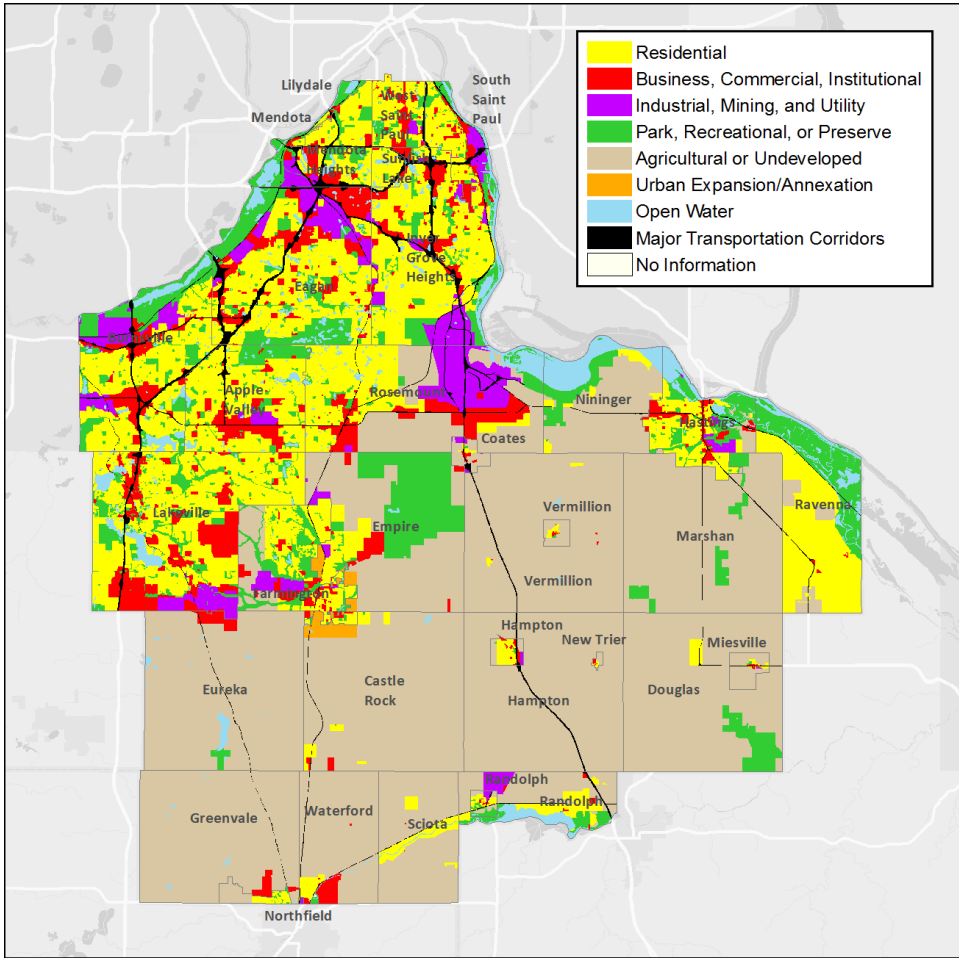
#### **Commercial Growth**

Maxfield Research, Inc. (Minneapolis, MN) conducted a market study for Dakota County in 2008, projecting commercial and industrial needs in the county through 2030. The study found that projected household and job growth and other factors will create demand for an additional 10 to 12 million square feet of commercial/retail space in the county by 2030. This roughly translates to 450-550 new buildings, based on the average size of a new commercial building constructed between 2000 and 2006. Demand for commercial land is projected to be greatest in Lakeville, Apple Valley, and Inver Grove Heights.

#### **Industrial Growth**

Dakota County had an inventory of about 980 industrial buildings with roughly 40 million square feet of space in 2007. Maxfield Research, Inc. projects an additional 7.6 to 8.7 million square feet of industrial space will be added between 2008 and 2030. This translates to approximately 260 – 310 new buildings based on the average size of a new industrial building constructed between 2000 and 2006. Demand for industrial land is projected to be greatest in Rosemount, Inver Grove Heights, and Apple Valley.

Figure 5.7: Future Land Use in Dakota County



## DAKOTA COUNTY GOALS AND STRATEGIES

**Section IV** documents how natural and technological hazards affect Dakota County. This section evaluates risks each hazard poses to the County’s people and physical assets, and discusses areas of vulnerability. The remainder of this section details Dakota County’s specific goals and strategies developed for each hazard to address vulnerabilities.

Goals express desired outcomes related to the major hazards of concern in Dakota County. Strategies, or “action steps” toward reaching the goals, will be implemented with the support of the County Board of Commissioners. Goals and strategies are outcomes of the planning process outlined in **Section II**. Strategy development began with a progress review of strategies in the 2011 plan, to identify efforts that were complete, efforts that are part of ongoing program operations that should carry forward to the plan update, and efforts that were no longer needed (see **Appendix III** for 2011 plan progress reports). New strategies were developed with input from County departments, jurisdictions, community groups, and the public.

Strategies are presented in table format with the following information:

- Implementation priority (based on need and whether the strategy builds on existing efforts)
- A modified STAPLEE rating that estimates the ease of implementation
- The lead department and position title responsible for coordinating action
- Implementation path through new or existing processes and programs within the County
- Hazards addressed by the strategy
- Status of the strategy – ongoing efforts or specific initiatives with an estimated completion date
- Funding status and likely funding sources

The planning team also used modified STAPLEE criteria to evaluate each strategy against seven areas of consideration listed in Table 1. Strategies that scored higher have fewer implementation barriers.

**Table 1: Modified STAPLEE Evaluation of Strategies**

<b>Modified STAPLEE Scoring:</b> <b>1=does not meet criteria, 2=somewhat meets criteria, or 3=meets or exceeds criteria</b>	
1.	<b>Social Impacts:</b> community acceptance likely, benefits segment of population
2.	<b>Technical:</b> feasible, provides long-term solution, has secondary benefits
3.	<b>Administrative:</b> staffing available, funding allocated, maintenance/operations needs can be addressed
4.	<b>Political:</b> political support, local champion, and public support are likely
5.	<b>Legal:</b> state and/or local authority exists, low likelihood of legal challenges
6.	<b>Economic:</b> beneficial, affordable, contributes to economic goals, outside funding available
7.	<b>Environmental:</b> benefits natural resources, increases site safety, consistent with local goals and federal law

The following strategies are for Dakota County as a whole; city-level strategies are presented in **Section VI** of this plan.

## Communication and Education Goals: All Hazards

### Communication Goal 1: Increase public awareness of hazard mitigation and disaster preparedness

1. Continue to provide comprehensive public information on disaster mitigation and preparedness, using the County website and/or social media as primary resources for clear information on:

- How to get immediate help
- How to do home emergency planning (e.g., evaluation routes, family communication)
- How to make a home emergency kit
- How to stay informed during emergencies
- Learning CPR
- Hazard-specific information for the public (e.g., tornadoes, storms, diseases)
- County emergency planning

Priority/STAPLEE: High/19

Hazards: All

Lead: Dakota County Communications, Director (DCC-CD); Dakota County Emergency Management, Risk and Homeland Security Manager (DCEM-RHSM)

Status/Completion: Ongoing

Implementation: Annual work planning

Funding Source: Partly Funded/Budget

2. Develop an annual seasonal outreach campaign on topics such as severe weather awareness (April) and winter weather preparedness (November) to reach residents directly through targeted mailings, articles in the Dakota County Newsletter, and news releases.

Priority/STAPLEE: High/19

Hazards: All

Lead: DCC-CD, DCEM-RHSM

Status/Completion: New/Ongoing

Implementation: Annual work planning

Funding Source: Partly Funded/Budget

3. Routinely include questions on household emergency preparedness in scientific residential surveys, to estimate the level of preparedness in Dakota County over time.

Priority/STAPLEE: Medium/19

Hazards: All

Lead: Office of Performance Analysis (OPA), Manager, DCEM-RHSM

Status/Completion: Ongoing

Implementation: Biennial survey development process

Funding Source: Partly Funded/Budget

### Communication Goal 2: Continue to communicate and coordinate with other agencies on hazard mitigation and preparedness

1. Continue to regularly meet with city law enforcement, fire departments, emergency managers, public health, hospitals, and emergency medical services as the Domestic Preparedness Committee (DPC).

Priority/STAPLEE: High/21

Hazards: All

Lead: DCEM-RHSM

Status/Completion: Ongoing

Implementation: Regular interagency meetings

Funding Source: Funded/Budget

2. Annually review status of City and County All-Hazard Mitigation Plan strategies with the DPC.\*\*

Priority/STAPLEE: High/20

Hazards: All

Lead: Dakota County Emergency Management, Risk and Homeland Security Manager (DCEM-RHSM)

Status/Completion: Ongoing

Implementation: Regular interagency meetings

Funding Source: Funded/Budget

\*Reduces risk to buildings or infrastructure

\*\* Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation  
Modified STAPLEE implementation score: higher scores indicate fewer barriers

## Goals for Natural Hazards:

### Violent Storms and Extreme Temperatures

#### Storms Goal 1: Ensure that there is safe and accessible shelter from violent storms

1. **Develop a safe shelter plan for County-owned facilities including shelters, shelter capacity, and exit routes.**

Priority/STAPLEE: High/19

Hazards: Violent Storms and Extreme Temperatures

Lead: DCEM-RHSM

Status/Completion: Ongoing

Implementation: Annual work planning

Funding Source: Funded/Budget

2. **Work with City Emergency Managers and the Red Cross to assure that shelter locations distributed across the County are evaluated by or for the Red Cross as approved shelters with agreements in place.**

Priority/STAPLEE: Medium/17

Hazards: Violent Storms and Extreme Temperatures

Lead: DCEM-RHSM

Status/Completion: Ongoing

Implementation: Interagency coordination

Funding Source: Partly Funded/Budget

3. **Construct storm shelter safe rooms at manufactured home parks/communities, County campgrounds, and publicly owned athletic fields or golf courses.**

Priority/STAPLEE: High/16

Hazards: Violent Storms and Extreme Temperatures

Lead: DCEM-RHSM

Status/Completion: Ongoing

Implementation: Capital improvement planning, grants

Funding Source: Partly Funded/Capital Improvement Plan

#### Storms Goal 2: Improve the severe storm warning system for all residents

1. **Evaluate the County's outdoor warning system activation policy and procedures with local emergency managers on a periodic basis and communicate any changes with the Dakota Communications Center (DCC).**

Priority/STAPLEE: High/18

Hazards: Violent Storms and Extreme Temperatures

Lead: DCEM-RHSM

Status/Completion: Ongoing

Implementation: Annual interagency coordination

Funding Source: Funded/Budget

2. **Coordinate with DCC and local emergency managers to implement IPAWS emergency notifications from the DCC.**

Priority/STAPLEE: High/19

Hazards: Violent Storms and Extreme Temperatures

Lead: DCC, Operations Manager

Status/Completion: New/TBD

Implementation: Interagency coordination

Funding Source: Funded/Budget

3. **Develop a communications plan to notify vulnerable populations to take steps to protect themselves.**

Priority/STAPLEE: Medium/17

Hazards: Violent Storms and Extreme Temperatures

Lead: DCEM-RHSM

Status/Completion: Ongoing

Implementation: Work plan, interagency coordination

Funding Source: Not Funded

4. **Continue participation with ARES group for severe storm spotters and communications network volunteers.**

Priority/STAPLEE: Low/21

Hazards: Violent Storms and Extreme Temperatures

Lead: DCEM-RHSM

Status/Completion: Ongoing

Implementation: Interagency coordination

Funding Source: Funded/Budget

\*Reduces risk to buildings or infrastructure

\*\* Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

Modified STAPLEE implementation score: higher scores indicate fewer barriers

**Storms Goal 2: Improve the severe storm warning system for all residents, continued**

5. Continue participation in the Metropolitan Emergency Managers Association's (MEMA) efforts to improve the community notification process and consistency across the Twin Cities area.

Priority/STAPLEE: Low/21

Lead: DCEM-RHSM

Implementation: Interagency coordination

Hazards: Violent Storms and Extreme Temperatures

Status/Completion: Ongoing

Funding Source: Funded/Budget

**Principal Contact:** Dakota County Emergency Management-Risk and Homeland Security Manager

**Cooperating Partners:** city emergency managers, city and County park departments, townships, National Weather Service, County GIS, county law enforcement, Dakota County Transportation Department, and Amateur Radio Emergency Services (ARES)

**Storms Goal 3: Protect people and public infrastructure**

1. Continue communications with public safety officials, county/city/township transportation departments, and MN Department of Transportation to limit travel on major transportation routes during hazardous driving conditions.

Priority/STAPLEE: High/16

Lead: DCEM-RHSM

Implementation: Interagency coordination, emergency operations

Hazards: Violent Storms and Extreme Temperatures

Status/Completion: Ongoing

Funding Source: Funded/Budget

2. Continue to review and improve methods to notify Dakota County staff and facilities to provide adequate warning for severe weather emergencies in the field and the office environment. Update as needed.

Priority/STAPLEE: High/18

Lead: DCEM-RHSM

Implementation: Annual work planning

Hazards: Violent Storms and Extreme Temperatures

Status/Completion: Ongoing

Funding Source: Partly Funded/Budget

3. Evaluate installation of lightning indicator and alert systems for outdoor public venues, such as the Dakota County Fairgrounds or Dakota County Park System.

Priority/STAPLEE: High/19

Lead: DCEM-RHSM

Implementation: Capital improvement planning

Hazards: Violent Storms and Extreme Temperatures

Status/Completion: Ongoing

Funding Source: Not Funded/Capital Improvement Plan

4. Complete storm debris management guidelines.

Priority/STAPLEE: High/21

Lead: Environmental Resources-Director (DCER-D)

Implementation: Debris Management Plan updates

Hazards: Violent Storms and Extreme Temperatures

Status/Completion: Ongoing

Funding Source: Partly Funded/Budget

5. Proactively manage stormwater infrastructure (e.g., maintaining drainage ditches, replacing culverts). Conduct hydrological assessments based on NOAA Atlas 14 Precipitation Frequency estimates to determine appropriate capacity.\*

Priority/STAPLEE: High/12

Lead: Transp.-County Engineer (DCT-CE); DCER-D

Implementation: Service level agreement, annual work planning

Hazards: Violent Storms and Extreme Temperatures

Status/Completion: Ongoing

Funding Source: Partly Funded/Budget, CIP

\*Reduces risk to buildings or infrastructure

\*\* Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

Modified STAPLEE implementation score: higher scores indicate fewer barriers



**Storms Goal 3: Protect people and public infrastructure, continued**

**6. Reconstruct roads that have become vulnerable to repetitive flooding and washouts.\***

Priority/STAPLEE: Medium/14

Lead: DCT-CE

Implementation: Capital improvement planning

Hazards: Violent Storms and Extreme Temperatures

Status/Completion: Ongoing

Funding Source: Partly Funded/CIP

**7. Maintain river flow by clearing debris from under bridges during storm-flooding events.\***

Priority/STAPLEE: High/17

Lead: DCT-CE

Implementation: Annual work planning

Hazards: Violent Storms and Extreme Temperatures

Status/Completion: Ongoing

Funding Source: Partly Funded/Budget

**8. Install power back-up systems to maintain operation of traffic signals at high-volume intersections during outages.**

Priority/STAPLEE: Low/13

Lead: DCT-CE

Implementation: Capital improvement planning

Hazards: Violent Storms and Extreme Temperatures

Status/Completion: New/TBD

Funding Source: Partly Funded/CIP

**Principal Contact:** Dakota County Emergency Management-Risk and Homeland Security Manager; Dakota County Transportation-County Engineer. **Cooperating Partners:** County public safety agencies, transportation and public works, local planning commissions, County and city planning staff, city emergency managers, township officials, Dakota County Environmental Resources, and utilities

**Flood**

**Flood Goal 1: Address 100-year flood risks in all jurisdictions through land use planning and management.**

**1. Review current floodplain zoning ordinances for noncompliance with state and federal regulations with respect to nonconforming structures.**

Priority/STAPLEE: Medium/21

Lead: Shoreland Floodplain Prog. Supv. (DCER-SFPS)

Implementation: Ordinance updates

Hazards: Flood

Status/Completion: Ongoing

Funding Source: Partly Funded/Budget

**2. Encourage city and county participation in FEMA Community Rating System program. Townships coordinate with County Floodplain Manager on floodplain permit review.**

Priority/STAPLEE: Low/21

Lead: DCER-SFPS

Implementation: Code/ordinance enforcement

Hazards: Flood

Status/Completion: New

Funding Source: Not Funded

**Flood Goal 2: Pursue acquisition of repetitive loss structures.**

**1. Coordinate with MN HSEM and MN DNR Flood Damage Reduction Program to secure funding to acquire repetitive loss structures from willing sellers.\***

Priority/STAPLEE: High/20

Lead: DCER-SFPS

Implementation: Grant requests

Hazards: Flood

Status/Completion: Ongoing

Funding Source: Not Funded

\*Reduces risk to buildings or infrastructure

\*\* Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

Modified STAPLEE implementation score: higher scores indicate fewer barriers

**Principal Contact:** Dakota County Environmental Resources-Shoreland Floodplain Program Supervisor

**Cooperating Partners:** city planning and zoning commissions, city councils, city administrators, township officials, and MN Department of Natural Resources

## Drought

### Drought Goal 1: Continue to work toward adequate wellhead protection in Dakota County.

**1. Encourage and assist municipal well owners in developing wellhead protection plans.**

Priority/STAPLEE: Medium/20

Hazards: Drought

Lead: DCER-Groundwater Protection Program Supervisor (DCER-GPPS)

Status/Completion: Ongoing

Implementation: Program operations

Funding Source: Partly Funded/Budget

### Drought Goal 2: Monitor the County's ground water quality, supplies, and demands.

**1. Review existing groundwater monitoring and modeling programs and determine any needs for additional groundwater monitoring.**

Priority/STAPLEE: Medium/21

Hazards: Drought

Lead: DCER-GPPS

Status/Completion: Ongoing

Implementation: Program operations

Funding Source: Funded/Budget

**2. Continue to participate in the Metropolitan Area Water Supply Advisory Committee, Southwest Groundwater Work Group, and Southeast Groundwater Work Group.**

Priority/STAPLEE: Medium/21

Hazards: Drought

Lead: DCER-GPPS

Status/Completion: Ongoing

Implementation: Meeting attendance

Funding Source: Funded/Budget

**Principal Contact:** Dakota County Environmental Resources-Groundwater Protection Program Supervisor

**Cooperating Partners:** Dakota County Office of Planning, Dakota County Public Health, MN Departments of Health and Natural Resources, Minnesota Geologic Survey, Metropolitan Council

## Wildfire

### Wildfire Goal 1: Reduce wildfire risk.

**1. Annually evaluate prescribed burning on all county lands and parks with Minnesota DNR and local jurisdictions.**

Priority/STAPLEE: High/20

Hazards: Wildfire

Lead: Dakota County Parks, Natural Resources Manager

Status/Completion: Ongoing

Implementation: Permit process, contractor certification

Funding Source: Partly Funded/Budget

**2. Provide an education program for property owners in identified risk areas on practices for reducing or minimizing wildfire risk.\***

Priority/STAPLEE: Low/19

Hazards: Wildfire

Lead: DCEM-RHSM

Status/Completion: Ongoing

Implementation: Program operations, work planning

Funding Source: Partly Funded/Budget

\*Reduces risk to buildings or infrastructure

\*\* Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

Modified STAPLEE implementation score: higher scores indicate fewer barriers

**Principal Contact:** Dakota County Emergency Management-Risk and Homeland Security Manager, Dakota County Parks-Natural Resources Manager. **Cooperating Partners:** Minnesota DNR, Vermillion Highlands Operations Committee, local fire marshals, city and County park departments

## Infectious Disease

### Infectious Disease Goal 1: Ensure effective and coordinated response to preventing and controlling infectious disease.

1. **Work with state and federal agencies to identify infectious diseases with potential to affect the county and region.**  
Priority/STAPLEE: High/15 Hazards: Infectious Disease  
Lead: County Public Health, Director (DCPH-D) Status/Completion: Ongoing  
Implementation: Coordination with MDH, monitor and report via MDH infectious disease reporting protocol Funding Source: Funded/Budget
2. **Utilize state and federal and local resources to prevent and control infectious diseases in the county.**  
Priority/STAPLEE: High/17 Hazards: Infectious Disease  
Lead: DCPH-D Status/Completion: Ongoing  
Implementation: Seek Federal/State Public Health Emergency Preparedness grants and use State Community Health funding to maintain and improve infectious disease prevention and control practices. Funding Source: Funded/Budget
3. **Work with the Minnesota Department of Health (MDH) to develop training programs for private health care providers and public health staff in infectious disease monitoring and response.**  
Priority/STAPLEE: High/16 Hazards: Infectious Disease  
Lead: DCPH-D Status/Completion: Ongoing  
Implementation: Coordinate with MDH, collaborate with providers. Funding Source: Funded/Budget
4. **Provide information on the recognition, testing, treating, and reporting of infectious diseases to healthcare providers in clinics, hospitals, and other healthcare settings.**  
Priority/STAPLEE: High/17 Hazards: Infectious Disease  
Lead: DCPH-D Status/Completion: Ongoing  
Implementation: Maintain Health Alert Network (HAN) Funding Source: Funded/Budget
5. **Work with clinics and hospitals to improve infectious disease reporting.**  
Priority/STAPLEE: High/17 Hazards: Infectious Disease  
Lead: DCPH-D Status/Completion: Ongoing  
Implementation: On-site meetings with clinical staff. Timely information via varied communications, HAN. Funding Source: Funded/Budget
6. **Maintain an up-to-date Health Alert Network (HAN) system to keep clinics, hospitals, other health care providers, public safety agencies, schools, local governments, and others informed of urgent health/infectious disease events.**  
Priority/STAPLEE: High/18 Hazards: Infectious Disease  
Lead: DCPH-D Status/Completion: Ongoing  
Implementation: Periodic HAN evaluation and update Funding Source: Funded/Budget
7. **On an annual basis, review and update the public health emergency response operations plan that outlines procedures for dealing with infectious diseases.**  
Priority/STAPLEE: High/18 Hazards: Infectious Disease  
Lead: DCPH-D Status/Completion: Ongoing/each fall  
Implementation: Review, update, approve plans. Coordinate with partners to identify gaps in plans. Funding Source: Funded/Budget

\*Reduces risk to buildings or infrastructure

\*\* Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

Modified STAPLEE implementation score: higher scores indicate fewer barriers

**Infectious Disease Goal 1: Ensure an effective and coordinated response to preventing and controlling infectious disease, continued**

**8. Continue to work with local hospitals and clinics in developing plans and roles in infectious disease response, including quarantine.**

Priority/STAPLEE: High/18

Lead: DCPH-D

Implementation: Coordinated, regular partner meetings with hospitals and Public Health

Hazards: Infectious Disease

Status/Completion: Ongoing

Funding Source: Funded/Budget

**9. Continue to work with the MDH in surveillance of infectious diseases in the county. For diseases that may transfer from livestock to humans, continue to work with the State Departments of Health and Agriculture, the University of MN Veterinary College, and Agricultural Extension.**

Priority/STAPLEE: High/14

Lead: DCPH-D

Implementation: Coordinated interagency surveillance and communications with MDH, per protocol

Hazards: Infectious Disease

Status/Completion: Ongoing

Funding Source: Funded/Budget

**10. Work closely with MDH, CDC, and regional public health partners to plan the receipt and dispensing of the Strategic National Stockpile.**

Priority/STAPLEE: High/18

Lead: DCPH-D

Implementation: Plan, drill, exercise SNS emergency plans, per MDH grant guidelines/agreements

Hazards: Infectious Disease

Status/Completion: Ongoing

Funding Source: Funded/Budget

**11. Continue to develop a human quarantine plan collaborating with state, regional, and local partners including emergency managers.**

Priority/STAPLEE: High/14

Lead: DCPH-D

Implementation: Review/update isolation-quarantine plans annually. Coordinate with partners.

Hazards: Infectious Disease

Status/Completion: New/TBD-annual

Funding Source: Partly Funded/Budget

**12. Work closely with the MDH and regional public health partners to refine the region's all-hazard response plan.**

Priority/STAPLEE: High/18

Lead: DCPH-D

Implementation: Coordination-collaboration with partners to develop-improve regional response plans

Hazards: Infectious Disease

Status/Completion: Ongoing

Funding Source: Funded/Budget

**Principal Contact:** Dakota County Public Health Department, Director. **Cooperating Partners:** Minnesota Department of Health, health care providers, hospitals and clinics, County school systems, nursing homes, local emergency managers

**Infectious Disease Goal 2: Provide information to the public on infectious disease threats.**

**1. Work with the Minnesota Public Health Department (MDH) to develop fact sheets, media releases, and educational programs for the public.**

Priority/STAPLEE: High/15

Lead: DCPH-D

Implementation: Coordinate-collaborate with MDH and regional and local partners

Hazards: Infectious Disease

Status/Completion: New/TBD

Funding Source: Partly Funded/Budget

\*Reduces risk to buildings or infrastructure

\*\* Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

Modified STAPLEE implementation score: higher scores indicate fewer barriers

**Infectious Disease Goal 2: Provide information to the public on infectious disease threats, continued.**

**2. Continue to work with local media to disseminate information about infectious diseases, risk potential, and prevention through education articles and news releases.**

Priority/STAPLEE: High/18

Hazards: Infectious Disease

Lead: DCPH-D

Status/Completion: Ongoing

Implementation: Coordinate news releases with County PIO, maintain media relationships with regular information

Funding Source: Funded/Budget

**3. Maintain up-to-date website information and/or links to other sources of reliable information about infectious diseases and prevention.**

Priority/STAPLEE: Medium/21

Hazards: Infectious Disease

Lead: DCPH-D

Status/Completion: Ongoing

Implementation: Collaborate with MDH and partners, develop targeted web info for defined populations

Funding Source: Partly Funded/Budget

**Principal Contact:** Dakota County Public Health Department, Director. **Responsible Parties:** Dakota County Public Health Department, Minnesota Department of Health, Dakota County Public Information Officer. **Cooperating Partners:** public media, Dakota County cities

## Pandemic Influenza

**Pandemic Influenza Goal 1: Maintain public health influenza response preparedness.**

**1. Develop and exercise Public Health pandemic flu preparedness plans.**

Priority/STAPLEE: High/16

Hazards: Pandemic Influenza

Lead: County Public Health, Director (DCPH-D)

Status/Completion: Ongoing

Implementation: Review-update public health preparedness plans that could be used for a pandemic flu response (e.g. Isolation & Quarantine, Mass Dispensing, Strategic National Stockpile). Plan and implement periodic functional and full scale exercises related to the plans listed above. Collaborate with community partners on development of planning and exercising plans.

Funding Source: Funded/Budget

## Landslide

**Landslide Goal 1: Reduce vulnerability of infrastructure to landslides in Dakota County.\***

**1. Address vulnerabilities in the County Road System related to saturated soil conditions that can cause landslides or retaining wall failures. Maintain an inventory of retaining walls and prioritize replacements.\***

Priority/STAPLEE: Medium/12

Hazards: Landslide

Lead: Dakota County Transportation, County Engineer (DCT-CE)

Status/Completion: Ongoing

Implementation: Capital improvement planning

Funding Source: Partly Funded/CIP

\*Reduces risk to buildings or infrastructure

\*\* Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

Modified STAPLEE implementation score: higher scores indicate fewer barriers

**Landslide Goal 1: Reduce vulnerability of infrastructure to landslides in Dakota County, continued.**

2. Address vulnerabilities in the County Trail System related to saturated soil conditions that can cause landslides. Identify and maintain an inventory of high hazard areas to mitigate the potential for erosion and landslides.\*

Priority/STAPLEE: Medium/12

Lead: DCT-CE; Facilities Maintenance, Parks

Implementation: Capital improvement planning

Hazards: Landslide

Status/Completion: Ongoing

Funding Source: Partly Funded

## Goals for Technological Hazards:

### Structural Fire

**Structural Fire Goal 1: Protect structures from fire.**

1. Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to ensure access for fire and other emergency equipment with cities and townships.\*

Priority/STAPLEE: Medium/20

Lead: Dakota County Fire Chiefs

Implementation: Ordinance enforcement

Hazards: Fire

Status/Completion: New/TBD

Funding Source: Not Funded

2. Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.\*

Priority/STAPLEE: Medium/16

Lead: Dakota County Fire Chiefs

Implementation: Interagency coordination, capital improvement planning

Hazards: Fire

Status/Completion: New/TBD

Funding Source: Not Funded

**Structural Fire Goal 2: Work toward an educated and informed public on fire safety.**

1. Work through Dakota County Fire Chiefs Association and participating cities to provide public education to a) youth, focusing on stoves, smoke detectors, fire safety, and evacuation; and b) homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals, and evacuation.\*

Priority/STAPLEE: High/18

Lead: Dakota County Fire Chiefs

Implementation: Education and outreach planning, interagency coordination

Hazards: Fire

Status/Completion: Ongoing

Funding Source: Partly Funded/Budget

\*Reduces risk to buildings or infrastructure

\*\* Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

Modified STAPLEE implementation score: higher scores indicate fewer barriers

**Principal Contact:** Dakota County Fire Chiefs Association. **Cooperating Partners:** Dakota County Emergency Management personnel, school systems, county news media, and non-profit organizations



## Hazardous Material/Waste

**Hazardous Material/Waste Goal 1: Work to ensure that emergency personnel and other potentially affected parties are informed about hazardous materials/waste located in and transported through Dakota County.**

1. **Work with township, city, state, and federal agencies and private industries to share information on types and locations of hazardous wastes and contaminated sites that have the potential to affect the county and region.**

Priority/STAPLEE: High/20

Hazards: Hazmat/Hazardous Waste

Lead: Dakota DCER-Waste Regulation Unit Supervisor (DCER-WRUS)

Status/Completion: Ongoing

Implementation: Program operations

Funding Source: Partly Funded/Budget

2. **Support the use of the Recycling Zone to minimize the quantities of household hazardous materials/waste in the community and encourage cities to promote household hazardous waste collection.**

Priority/STAPLEE: High/21

Hazards: Hazmat/Hazardous Waste

Lead: DCER-WRUS

Status/Completion: Ongoing

Implementation: Program operations

Funding Source: Funded/Budget

3. **Provide training/education for hazardous waste generators on proper storage/disposal of hazardous waste.**

Priority/STAPLEE: Medium/21

Hazards: Hazmat/Hazardous Waste

Lead: DCER-WRUS

Status/Completion: Ongoing

Implementation: Program operations

Funding Source: Funded/Budget

4. **Continue to develop new capabilities to predict the direction and velocity of groundwater flow and surface water runoff; integrate these results in the County GIS system; and share results with appropriate users.**

Priority/STAPLEE: Medium/19

Hazards: Hazmat/Hazardous Waste

Lead: DCER-Groundwater Protection Prog. Supervisor

Status/Completion: Ongoing

Implementation: Program operations

Funding Source: Partly Funded/Budget

5. **Conduct hazardous waste compliance inspections to ensure proper management, storage, and training at hazardous waste generator locations.**

Priority/STAPLEE: High/21

Hazards: Hazmat/Hazardous Waste

Lead: DCER-WRUS

Status/Completion: Ongoing

Implementation: Code/ordinance enforcement

Funding Source: Funded/Budget

**Principal Contact:** Dakota County Environmental Resources: Waste Regulation Unit, Environmental Initiatives, and Groundwater Protection Program supervisors. **Cooperating Partners:** MN Pollution Control Agency, city public safety agencies, County public safety agencies, and County GIS staff

**Hazardous Material/Waste Goal 2: Improve the effectiveness of policies and planning efforts addressing hazardous materials/waste.**

1. **Review and update the County policies and environmental plans that address hazardous material/waste storage and transportation in Dakota County.**

Priority/STAPLEE: High/21

Hazards: Hazmat/Hazardous Waste

Lead: DCER-WRUS

Status/Completion: Ongoing

Implementation: Program operations

Funding Source: Funded/Budget

\*Reduces risk to buildings or infrastructure

\*\* Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

Modified STAPLEE implementation score: higher scores indicate fewer barriers

**Hazardous Material/Waste Goal 2: Improve the effectiveness of policies and planning efforts addressing hazardous materials/waste, continued.**

**2. Develop and distribute debris management guidelines.**

Priority/STAPLEE: High/21

Lead: DCER-WRUS

Implementation: Debris Management Plan updates

Hazards: Hazmat/Hazardous Waste

Status/Completion: Ongoing

Funding Source: Partly Funded/Budget

**3. Coordinate and facilitate discussion between the cities and the County on policies related to hazardous materials/waste storage and transportation.**

Priority/STAPLEE: Medium/21

Lead: DCER-WRUS

Implementation: Program operations

Hazards: Hazmat/Hazardous Waste

Status/Completion: Ongoing

Funding Source: Funded/Budget

**4. Design and implement hazardous material scenarios for practice exercise and to create community awareness. (consistent with National Planning Scenarios).**

Priority/STAPLEE: Medium/19

Lead: DCEM-RHSM

Implementation: Exercise planning

Hazards: Hazmat/Hazardous Waste

Status/Completion: Ongoing

Funding Source: Not Funded

**5. Encourage training to at least the Hazardous Materials Awareness and Weapons of Mass Destruction (CBRNE) level training for the ten Office of Domestic Preparedness disciplines (law enforcement, fire, EMS, dispatch, public health, health care, emergency management, public works, administration, and hazmat).**

Priority/STAPLEE: Medium/18

Lead: DCEM-RHSM

Implementation: Interagency coordination

Hazards: Hazmat/Hazardous Waste

Status/Completion: Ongoing

Funding Source: Not Funded

**6. Continue to expand the use of mutual aid agreements and memoranda of understanding to improve response coordination between local, state, and federal agencies and appropriate private sectors.**

Priority/STAPLEE: Medium/19

Lead: DCEM-RHSM

Implementation: Interagency coordination

Hazards: Hazmat/Hazardous Waste

Status/Completion: Ongoing

Funding Source: Funded/Budget

**7. Conduct evacuation planning for townships and County facilities for hazardous material incidents.**

Priority/STAPLEE: Medium/17

Lead: DCEM-RHSM

Implementation: Incident response planning

Hazards: Hazmat/Hazardous Waste

Status/Completion: Periodic, based on identified needs

Funding Source: Not Funded

**8. Evaluate how to improve safety of rail intersections with major highways, through deeper/wider intersections or grade separated crossings.**

Priority/STAPLEE: Medium/14

Lead: DCT-CE

Implementation: Secure grant funding

Hazards: Hazmat/Hazardous Waste

Status/Completion: Periodic, based on identified needs

Funding Source: Partly Funded/Budget, potential grants

\*Reduces risk to buildings or infrastructure

\*\* Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

Modified STAPLEE implementation score: higher scores indicate fewer barriers

**Principal Contact:** Dakota County Environmental Resources-Waste Regulation Unit Supervisor, Dakota County Emergency Management-Risk-Homeland Security Manager, Dakota County Transportation-County Engineer  
**Cooperating Partners:** Dakota County Emergency Management, MN Pollution Control Agency, city and County public safety agencies, and County GIS staff

## Dam, Bridge, and Structural Failure

### Structural Failure Goal 1: Maintain continued structural integrity of dams and bridges located in Dakota County.

1. Continue implementation of Federal Energy Regulatory Commission (FERC) dam safety requirements at the County-owned Byllesby Dam.

Priority/STAPLEE: High/19

Hazards: Dam, Bridge, Structural Failure

Lead: DCER-Shoreland Floodplain Program Supervisor (DCER-SFPS)

Status/Completion: Ongoing

Implementation: Budgeting process

Funding Source: Funded/Budget

2. Regularly inspect and maintain bridges and update the bridge replacement list to ensure that potential deficiencies are addressed.

Priority/STAPLEE: High/19

Hazards: Dam, Bridge, Structural Failure

Lead: DCT-CE

Status/Completion: Ongoing

Implementation: Annual work planning

Funding Source: Partly Funded/Budget

**Principal Contact:** Dakota County Environmental Resources-Shoreland and Floodplain Program Supervisor, Dakota County Emergency Management-Risk-Homeland Security Manager, Dakota County Transportation-County Engineer and Bridge Inspection Program Administrator. **Cooperating Partners:** Goodhue County, Federal Energy Regulatory Commission, Eagle Creek Renewable Energy, and Army Corps of Engineers

### Structural Failure Goal 2: Protect residents' safety downstream of Lake Byllesby Dam.

1. Continue to coordinate with Dakota County Environmental Resources, Goodhue County, Cannon Falls, and other emergency providers to exercise the Lake Byllesby Dam Emergency Action Plan (EAP) as required by FERC.\*

Priority/STAPLEE: Medium/18

Hazards: Dam, Bridge, Structural Failure

Lead: DCEM-RHSM

Status/Completion: Ongoing

Implementation: Exercise planning, interagency coordination

Funding Source: Partly Funded/Budget

2. Continue to monitor reservoir elevations and effectively communicate conditions to downstream interests as warranted.

Priority/STAPLEE: High/21

Hazards: Dam, Bridge, Structural Failure

Lead: DCER-Shoreland Floodplain Program Supervisor (DCER-SFPS)

Status/Completion: Ongoing

Implementation: Program operations

Funding Source: Funded/Budget

3. Enforce the Byllesby Dam security plan elements and public safety rules, per FERC requirements.\*

Priority/STAPLEE: High/21

Hazards: Dam, Bridge, Structural Failure

Lead: DCER-Shoreland Floodplain Program Supervisor (DCER-SFPS)

Status/Completion: Ongoing

Implementation: Program operations

Funding Source: Funded/Budget

\*Reduces risk to buildings or infrastructure

\*\* Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation  
Modified STAPLEE implementation score: higher scores indicate fewer barriers

**Principal Contact:** Dakota County Environmental Resources-Floodplain Shoreland Program Supervisor  
**Cooperating Partners:** Goodhue County, Federal Energy Regulatory Commission, MN Department of Natural Resources, local public safety agencies, County emergency managers, and County sheriffs

## Water Supply Contamination

### Water Supply Goal 1: Protect the quality of Dakota County's groundwater.

1. **Continue to regulate well construction and sealing through a permitting process that includes inspections in accordance with Dakota County Ordinance No. 114 and Minnesota Rules Chapter 4725.**  
Priority/STAPLEE: High/21 Hazards: Water Supply Contamination  
Lead: DCER-GPPS Status/Completion: Ongoing  
Implementation: Code/ordinance enforcement Funding Source: Funded/Budget
2. **Continue providing a well-testing service for private well owners.**  
Priority/STAPLEE: High/21 Hazards: Water Supply Contamination  
Lead: DCER-GPPS Status/Completion: Ongoing  
Implementation: Program operations Funding Source: Funded/Budget
3. **Continue to review well disclosure documents for the purpose of sealing wells at property sale.**  
Priority/STAPLEE: High/21 Hazards: Water Supply Contamination  
Lead: DCER-GPPS Status/Completion: Ongoing  
Implementation: Program operations Funding Source: Funded/Budget
4. **Continue to administer a well seal-cost share grant with the assistance of the Dakota County Community Development Agency (CDA) and continue to administer our Well Seal-Cost Share Grant Program.**  
Priority/STAPLEE: High/21 Hazards: Water Supply Contamination  
Lead: DCER-GPPS Status/Completion: Ongoing  
Implementation: Program operations Funding Source: Funded/Budget
5. **Continue to enforce private well water quality standards at the time of property sale.**  
Priority/STAPLEE: High/21 Hazards: Water Supply Contamination  
Lead: DCER-GPPS Status/Completion: Ongoing  
Implementation: Code/ordinance enforcement Funding Source: Funded/Budget
6. **Continue to enforce septic system construction standards at the time of property sale or bedroom addition in areas where the County has jurisdictional authority.**  
Priority/STAPLEE: High/21 Hazards: Water Supply Contamination  
Lead: DCER-GPPS Status/Completion: Ongoing  
Implementation: Code/ordinance enforcement Funding Source: Funded/Budget
7. **Continue to administer a septic system maintenance program that requires that every system is pumped or inspected every three years.**  
Priority/STAPLEE: High/21 Hazards: Water Supply Contamination  
Lead: DCER-GPPS Status/Completion: Ongoing  
Implementation: Code/ordinance enforcement Funding Source: Funded/Budget
8. **Explore ways to reduce impacts of non-point source contaminants on groundwater and surface water through outreach on adoption of agricultural Best Management Practices (BMPs) and availability of financial support.**  
Priority/STAPLEE: High/16 Hazards: Water Supply Contamination  
Lead: DCER-GPPS Status/Completion: Ongoing  
Implementation: Program operations Funding Source: Not Funded

\*Reduces risk to buildings or infrastructure

\*\* Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

Modified STAPLEE implementation score: higher scores indicate fewer barriers

**Water Supply Goal 1: Protect the quality of Dakota County’s groundwater, continued.**

9. Explore ways to reduce impacts of non-point source contaminants on groundwater and surface waters through targeted monitoring for nitrates, pesticides, and herbicides.

Priority/STAPLEE: High/21

Lead: DCER-GPPS

Implementation: Program operations

Hazards: Water Supply Contamination

Status/Completion: Ongoing

Funding Source: Funded/Budget

10. Educate floodplain well owners about protecting drinking water wells from flooding.

Priority/STAPLEE: Medium/21

Lead: DCER-GPPS

Implementation: Program operations

Hazards: Water Supply Contamination

Status/Completion: New

Funding Source: Funded/Budget

**Principal Contact:** Dakota County Environmental Resources-Groundwater Protection Program Supervisor

**Cooperating Partners:** cities, townships, Dakota County Office of Planning and Office of GIS, Dakota County SWCD, watershed management organizations, Metropolitan Council, Minnesota Department of Health, and Minnesota Pollution Control Agency

**Water Supply Goal 2: Protect Dakota County residents from contaminated groundwater.**

1. Identify sources for obtaining bottled water, including bottled water distributors and local grocery stores for unincorporated areas of the county.

Priority/STAPLEE: High/21

Lead: DCEM-RHSM

Implementation: Emergency response planning

Hazards: Water Supply Contamination

Status/Completion: New

Funding Source: Funded/Budget

2. Facilitate well testing and disinfection in case of contamination.

Priority/STAPLEE: High/21

Lead: DCER-GPPS

Implementation: Program operations

Hazards: Water Supply Contamination

Status/Completion: Ongoing

Funding Source: Funded/Budget

3. Assist cities and the State Health Department in public notification and coordination in the event of a municipal well contamination incident.

Priority/STAPLEE: High/21

Lead: DCER-GPPS

Implementation: Program operations

Hazards: Water Supply Contamination

Status/Completion: Ongoing

Funding Source: Funded/Budget

4. Provide well disinfection brochures to impacted well owners.

Priority/STAPLEE: Medium/21

Lead: DCER-GPPS

Implementation: Program operations

Hazards: Water Supply Contamination

Status/Completion: Ongoing

Funding Source: Funded/Budget

5. Provide education materials on monitoring private wells.

Priority/STAPLEE: Medium/21

Lead: DCER-GPPS

Implementation: Program operations

Hazards: Water Supply Contamination

Status/Completion: Ongoing

Funding Source: Funded/Budget

\*Reduces risk to buildings or infrastructure

\*\* Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

Modified STAPLEE implementation score: higher scores indicate fewer barriers

**Principal Contact:** Dakota County Emergency Management, Risk-Homeland Security Manager, Dakota County Environmental Resources-Groundwater Protection. **Cooperating Partners:** City public works, Dakota County GIS staff, Metropolitan Council, Minnesota Department of Health, and Pollution Control Agency

### Water Supply Goal 3: Protect drinking water supplies.

1. Maintain and review copies of Wellhead Protection Plans and GIS coverages of the Wellhead Protection Areas (WHPAs) and Drinking Water Supply Management Areas (DWSMAs) as they are developed by Public Water Supply Well owners and submitted to the Minnesota Department of Health. Provide comments.

Priority/STAPLEE: High/20

Lead: DCER-GPPS

Implementation: Program operations

Hazards: Water Supply Contamination

Status/Completion: Ongoing

Funding Source: Funded/Budget

2. Encourage and assist communities in developing groundwater protection plans.

Priority/STAPLEE: Medium/20

Lead: DCER-GPPS

Implementation: Program operations

Hazards: Water Supply Contamination

Status/Completion: Ongoing

Funding Source: Funded/Budget

3. Encourage cities to enhance security of their wells, reservoirs, and treatment facilities.\*

Priority/STAPLEE: Medium/18

Lead: DCEM-RHSM

Implementation: Interagency planning, grants

Hazards: Water Supply Contamination

Status/Completion: Ongoing

Funding Source: Partly Funded/Budget

**Principal Contact:** Dakota County Environmental Resources-Groundwater Protection Program Supervisor, Dakota County Emergency Management-Risk-Homeland Security Manager. **Cooperating Partners:** Dakota County GIS staff, Metropolitan Council, Minnesota Department of Health, and Minnesota Pollution Control Agency, cities, townships

### Wastewater Treatment Facility Failure

Wastewater facilities in Dakota County fall under the jurisdiction of the Twin Cities Metropolitan Council, the City of Hampton, or the City of Vermillion. Consequently, Dakota County does not serve as the lead agency for mitigation action involving any treatment plant.

### Terrorism

#### Terrorism Goal 1: Reduce risk to government and publicly owned facilities and infrastructure.

1. Enhance public employee training on facility security awareness and incident reporting via “See Something – Say Something” Campaign.

Priority/STAPLEE: High/19

Lead: DCEM-RHSM

Implementation: Ongoing training program, planning

Hazards: Terrorism

Status/Completion: Ongoing

Funding Source: Funded/Budget

\*Reduces risk to buildings or infrastructure

\*\* Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

Modified STAPLEE implementation score: higher scores indicate fewer barriers



**Terrorism Goal 1: Reduce risk to government and publicly owned facilities and infrastructure, cont.**

2. Review recommendations made in FEMA 426 Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings for possible incorporation into County building design standards. Share applicable information with cities.\*

Priority/STAPLEE: Medium/19

Hazards: Terrorism

Lead: DCEM-RHSM

Status/Completion: Ongoing

Implementation: Capital improvement planning, interagency coordination

Funding Source: Partly Funded/Budget, CIP

3. Continue to explore different methods to share public building specifications and plans with police and fire.

Priority/STAPLEE: Medium/18

Hazards: Terrorism

Lead: DCEM-RHSM

Status/Completion: Ongoing

Implementation: Emergency response planning

Funding Source: Funded/Budget

4. Continue countywide exercise program to include threats presented by terrorism (e.g., active shooter, bomb threats, anthrax).

Priority/STAPLEE: High/20

Hazards: Terrorism

Lead: DCEM-RHSM

Status/Completion: Ongoing

Implementation: Exercise planning

Funding Source: Funded/Budget

**Principal Contact:** Dakota County Emergency Management-Risk-Homeland Security Manager. **Cooperating Partners:** Dakota County Emergency Manager, Dakota County Capital Planning Department, Dakota County Facilities Management, Dakota County Sheriff's Office, public safety agencies, and critical infrastructure plant managers

**Goal 2: Assure an effective and coordinated public health response to prevent and control injury, disease, and death as a result of bioterrorism.**

Objectives and strategies under this goal are the same as goals and objectives listed under the hazard **"Infectious Diseases."** The County Public Health Department is developing its infectious disease strategies under the philosophy that these strategies will be equally important whether an infectious disease occurs naturally or a bioterrorist event occurs.

## Cyber-Attack

**Cyber-Attack Goal 1: Reduce Cyber Security Risk to County Network Infrastructure and Software Applications.**

1. Communicate with cities regarding strategies for infrastructure protection and cyber-security.

Priority/STAPLEE: Medium/19

Hazards: Cyber-Attack

Lead: DCEM-RHSM

Status/Completion: Ongoing

Implementation: Interagency coordination

Funding Source: Funded/Budget

## IMPLEMENTATION

Dakota County's Office of Risk Management and Homeland Security will work with municipalities and other implementation partners to identify required resources, assign specific responsibilities, and initiate work on each mitigation strategy. Work on the individual strategies will proceed according to priority ranking and available funding.

### Incorporation into Planning Mechanisms

Where appropriate, actions will be incorporated into local zoning ordinance, emergency operation plans, and planning studies. Each participating jurisdiction followed a planning process to evaluate how best to incorporate mitigation strategies into action.

### Dakota County Implementation Resources

The principal County program areas and positions responsible for implementing this plan's mitigation strategies will use a range of tools and processes. The following table identifies County-led programs and resources for hazards. Additional resources are in place through local, state, and federal partners.

**Table 5.15: Dakota County Implementation Resources**

Hazard Addressed	Dakota County Resources
All	<ul style="list-style-type: none"> <li>• <b>Annual Budget Process:</b> aligns funding with operational priorities.</li> <li>• <b>Capital Improvement Program:</b> aligns funding with physical project priorities.</li> <li>• <b>Emergency Operations Plan:</b> provides an all hazard response plan for emergencies to mitigate damage that might occur during or after an event.</li> <li>• <b>Dakota County Communications Center:</b> provides communications for first responders throughout the County and notifications to the public through mass telephone notification system and the Integrated Public Alert and Warning System (IPAWS).</li> <li>• <b>Dakota County Emergency Personnel:</b> provide staffing to support mitigation and response activities.</li> <li>• <b>Training Plans:</b> align information needs of the public and staff with training resources.</li> <li>• <b>Office of Geographic Information Systems:</b> provides physical systems and demographic map data and analysis.</li> <li>• <b>Dakota County Communications:</b> provides public communications through multiple media.</li> </ul>
Dam or Structural Failure	<ul style="list-style-type: none"> <li>• <b>Byllesby Dam FERC Inspection:</b> identifies issues of concern in physical infrastructure as well as operating and emergency plans.</li> <li>• <b>Byllesby Dam Emergency Action Plan:</b> mitigates loss of lives and property damage as a result of dam operations.</li> <li>• <b>Byllesby Security and Structural Enhancement Program:</b> implements safety and security concerns.</li> <li>• <b>Transportation Bridge Inspection and Maintenance Program</b></li> </ul>
Drought	<ul style="list-style-type: none"> <li>• <b>Comprehensive Water Plan</b></li> </ul>
Flood	<ul style="list-style-type: none"> <li>• <b>Shoreland and Floodplain Ordinance (No. 50)</b></li> <li>• <b>Flood Area Map and Controls</b></li> </ul>
Hazardous	<ul style="list-style-type: none"> <li>• <b>Hazardous Waste Ordinance (No. 111)</b></li> </ul>

Hazard Addressed	Dakota County Resources
Materials	<ul style="list-style-type: none"> <li>• Hazardous chemical data collection</li> <li>• Nuclear Emergency Plan Exercises (Prairie Island)</li> <li>• Environmental Health Regulations</li> </ul>
Infectious Disease	<ul style="list-style-type: none"> <li>• Infectious Disease Reporting systems</li> <li>• Health Alert Network</li> <li>• Training services for local health care providers</li> <li>• Vaccination Program</li> <li>• Isolation and Quarantine Plan</li> <li>• Environmental Health Program</li> </ul>
Summer Storms and Tornado	<ul style="list-style-type: none"> <li>• Severe Weather Warning System</li> </ul>
Water Supply Contamination	<ul style="list-style-type: none"> <li>• Wellhead Protection Program</li> <li>• Well sealing grant and program</li> <li>• County Comprehensive Plan: Water Resources Section</li> <li>• Well and Water Supply Ordinance (No. 114)</li> </ul>
Wildfire	<ul style="list-style-type: none"> <li>• County land management protocols, including prescribed burns</li> </ul>
Cyber-Attack	<ul style="list-style-type: none"> <li>• Cyber Security Policies</li> <li>• Network Monitoring programs</li> <li>• Mobile Device Management</li> <li>• Staff Training</li> </ul>
Landslide	<ul style="list-style-type: none"> <li>• Roadway Protection Program</li> <li>• Trail Management Program</li> </ul>

## Plan Evaluation

### Performance Measures

Each County-level mitigation strategy includes a baseline metric for monitoring implementation progress. Dakota County's Office of Risk Management and Homeland Security will work with municipalities and other implementation partners to evaluate progress on an annual basis for each mitigation strategy.

### Coordination with the Dakota County Preparedness Committee (DPC) Agenda

Mitigation action status will be a regular agenda item for the DPC. On at least an annual basis, each of the eleven member cities will be given dedicated time to update the group on strategy progress, funding status, and opportunities for cooperation. Likewise, County staff will keep the group up to date on the status of County-level strategies.

### Review with Responsible Departments (County Level)

Although Dakota County's Office of Risk Management and Homeland Security is ultimately accountable for the implementation of County-level actions, in many cases the responsibility of execution falls to other County departments (e.g., Dakota County Public Health, Dakota County Environmental Resources, Dakota County Transportation). In order to track progress, the Office of Risk Management and Homeland Security will meet at least annually with these departments to track progress and provide assistance in removing roadblocks.

### Continued Public Involvement

Public outreach and engagement efforts will continue during the five-year effective period of this plan. Future opportunities for public involvement include:

- Many capital projects, ordinance changes, and plan updates associated with the mitigation strategies require a formal adoption process, which would include the opportunity for public participation. Each associated jurisdiction is responsible for providing public notice and opportunity for public comment. This applies to both County-level and city-level mitigation actions.
- Continued evaluation of plan and strategy progress will be presented to the Dakota County Planning Commission (a citizen advisory committee) on a timely basis. Committee meetings follow an open-forum agenda where public input is encouraged.
- Dakota County will continue to maintain an All-Hazard Mitigation Plan website, as a public information resource on individual preparedness and as a vehicle for receiving public comment: <https://www.co.dakota.mn.us/HealthFamily/HandlingEmergencies/Pages/default.aspx>
- Concerns, opinions, and new ideas will be forwarded to Dakota County's Office of Risk Management and Homeland Security. In addition, hard copies of the plan will be made available upon request.

## VI: PARTICIPATING CITY RISKS, STRATEGIES, AND PRIORITIES

### OVERVIEW

Cities participating in the Dakota County All-Hazard Mitigation Plan 2016 Update evaluated hazards and vulnerabilities in their communities and identified strategies, priorities, and implementation resources to address vulnerabilities. Participating cities in this plan include:

Apple Valley	Burnsville	Coates	Eagan
Farmington	Hampton	Hastings	Inver Grove Heights
Lakeville	Lilydale	Mendota	Mendota Heights
Miesville	New Trier	Randolph	Rosemount
South St. Paul	Sunfish Lake	Vermillion	West St. Paul

City planning efforts were guided by the **Minnesota Crosswalk – Local Hazard Mitigation Plan Review Tool**, prepared by the Minnesota Office of Homeland Security and Emergency Management, based on requirements presented in FEMA’s **Local Mitigation Plan Review Guide** of October 1, 2011. Additional references provided to cities to assist in development of mitigation strategies include **Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards**, published by FEMA in January 2013.

The remainder of this section is presented on a city-by-city basis with the following information:

1. Hazard Identification and Risk Evaluation
2. General Land Use and Structural Inventory - Value
3. Vulnerable Populations
4. Critical Infrastructure Vulnerability
5. Changes in the City since the 2011 Dakota County Plan update
6. Critical Infrastructure Maps
7. National Floodplain Insurance Program Participation and Compliance
8. Flood-Vulnerable Structure Inventory and Value
9. Prioritized Strategies for 2016 Plan Update
10. Implementation Resources
11. Implementation progress for their strategies in the 2011 Plan, summarized in Appendix III.

Cities usually assigned high, medium, or low priority ratings to their strategies based on need. Each city also used modified STAPLEE criteria to evaluate ease of implementation based on scoring each strategy against seven areas of consideration listed in Table 1. Strategies that scored higher have fewer implementation barriers. Table 2 provides an example of scoring.

**Table 1: Modified STAPLEE Evaluation of Strategies**

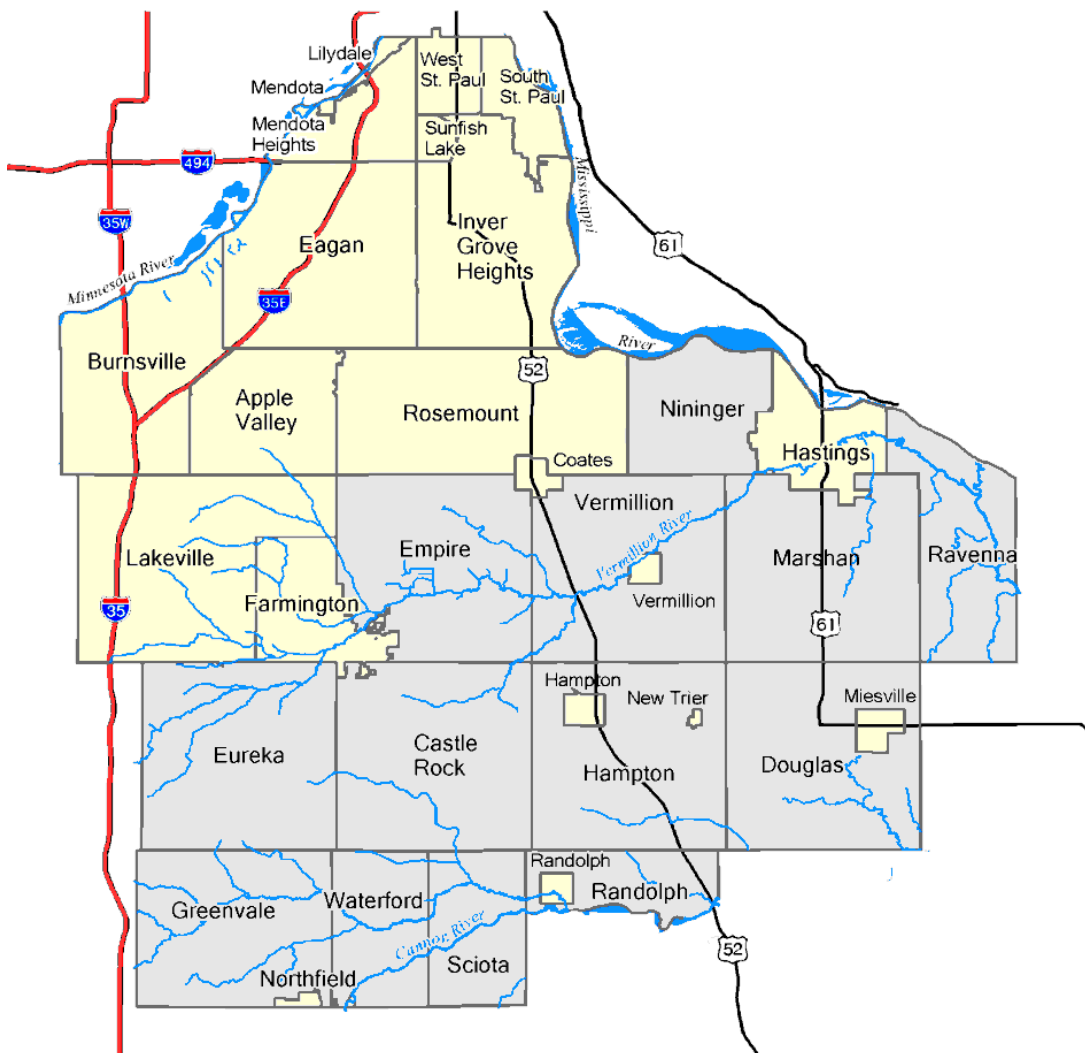
<b>Modified STAPLEE Scoring:</b>
<b>1=does not meet criteria, 2=somewhat meets criteria, or 3=meets or exceeds criteria</b>
8. <b>Social Impacts:</b> community acceptance likely, benefits segment of population
9. <b>Technical:</b> feasible, provides long-term solution, has secondary benefits
10. <b>Administrative:</b> staffing available, funding allocated, maintenance/operations needs can be addressed
11. <b>Political:</b> political support, local champion, and public support are likely
12. <b>Legal:</b> state and/or local authority exists, low likelihood of legal challenges
13. <b>Economic:</b> beneficial, affordable, contributes to economic goals, outside funding available
14. <b>Environmental:</b> benefits natural resources, increases site safety, consistent with local goals and federal law

## SECTION VI – PARTICIPATING CITY RISKS, STRATEGIES, AND PRIORITIES

**Table 2: Example of STAPLEE Evaluation of City Strategies**

Strategy	Social	Technical	Administrative	Political	Legal	Economic	Environmental	Total
1. 3 Echo / Active / Hostile Event Training	3	3	3	3	3	3	3	21
2. Development of the citywide Street Reconstruction Plan	3	2	2	2	3	3	3	18
3. Shelter Planning with local partners	3	3	2	2	2	2	3	17

**Figure 1: Cities and Townships within Dakota County**



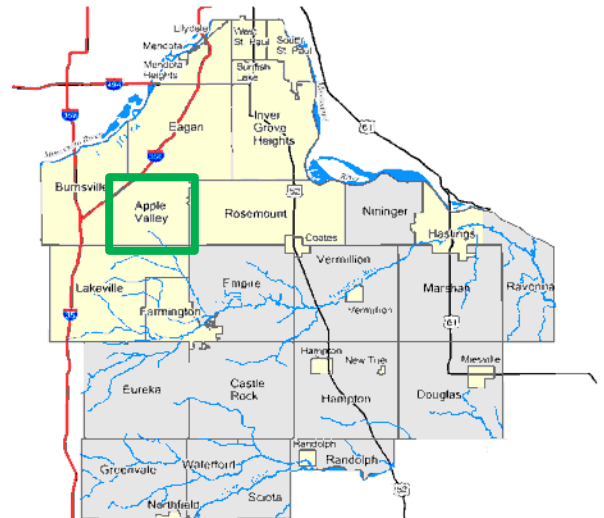


## CITY OF APPLE VALLEY

**Table 1: Apple Valley Community Data**

<b>Population (2014):</b>	50,330
<b>Households:</b>	19,341
<b>Employment/Jobs:</b>	15,171
<b>Area:</b>	17.5 Sq. Mi.
<b>Major Land Uses:</b>	56.5% Residential 15.7% Parks/Recreation 10.9% Commercial & Institutional
<b>Community Type:</b>	Suburban
<b>Undeveloped Area:</b>	9.8%

Source: Metropolitan Council Community Profiles



**Figure 1: City of Apple Valley Location**

## Hazards of Concern

Apple Valley staff evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

**Table 2: Dakota County Hazard Rating Model**

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
<b>Frequency</b>	Unlikely: <1% chance in 100 years	Occasional: 1 to 10% chance in next year	Likely: >10 to <100% chance in next year	Highly Likely: 100% chance in next year
<b>Warning Time</b>	More than 12 hours	6-12 hours	3-6 hours	None-minimal
<b>Geographic Extent</b>	Localized	Community-wide	County-wide or greater	
<b>Likely Impact</b>	Negligible	Limited	Critical	Catastrophic

**Table 3: Apple Valley Hazard Rating**

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Violent Summer Storms (windstorms, hail, and lightning)	4	3	3	3	13
Tornado	3	3	3	3	12
Cyber-Attack*	3	4	2	3	12
Structural Fire	4	4	1	1	10
Hazardous Material Incidents (including nuclear material releases)	2	4	1	2	9
Infectious Disease	2	1	3	3	9
Flash Flood	2	3	1	2	8
Violent Winter Storms	2	1	3	2	8
Extreme Heat	2	1	3	2	8
Extreme Cold	2	1	3	2	8
Terrorism	1	4	1	1	7
Drought	1	1	3	2	7
Water Supply Contamination (including Wastewater Treatment Plant Failure)	1	1	2	1	5
Wildfire	1	2	1	1	5
Overland Flood	1	1	1	1	4
Landslide*	1	1	1	1	4
Dam Failure	NA	NA	NA	NA	NA

\*New Hazards considered in 2016

### General Land Use

Figure 2 depicts general land use in Apple Valley, with residential (single- and multi-family) being the predominant land use.

### Structural Inventory Value

Table 4 provides a current total and estimated value for structures in the City of Apple Valley. Data are from the Dakota County's Offices of Assessor Services and Geographic Information Services. Structures identified as residential, commercial, industrial, and agricultural have the types of structures associated with those land uses. "Exempt" includes all buildings not subject to property taxes, such as government buildings, schools, and places of worship. "Utilities" includes fixed sites with infrastructure for electricity, sewer, and water. "Other" includes structures that do not fall into preceding categories.

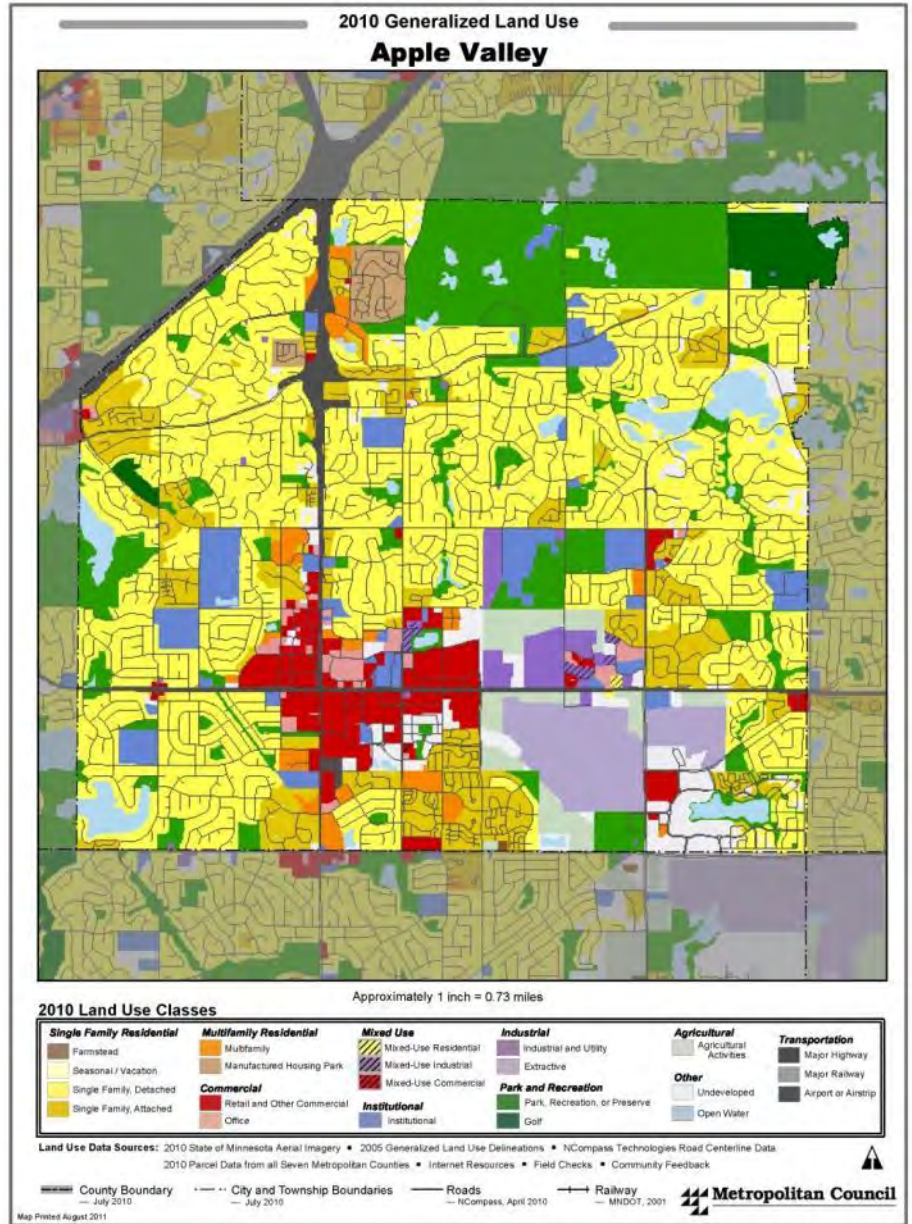


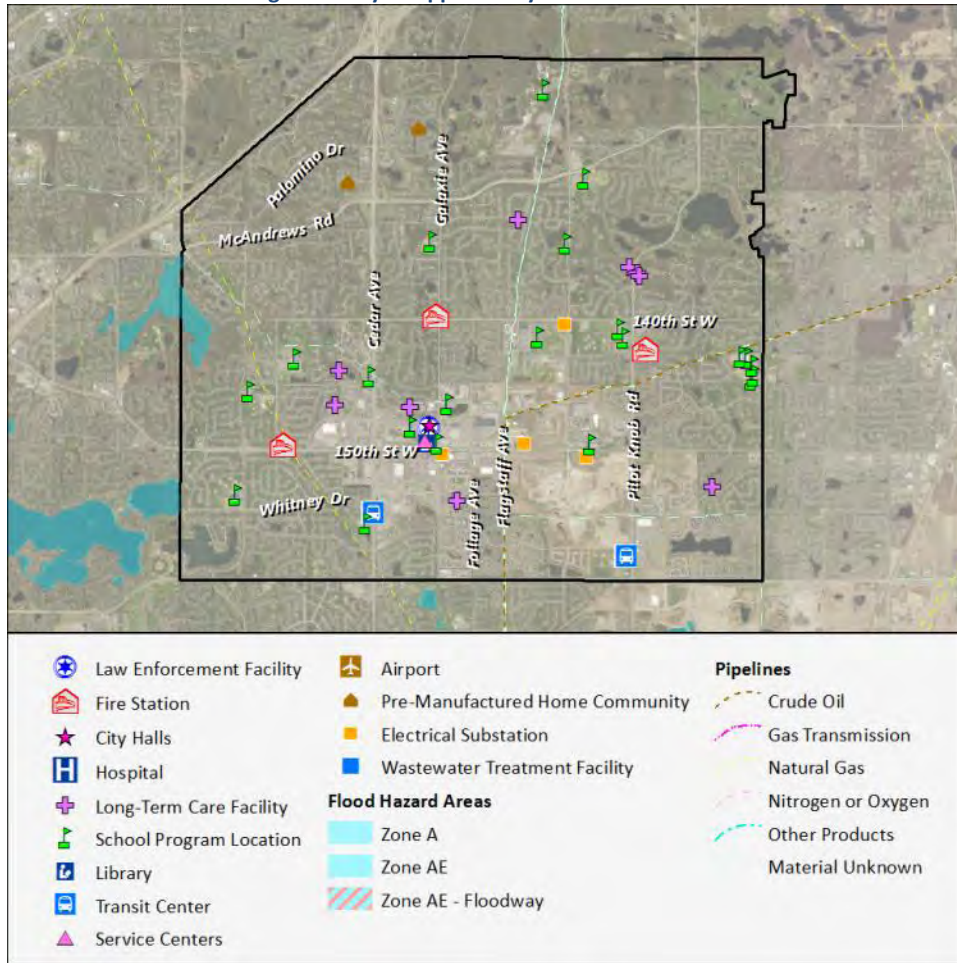
Figure 2: Apple Valley 2010 Land Use Map, Metropolitan Council

Table 4: Structural Inventory and Value, Apple Valley

Use Type	Number of Structures	Structural Value	Land Value	Total Value
Agricultural	10	\$377,500	\$4,788,000	\$5,165,500
Commercial	297	\$268,696,300	\$209,196,900	\$477,893,200
Exempt	435	\$271,560,000	\$152,131,100	\$423,691,100
Industrial	14	\$8,256,800	\$24,318,700	\$32,575,500
Other	73	\$968,400	\$355,600	\$1,324,000
Residential	15,576	\$3,273,264,200	\$1,097,567,400	\$4,370,831,600
Utilities	21	\$6,725,600	\$6,251,500	\$12,977,100
<b>TOTAL</b>	<b>16,426</b>	<b>\$3,829,848,800</b>	<b>\$1,494,609,200</b>	<b>\$5,324,458,000</b>





**Figure 3: City of Apple Valley – Critical Facilities**

### National Flood Insurance Program Participation

Table 7 includes information on Apple Valley's participation in the National Flood Insurance Program (NFIP). Additional information follows about City compliance with the terms of the NFIP.

**Table 7: Apple Valley NFIP Participation**

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Apple Valley	270050	12/02/11	27	\$6,119,000

### Compliance

The City of Apple Valley Code Enforcement Department monitors compliance. In addition, all building plans are ensured to be compliant with the ordinance. In 2006, the City of Apple Valley was approved for eligibility in the National Flood Insurance Program (NFIP). The NFIP is a federal program enabling property owners in participating communities to purchase insurance protection against losses from flooding. This insurance is designed to provide an alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents by floods. At the time of this approval, no flood-prone areas were designated by Federal Emergency Management Agency (FEMA).

In 2003, prior to our eligibility approval, Dakota County partnered with FEMA to complete a new county-wide floodplain study. The study was funded with more than \$500,000 in federal grants, which produced new digital Flood Insurance Rate Maps (FIRMs) and a flood insurance study as part of the NFIP. In June 2011, FEMA approved the new FIRMs and insurance study. These changes included the identification of two areas in Apple Valley designated in zone AE, which identified as areas having a one percent chance of experiencing a flood each year. These areas include up to 42 residential properties located directly adjacent to Alimagnet and Keller lakes in the western part of the city. These properties would be required to get flood insurance only when getting a loan for insurable structures that are located within the zone. Because the new zone does not encroach beyond the minimum 75-foot building setback from the ordinary high water line, as established in the City's shoreland overlay district, it does not appear that any building construction would occur within the newly established FIRM zone. Therefore, flood insurance would likely not be mandatory. The remainder of the city is located in zone X, which is an area outside the 500-year flood, which means it has a less than 0.2 percent chance to flood annually. These areas are sometimes referred to as unmapped areas because FEMA does not provide FIRM panels for those parts of the city.

Table 8 provides an inventory and assessed value of structures in the City of Apple Valley located within the digital flood insurance rate map (DFIRM) boundaries. Structures are listed by predominant land use categories. The table was compiled with data from the Dakota County Office of GIS and Assessor's Office.

**Table 8: Total Floodplain Structure and Value Inventory, Apple Valley**

Structure Type	Total Structures	Estimated Land Value	Estimated Building Value	Total Value
Residential	1	\$256,300	\$239,900	\$426,200
<b>Total</b>	<b>1</b>	<b>\$256,300</b>	<b>\$239,900</b>	<b>\$426,200</b>

### Strategy Review and Development

In 2016, Apple Valley staff reviewed strategies from the 2011 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2016 Plan update as ongoing efforts or project that have not been completed. City staff considered and addressed FEMA requirements for:

1. A mitigation strategy that identifies and analyzes a comprehensive range of specific mitigation actions and projects and further identifies which actions were selected for implementation
2. At least one strategy to reduce risk to buildings and infrastructure

City staff also developed new strategies reflective of remaining concerns and vulnerabilities. Table 8 presents Apple Valley's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

**Table 8: Apple Valley Strategies****APPLE VALLEY MITIGATION STRATEGIES, 2016****1. Provide NIMS and Hazmat training to all police department employees***Priority:* High (19)<sup>^</sup>*Lead:* Police Dept., FTO Training Sgt.*Implementation:**Hazards:* Multiple*Status-Completion:* Ongoing*Est. Cost/Funding Source:* \$500, local budget**2. Complete and update emergency medication dispensing planning for City of Apple Valley***Priority:* High (20)*Lead:* Police Dept., Chief*Implementation:**Hazards:* Terrorism, Infectious Disease*Status / Completion:* New / by June 2016*Est. Cost/Funding Source:* none / N/A**3. Identify emerging and local terrorism risks/concerns through regular involvement with the FBI Joint Terrorism Executive Task Force Executive Board***Priority:* High (19)*Lead:* Police Dept., Chief*Implementation:**Hazards:* Terrorism*Status / Completion:* Ongoing*Est. Cost/Funding Source:* none / N/A**4. Install sprinkling system into the Hayes Community Center building\****Priority:* High (19)*Lead:* Parks Dept., Director; Fire Dept., Chief*Implementation:**Hazards:* Structural Fire*Status / Completion:* New / by December 2016*Est. Cost/Funding Source:* \$150,000 / local budget**5. Continue 2020 Flood Mitigation: Galaxie Ave. and Garden View Dr.\*\****Priority:* Med (18)*Lead:* Public Works, Director*Implementation:* Capital Improvement Program*Hazards:* Flooding*Status / Completion:* Existing, by December 31, 2020*Est. Cost/Funding Source:* \$750,000 / local budget**6. Continue annual infrastructure inspection/maintenance program***Priority:* Med (17)*Lead:* Public Works, Director*Implementation:**Hazards:* Flooding, Water Supply Contamination*Status / Completion:* Ongoing*Est. Cost/Funding Source:* \$1,000,000 / local budget**7. Update and implement the City of Apple Valley Emergency Operations Plan (EOP)***Priority:* Low (15)*Lead:* Police Dept., Chief*Implementation:**Hazards:* Multiple*Status / Completion:* New / by December 1, 2016*Est. Cost/Funding Source:* \$7,000 / local budget**8. Regularly train with Apple Valley Fire Dept. relating to coordinated response (3-Echo) including hands on scenario based training***Priority:* Low (15)*Lead:* Police Dept., Chief*Implementation:**Hazards:* Terrorism*Status / Completion:* Ongoing*Est. Cost/Funding Source:* \$500 / local budget

\*Reduces risk to buildings or infrastructure

\*\* Evaluates comprehensive range of specific mitigation actions/projects; identifies which were selected for implementation

<sup>^</sup>Modified STAPLEE evaluation score; higher scores generally correlated to fewer implementation barriers



## Implementation Resources

Table 10 identifies Apple Valley staff resources and their roles in implementing its mitigation strategies.

**Table 10: Apple Valley Mitigation Implementation Resources**

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
<b>Building Inspections</b> , City Building Inspector	Building inspections, regulation of new housing development	Enforce safety restrictions including setbacks, building materials, spacing, and location to hydrants in new construction areas
<b>Planning and Zoning</b> , Planning Director	Zoning, development siting, and restrictions, Comprehensive Plans	Enforce floodplain ordinances and compliance, proper land use per ordinances
<b>Police</b> , Police Chief	Public safety and law enforcement, emergency response	Emergency response, incident command training, training for public safety, city, schools, and businesses
<b>Public Works</b> , Public Works Director	Development and operations of public infrastructure (roads, utilities)	City well inspections and maintenance, 24-7 callout availability, partnership with all city departments
<b>Fire Department</b> , Fire Chief	Public and fire safety enforcement, emergency response	Inspect commercial buildings for code compliance, input into building phase of new construction, training with police on coordinated response

Table 11 identifies Apple Valley's implementation resources related to processes and ordinances.

**Table 11: Apple Valley Additional Implementation Resources**

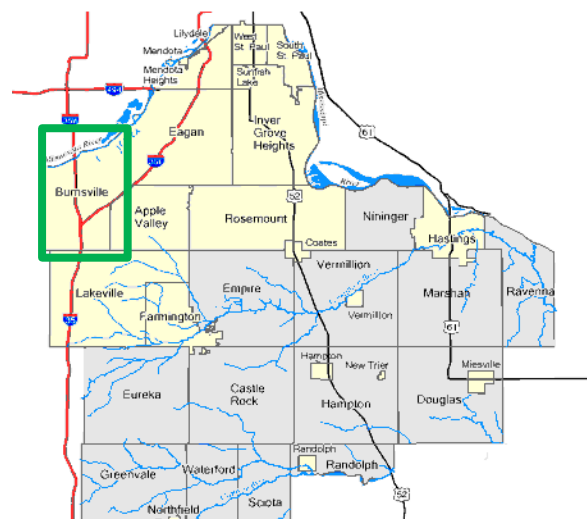
Program/Ordinance/Study/Technical Document	Adopted or Revised	Method of incorporation into the hazard mitigation plan
1. Surface Water Management Plan	2008	Planning document for local drainage system
2. Capital Improvement Program	2016	Infrastructure upgrades to support hazard mitigation
3. Annual Budget	2016	Allocates annual operational funding for departments and staff implementing the City's mitigation strategies
4. NIMS Compliance	2009	Continued education for new and existing employees

## CITY OF BURNSVILLE

**Table 1: Burnsville Community Data**

<b>Population (2014):</b>	61,747
<b>Households:</b>	24,960
<b>Employment/Jobs:</b>	34,664
<b>Area:</b>	27.0 Sq. Mi.
<b>Major Land Uses:</b>	41% Residential 18% Parks/Recreation 11% Commercial & Institutional 9% Industrial
<b>Community Type:</b>	Suburban
<b>Undeveloped Area:</b>	8%

Source: Metropolitan Council Community Profiles



**Figure 1: City of Burnsville Location**

## Hazards of Concern

Burnsville staff evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

**Table 2: Dakota County Hazard Rating Model**

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
<b>Frequency</b>	Unlikely: <1% chance in 100 years	Occasional: 1 to 10% chance in next year	Likely: >10 to <100% chance in next year	Highly Likely: 100% chance in next year
<b>Warning Time</b>	More than 12 hours	6-12 hours	3-6 hours	None-minimal
<b>Geographic Extent</b>	Localized	Community-wide	County-wide or greater	
<b>Likely Impact</b>	Negligible	Limited	Critical	Catastrophic

**Table 3: Burnsville Hazard Rating**

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Tornado	2	3	3	4	13
Cyber Security Threats	3	4	2	3	12
Violent Summer Storms	3	3	2	3	11
Terrorism	1	4	2	4	11
Structural Fire	4	4	1	1	10
Hazardous Material Incidents (includes nuclear material release)	4	4	1	1	10
Flash Flood	3	3	1	3	10
Violent Winter Storms	3	1	3	2	9
Overland Flood	2	1	3	3	9
Drought	2	1	3	3	9
Extreme Heat	3	1	3	2	9
Extreme Cold	3	1	3	2	9
Water Supply Contamination, Wastewater Plant Failure	1	2	2	3	8
Landslide	2	3	1	2	8
Infectious Disease	2	1	3	1	7
Wildfire	2	2	1	2	7
Dam Failure	1	2	1	3	7

\*New Hazards considered in 2016

## General Land Use

Figure 2 depicts general land use in Burnsville, with residential (single- and multi-family) being the predominant land use.

## Structural Inventory Value

Table 4 provides a current total and estimated value for structures in the City of Burnsville. Data are from the Dakota County's Offices of Assessor Services and Geographic Information Services. Structures identified as residential, commercial, industrial, and agricultural have the types of structures associated with those land uses. "Exempt" includes all buildings not subject to property taxes, such as government buildings, schools, and places of worship. "Utilities" includes fixed sites with infrastructure for electricity, sewer, and water. "Other" includes structures that do not fall into preceding categories.

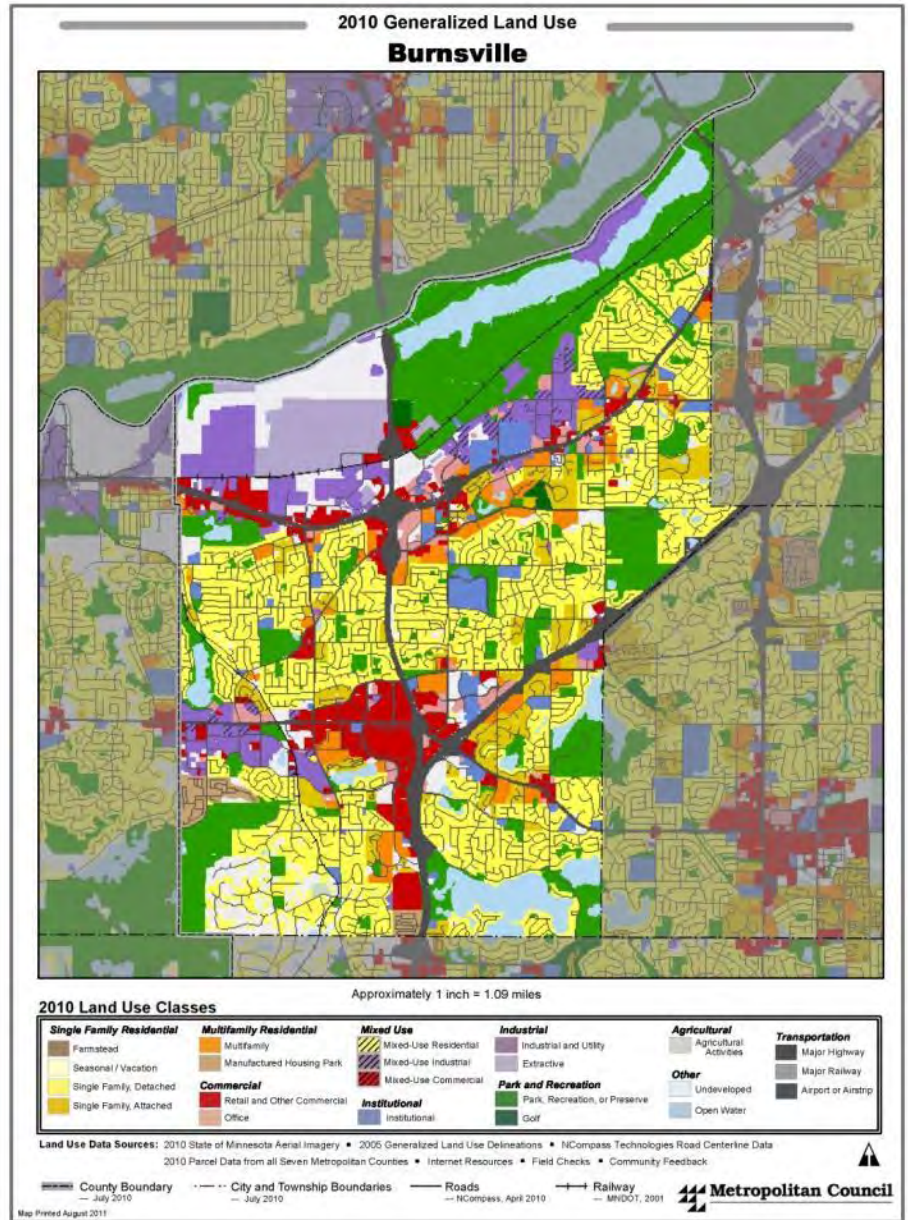


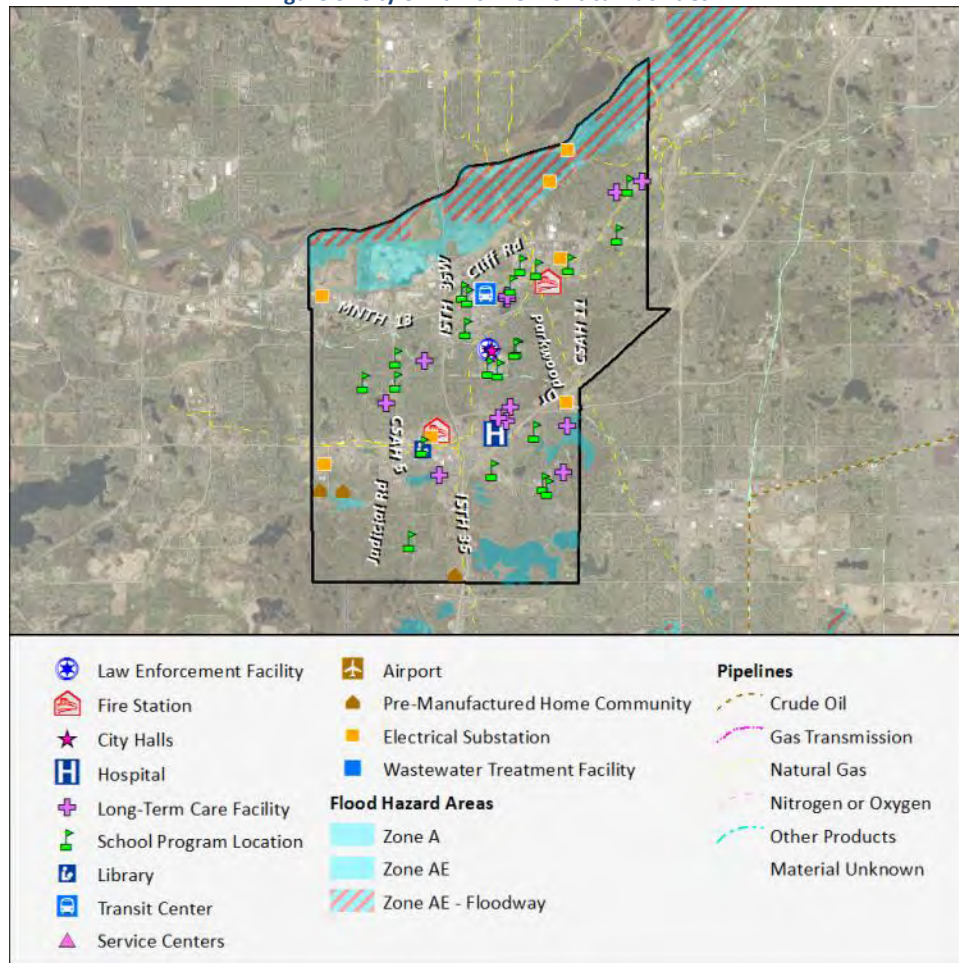
Figure 2: Burnsville 2010 Land Use Map, Metropolitan Council

Table 4: Structural Inventory and Value, Burnsville

Use Type	Number of Structures	Structural Value	Land Value	Total Value
Commercial	746	\$665,734,400	\$401,294,700	\$1,067,029,100
Exempt	372	\$243,129,300	\$132,553,300	\$375,682,600
Industrial	179	\$108,537,800	\$97,726,200	\$206,264,000
Other	54	\$1,178,500	\$345,800	\$1,524,300
Residential	17,311	\$3,427,801,600	\$1,079,253,100	\$4,507,054,700
Utilities	189	\$128,033,500	\$22,262,200	\$150,295,700
<b>TOTAL</b>	<b>18,851</b>	<b>\$4,574,415,100</b>	<b>\$1,733,435,300</b>	<b>\$6,307,850,400</b>





**Figure 3: City of Burnsville – Critical Facilities**

### National Flood Insurance Program Participation and Compliance

Table 7 includes information on Burnsville's participation in the National Flood Insurance Program (NFIP). Additional information follows about City compliance with the terms of the NFIP.

**Table 7: Burnsville NFIP Participation**

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Burnsville	270102	12/02/2011	32	\$9,305,300

### Compliance:

City of Burnsville Floodplain Regulations (City Code Chapter 10), Ordinance 1250 (October 8, 2011), and the Burnsville Official Zoning Map together govern allowable uses in the floodway, flood fringe, and general floodplain districts. The City Planner administers and enforces the terms of this ordinance. Violations of the City Code Floodplain Chapter constitute a misdemeanor subject to prosecution.

Table 8 provides an inventory and assessed value of structures in the City of Burnsville located within the digital flood insurance rate map (DFIRM) boundaries. Structures are listed by predominant land use categories. The table was compiled with data from the Dakota County Office of GIS and Assessor's Office.

**Table 8: Total Floodplain Structure and Value Inventory, Burnsville**

Structure Type	Total Structures	Estimated Land Value	Estimated Building Value	Total Value
Exempt	12	\$23,900	\$0	\$23,900
Industrial	14	\$8,109,800	\$2,571,200	\$10,681,000
Residential	55	\$25,677,300	\$7,628,600	\$33,305,900
Utilities	116	\$9,646,200	\$110,053,400	\$119,699,600
<b>Total</b>	<b>197</b>	<b>\$43,457,200</b>	<b>\$120,253,200</b>	<b>\$163,710,400</b>

### Strategy Review and Development

In 2016, Burnsville staff reviewed their strategies from the 2011 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2016 Plan update as ongoing efforts or project that have not been completed. City staff considered and addressed FEMA requirements for:

1. A mitigation strategy that identifies and analyzes a comprehensive range of specific mitigation actions and projects and further identifies which actions were selected for implementation
2. At least one strategy to reduce risk to buildings and infrastructure

City staff also developed new strategies reflective of remaining concerns and vulnerabilities. Table 9 lists Burnsville's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

**Table 9: Burnsville All-Hazard Mitigation Plan Strategies**

#### **BURNSVILLE MITIGATION STRATEGIES, 2016**

##### **1. Enhance Information Technology/Fiber Optic Security**

*Priority:* High (21)

*Lead:* COB

*Implementation:* CDA JPA Broadband Assets Inventory;  
COB Fiber Vault condition review project

*Hazards:* Water Supply Contamination, Tornado, Terrorism

*Status/Completion:* Existing / by October 1, 2017

*Est. Cost/Funding Source:* \$20,000 / Water, Sewer, IT  
Enterprise funds

##### **2. Replace aging sewer lines\***

*Priority:* High (21)

*Lead:* City Engineer

*Implementation:* Capital Improvement Plan

*Hazards:* Flash Flood, Backups

*Status/Completion:* Ongoing

*Est. Cost/Funding Source:* Varies / CIP Funds

##### **3. Establish a process to increase monitoring-patrol of identified MANPADS sites**

*Priority:* Low (17)

*Lead:* Police Dept., Chief

*Implementation:* Emergency Operations Planning (EOP)

*Hazards:* Terrorism

*Status/Completion:* Ongoing

*Est. Cost/Funding Source:* Staff time / Budget



**BURNSVILLE MITIGATION STRATEGIES, 2016****4. Continue Emergency Siren Maintenance Plan***Priority:* Med (19)<sup>^</sup>*Lead:* Emergency Management Coordinator*Implementation:* EOP*Hazards:* Natural Disasters, Weather Events*Status/Completion:* Existing / by Summer 2016*Est. Cost/Funding Source:* \$8,000 yearly / Budget**5. Maintain Active List of All 302 Facilities***Priority:* High (21)*Lead:* Emergency Management Coordinator*Implementation:* EOP*Hazards:* Hazardous Materials, Weather Events*Status/Completion:* Existing / Ongoing*Est. Cost/Funding Source:* Staff time / Budget**6. Conduct EOC Drill Annually***Priority:* Med (18 )*Lead:* Emergency Management Coordinator*Implementation:* EOP*Hazards:* All*Status/Completion:* Existing / each October*Est. Cost/Funding Source:* Staff time / Budget**7. Continue NIMS Training for City Staff***Priority:* Low (17)*Lead:* Emergency Mgmt. Coordinator, Police Chief*Implementation:* EOP*Hazards:* Multiple*Status/Completion:* Existing / Ongoing*Est. Cost/Funding Source:* Staff time / Budget**8. Complete Sunset Dam EAP Update***Priority:* High (21)*Lead:* Public Works Director*Implementation:* Dam EAP*Hazards:* Flooding*Status/Completion:* Existing / Summer 2016*Est. Cost/Funding Source:* \$20,000 / Stormwater Fund**9. Continue Fire Prevention Programs***Priority:* Low (17)*Lead:* Fire Chief*Implementation:* Fire Prevention Programs*Hazards:* Structural Fire*Status/Completion:* Existing / Ongoing*Est. Cost/Funding Source:* \$5,000 / Budget

\*Reduces risk to buildings or infrastructure

\*\* Evaluates comprehensive range of specific mitigation actions/projects; identifies which were selected for implementation

<sup>^</sup>Modified STAPLEE evaluation score; higher scores generally correlated to fewer implementation barriers**Implementation Resources**

Table 11 identifies Burnsville staff roles in implementing mitigation strategies.

**Table 11: Burnsville Staff Implementation Resources**

<b>Department, Responsible Position</b>	<b>General Role</b>	<b>Processes and Tool for Implementing Mitigation Strategies</b>
<b>Building Inspections, City Building Inspector</b>	Building inspections, regulation of new housing development	<i>Enforce current codes related to building and property maintenance</i>
<b>Planning and Zoning, Planning Director</b>	Zoning, development siting and restrictions, Comprehensive Plans	<i>Follow the Floodplain Regulations set forth in City code</i>
<b>Police, Police Chief</b>	Public safety and law enforcement, emergency response	<i>Provide response training to all current and new employees through annual training and Field Training processes; Community outreach programs through the</i>

SECTION VI – PARTICIPATING CITY RISKS, STRATEGIES, AND PRIORITIES

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
		<i>community resource division, Blue in the School program, and other committees</i>
<b>Public Works, Public Works Director</b>	Development and operations of public infrastructure (roads, utilities)	<i>Follow the replacement schedule for infrastructure and capital improvement plans</i>
<b>Fire Department, Fire Chief</b>	Public and fire safety enforcement, emergency response	<i>Inspect commercial buildings, Plan review, CERT training for community, Public Education, community engagement through various committees and partnerships</i>

Table 12 identifies Burnsville’s policy and technical resources for implementing mitigation strategies.

**Table 12: Burnsville Technical Implementation Resources**

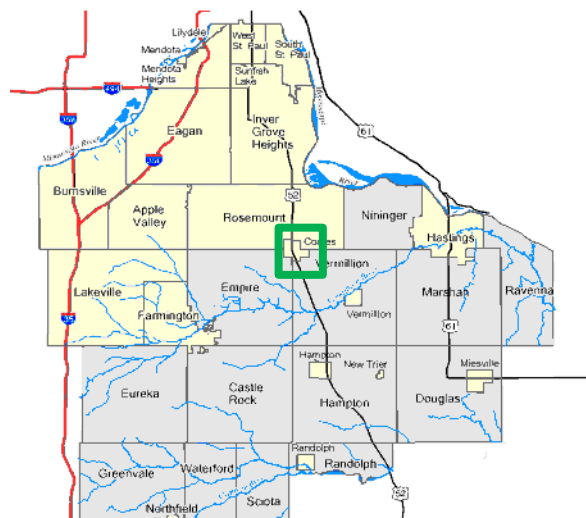
Burnsville Program/Policy/Technical Documents	Year adopted/revised	Method of incorporation into the hazard mitigation plan
<b>Emergency Operations Plan</b>	12/2015	Used city wide for Emergency Operations
<b>BPD Policy Manual</b>	2016	Directs PD staff at emergency incidents
<b>BFD Policy Manual</b>	05/2016-Ongoing	Directs FD staff at emergency incidents
<b>Water Resource Management Plan</b>	05-20-02; 09-02-08 Updated; 06-03-14 Updated; 11-02-15 Authorized update	Used for Evaluating storm water issues and CIP improvements
<b>NPDES Permit</b>	04-07-15 Adopt Policy 5.155 Annual-2016	Must Manage the City's storm water facilities
<b>2030 Comprehensive Plan</b>	2010	Provides overall direction for future development/operations
<b>Uniform Building and Fire Codes</b>	Building: 11-16-64/many amendments Fire: 02-04-80/many amendments	Standards for new construction and remodeling
<b>Zoning Ordinance</b>	02-15-65 Ord. #47/many amendments	Flood related building standards
<b>Water Supply Plan</b>	05/15/2009	Has Emergency Action Plan
<b>Chlorine Release Risk Management/Process Safety Management Plan</b>	No longer required due to elimination of Chlorine Gas System at Plant in 2014	No Longer Used in City facilities
<b>Public Safety Mutual Aid Documents</b>	Multiple documents and updates	Guides neighboring cities in providing public safety assistance to each other during emergencies
<b>Public Works Mutual Aid Document</b>	Multiple documents and updates	Guides neighboring cities in providing public works assistance to each other during emergencies

## CITY OF COATES

**Table 1: Coates Community Data**

<b>Population (2014):</b>	157
<b>Households:</b>	65
<b>Employment/Jobs:</b>	123
<b>Area:</b>	1.4 Sq. Mi.
<b>Major Land Uses:</b>	75% Agricultural/Undeveloped 7% Industrial 5% Residential
<b>Community Type:</b>	Diversified Rural
<b>Undeveloped Area:</b>	75%

Source: Metropolitan Council Community Profiles



**Figure 1: City of Coates Location**

## Hazards of Concern

Coates staff evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

**Table 2: Dakota County Hazard Rating Model**

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
<b>Frequency</b>	Unlikely: <1% chance in 100 years	Occasional: 1 to 10% chance in next year	Likely: >10 to <100% chance in next year	Highly Likely: 100% chance in next year
<b>Warning Time</b>	More than 12 hours	6-12 hours	3-6 hours	None-minimal
<b>Geographic Extent</b>	Localized	Community-wide	County-wide or greater	
<b>Likely Impact</b>	Negligible	Limited	Critical	Catastrophic

**Table 3: Coates Hazard Rating**

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Terrorism	1	4	3	4	12
Tornado	2	1	2	4	9
Structural Fire	2	4	1	2	9
Hazardous/Nuclear Material Incidents	1	4	1	3	9
Wildfire	1	2	3	3	9
Summer Storms	2	1	2	3	8
Winter Storms	2	1	2	3	8
Infectious Disease	1	1	2	3	7
Extreme Heat	1	1	3	2	7
Extreme Cold	1	1	3	2	7
Drought	1	1	2	2	6
Flash Flood	N/A	N/A	N/A	N/A	
Water Supply Contamination, including WWTP Failure	N/A	N/A	N/A	N/A	
Overland Flood	N/A	N/A	N/A	N/A	
Dam Failure	N/A	N/A	N/A	N/A	
Landslide	N/A	N/A	N/A	N/A	
Cyber Security					

\*New Hazards considered in 2016

### General Land Use

Figure 2 depicts general land use in Coates, with agriculture being the predominant land use.

### Structural Inventory Value

Table 4 provides a current total and estimated value for structures in the City of Coates. Data are from the Dakota County's Offices of Assessor Services and Geographic Information Services. Structures identified as residential, commercial, industrial, and agricultural have the types of structures associated with those land uses. "Exempt" includes all buildings not subject to property taxes, such as government buildings, schools, and places of worship. "Utilities" includes fixed sites with infrastructure for electricity, sewer, and water. "Other" includes structures that do not fall into preceding categories.

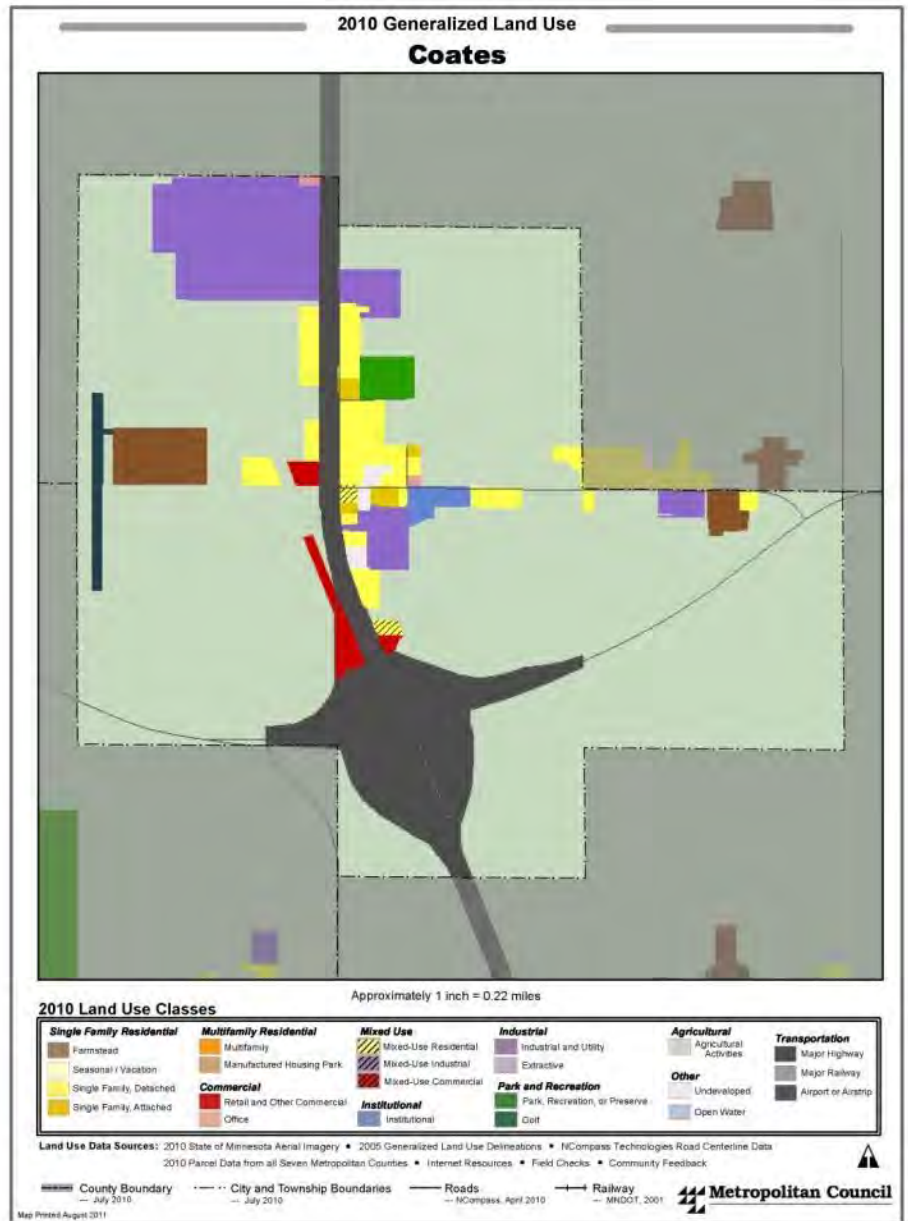


Figure 2: Coates 2010 Land Use Map, Metropolitan Council

Table 4: Structural Inventory and Value, Coates

Use Type	Number of Structures	Structural Value	Land Value	Total Value
Agricultural	14	\$384,900	\$4,778,800	\$5,163,700
Commercial	27	\$2,109,400	\$1,702,100	\$3,811,500
Exempt	2	\$213,200	\$790,700	\$1,003,900
Industrial	8	\$2,570,200	\$1,366,300	\$3,936,500
Residential	97	\$7,102,300	\$2,572,500	\$9,674,800
<b>TOTAL</b>	<b>148</b>	<b>\$12,380,000</b>	<b>\$11,210,400</b>	<b>\$23,590,400</b>

## Vulnerability

### Vulnerable Populations

Table 5 provides current estimates of populations in Coates considered by FEMA to be at potentially increased risk during hazard events.

**Table 5: Coates Potentially Vulnerable Populations, American Community Survey 2010-2014 Estimates**

Potentially Vulnerable Population	Number (#)	Percentage (%)	U.S. (%)	Coates, MN – U.S. Difference
Under Age 5	7	5.0%	6.4%	-1.5%
Over Age 65	17	12.1%	13.7%	-1.6%
Below Federal Poverty Line	8	5.7%	15.6%	-9.9%
Living with a Disability	12	8.6%	12.3%	-3.7%

### Vulnerability of Critical Assets to Hazards

Coates staff evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table 6. Figure 3 provides general locations for selected critical assets in Coates.

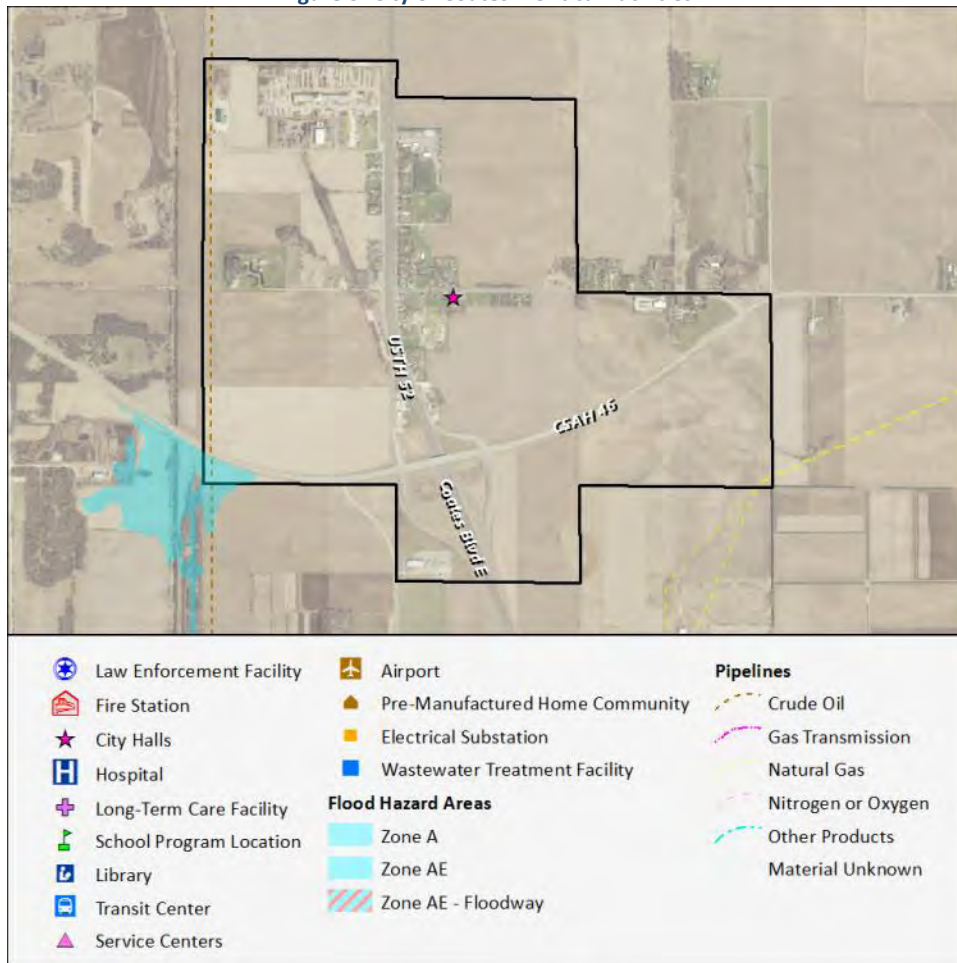
**Table 6: Assessment of Critical Assets**

Critical Facilities	Summer Storms	Tornado	Structure Fire	Hazmat Incidents	Flash Flood	Winter Storms	Infectious Disease	Water Supply Contamination	Overland Flood	Terrorism	Wildfire	Drought	Extreme Temps	Cyber Threats

### Changes since the 2011 Plan

City staff identified land use changes and additions to critical facilities since the last plan update in 2011:

- No development has occurred in hazard-prone areas since the 2011 Plan update.

**Figure 3: City of Coates – Critical Facilities**

### National Flood Insurance Program Participation and Compliance

The City of Coates does not participate in the NFIP and has no structures identified to be within the digital flood insurance rate map (DFIRM) boundaries.

### Strategy Review and Development

In 2016, Coates staff reviewed strategies from the 2011 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2016 Plan update as ongoing efforts or project that have not been completed. City staff considered and addressed FEMA requirements for:

1. A mitigation strategy that identifies and analyzes a comprehensive range of specific mitigation actions and projects and further identifies which actions were selected for implementation
2. At least one strategy to reduce risk to buildings and infrastructure

City staff also developed new strategies reflective of remaining concerns and vulnerabilities. Table 7 presents Coates's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.



**Table 7: Coates All-Hazard Mitigation Plan Strategies****COATES MITIGATION STRATEGIES, 2016****1. Maintain warning sirens\****Priority:* High (16)*Lead:* City Administration*Implementation:* Yearly inspections*Hazards:* Violent Storms, Tornado*Status/Completion:* Existing / ongoing*Est. Cost/Funding Source:* \$1,000 / City budget**2. Grade roads to repair damage from flash floods\****Priority:* High (16)*Lead:* Street Department,*Implementation:* As needed*Hazards:* Flash Flood*Status/Completion:* Ongoing*Est. Cost/Funding Source:* \$1,000 / City budget

\*Reduces risk to buildings or infrastructure

\*\* Evaluated a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

^Modified STAPLEE evaluation score; higher scores generally correlated to fewer implementation barriers

**Implementation Resources**

Table 8 identifies Coates staff resources and roles in implementing its mitigation strategies. Table 9 identifies implementation resources related to processes and ordinances.

**Table 8: Coates Mitigation Implementation Resources**

<b>Department, Responsible Position</b>	<b>General Role</b>	<b>Processes and Tool for Implementing Mitigation Strategies</b>
<b>Building Inspections,</b> contracted to Ron Wassman	Building inspections, regulation of new housing development	<i>e.g., enforce safety restrictions including setbacks, building materials and fire suppression systems</i>
<b>Planning and Zoning,</b> contracted to Dean Johnson	Zoning, development siting and restrictions, Comprehensive Plans	<i>e.g., floodplain ordinances and compliance</i>
<b>Police,</b> Dakota County Sheriff	Public safety and law enforcement, emergency response	<i>e.g., city well inspection and maintenance</i>

**Table 9: Coates Additional Implementation Resources**

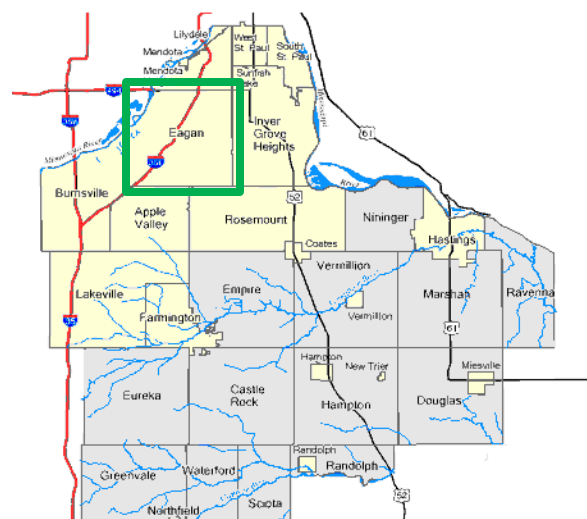
<b>Program/Ordinance/Study/ Technical Document</b>	<b>Adopted or Revised</b>	<b>Method of incorporation into the hazard mitigation plan</b>

## CITY OF EAGAN

**Table 1: Eagan Community Data**

<b>Population (2014):</b>	66,810
<b>Households:</b>	26,252
<b>Employment/Jobs:</b>	55,824
<b>Area:</b>	33.5 Sq. Mi.
<b>Major Land Uses:</b>	39% Residential 19% Parks/Recreation 12% Agricultural/Undeveloped 7% Industrial
<b>Community Type:</b>	Suburban
<b>Undeveloped Area:</b>	12%

Source: Metropolitan Council Community Profiles



**Figure 1: City of Eagan Location**

## Hazards of Concern

Eagan staff evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

**Table 2: Dakota County Hazard Rating Model**

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
<b>Frequency</b>	Unlikely: <1% chance in 100 years	Occasional: 1 to 10% chance in next year	Likely: >10 to <100% chance in next year	Highly Likely: 100% chance in next year
<b>Warning Time</b>	More than 12 hours	6-12 hours	3-6 hours	None-minimal
<b>Geographic Extent</b>	Localized	Community-wide	County-wide or greater	
<b>Likely Impact</b>	Negligible	Limited	Critical	Catastrophic

**Table 3: Eagan Hazard Rating**

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Cyber Threats*	4	4	2	3	13
Wildfire	4	4	2	3	13
Structural Fire	4	4	1	2	11
Violent Summer Storms	3	3	2	2	10
Water Supply Contamination, Wastewater Treatment Plant Failure	1	4	2	3	10
Hazardous/Nuclear Material Incidents	2	4	1	2	9
Flash Flood	3	3	1	2	9
Infectious Disease	2	2	3	2	9
Terrorism	2	4	1	2	9
Drought	3	1	3	2	9
Tornado	2	3	1	2	8
Violent Winter Storms	2	1	3	2	8
Extreme Heat	3	1	3	1	8
Extreme Cold	3	1	3	1	8
Landslide*	2	4	1	1	8
Overland Flood	3	1	1	2	7
Dam Failure	n/a	n/a	n/a	n/a	n/a

\*New Hazards considered in 2016

### General Land Use

Figure 2 depicts general land use in Eagan, with residential (single- and multi-family) being the predominant land use.

### Structural Inventory Value

Table 4 provides a current total and estimated value for structures in the City of Eagan.

Data are from the Dakota County's Offices of Assessor Services and Geographic Information Services. Structures identified as residential, commercial, industrial, and agricultural have the types of structures associated with those land uses. "Exempt" includes all buildings not subject to property taxes, such as government buildings, schools, and places of worship. "Utilities" includes fixed sites with infrastructure for electricity, sewer, and water. "Other" includes structures that do not fall into preceding categories.

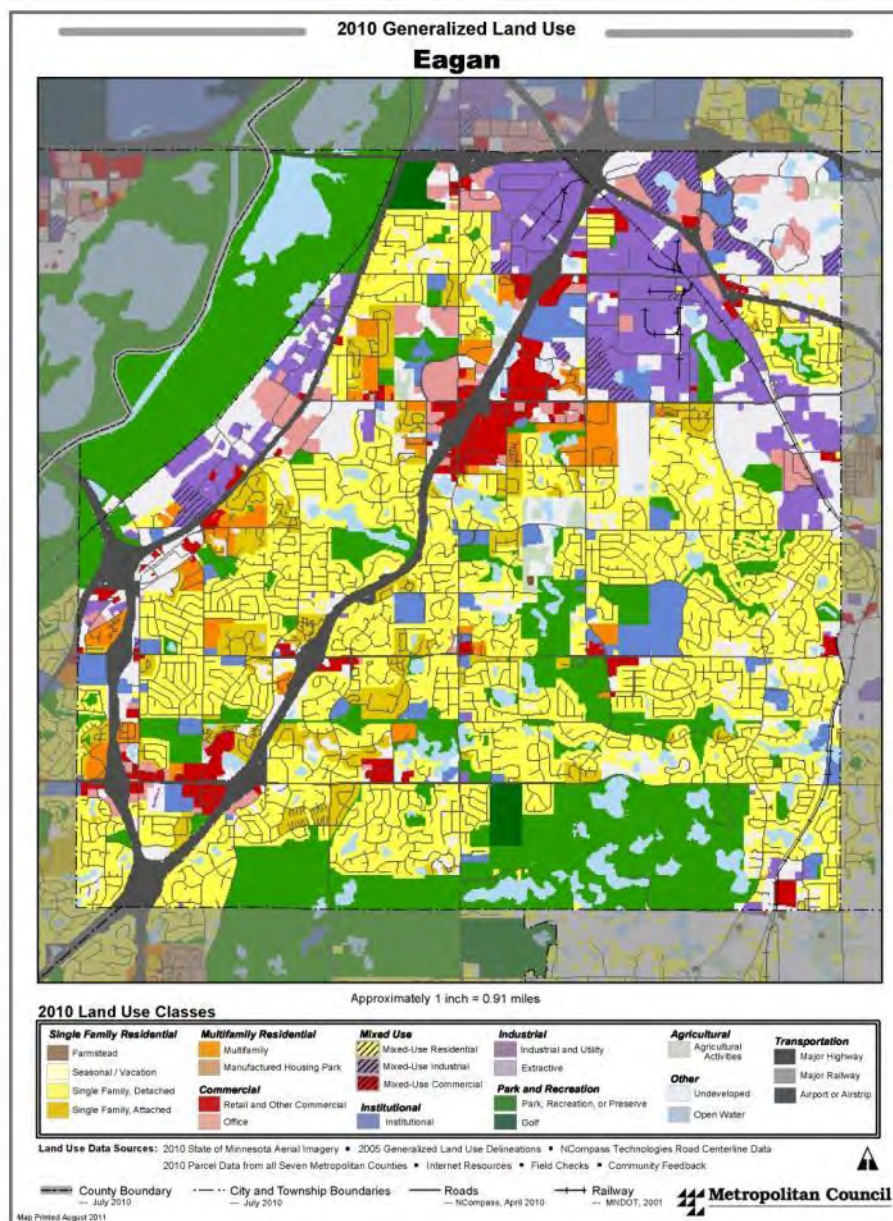


Figure 2: Eagan 2010 Land Use Map, Metropolitan Council

Table 4: Structural Inventory and Value, Eagan

Use Type	Number of Structures	Structural Value	Land Value	Total Value
Agricultural	9	\$76,300	\$14,137,300	\$14,213,600
Commercial	690	\$867,504,604	\$547,619,000	\$1,415,123,600
Exempt	430	\$323,777,200	\$303,797,600	\$627,574,800
Industrial	209	\$139,085,700	\$143,453,900	\$282,539,600
Other	7	\$1,186,700	\$362,500	\$1,549,200
Residential	19,332	\$4,562,788,600	\$1,424,706,500	\$5,987,495,100
Utilities	38	\$14,364,100	\$3,828,700	\$18,192,800
<b>TOTAL</b>	<b>20,715</b>	<b>\$5,908,783,204</b>	<b>\$2,437,905,500</b>	<b>\$8,346,688,700</b>

## Vulnerability

## Vulnerable Populations

Table 5 provides current estimates of populations in Eagan considered by FEMA to be at potentially increased risk during hazard events.

**Table 5: Eagan Potentially Vulnerable Populations, American Community Survey 2010-2014 Estimates**

Potentially Vulnerable Population	Number (#)	Percentage (%)	U.S. (%)	Eagan, MN – U.S. Difference
Under Age 5	4,026	6.2%	6.4%	-0.2%
Over Age 65	5,791	8.9%	13.7%	-4.8%
Below Federal Poverty Line	4,584	7.1%	15.6%	-8.5%
Living with a Disability	4,291	6.6%	12.3%	-5.7%

## Vulnerability of Critical Assets to Hazards

Eagan staff evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table 6. City staff identified *dam failure* as not relevant to critical facilities. Figure 3 provides general locations for selected critical assets in Eagan.

### Table 6: Eagan Assessment of Critical Assets

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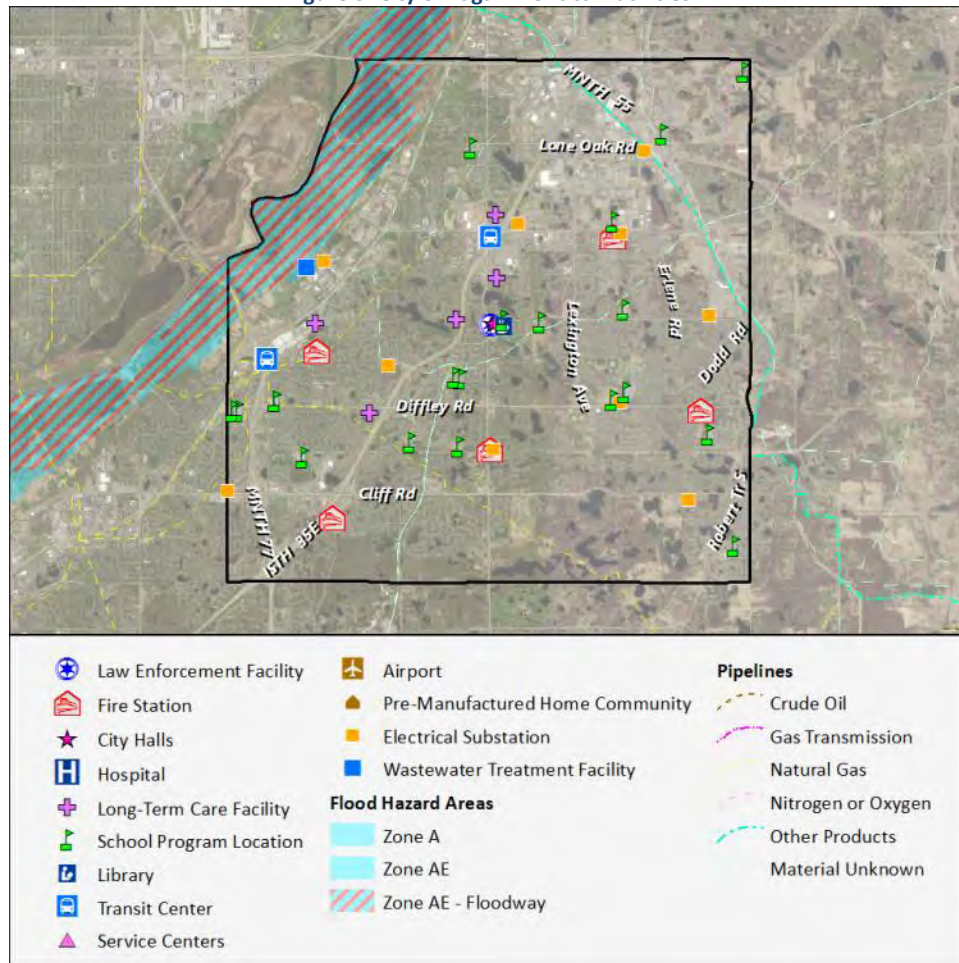
## Changes since the 2011 Plan

Eagan staff identified use changes and additions to critical facilities since the plan update in 2011:

- New Fire Station #2
- Regional Electric Management Facility MISO
- Twin Cities Premium Outlet Shopping Center
- Minnesota Vikings Training Facility (proposed but not constructed)



Figure 3: City of Eagan – Critical Facilities



### National Flood Insurance Program Participation and Compliance

Table 7 includes information on Eagan's participation in the National Flood Insurance Program (NFIP). Additional information follows about City compliance with the terms of the NFIP.

Table 7: Eagan NFIP Participation

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Eagan	270103	12/2/11	55	\$14,319,500

### Compliance:

Compliance is ensured through use of the City's official flood zoning map and enforcement of City Ordinances related to floodplain zones, allowed/prohibited uses, standards, addressing violations, plan review, and inspections.

Table 8 provides an inventory and assessed value of structures in Eagan located within the digital flood insurance rate map (DFIRM) boundaries. Structures are listed by predominant land use categories. The table was compiled with data from the Dakota County Office of GIS and Assessor's Office.

**Table 8: Total Floodplain Structure and Value Inventory, Eagan**

Structure Type	Total Structures	Estimated Land Value	Estimated Building Value	Total Value
Exempt	11	\$10,752,400	\$23,099,700	\$33,852,100
<b>Total</b>	<b>11</b>	<b>\$10,752,400</b>	<b>\$23,099,700</b>	<b>\$33,852,100</b>

## Strategy Review and Development

In 2016, Eagan staff reviewed their strategies from the 2011 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2016 Plan update as ongoing efforts or project that have not been completed. City staff considered and addressed FEMA requirements for:

1. A mitigation strategy that identifies and analyzes a comprehensive range of specific mitigation actions and projects and further identifies which actions were selected for implementation
2. At least one strategy to reduce risk to buildings and infrastructure

City staff also developed new strategies reflective of remaining concerns and vulnerabilities. Table 9 lists Eagan's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

**Table 9: Eagan All-Hazard Mitigation Plan Strategies**

### EAGAN MITIGATION STRATEGIES, 2016

**1. Complete implementation of the "Top Ten" items to address as identified from the preliminary security assessment.**

*Priority:* High

*Lead:* IT Department, IT Network Supervisor

*Implementation:* Risk and Information Security Committee (RISC)

*Hazards:* Cyber Security

*Status/Completion:* Existing / by 2018

*Est. Cost/Funding Source:* Staff time / City Budget

**2. Install an emergency generator at South Water Treatment Plant.**

*Priority:* High

*Lead:* Public Works, Utilities Superintendent

*Implementation:* Continuation of Utility improvements

*Hazards:* Summer Storms, Water Supply Contamination

*Status/Completion:* New / by 2017

*Est. Cost/Funding Source:* TBD / City Budget

**3. Continue storm water pond expansion and maintenance.**

*Priority:* High

*Lead:* Public Works, City Engineer

*Implementation:* Capital Improvement Program (CIP)

*Hazards:* Flash Flood

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* \$250,000 annually / Local, with County, State, or federal

**4. Adopt the 2015 Minnesota Fire Code.\***

*Priority:* Med

*Lead:* Fire Department, Fire Marshal

*Implementation:* City Council Adoption

*Hazards:* Structural Fire

*Status/Completion:* Existing / 2016

*Est. Cost/Funding Source:* Staff Time / City Budget



**EAGAN MITIGATION STRATEGIES, 2016****5. Conduct Internal and/or External Network Information Security Assessments and Penetration Tests.***Priority:* Med*Lead:* IT Department, IT Network Supervisor*Implementation:* Risk and Information Security Committee (RISC)*Hazards:* Cyber Security*Status/Completion:* Existing / TBD*Est. Cost/Funding Source:* \$8-16K (assess), \$20K (tests) / Local, possible State, or federal**6. Update Building Code.***Priority:* Med*Lead:* Community Development, Chief Building Official*Implementation:* Local Building Code*Hazards:* Summer Storms, Structural Fire*Status/Completion:* Existing / Every three years*Est. Cost/Funding Source:* Staff Time / City Budget**7. Conduct special event and emergency planning activities with the local NFL franchise that will be moving headquarters and training facilities into the City.***Priority:* Med*Lead:* Lead Dept. to vary as development and tenancy progress; responsible position will be head planner*Implementation:* Cooperative planning: Community Development, Engineering, Police, and Fire*Hazards:* Summer Storms, Structural Fire, Extreme Heat*Status/Completion:* New / 2020*Est. Cost/Funding Source:* Staff Time / City Budget**8. Train staff from multiple departments in the proper reporting and response to illicit discharges to storm sewers and surface waters.***Priority:* Low*Lead:* Water Resources Manager*Implementation:* Storm Water Pollution Prevention Program (SWPPP)*Hazards:* Hazmat, Water Supply Contamination*Status/Completion:* Existing / Ongoing*Est. Cost/Funding Source:* Staff Time / City Budget**9. Research lightning detection equipment / services for city venues, particularly for the water park.\*\****Priority:* Low*Lead:* Police, Support Services Manager*Implementation:* Emergency Preparedness Plan (Notification and Warning)*Hazards:* Summer Storms*Status/Completion:* New / 2017*Est. Cost/Funding Source:* Staff Time / City Budget**10. Research sheltering options for large outdoor gatherings (festival grounds, athletic complexes).\*\****Priority:* Low*Lead:* Police, Support Services Manager*Implementation:* Emergency Preparedness Plan*Hazards:* Summer Storms, Tornado*Status/Completion:* New / by 2018*Est. Cost/Funding Source:* Staff Time / City Budget

\*Reduces risk to buildings or infrastructure

\*\* Evaluates comprehensive range of specific mitigation actions/projects; identifies which were selected for implementation

^Modified STAPLEE evaluation score; higher scores generally correlated to fewer implementation barriers

## Implementation Resources

Table 11 identifies staff resources and roles in implementing its mitigation strategies. Table 12 identifies process and ordinance resources.

**Table 11: Eagan Mitigation Implementation Resources**

Department, Responsible Position	General Role	Processes Implementing Mitigation Strategies
<b>Building Inspections</b> , City Building Inspector	Building inspections, regulation of new housing development	Adoption and enforcement of state building code, evaluation of additional safety standards and revision of city ordinance as needed.
<b>Planning and Zoning</b> , Planning Director	Zoning, development, Comprehensive Plans	Floodplain management and land use planning.
<b>Police</b> , Police Chief	Public safety, law enforcement, emergency response	Emergency response training, public safety education, emergency operations planning.
<b>Public Works</b> , Public Works Director	Development and operations of public infrastructure (roads, utilities)	Management of transportation infrastructure, storm and sanitary sewer systems and the water production system, and surface water protection.
<b>Fire Department</b> , Fire Chief	Public and fire safety enforcement, emergency response	Emergency response training, public education, fire code enforcement in construction.
<b>Risk-Security Information Committee</b>	Evaluate, address cyber security concerns for City of Eagan	

**Table 12: Eagan Additional Implementation Resources**

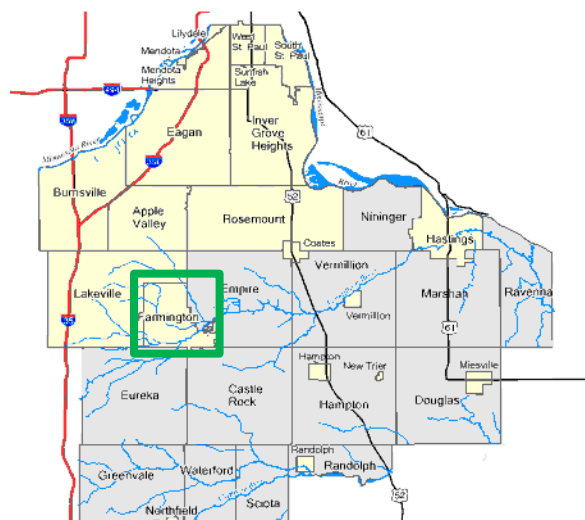
Eagan Program/Policy/Technical Documents	Year adopted/ revised	Method of incorporation into the hazard mitigation plan
Storm Water Management Plan	2008, (MS4 in 2013)	Flood management reference
Capital Improvement Program	2015	Infrastructure upgrades to support hazard mitigation
Emergency Preparedness Plan	2015	Hazard ID and ranking
Water Quality and Wetland Management Plan	2008	Flood control reference, pond sediment removal
Water Supply Distribution Report	2008	Reference document related to drinking water protection hazard
Comprehensive Sewer Plan	2008	Infrastructure improvement information
2030 Comprehensive Plan	2010, (Land Use in 2015)	Supports mitigation efforts through sharing consistent objectives in the area of reducing the impacts of known hazards
City Code Chapter 4 - Construction Licensing, Permits and Regulations, Excavations, and Mobile Home Parks	2010	(Includes the State Building Code), reference regarding garage door requirements
City Code Chapter 10, Sec. 10.40 - Minnesota Uniform Fire Code	2010	Reference regarding grill ordinance
City Code Chapter 11, Sec. 11.66 - Floodplain Overlay District	2010	Reviewed to ensure consistent floodplain management objectives
City Code Chapter 11, Sec. 11.67 - Wetlands Protection and Management Regulations	2010	Reference regarding existing flood control

## CITY OF FARMINGTON

**Table 1: Farmington Community Data**

<b>Population (2014):</b>	22,386
<b>Households:</b>	7,557
<b>Employment/Jobs:</b>	4,696
<b>Area:</b>	14.8 Sq. Mi.
<b>Major Land Uses:</b>	56.4% Agricultural/Undeveloped 24.8% Residential 8.9% Park and Recreational
<b>Community Type:</b>	Emerging Suburban Edge
<b>Undeveloped Area:</b>	56.4%

Source: Metropolitan Council Community Profiles



**Figure 1: City of Farmington Location**

### Hazards of Concern

Farmington staff evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

**Table 2: Dakota County Hazard Rating Model**

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
<b>Frequency</b>	Unlikely: <1% chance in 100 years	Occasional: 1 to 10% chance in next year	Likely: >10 to <100% chance in next year	Highly Likely: 100% chance in next year
<b>Warning Time</b>	More than 12 hours	6-12 hours	3-6 hours	None-minimal
<b>Geographic Extent</b>	Localized	Community-wide	County-wide or greater	
<b>Likely Impact</b>	Negligible	Limited	Critical	Catastrophic

**Table 3: Farmington Hazard Rating**

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Hazardous / Nuclear Material Incidents	2	4	2	3	11
Cyber Security	4	4	1	2	11
Water Supply Contamination, including WWTP Failure	1	4	2	3	10
Terrorism	1	4	1	4	10
Wildfire	1	4	1-2	3	10
Structural Fire	2	4	1	2	9
Violent Summer Storms	4	1-2	1	1-2	8
Tornado	2	1-2	1	1-2	8
Extreme Heat	4	1	1	2	8
Extreme Cold	4	1	1	2	8
Violent Winter Storms	3	1	2	1	7
Infectious Disease	1	1	2	3	7
Flash Flood	1	1	1	2	5
Overland Flood	1	1	1	2	5
Drought	1	1	1	1	4
Dam Failure	N/A				
Landslide	N/A				

\*New Hazards considered in 2016

### General Land Use

Figure 2 depicts general land use in Farmington, with agricultural and open being the predominant land use.

### Structural Inventory Value

Table 4 provides a current total and estimated value for structures in the City of Farmington. Data are from the Dakota County's Offices of Assessor Services and Geographic Information Services. Structures identified as residential, commercial, industrial, and agricultural have the types of structures associated with those land uses. "Exempt" includes all buildings not subject to property taxes, such as government buildings, schools, and places of worship. "Utilities" includes fixed sites with infrastructure for electricity, sewer, and water. "Other" includes structures that do not fall into preceding categories.

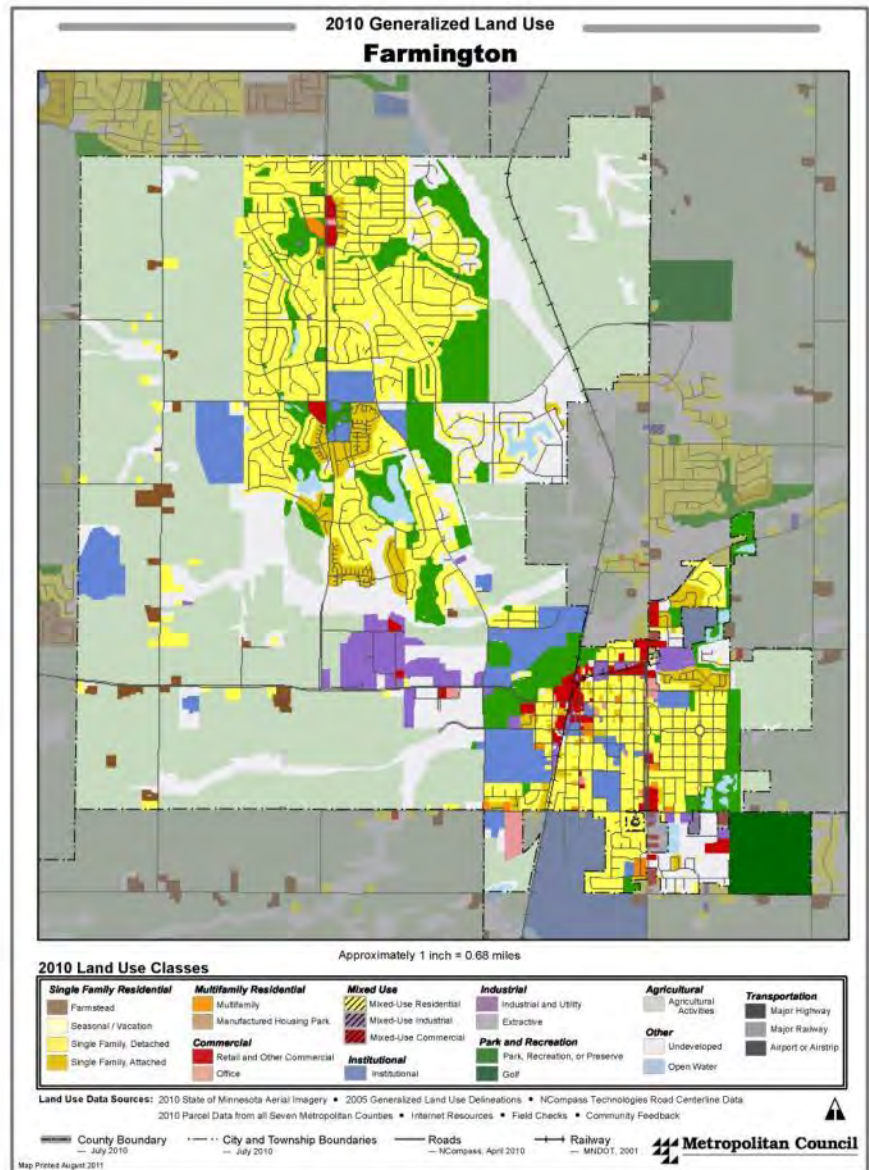


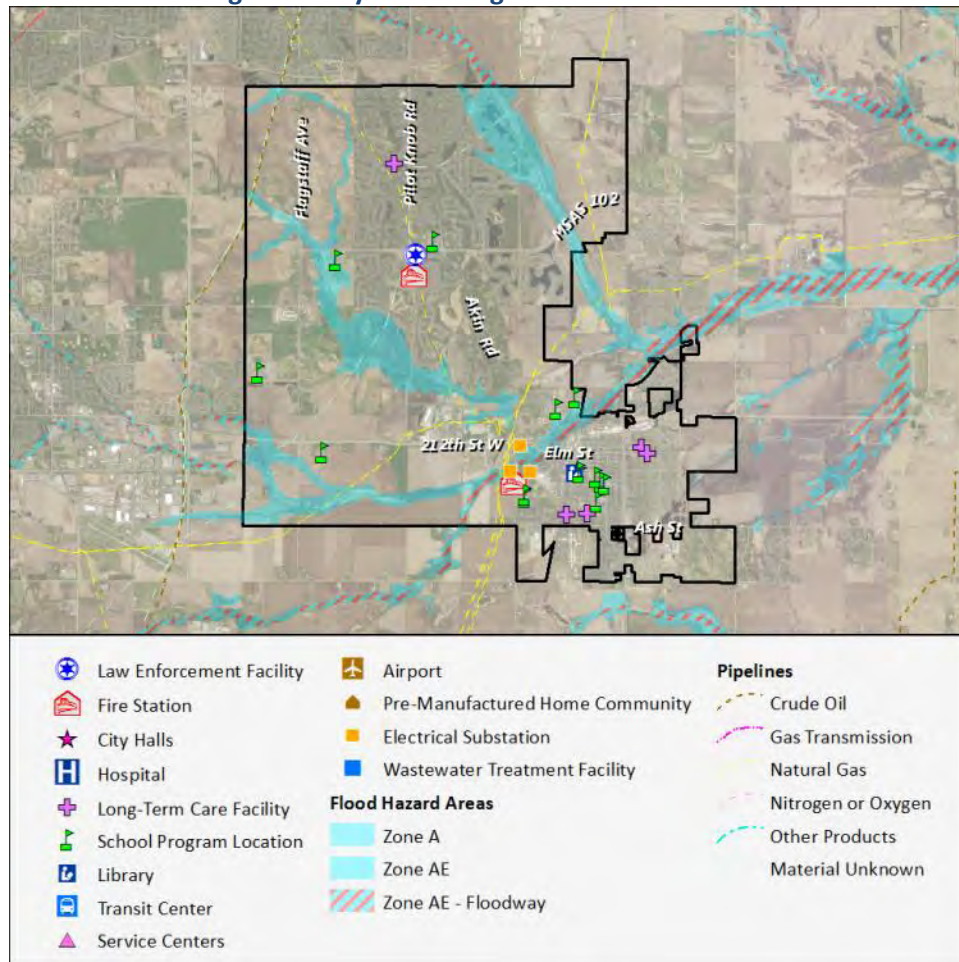
Figure 2: Farmington 2010 Land Use, Metropolitan Council

Table 4: Structural Inventory and Value, Farmington

Use Type	Number of Structures	Structural Value	Land Value	Total Value
Agricultural	243	\$3,236,000	\$38,520,500	\$41,756,500
Commercial	165	\$43,264,000	\$33,641,900	\$76,905,900
Exempt	209	\$153,131,700	\$35,825,900	\$188,957,600
Industrial	35	\$12,997,700	\$6,952,000	\$19,949,700
Other	4	\$420,900	\$147,500	\$568,400
Residential	7,647	\$1,225,910,700	\$402,011,600	\$1,627,922,300
Utilities	46	\$22,975,900	\$3,633,700	\$26,609,600
<b>TOTAL</b>	<b>8,349</b>	<b>\$1,461,936,900</b>	<b>\$520,733,100</b>	<b>\$1,982,670,000</b>





**Figure 3: City of Farmington – Critical Facilities**

### National Flood Insurance Program Participation and Compliance

Table 7 includes information on Farmington's participation in the National Flood Insurance Program (NFIP). Additional information follows about City compliance with the terms of the NFIP.

**Table 7: Farmington NFIP Participation**

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Farmington	270104	2011	7	\$1,699,100

### Compliance:

Compliance is ensured through use of the City's official flood zoning map and enforcement of City Ordinances related to floodplain zones, allowed/prohibited uses, standards, addressing violations, plan review, and inspections.



Table 8 provides an inventory and assessed value of structures in the City of Farmington located within the digital flood insurance rate map (DFIRM) boundaries. Structures are listed by predominant land use categories. The table was compiled with data from the Dakota County Office of GIS and Assessor's Office.

**Table 8: Total Floodplain Structure and Value Inventory, Farmington**

Structure Type	Total Structures	Estimated Land Value	Estimated Building Value	Total Value
Agricultural	14	\$831,000	\$729,500	\$1,560,500
Exempt	9	\$1,287,600	\$13,074,200	\$14,361,800
Residential	208	\$22,506,600	\$74,671,300	\$97,177,900
Utilities	4	\$3,474,700	\$22,120,500	\$25,595,200
<b>Total</b>	<b>235</b>	<b>\$28,099,900</b>	<b>\$110,595,500</b>	<b>\$138,695,400</b>

### Strategy Review and Development

In 2016, Farmington staff reviewed strategies from the 2011 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2016 Plan update as ongoing efforts or project that have not been completed. City staff considered and addressed FEMA requirements for:

1. A mitigation strategy that identifies and analyzes a comprehensive range of specific mitigation actions and projects and further identifies which actions were selected for implementation
2. At least one strategy to reduce risk to buildings and infrastructure

City staff also developed new strategies reflective of remaining concerns and vulnerabilities. Table 9 presents Farmington's strategies, with information on hazards, priority, implementation lead, and costs.

**Table 9: Farmington All-Hazard Mitigation Plan Strategies**

FARMINGTON MITIGATION STRATEGIES			
<b>1. Identify 302 Facilities, Debris Management and Staging Plans.**</b>			
<i>Priority:</i> 19^		<i>Hazards:</i> Summer Storms, Tornado, Hazmat Incidents	
<i>Lead:</i> Police Dept., Public Works		<i>Status/Completion:</i> Existing / Ongoing	
<i>Implementation:</i> Emergency Preparedness Plan		<i>Est. Cost/Funding Source:</i>	
<b>2. Continue Water Tower Inspection*</b>			
<i>Priority:</i> 17		<i>Hazards:</i> Water Supply Contamination	
<i>Lead:</i> Water Department		<i>Status/Completion:</i> Existing / Continual	
<i>Implementation:</i> As needed		<i>Est. Cost/Funding Source:</i> City Budget	
<b>3. Replace water and sewer lines identified as insufficient*</b>			
<i>Priority:</i> 18		<i>Hazards:</i> Flash Floods, Backups	
<i>Lead:</i> City Engineer		<i>Status/Completion:</i> Existing-New / Ongoing	
<i>Implementation:</i> Capital Improvement Program		<i>Est. Cost/Funding Source:</i> varies / City Budget, Bonding	
<b>4. Wellhead Protection Maintenance*</b>			
<i>Priority:</i> 17		<i>Hazards:</i> Water Supply Contamination	
<i>Lead:</i> City Administration, MN Dept. of Health		<i>Status/Completion:</i> Existing / Ongoing	
<i>Implementation:</i> City Permits		<i>Est. Cost/Funding Source:</i>	

**FARMINGTON MITIGATION STRATEGIES****5. Fire Truck Replacement or Refurbishment\****Priority:* 14*Lead:* Fire Department, Chief*Implementation:* Emergency Operations Plan, Capital Improvement Program, Mutual Aid Agreements*Hazards:* Structural Fire, Multiple Natural Hazards*Status/Completion:* Existing / Continual*Est. Cost/Funding Source:* \$100,000 yearly / General Fund**6. Police Car Replacement\****Priority:* 14*Lead:* Police Department, Chief*Implementation:* Emergency Operations Plan, Capital Improvement Program, Mutual Aid Agreements*Hazards:* Multiple*Status/Completion:* Existing / Continual*Est. Cost/Funding Source:* \$170,000 yearly / General Fund**7. Continue NIMS training***Priority:* 19*Lead:* Police Dept., Chief*Implementation:* Emergency Operations Plan*Hazards:* All*Status/Completion:* Existing / Ongoing*Est. Cost/Funding Source:* Staff Time/ City Budget**8. Examine solutions for Vermillion River Flooding***Priority:* 20*Lead:* Engineering, Public Works, Police*Implementation:* Engineering, Public Works, Police*Hazards:* Flood*Status / Completion:* Existing / Ongoing*Est. Cost/Funding Source:* Staff Time / City Budget

\*Reduces risk to buildings or infrastructure

\*\* Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

^Modified STAPLEE evaluation score; higher scores generally correlated to fewer implementation barriers

**Implementation Resources:**

Table 10 identifies Farmington staff resources and their roles in implementing its mitigation strategies.

**Table 10: Farmington Mitigation Implementation Resources**

<b>Department, Responsible Position</b>	<b>General Role</b>	<b>Processes and Tool for Implementing Mitigation Strategies</b>
<b>Building Inspections,</b> City Building Inspector	Building inspections, regulation of new housing development	<i>Enforce safety restrictions including setbacks, building materials, and fire suppression systems</i>
<b>Planning and Zoning,</b> Planning Director	Zoning, development siting and restrictions, Comprehensive Plans	<i>Floodplain ordinances and compliance</i>
<b>Police,</b> Police Chief	Public safety and law enforcement, emergency response	<i>Response training, public safety education</i>
<b>Public Works,</b> Public Works Director	Development and operations of public infrastructure (roads, utilities)	<i>City well inspection and maintenance</i>
<b>Fire Department,</b> Fire Chief	Public and fire safety enforcement, emergency response	<i>Inspect commercial structures for fire hazards</i>

SECTION VI – PARTICIPATING CITY RISKS, STRATEGIES, AND PRIORITIES

Table 11 identifies implementation resources related to processes and ordinances.

**Table 11: Farmington Additional Implementation Resources**

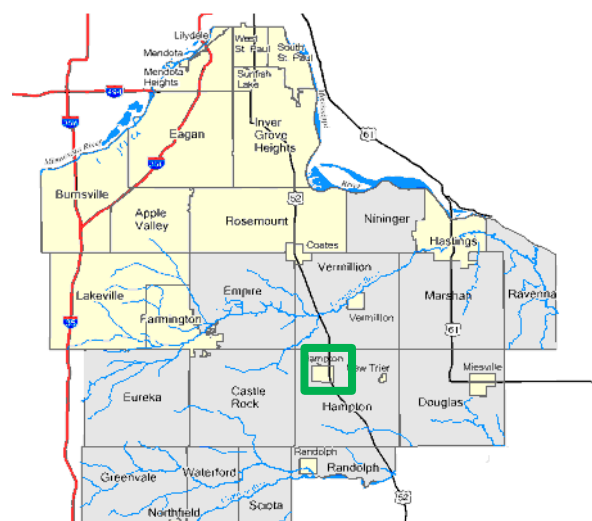
<b>Program/Ordinance/Study/ Technical Document</b>	<b>Adopted or Revised</b>	<b>Relation to the Hazard Mitigation Plan Strategies</b>
1. Emergency Operations Plan	2015	Response and recovery
2. Capital Improvement Plan	Annually	Equipment replacement and procurement
3. Street Improvement Plan	Annually	Maintenance and Reconstruction
4. Zoning Ordinance	Annually	Development standards
5. Building Codes	Annually	City utilizes State Building Codes
6. MN Uniform Fire Code	Annually	City utilizes State Fire Codes
7. Storm Water Management	2015	Standards for run-off control Existing and new

## CITY OF HAMPTON

**Table 1: Hampton Community Data**

<b>Population (2014):</b>	697
<b>Households:</b>	252
<b>Employment/Jobs:</b>	151
<b>Area:</b>	1.3 Sq. Mi.
<b>Major Land Uses:</b>	75% Agricultural/Undeveloped 14% Residential 2% Park and Recreational
<b>Community Type:</b>	Rural Center/Agricultural
<b>Undeveloped Area:</b>	75%

Source: Metropolitan Council Community Profiles



**Figure 1: City of Hampton Location**

## Hazards of Concern

Hampton representatives evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

**Table 2: Dakota County Hazard Rating Model**

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
<b>Frequency</b>	Unlikely: <1% chance in 100 years	Occasional: 1 to 10% chance in next year	Likely: >10 to <100% chance in next year	Highly Likely: 100% chance in next year
<b>Warning Time</b>	More than 12 hours	6-12 hours	3-6 hours	None-minimal
<b>Geographic Extent</b>	Localized	Community-wide	County-wide or greater	
<b>Likely Impact</b>	Negligible	Limited	Critical	Catastrophic

**Table 3: Hampton Hazard Rating**

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Winter Storms	4	2	3	1.5	<b>10.5</b>
Terrorism	1	4	2	3	<b>10</b>
Wildfire	1.5	4	2.5	2	<b>9</b>
Dam Failure	1	3	2	3	<b>9</b>
Summer Storms	2	2.5	2	2	<b>8.5</b>
Structural Fire	1.5	4	1	2	<b>8.5</b>
Hazmat / Nuclear Incidents	2	4	1	1.5	<b>8.5</b>
Tornado	1.5	3	1	2.5	<b>8.0</b>
Infectious Disease	1	1	3	3	<b>8</b>
Drought	2	1	3	2	<b>8</b>
Flash Flood	1	2	2	2.5	<b>7.5</b>
Cyber Attack	1	4	1	1	<b>7</b>
Overland Flood	1	1	2	2.5	<b>6.5</b>
Extreme Heat	1.5	1	2	2	<b>6.5</b>
Extreme Cold	1.5	1	2	2	<b>6.5</b>
Water Supply Contamination, including WWTP Failure	1	1	2	1	<b>5</b>
Landslide	1	1	1	1	<b>4</b>

\*New Hazards considered in 2016

### General Land Use

Figure 2 depicts general land use in Hampton, with agricultural and open being the predominant land use.

### Structural Inventory Value

Table 4 provides a current total and estimated value for structures in the City of Hampton.

Data are from the Dakota County's Offices of Assessor Services and Geographic Information Services. Structures identified as residential, commercial, industrial, and agricultural have the types of structures associated with those land uses. "Exempt" includes all buildings not subject to property taxes, such as government buildings, schools, and places of worship. "Utilities" includes fixed sites with infrastructure for electricity, sewer, and water. "Other" includes structures that do not fall into preceding categories.

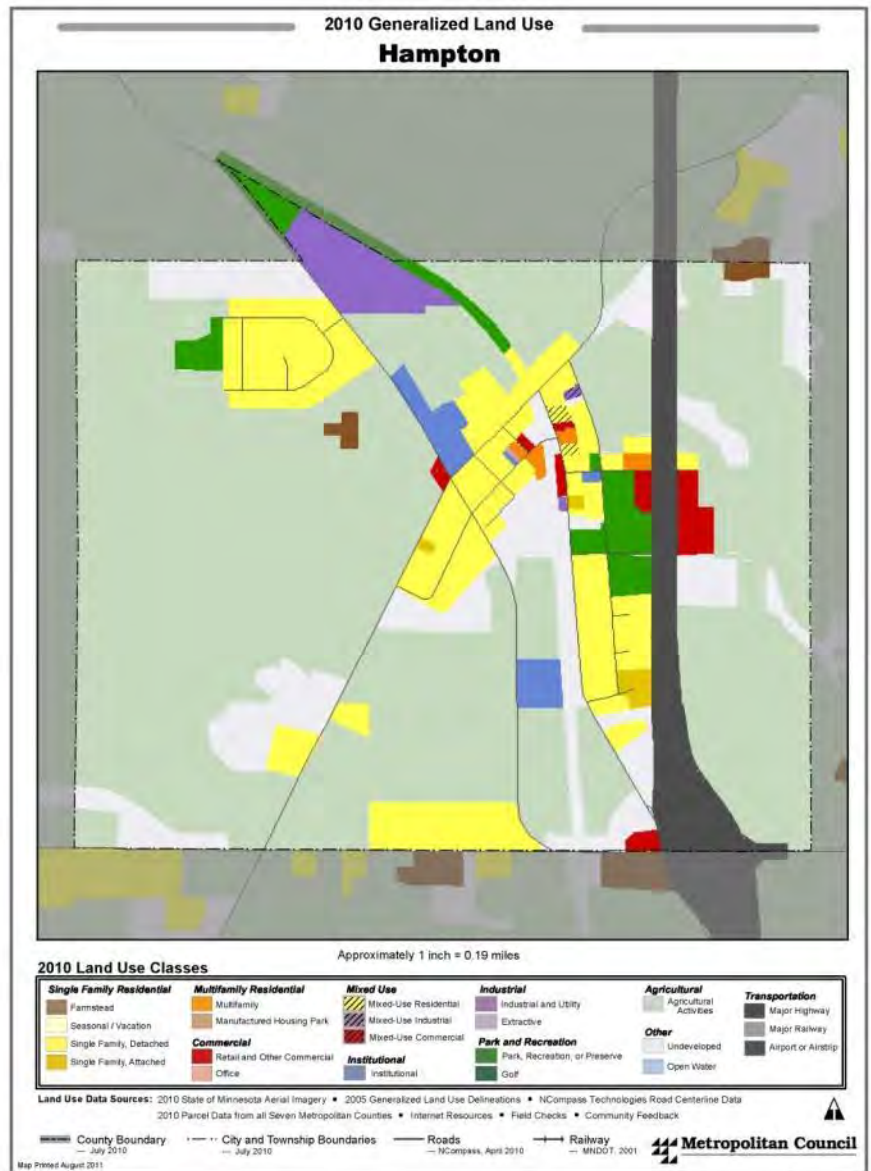


Figure 2: Hampton 2010 Land Use, Metropolitan Council

Table 4: Structural Inventory and Value, Hampton

Use Type	Number of Structures	Structural Value	Land Value	Total Value
Agricultural	17	\$129,800	\$3,606,900	\$3,736,700
Commercial	22	\$1,076,700	\$1,295,300	\$2,372,000
Exempt	17	\$1,373,500	\$956,800	\$2,330,300
Other	1	\$84,100	\$46,000	\$130,100
Residential	320	\$31,257,000	\$11,280,500	\$42,537,500
<b>TOTAL</b>	<b>377</b>	<b>\$33,921,100</b>	<b>\$17,185,500</b>	<b>\$51,106,600</b>





Figure 3: City of Hampton – Critical Facilities



### National Flood Insurance Program Participation and Compliance

The City of Hampton does not participate in the National Flood Insurance Program (NFIP). GIS analyses of DFIRM boundaries and property data did not locate structures within the floodplain in the City of Hampton.

### Strategy Review and Development

In 2016, Hampton officials reviewed strategies from the 2011 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2016 Plan update as ongoing efforts or project that have not been completed. City staff considered and addressed FEMA requirements for:

1. A mitigation strategy that identifies and analyzes a comprehensive range of specific mitigation actions and projects and further identifies which actions were selected for implementation
2. At least one strategy to reduce risk to buildings and infrastructure

City staff also developed new strategies reflective of remaining concerns and vulnerabilities. Table 7 presents Hampton's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

**Table 7: Hampton All-Hazard Mitigation Plan Strategies****HAMPTON MITIGATION STRATEGIES****1. Replace clay sewer lines.***Priority: 20<sup>^</sup>**Lead: City Engineer, W/S Supt., City Council**Implementation: Capital improvement Program (CIP)**Hazards: Flash Floods, Backups**Status/Completion: Existing-New / Ongoing**Est. Cost/Funding Source: Varies / Budget, Bonding***2. Erect new water tower.\****Priority: 20**Lead: City Engineer, W/S Supt., City Council**Implementation: CIP**Hazards: Structural Fire Protection, Supply**Status/Completion: Existing-New / Ongoing**Est. Cost/Funding Source: \$1 Million / Budget, Bonding***3. Continue to document City critical infrastructure in GIS.***Priority: 21**Lead: City Engineer, Water-Sewer Superintendent**Implementation: Budget and CIP**Hazards: All**Status/Completion: Existing-New / Ongoing**Est. Cost/Funding Source: Varies / City Budget, Bonding***4. Continue to participate in NIMS training.***Priority: 21**Lead: Randolph-Hampton Fire Dept. and City, Fire Chief**Implementation: Budget**Hazards: All**Status/Completion: Existing / Ongoing**Est. Cost/Funding Source: Varies / City Budget*

\*Reduces risk to buildings or infrastructure

\*\* Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

<sup>^</sup>Modified STAPLEE evaluation score; higher scores generally correlated to fewer implementation barriers**Implementation Resources:**

Table 8 identifies Hampton staff resources and their roles in implementing its mitigation strategies.

**Table 8: Hampton Mitigation Implementation Resources**

<b>Department, Responsible Position</b>	<b>General Role</b>	<b>Processes and Tool for Implementing Mitigation Strategies</b>
<b>Building Inspections,</b> City Building Inspector (Qual-Spec Inspections)	Building inspections, regulation of new housing development	<i>Enforce safety restrictions including setbacks, building materials and fire suppression systems</i>
<b>Planning and Zoning:</b> Planning Commission, Consulting Planner (Sambatek, Inc.)	Zoning, development siting and restrictions, Comprehensive Plans	<i>Floodplain ordinances and compliance</i>
<b>Law Enforcement,</b> Dakota County Sheriff's Office	Public safety, law enforcement, emergency response	<i>Response training, public safety education</i>
<b>Public Works,</b> City Engineer (Bolton and Menk)	Develop/operate public infrastructure (roads, utilities)	<i>City well inspection and maintenance</i>
<b>Fire Department,</b> Fire Chief	Fire safety enforcement, emergency response	<i>Inspect commercial structures for fire hazards</i>
<b>City Council and Mayor</b>	City governance	<i>Policy, establish annual budgets and Capital Improvements</i>

## SECTION VI – PARTICIPATING CITY RISKS, STRATEGIES, AND PRIORITIES

Table 9 identifies implementation resources related to processes and ordinances.

**Table 9: Hampton Additional Implementation Resources**

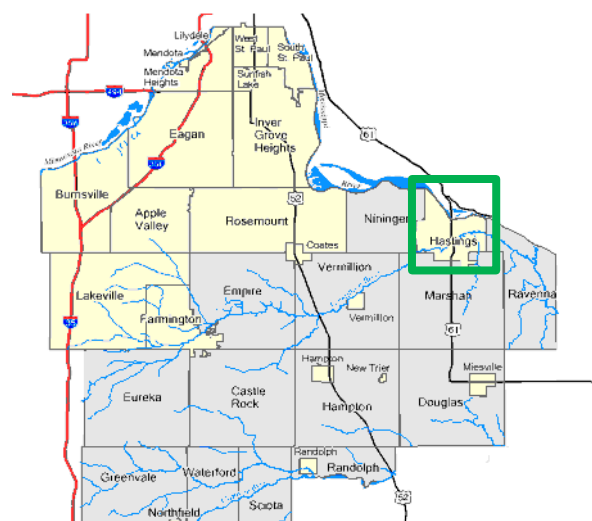
<b>Program/Ordinance/Document</b>	<b>Adopted-Revised</b>	<b>Relation to Mitigation Plan Implementation</b>
Emergency Operations Plan, EOC Drills		Increases ability to respond in emergencies, enhance communications
Capital Improvement Plan and Annual Budget		Allocates funds to City priorities (structural and operations)
Zoning Ordinance		Allows uses within areas of the cities, avoiding hazard prone areas
Building Codes		Emphasize safe construction requirements
Standard Operating Guidelines for Emergencies		Define and update protocols for emergency situations
Comprehensive Plan		Addresses future growth needs in the City

## CITY OF HASTINGS

**Table 1: Hastings Community Data**

<b>Population (2014):</b>	22,492
<b>Households:</b>	8,792
<b>Employment/Jobs:</b>	8,416
<b>Area:</b>	12.0 Sq. Mi.
<b>Major Land Uses:</b>	32.6% Residential 24.5% Agricultural/Undeveloped 15.3% Park/Recreation 5.1% Institutional
<b>Community Type:</b>	Emerging Suburban Edge
<b>Undeveloped Area:</b>	24.5%

Source: Metropolitan Council Community Profiles



**Figure 1: City of Hastings Location**

## Hazards of Concern

Hastings staff evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

**Table 2: Dakota County Hazard Rating Model**

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
<b>Frequency</b>	Unlikely: <1% chance in 100 years	Occasional: 1 to 10% chance in next year	Likely: >10 to <100% chance in next year	Highly Likely: 100% chance in next year
<b>Warning Time</b>	More than 12 hours	6-12 hours	3-6 hours	None-minimal
<b>Geographic Extent</b>	Localized	Community-wide	County-wide or greater	
<b>Likely Impact</b>	Negligible	Limited	Critical	Catastrophic

**Table 3: Hastings Hazard Rating**

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Violent Summer Storms	4	3	3	3	13
Cyber Security Threat	4	4	1.5	3	12.5
Structural Fire	4	4	1	3	12
Tornado	3	3	2	3	11
Hazardous / Nuclear Material Incidents	4	4	1	2	11
Water Supply Contamination, including WWTP Failure	1	4	2	3	10
Drought	2	1	3	4	10
Dam Failure	1	4	1	4	10
Infectious Disease	2	1	3	3	9
Terrorism	2	4	1	2	9
Wildfire	1	4	2	2	9
Extreme Heat	3	1	3	2	9
Extreme Cold	3	1	3	2	9
Violent Winter Storms	2	1	3	2	8
Flash Flood	2	2	1	2	7
Landslide	1	4	1	1	7
Overland Flood	3	1	1	1	6

\*New Hazards considered in 2016

### General Land Use

Figure 2 depicts general land use in Hastings, with residential (single- and multi-family) being the predominant land use.

### Structural Inventory Value

Table 4 provides a current total and estimated value for structures in the City of Hastings.

Data are from the Dakota County's Offices of Assessor Services and Geographic Information Services. Structures identified as residential, commercial, industrial, and agricultural have the types of structures associated with those land uses. "Exempt" includes all buildings not subject to property taxes, such as government buildings, schools, and places of worship. "Utilities" includes fixed sites with infrastructure for electricity, sewer, and water. "Other" includes structures that do not fall into preceding categories.

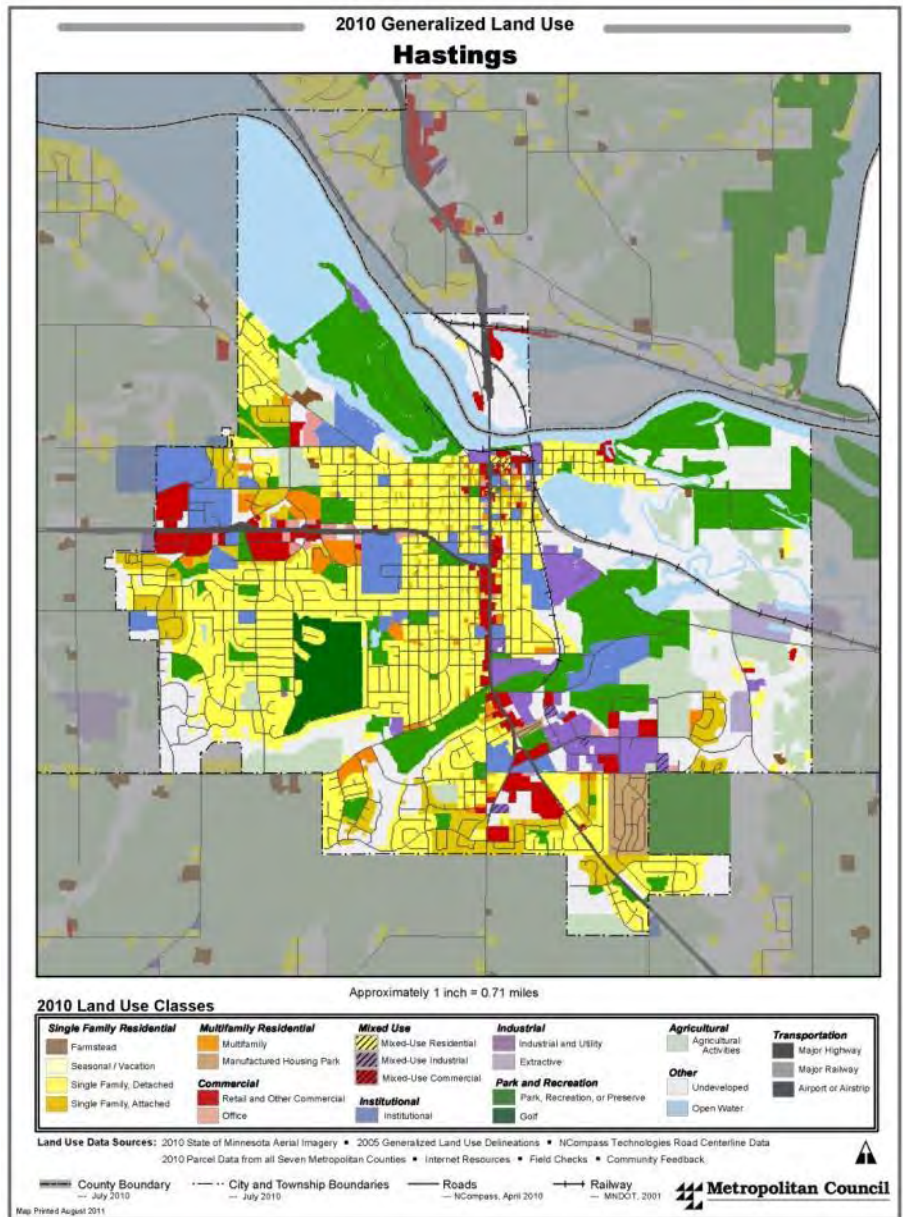


Figure 2: Hastings 2010 Land Use Map, Metropolitan Council

Table 4: Structural Inventory and Value, Hastings

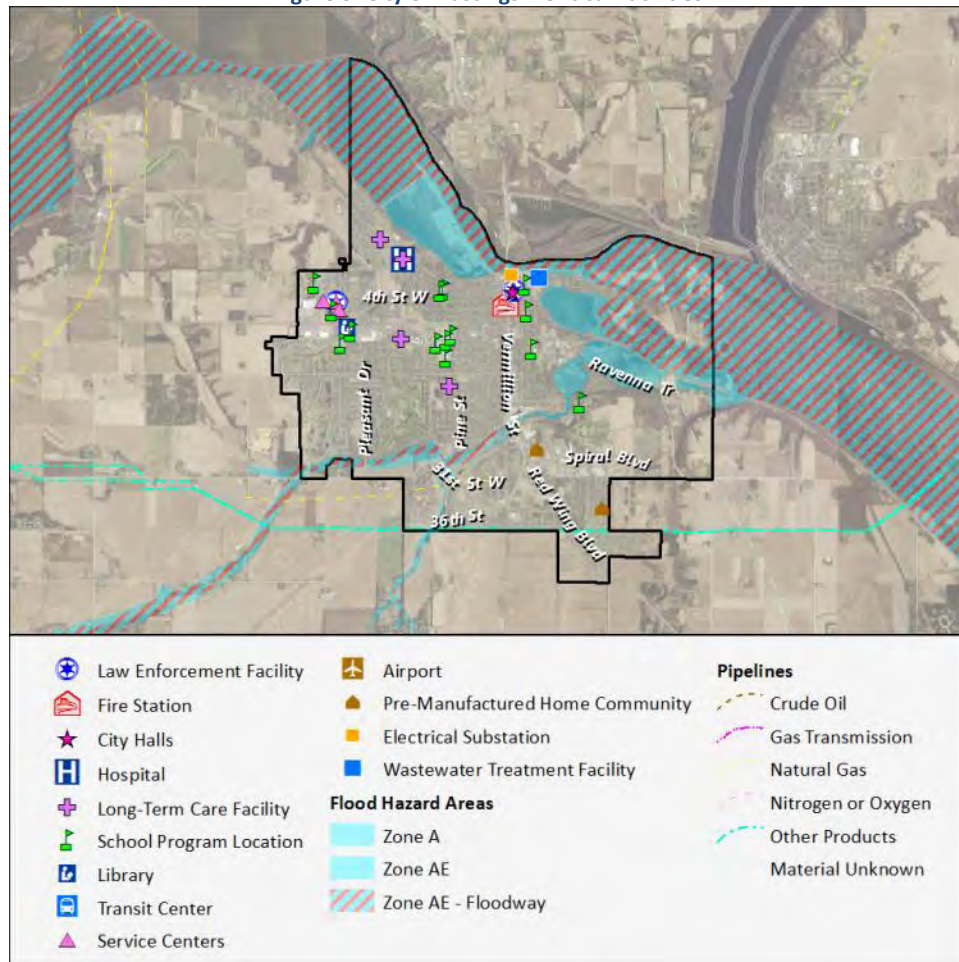
Use Type	Number of Structures	Structural Value	Land Value	Total Value
Agricultural	45	\$608,000	\$6,543,900	\$7,151,900
Commercial	306	\$108,956,900	\$65,144,900	\$174,101,800
Exempt	318	\$294,182,600	\$79,377,300	\$373,559,900
Industrial	55	\$18,387,500	\$8,993,100	\$27,380,600
Other	33	\$703,100	\$237,500	\$940,600
Residential	9,174	\$1,150,231,600	\$362,152,100	\$1,512,383,700
Utilities	2	\$1,536,300	\$435,600	\$1,971,900
<b>TOTAL</b>	<b>9,933</b>	<b>\$1,574,606,000</b>	<b>\$522,884,400</b>	<b>\$2,097,490,400</b>







Figure 3: City of Hastings – Critical Facilities



### National Flood Insurance Program Participation and Compliance

Table 7 includes information on Hastings's participation in the National Flood Insurance Program (NFIP). Additional information follows about City compliance with the terms of the NFIP.

Table 7: Hastings NFIP Participation

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Hastings	270105	3/16/16	19	\$3,340,800

### Compliance:

Title XV, Chapter 151 of the Hastings City Ordinance governs land use restrictions in floodplain. Compliance is ensured through use of the City's official flood zoning map and enforcement of Title XV, Chapter 151 related to floodplain zones, allowed/prohibited uses, standards, addressing violations, plan review, and inspections. The City works with the Corp of Engineers on annual inspections of flood levees in the City.

Table 8 provides an inventory and assessed value of structures in Hastings located within the digital flood insurance rate map (DFIRM) boundaries. Structures are listed by predominant land use categories. The table was compiled with data from the Dakota County Office of GIS and Assessor's Office.

**Table 8: Total Floodplain Structure and Value Inventory, Hastings**

Structure Type	Total Structures	Estimated Land Value	Estimated Building Value	Total Value
Agricultural	2	\$198,100	\$147,200	\$345,300
Exempt	42	\$14,304,400	\$4,049,200	\$18,353,600
Industrial	1	\$1,114,200	\$2,396,200	\$3,510,400
Residential	59	\$2,820,200	\$3,719,600	\$6,539,800
<b>TOTAL</b>	<b>104</b>	<b>\$18,436,900</b>	<b>\$10,312,200</b>	<b>\$28,749,100</b>

### Strategy Review and Development

In 2016, Hastings staff reviewed their strategies from the 2011 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2016 Plan update as ongoing efforts or project that have not been completed. City staff considered and addressed FEMA requirements for:

1. A mitigation strategy that identifies and analyzes a comprehensive range of specific mitigation actions and projects and further identifies which actions were selected for implementation
2. At least one strategy to reduce risk to buildings and infrastructure

City staff also developed new strategies reflective of remaining concerns and vulnerabilities. Table 9 lists Hastings's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

**Table 9: Hastings All-Hazard Mitigation Plan Strategies**

#### HASTINGS MITIGATION STRATEGIES

##### 1. Update Emergency Operations Plan (EOP)

*Priority:* 19^

*Lead:* Emergency Management, Director

*Implementation:* Periodic updates

*Hazards:* All

*Status/Completion:* Existing and New / Ongoing

*Est. Cost/Funding Source:* Staff Time / General Fund

##### 2. Replace water/sewer/storm sewer lines (new and existing)\*

*Priority:* 19

*Lead:* Public Works, Director

*Implementation:* Capital Improvement Plan (CIP)

*Hazards:* Flash Flood, Water supply

*Status/Completion:* Existing and New /

*Est. Cost/Funding Source:* TBD / TBD

##### 3. Continue wellhead protection

*Priority:* 18

*Lead:* Public Works, Director

*Implementation:* Wellhead Protection Plan

*Hazards:* Water Supply Contamination

*Status/Completion:* Existing and New / Ongoing

*Est. Cost/Funding Source:* \$1,500 yearly / Water Fund – Commodity Charges

*Notes:* Plan complete, annual reporting and notification requirements

**HASTINGS MITIGATION STRATEGIES****4. Continue stormwater management (replacing undersized storm sewers and improving water quality)\****Priority:* 19*Lead:* Public Works, Director*Implementation:* Capital Improvement Plan (CIP)*Hazards:* Flooding, Severe Summer Storms*Status/Completion:* Existing and New / Ongoing*Est. Cost/Funding Source:* TBD / Stormwater Utility and City Debt**5. Continue with drainage and erosion control plans***Priority:* 19*Lead:* Planning, Building Safety*Implementation:* Building Safety and Community Development*Hazards:* Flooding*Status/Completion:* Existing and New / Ongoing*Est. Cost/Funding Source:* TBD / General Fund**6. Continue to enforce zoning and permits regulations in floodplains\*\****Priority:* 19*Lead:* Planning and Building Safety, Director*Implementation:* Building Safety and Community Development*Hazards:* Flooding*Status/Completion:* Existing and New / Ongoing*Est. Cost/Funding Source:* TBD / General Fund**7. Monitor construction, improvements, alterations, and development in floodplains***Priority:* 15*Lead:* Planning and Building Safety, Director*Implementation:* Building Safety and Community Development*Hazards:* Flooding*Status/Completion:* Existing and New / Ongoing*Est. Cost/Funding Source:* TBD / General Fund**8. Ensure Building Code compliance\****Priority:* 18*Lead:* Building Safety, Director*Implementation:* Building Safety and Community Development*Notes:* new homes to have two feet of freeboard/runoff area*Hazards:* Multiple*Status/Completion:* Existing and New / Ongoing*Est. Cost/Funding Source:* TBD / General Fund**9. Continue to enforce mixed occupancy fire alarm ordinance***Priority:* 18*Lead:* Fire Department, Chief*Implementation:* Community Development*Hazards:* Structural Fire*Status/Completion:* Existing and New / Ongoing*Est. Cost/Funding Source:* Staff Time / General Fund**10. Continue to enforce burning bans***Priority:* 18*Lead:* Fire Department, Chief*Implementation:* Fire Department enforcement*Hazards:* Wildfire, Structural Fire*Status/Completion:* Existing and New / Ongoing*Est. Cost/Funding Source:* Staff Time / General Fund**11. Conduct Emergency Operations Center Drills***Priority:* 15*Lead:* Emergency Management, Director*Implementation:* Emergency management training*Hazards:* All*Status/Completion:* Existing and New / Ongoing*Est. Cost/Funding Source:* Staff Time / General Fund

**HASTINGS MITIGATION STRATEGIES****12. Educate and train staff on Illicit Discharge Detection Elimination (IDDE) to eliminate discharge to storm sewers***Priority:**Lead:* Public Works/Engineering/Emergency

Management, Director

*Implementation:**Hazards:**Status/Completion:* New / Ongoing*Est. Cost/Funding Source:***13. Evaluate need for additional storm sirens related to community growth***Priority:**Lead:* Public Works/Engineering/Emergency

Management, Director

*Implementation:**Hazards:* Severe storms, hazmat incidents*Status/Completion:* New / Ongoing*Est. Cost/Funding Source:***14. Conduct water main leak detection survey***Priority:**Lead:* Public Works/Engineering/Emergency

Management, Director

*Implementation:**Hazards:**Status/Completion:* New / 2017*Est. Cost/Funding Source:*

\*Reduces risk to buildings or infrastructure

\*\* Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

^Modified STAPLEE evaluation score; higher scores generally correlated to fewer implementation barriers

**Implementation Resources:**

Table 10 identifies Hastings staff resources and roles in implementing its mitigation strategies.

**Table 10: Hastings Mitigation Implementation Resources**

<b>Department, Responsible Position</b>	<b>General Role</b>	<b>Processes and Tool for Implementing Mitigation Strategies</b>
<b>Building Inspections,</b> City Building Official (T. Bakken)	Building inspections, regulation of new housing development	<i>e.g., enforce safety restrictions including setbacks, building materials and fire suppression systems</i>
<b>Planning and Zoning</b> Community Development Director (J. Hinzman)	Zoning, development siting and restrictions, Comprehensive Plans	<i>e.g., floodplain ordinances and compliance</i>
<b>Police,</b> Police Chief (B. Schafer)	Public safety and law enforcement, emergency response	<i>e.g., response training, public safety education</i>
<b>Public Works,</b> Public Works Director (N. Egger)	Development and operations of public infrastructure (roads, utilities)	<i>e.g., city well inspection and maintenance</i>
<b>Fire Department,</b> Fire Chief (M. Schutt)	Public and fire safety enforcement, emergency response	<i>e.g., response and mitigation, inspect commercial structures for fire hazards, building and fire suppression plan reviews, public education</i>

## SECTION VI – PARTICIPATING CITY RISKS, STRATEGIES, AND PRIORITIES

Table 11 identifies process and ordinance resources.

**Table 11: Hastings Additional Implementation Resources**

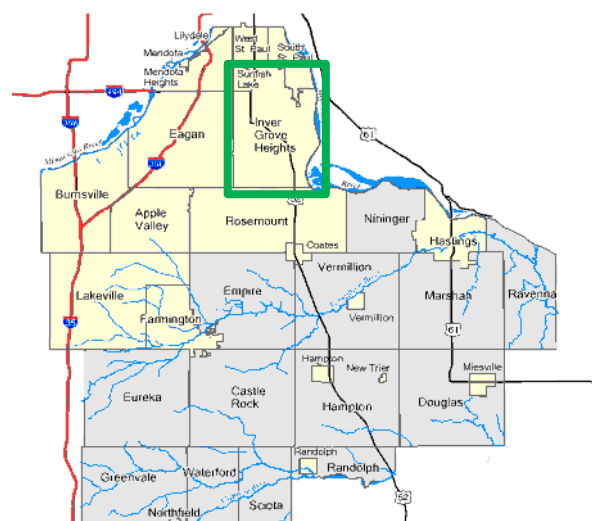
<b>Program/Ordinance/Study/ Technical Document</b>	<b>Year adopted/revised</b>	<b>Reviewed during the planning process? (Yes/No)</b>	<b>Method of incorporation into the hazard mitigation plan</b>
Narrowbanding of outdoor sirens	2011 - 2012	<b>Yes Completed</b>	Working with Dakota County
Educate public on Storm Siren Policy	Spring 2011	Yes	Community Relations
Update EOP	2016	Yes	Working with Dakota County
Wellhead Protection	Annual Reporting 2011	Yes	Continuous efforts with public
Water Supply	2010	Yes	Continuous efforts with public
Storm Water Management	2016	Yes	Continuous efforts with public
Mississippi River Flooding	Revised Spring 2011	Yes	Continuous efforts with public and other agencies
Drainage and Erosion Control	2016	Yes	Continuous efforts with public
Enforce Zoning/permits in floodplain	Ongoing	Yes	Continuous efforts with public
Monitor construction/improvements	Ongoing	Yes	Continuous efforts with public
Ensure Building Code Compliance	Ongoing	Yes	Continuous efforts with public
Mixed Occupancy Fire Alarm	2004 - Ongoing	Yes	Continuous efforts with public
Burning Bans	2016	Yes	Continuous efforts with public
EOC Drill	2016	Yes	Organize with city staff

## CITY OF INVER GROVE HEIGHTS

**Table 1: Inver Grove Heights Community Data**

<b>Population (2014):</b>	34,831
<b>Households:</b>	13,823
<b>Employment/Jobs:</b>	10,626
<b>Area:</b>	30.0 Sq. Mi.
<b>Major Land Uses:</b>	42.6% Agricultural/Undeveloped 28.8% Residential 7.9% Park/Recreation 5.9% Industrial
<b>Community Type:</b>	Emerging Suburban Edge/Rural Residential
<b>Undeveloped Area:</b>	42.6%

Source: Metropolitan Council Community Profiles



**Figure 1: City of Inver Grove Heights Location**

## Hazards of Concern

Inver Grove Heights staff evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

**Table 2: Dakota County Hazard Rating Model**

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
<b>Frequency</b>	Unlikely: <1% chance in 100 years	Occasional: 1 to 10% chance in next year	Likely: >10 to <100% chance in next year	Highly Likely: 100% chance in next year
<b>Warning Time</b>	More than 12 hours	6-12 hours	3-6 hours	None-minimal
<b>Geographic Extent</b>	Localized	Community-wide	County-wide or greater	
<b>Likely Impact</b>	Negligible	Limited	Critical	Catastrophic

**Table 3: Inver Grove Heights Hazard Rating**

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Structural Fire	4	4	1	2	11
Water Supply Contamination, including WWTP Failure	2	4	2	3	11
Terrorism	2	4	2	3	11
Violent Summer Storms	3	3	2	2	10
Hazardous / Nuclear Material Incidents	2	4	1	2	9
Flash Flood	3	3	1	2	9
Infectious Disease	2	2	3	2	9
Wildfire	3	3	1	2	9
Drought	3	1	3	2	9
Cyber Security Threats	2	4	1	2	9
Tornado	2	3	1	2	8
Violent Winter Storms	2	1	3	2	8
Extreme Heat	3	1	3	1	8
Extreme Cold	3	1	3	1	8
Overland Flood	3	1	1	2	7
Dam Failure	1	4	1	1	7
Landslide	1	4	1	1	7

\*New Hazards considered in 2016



### General Land Use

Figure 2 depicts general land use in Inver Grove Heights, with agriculture/undeveloped open space being the predominant land uses.

### Structural Inventory Value

Table 4 provides a current total and estimated value for structures in the City of Inver Grove Heights.

Data are from the Dakota County's Offices of Assessor Services and Geographic Information Services. Structures identified as residential, commercial, industrial, and agricultural have the types of structures associated with those land uses. "Exempt" includes all buildings not subject to property taxes, such as government buildings, schools, and places of worship. "Utilities" includes fixed sites with infrastructure for electricity, sewer, and water. "Other" includes structures that do not fall into preceding categories.

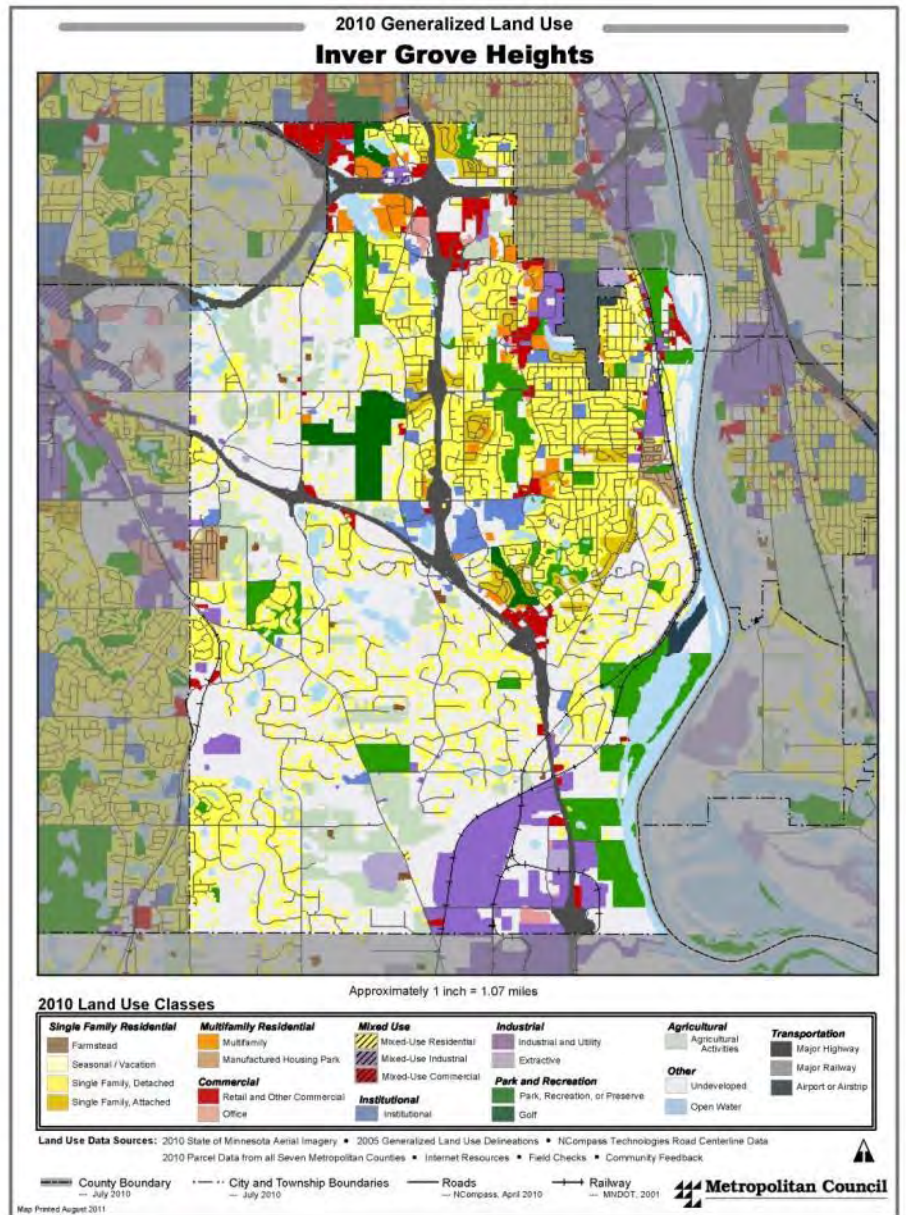
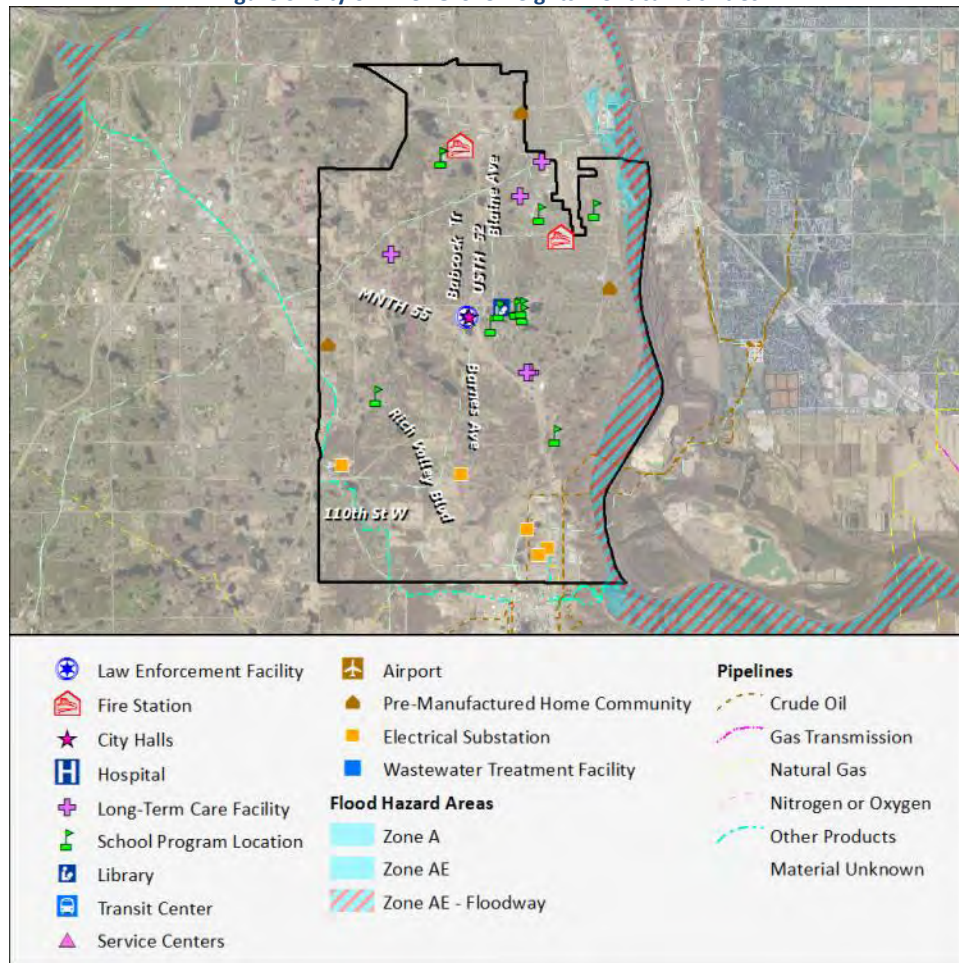


Figure 2: Inver Grove Heights 2010 Land Use Map, Metropolitan Council

Table 4: Structural Inventory and Value, Inver Grove Heights

Use Type	Number of Structures	Structural Value	Land Value	Total Value
Agricultural	156	\$6,121,600	\$40,805,900	\$46,927,500
Commercial	402	\$167,737,100	\$148,640,300	\$316,377,400
Exempt	227	\$137,780,100	\$67,934,600	\$205,714,700
Industrial	159	\$49,712,300	\$35,023,600	\$84,735,900
Other	30	\$500,600	\$148,500	\$649,100
Residential	13,506	\$2,142,725,500	\$753,209,100	\$2,895,934,600
Utilities	138	\$70,477,100	\$9,574,600	\$80,051,700
<b>TOTAL</b>	<b>14,618</b>	<b>\$2,575,054,300</b>	<b>\$1,055,336,600</b>	<b>\$3,630,390,900</b>



**Figure 3: City of Inver Grove Heights – Critical Facilities**

### National Flood Insurance Program Participation and Compliance

Table 7 includes information on Inver Grove Heights' participation in the National Flood Insurance Program (NFIP). Additional information follows about City compliance with the terms of the NFIP.

**Table 7: Inver Grove Heights NFIP Participation**

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Inver Grove Heights	270106	12/2/11	24	\$5,649,100

### Compliance:

Compliance is ensured through use of the City's official flood zoning map and enforcement of City Ordinances related to floodplain zones, allowed/prohibited uses, standards, addressing violations, plan review, and inspections.



Table 8 provides an inventory and assessed value of structures in Inver Grove Heights located within the digital flood insurance rate map (DFIRM) boundaries. Structures are listed by predominant land use categories. The table was compiled with data from the Dakota County Office of GIS and Assessor's Office.

**Table 8: Total Floodplain Structure and Value Inventory, Inver Grove Heights**

Structure Type	Total Structures	Estimated Land Value	Estimated Building Value	Total Value
Agricultural	14	\$1,673,300	\$732,800	\$2,406,100
Exempt	7	\$110,400	\$0	\$110,400
Industrial	1	\$0	\$0	\$0
Residential	19	\$1,409,200	\$2,430,300	\$3,839,500
<b>TOTAL</b>	<b>41</b>	<b>\$3,192,900</b>	<b>\$3,163,100</b>	<b>\$6,356,000</b>

### Strategy Review and Development

In 2016, Inver Grove Heights staff reviewed their strategies from the 2011 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2016 Plan update as ongoing efforts or project that have not been completed. City staff considered and addressed FEMA requirements for:

1. A mitigation strategy that identifies and analyzes a comprehensive range of specific mitigation actions and projects and further identifies which actions were selected for implementation
2. At least one strategy to reduce risk to buildings and infrastructure

City staff also developed new strategies reflective of remaining concerns and vulnerabilities. Table 9 lists Inver Grove Heights' strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

**Table 9: Inver Grove Heights All-Hazard Mitigation Plan Strategies**

INVER GROVE HEIGHTS MITIGATION STRATEGIES			
<b>1. Address wellhead protection needs.</b>			
<i>Priority:</i> High (18)^		<i>Hazards:</i> Water Supply Contamination	
<i>Lead:</i> Public Works, Director		<i>Status/Completion:</i> Existing-New / August 2016	
<i>Implementation:</i> Wellhead Protection Plans		<i>Est. Cost/Funding Source:</i> \$2,500 yearly / Water Fund	
<b>2. Complete water supply planning.</b>			
<i>Priority:</i> High (18)		<i>Hazards:</i> Water Supply (Future, Emergency Needs)	
<i>Lead:</i> Public Works, Director		<i>Status/Completion:</i> Existing-New / October 2017	
<i>Implementation:</i> Water Supply Plan		<i>Est. Cost/Funding Source:</i> \$20,000 / Water Fund	
<b>3. Conduct maintenance on water storage facilities.</b>			
<i>Priority:</i> High (18)		<i>Hazards:</i> Water Supply Contamination	
<i>Lead:</i> Public Works, Director		<i>Status/Completion:</i> Existing / Ongoing	
<i>Implementation:</i> Contract Engineering, Record Keeping		<i>Est. Cost/Funding Source:</i> \$10,200 / Water Fund	

**INVER GROVE HEIGHTS MITIGATION STRATEGIES****4. Inspect Wells.***Priority:* High (18)*Lead:* Public Works, Director*Implementation:* Weekly Checks and Record Keeping*Hazards:* Water Supply Contamination*Status/Completion:* Existing / Ongoing*Est. Cost/Funding Source:* \$30,000 per well / Water Fund**5. Sanitary Sewer Lining for Infiltration and Inflow Management.***Priority:* High (18)*Lead:* Public Works, Director*Implementation:* Maps, Daily Record Keeping*Hazards:* Flash Flooding, Backups*Status/Completion:* Existing / Ongoing*Est. Cost/Funding Source:* \$75,000 yearly / Sewer Fund**6. Lift Station Maintenance.***Priority:* High (18)*Lead:* Public Works, Director*Implementation:* Weekly Checks, Record Keeping*Hazards:* Flash Flooding, Backups*Status/Completion:* Existing / Ongoing*Est. Cost/Funding Source:* Staff Time / Sewer Fund**7. Risk Management for Water Treatment Plant.***Priority:* High (18)*Lead:* Public Works, Director*Implementation:* Risk Management Plan*Hazards:* Water Supply Contamination (Chlorine)*Status/Completion:* Existing / Ongoing*Est. Cost/Funding Source:* \$4,200 yearly / Water Fund**8. Storm Water Management/MS4/Maintenance.***Priority:* High (15)*Lead:* Public Works, Director*Implementation:* Storm sewer repair, improvements*Hazards:* Flash Flooding, Severe Storms*Status/Completion:* New-Existing / Ongoing*Est. Cost/Funding Source:* TBD / Stormwater Utility, General Fund, Bonding**9. Mississippi River Dike Opening Management/Flood Mitigation.***Priority:* Low (15)*Lead:* Public Works, Director*Implementation:* Emergency Preparedness Plan*Hazards:* Flooding*Status/Completion:* New-Existing / Ongoing*Est. Cost/Funding Source:* TBD / General Fund**10. Mass Dispensing Compliance.***Priority:* High (18)*Lead:* Police Department, Chief*Implementation:* Emergency Preparedness Plan*Hazards:* Pandemic Influenza, Infectious Disease Outbreak, Terrorism*Status/Completion:* New-Existing / Ongoing*Est. Cost/Funding Source:* TBD / General Fund**11. Outdoor Warning Siren Maintenance.***Priority:* High (18)*Lead:* Police Department, Chief*Implementation:* Emergency Preparedness Plan*Hazards:* Severe Summer Storms, Tornado, Hazmat*Status/Completion:* New-Existing / Ongoing*Est. Cost/Funding Source:* TBD / General Fund**12. Debris Management.***Priority:* High (18)*Lead:* Public Works, Director*Implementation:* Emergency Preparedness Plan*Hazards:* Severe Summer Storms, Tornado, Hazmat, Terrorism*Status/Completion:* New-Existing / Ongoing*Est. Cost/Funding Source:* TBD / General Fund

**INVER GROVE HEIGHTS MITIGATION STRATEGIES****13. Rail/Pipeline Safety.***Priority:* High (18)*Lead:* Police Department, Chief*Implementation:* Emergency Preparedness Plan*Hazards:* Severe Summer Storms, Tornado, Hazmat, Terrorism*Status/Completion:* New-Existing / Ongoing*Est. Cost/Funding Source:* TBD / General Fund**14. Build storm shelter/safe rooms at manufactured home parks.***Priority:* TBD*Lead:* TBD*Implementation:* TBD*Hazards:* Severe Summer Storms, Tornado*Status/Completion:* TBD*Est. Cost/Funding Source:* TBD

\*Reduces risk to buildings or infrastructure

\*\* Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

^Modified STAPLEE evaluation score; higher scores generally correlated to fewer implementation barriers

**Implementation Resources:**

Table 10 identifies Inver Grove Heights staff resources and roles in implementing its mitigation strategies.

**Table 10: Inver Grove Heights Mitigation Implementation Resources**

<b>Department, Responsible Position</b>	<b>General Role</b>	<b>Processes for Implementing Mitigation Strategies</b>
<b>Building Inspections,</b> Chief Building Official (F. Martin)	Building inspections, regulation of new housing development	<i>E.g., enforce safety restrictions, building materials, and fire suppression systems</i>
<b>Planning and Zoning,</b> City Planner (A. Hunting)	Zoning, development siting and restrictions, Comprehensive Plans	<i>E.g., floodplain ordinances and compliance</i>
<b>Police,</b> Police Chief (L. Stanger)	Public safety and law enforcement, emergency response	<i>E.g., response training, public safety education</i>
<b>Public Works,</b> Public Works Director (S. Thureen)	Development and operations of public infrastructure (roads, utilities)	<i>E.g., City well inspection and maintenance</i>
<b>Fire Department,</b> Fire Chief (J. Thill)	Public and fire safety enforcement, emergency response	<i>E.g., inspect commercial structures for fire hazards</i>

Table 11 identifies process and ordinance resources.

**Table 12: Inver Grove Heights Additional Implementation Resources**

<b>Inver Grove Heights Program/Policy/Technical Documents</b>	<b>Year adopted/revised</b>	<b>Method of incorporation into the hazard mitigation plan</b>
Water Supply Plan	2008	Emergency response procedures for staff
Sewer Plan	2008	Infrastructure information
NPDES Permit	2013	Standards for design, O & M
Water Resources Management Plan	2014	Evaluate storm water issues



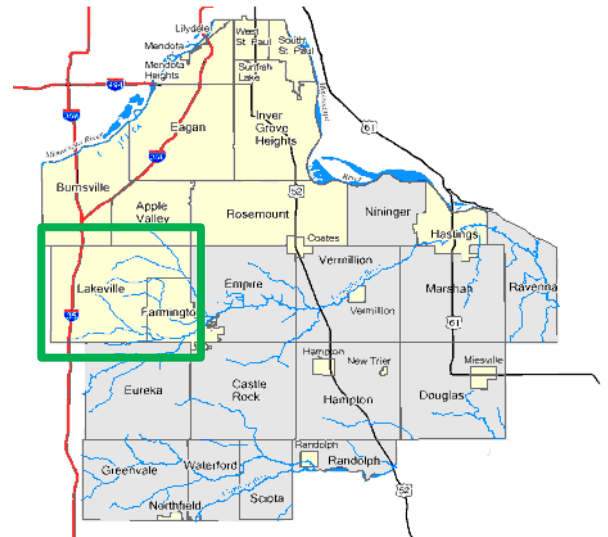
## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

### CITY OF LAKEVILLE

**Table 1: Lakeville Community Data**

<b>Population (2014):</b>	59,361
<b>Households:</b>	19,945
<b>Employment/Jobs:</b>	16,793
<b>Area:</b>	37.9 Sq. Mi.
<b>Major Land Uses:</b>	40.8% Agricultural/Undeveloped 33.7% Residential 9.2% Park/Recreation 4.1% Industrial
<b>Community Type:</b>	Suburban Edge
<b>Undeveloped Area:</b>	40.8%

Source: Metropolitan Council Community Profiles



**Figure 1: City of Lakeville Location**

### Hazards of Concern

Lakeville staff evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

**Table 2: Dakota County Hazard Rating Model**

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
<b>Frequency</b>	Unlikely: <1% chance in 100 years	Occasional: 1 to 10% chance in next year	Likely: >10 to <100% chance in next year	Highly Likely: 100% chance in next year
<b>Warning Time</b>	More than 12 hours	6-12 hours	3-6 hours	None-minimal
<b>Geographic Extent</b>	Localized	Community-wide	County-wide or greater	
<b>Likely Impact</b>	Negligible	Limited	Critical	Catastrophic

**Table 3: Lakeville Hazard Rating**

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Cyber Terrorism	2	4	2	3	11
Violent Winter Storms	2	2	3	3	10
Violent Summer Storms	2	2	3	2	9
Tornado	2	2	3	2	9
Structural Fire	3	4	1	1	9
Hazardous Material Incidents, including nuclear material releases	2	4	1	2	9
Terrorism	1	4	3	1	9
Extreme Heat	2	1	3	2	8
Extreme Cold	2	1	3	2	8
Flash Flood	1	3	1	2	7
Wildfire	2	4	3	1	7
Drought	1	1	3	2	7
Infectious Disease	1	1	2	2	6
Overland Flood	1	1	3	1	6
Water Supply Contamination, including WWTP Failure	1	1	2	1	5
Dam Failure	1	1	1	1	4
Landslide	1	1	1	1	4

\*New Hazards considered in 2016

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

### General Land Use

Figure 2 depicts general land use in Lakeville, with agriculture-undeveloped open space and residential being the predominant land uses.

### Structural Inventory Value

Table 4 provides a current total and estimated value for structures in the City of Lakeville.

Data are from the Dakota County's Offices of Assessor Services and Geographic Information Services. Structures identified as residential, commercial, industrial, and agricultural have the types of structures associated with those land uses. "Exempt" includes all buildings not subject to property taxes, such as government buildings, schools, and places of worship. "Utilities" includes fixed sites with infrastructure for electricity, sewer, and water. "Other" includes structures that do not fall into preceding categories.

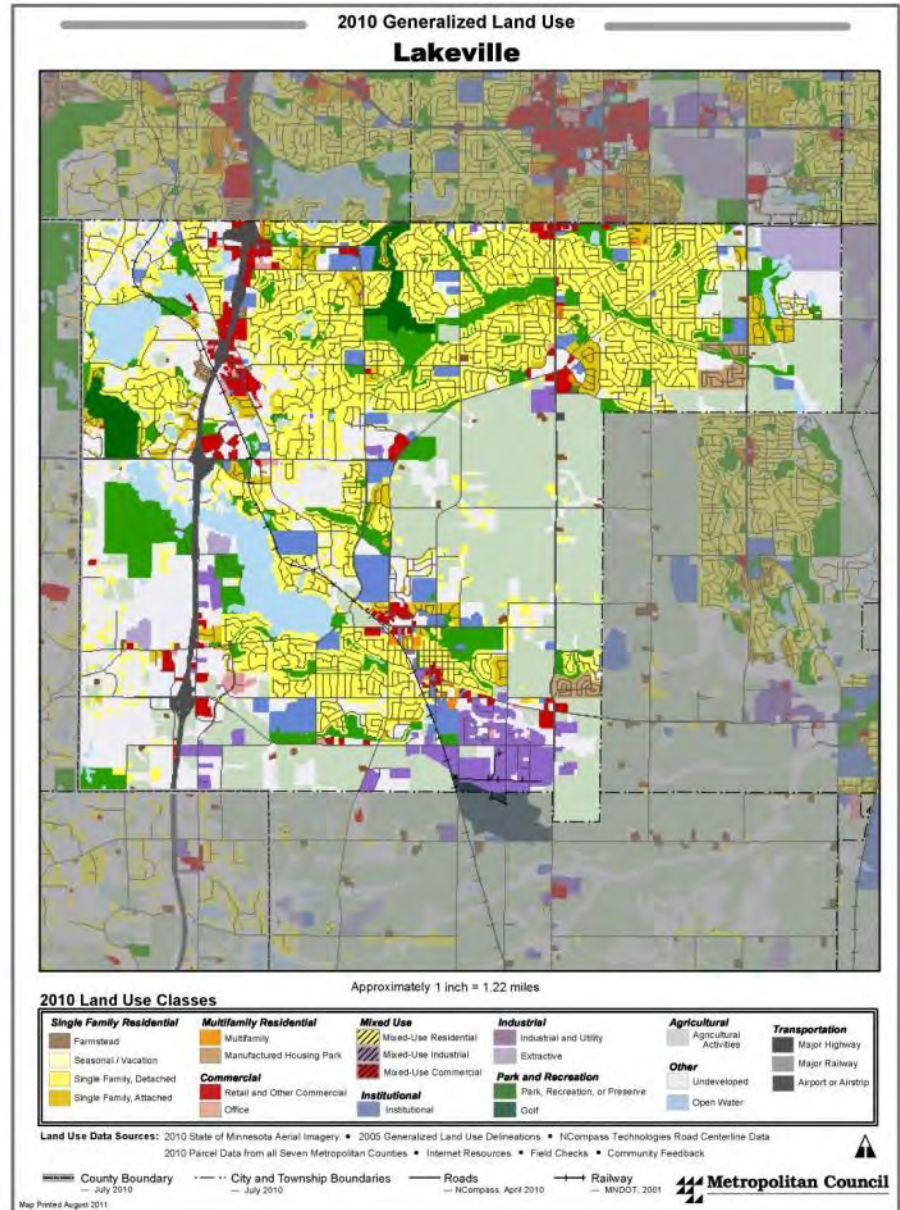


Figure 2: Lakeville 2010 Land Use Map, Metropolitan Council

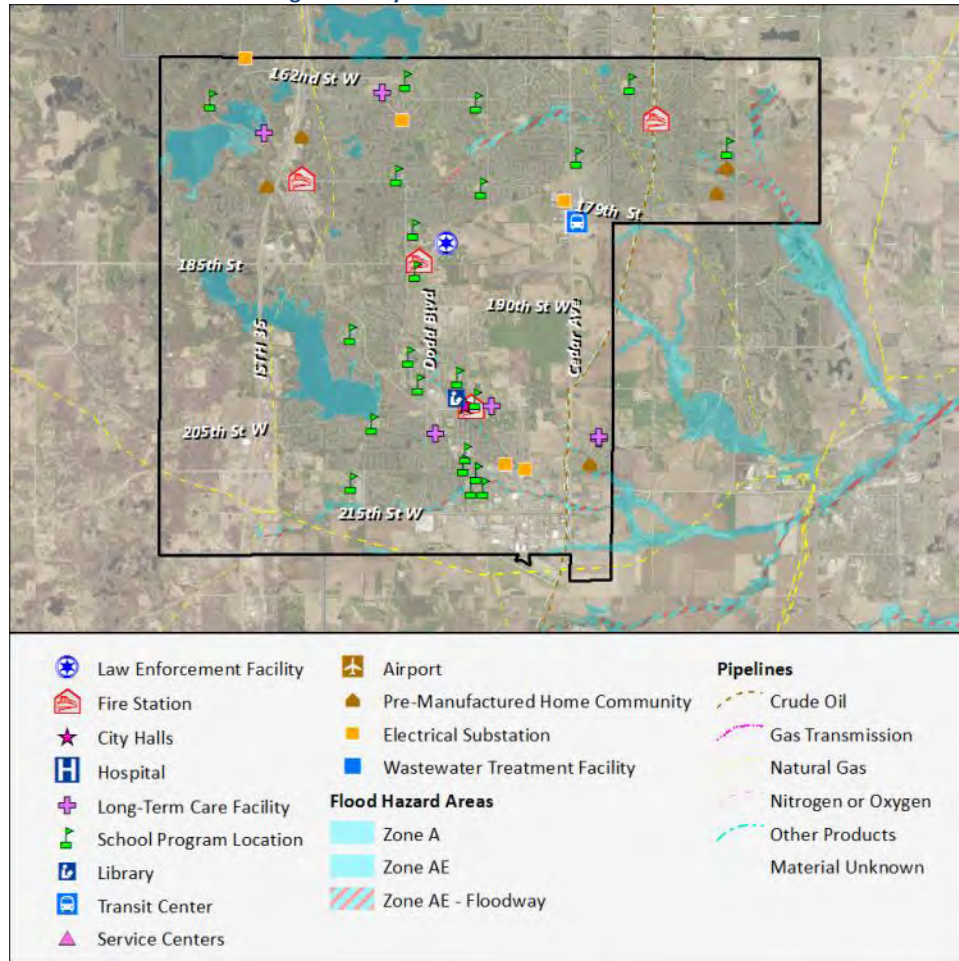
Table 4: Structural Inventory and Value, Lakeville

Use Type	Number of Structures	Structural Value	Land Value	Total Value
Agricultural	156	\$6,121,600	\$40,805,900	\$46,927,500
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Exempt	227	\$137,780,100	\$67,934,600	\$205,714,700
Industrial	159	\$49,712,300	\$35,023,600	\$84,735,900
Other	30	\$500,600	\$148,500	\$649,100
Residential	13,506	\$2,142,725,500	\$753,209,100	\$2,895,934,600
Utilities	138	\$70,477,100	\$9,574,600	\$80,051,700
<b>TOTAL</b>	<b>14,618</b>	<b>\$2,575,054,300</b>	<b>\$1,055,336,600</b>	<b>\$3,630,390,900</b>



## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

Figure 3: City of Lakeville – Critical Facilities



### National Flood Insurance Program Participation and Compliance

Table 7 includes information on Lakeville's participation in the National Flood Insurance Program (NFIP). Additional information follows about City compliance with the terms of the NFIP.

Table 7: Lakeville NFIP Participation

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Lakeville	270107	12/2/11	70	\$18,384,500

### Compliance:

Compliance is ensured through use of the City's official flood zoning map and enforcement of City Ordinances related to floodplain zones, allowed/prohibited uses, standards, addressing violations, plan review, and inspections.



## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

Table 8 provides an inventory and assessed value of structures in Lakeville located within the digital flood insurance rate map (DFIRM) boundaries. Structures are listed by predominant land use categories. The table was compiled with data from the Dakota County Office of GIS and Assessor's Office.

**Table 8: Total Floodplain Structure and Value Inventory, Lakeville**

Structure Type	Total Structures	Estimated Land Value	Estimated Building Value	Total Value
Commercial	9	\$2,949,600	\$4,360,700	\$7,310,300
Exempt	13	\$2,711,600	\$10,208,800	\$12,920,400
Residential	111	\$28,767,700	\$21,937,400	\$50,705,100
<b>TOTAL</b>	<b>133</b>	<b>\$34,428,900</b>	<b>\$36,506,900</b>	<b>\$70,935,800</b>

### Strategy Review and Development

In 2016, Lakeville staff reviewed their strategies from the 2011 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2016 Plan update as ongoing efforts or project that have not been completed. City staff considered and addressed FEMA requirements for:

1. A mitigation strategy that identifies and analyzes a comprehensive range of specific mitigation actions and projects and further identifies which actions were selected for implementation
2. At least one strategy to reduce risk to buildings and infrastructure

City staff also developed new strategies reflective of remaining concerns and vulnerabilities. Table 9 lists Lakeville's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

**Table 9: Lakeville All-Hazard Mitigation Plan Strategies**

LAKEVILLE MITIGATION STRATEGIES			
<b>1. Develop the Citywide Street Reconstruction Plan.*</b>			
<i>Priority:</i> First (18)^		<i>Hazards:</i> Flash Flooding	
<i>Lead:</i> Public Works, Director		<i>Status/Completion:</i> Existing / Ongoing	
<i>Implementation:</i> Street reconstruction		<i>Est. Cost/Funding Source:</i> \$20,000,000 / CIP	
<b>2. Conduct Three Echo / Active / Hostile Event Trainings.**</b>			
<i>Priority:</i> Second (21)		<i>Hazards:</i> All	
<i>Lead:</i> Police Department, Chief		<i>Status/Completion:</i> Existing / Ongoing	
<i>Implementation:</i> Public training and education		<i>Est. Cost/Funding Source:</i> Staff Time / Budget	
<b>3. Exercise and drill EOC and supervisory staff on storm or transportation accident.</b>			
<i>Priority:</i> Third (17)		<i>Hazards:</i> All	
<i>Lead:</i> All City Departments		<i>Status/Completion:</i> Existing / Annual	
<i>Implementation:</i> Emergency Preparedness Plan		<i>Est. Cost/Funding Source:</i> Dependent on scope / Budget, possible UASI funds	
<b>4. Storm watershed maintenance.</b>			
<i>Priority:</i> Fourth (21)		<i>Hazards:</i> Flash Flood	
<i>Lead:</i> Public Works, Director		<i>Status/Completion:</i> Existing / Ongoing	
<i>Implementation:</i> Department Operations Plan		<i>Est. Cost/Funding Source:</i> \$10,000 / Budget, taxes	

## LAKEVILLE MITIGATION STRATEGIES

**5. Shelter planning with local partners.***Priority:* Fifth (17)*Lead:* Police Department, Chief*Implementation:* Emergency Preparedness Plan*Hazards:* All*Status/Completion:* Existing / 2012*Est. Cost/Funding Source:* TBD / TBD**6. Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.\****Priority:* Sixth (20)*Lead:* Fire Chiefs*Implementation:* Fire inspections*Hazards:* Structural Fire (G1: protect structures)*Status/Completion:* New / Ongoing*Est. Cost/Funding Source:* Staff Time / Budget**7. Provide school programs to youth, focusing on stoves, smoke detectors, fire safety, and evacuation.***Priority:* Seventh (17)*Lead:* Fire Chiefs*Implementation:* Public Education: Elementary, Middle school engagement*Hazards:* Structural Fire (G2: public education)*Status/Completion:* Existing / Ongoing*Est. Cost/Funding Source:* Staff Time / Budget**8. Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals, and evacuation.***Priority:* Eighth (21)*Lead:* Fire Chiefs*Implementation:* Public Education*Hazards:* Structural Fire (G2: public education)*Status/Completion:* Existing / Ongoing*Est. Cost/Funding Source:* Staff Time / Budget**9. Storm Siren Maintenance.***Priority:* Ninth ()*Lead:* Police, Chief*Implementation:* Emergency Management*Hazards:* Severe Summer Storms, Tornado, Hazmat*Status/Completion:* Existing / Ongoing*Est. Cost/Funding Source:* TBD / Budget**10. Work towards a shared services system with Eureka Township.***Priority:* TBD (20)*Lead:* Fire Chiefs*Implementation:* Emergency Preparedness*Hazards:* All*Status/Completion:* New / 2018*Est. Cost/Funding Source:* Staff Time / Budget

\*Reduces risk to buildings or infrastructure

\*\* Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

^Modified STAPLEE evaluation score; higher scores generally correlated to fewer implementation barriers

**Implementation Resources:**

Table 10 identifies staff resources and roles in implementing its mitigation strategies.

**Table 10: Lakeville Mitigation Implementation Resources**

Department, Responsible Position	General Role	Processes for Implementing Mitigation Strategies
<b>Building Inspections,</b> Chief Building Official	Building inspections, regulation of new housing development.	<i>New and existing building inspections of all buildings within the city; review of buildings involved in a fire or other events that may comprise structural integrity</i>



# APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

Department, Responsible Position	General Role	Processes for Implementing Mitigation Strategies
<b>Planning and Zoning,</b> City Planner	Zoning, development siting and restrictions, Comprehensive Plans	<i>Ensuring compliance with floodplain ordinances and all applicable federal, state, &amp; city zoning compliance</i>
<b>Police,</b> Police Chief	Public safety and law enforcement, emergency response	<i>Public Safety Education, training of officers, community involvement and training in active shooter/hostile events</i>
<b>Public Works,</b> Public Works Director	Development and operations of public infrastructure (roads, utilities)	<i>City well and water system inspections; road reconstruction plans that include updates to storm, water, and sewer systems</i>
<b>Fire Department,</b> Fire Chief	Public and fire safety enforcement, emergency response	<i>Annual inspection of high hazard buildings; plan review of all buildings that require fire protection system to ensure compliance of fire code.</i>

Table 11 identifies process and ordinance resources.

**Table 11: Lakeville Additional Implementation Resources**

Lakeville Program/Policy/Technical Documents	Year adopted/revised	Method of incorporation into the hazard mitigation plan
City of Lakeville Emergency Operations Plan	2014	Action plan for all hazards
Capital Improvements Plan	2015	Infrastructure upgrades and repairs
Damage Reports/Flooding/2005 and 2010	2010	Reviewed historical data on localized flooding
FCC Narrow Banding Requirement	2014	Equipment upgrades to notification system
Zoning Ordinances	2015	Reviewed ordinances for hazard planning purposes

## CITY OF LILYDALE

Table 1: Lilydale Community Data

<b>Population (2014):</b>	948
<b>Households:</b>	583
<b>Employment/Jobs:</b>	565
<b>Area:</b>	0.9 Sq. Mi.
<b>Major Land Uses:</b>	48.5% Park and Recreational 12.9% Residential 5.0% Commercial
<b>Community Type:</b>	Suburban
<b>Undeveloped Area:</b>	2.0%

Source: Metropolitan Council Community Profiles

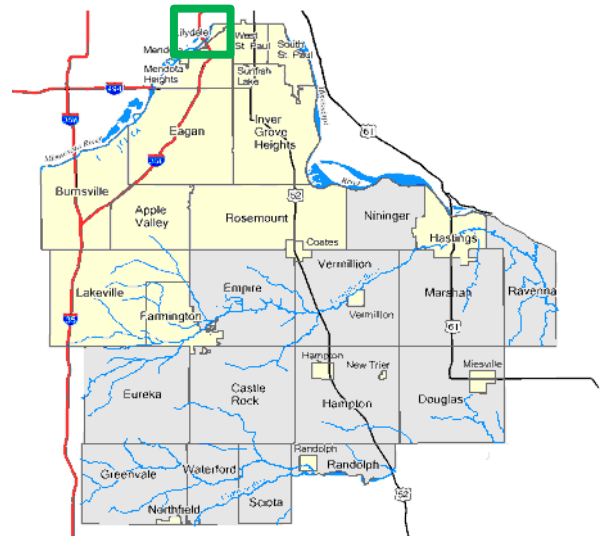


Figure 1: City of Lilydale Location

## Hazards of Concern

Lakeville staff evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

Table 2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
<b>Frequency</b>	Unlikely: <1% chance in 100 years	Occasional: 1 to 10% chance in next year	Likely: >10 to <100% chance in next year	Highly Likely: 100% chance in next year
<b>Warning Time</b>	More than 12 hours	6-12 hours	3-6 hours	None-minimal
<b>Geographic Extent</b>	Localized	Community-wide	County-wide or greater	
<b>Likely Impact</b>	Negligible	Limited	Critical	Catastrophic

Table 3: Lilydale Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
<b>Violent Summer Storms</b>	4	4	2	3	<b>13</b>
<b>Tornado</b>	4	4	2	3	<b>13</b>
<b>Terrorism</b>	3	4	3	2	<b>12</b>
<b>Cyber Terrorism</b>	4	4	1	2	<b>11</b>
<b>Structural Fire</b>	2	4	1	3	<b>10</b>
<b>Hazardous / Nuclear Material Incidents</b>	3	4	1	2	<b>10</b>
<b>Violent Winter Storms</b>	3	3	2	2	<b>10</b>
<b>Landslide</b>	3	4	1	2	<b>10</b>
<b>Flash Flood</b>	3	3.5	1	2	<b>9.5</b>
<b>Extreme Heat</b>	3	1	3	2	<b>9</b>
<b>Extreme Cold</b>	3	1	3	2	<b>9</b>
<b>Infectious Disease</b>	2	1	3	2	<b>8</b>
<b>Drought</b>	3	1	2	2	<b>8</b>
<b>Water Supply Contamination, including WWTP Failure</b>	1	2	2	2	<b>7</b>
<b>Overland Flood</b>	3	1	1	2	<b>7</b>
<b>Wildfire</b>	1	3	1	2	<b>7</b>
<b>Dam Failure</b>	1	1	1	2	<b>5</b>

\*New Hazards considered in 2016

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

### General Land Use

Figure 2 depicts general land use in Lilydale, with park-recreation and residential uses being the predominant land uses.

### Structural Inventory Value

Table 4 provides a current total and estimated value for structures in the City of Lilydale.

Data are from the Dakota County's Offices of Assessor Services and Geographic Information Services. Structures identified as residential, commercial, industrial, and agricultural have the types of structures associated with those land uses. "Exempt" includes all buildings not subject to property taxes, such as government buildings, schools, and places of worship. "Utilities" includes fixed sites with infrastructure for electricity, sewer, and water. "Other" includes structures that do not fall into preceding categories.

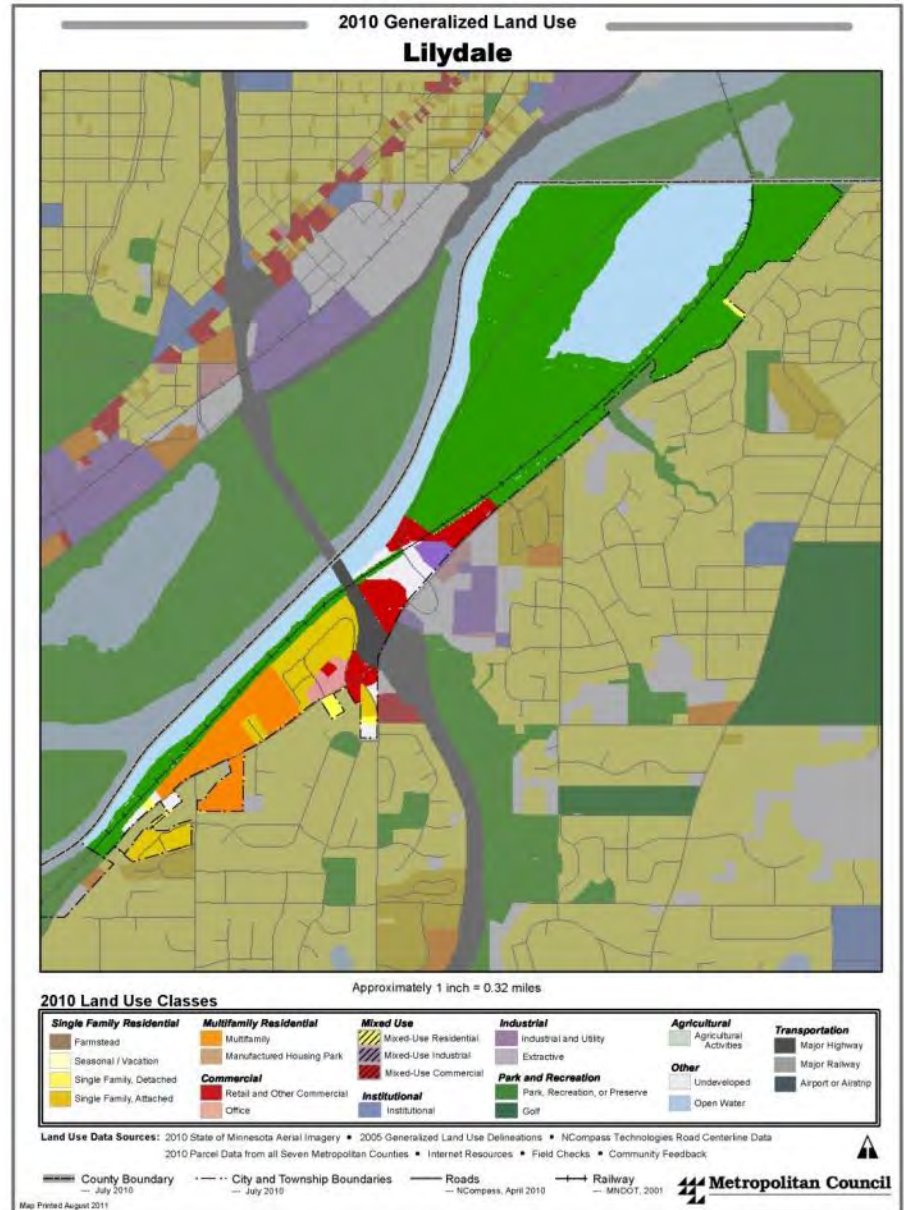


Figure 2: Lilydale 2010 Land Use Map, Metropolitan Council

Table 4: Structural Inventory and Value, Lilydale

Use Type	Number of Structures	Structural Value	Land Value	Total Value
Commercial	21	\$8,163,900	\$5,180,200	\$13,344,100
Exempt	8	\$195,500	\$2,306,100	\$2,501,600
Residential	66	\$130,324,800	\$30,833,400	\$161,158,200
<b>TOTAL</b>	<b>95</b>	<b>\$138,684,200</b>	<b>\$38,319,700</b>	<b>\$177,003,900</b>

## Vulnerability

### Vulnerable Populations

Table 5 provides current estimates of populations in Lilydale considered by FEMA to be at potentially increased risk during hazard events.

**Table 5: Lilydale Potentially Vulnerable Populations, American Community Survey 2010-2014 Estimates**

Potentially Vulnerable Population	Number (#)	Percentage (%)	U.S. (%)	Lilydale, MN – U.S. Difference
Under Age 5	17	2.3%	6.4%	-4.1%
Over Age 65	361	48.3%	13.7%	34.6%
Below Federal Poverty Line	7	0.9%	15.6%	-14.7%
Living with a Disability	124	16.6%	12.3%	4.3%

### Vulnerability of Critical Assets to Hazards

Lilydale staff evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table 6. Hazards identified as non-applicable to critical facilities include: *dam failure*. Figure 3 provides general locations for selected critical assets in Lilydale.

**Table 6: Lilydale Assessment of Critical Assets**

Critical Facilities	Summer Storms	Tornado	Structure Fire	Hazmat Incidents	Flash Flood	Winter Storms	Infectious Disease	Water Supply Contamination	Overland Flood	Terrorism	Wildfire	Drought	Extreme Temps	Landslide	Cyber Threats

### Changes since the 2011 Plan

Lilydale representatives identified use changes to critical facilities since the plan update in 2011:

- New senior living facilities

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

**Figure 3: City of Lilydale – Critical Facilities**



### National Flood Insurance Program Participation and Compliance

Table 7 includes information on Lilydale's participation in the National Flood Insurance Program (NFIP). Additional information follows about City compliance with the terms of the NFIP.

**Table 7: Lilydale NFIP Participation**

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Lilydale	275241	12/2/11	4	\$1,225,900

### Compliance:

Compliance is ensured through Floodplain management ordinance review and enforcement per contracted city planner (Stantec).



## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

Table 8 provides an inventory and assessed value of structures in Lilydale located within the digital flood insurance rate map (DFIRM) boundaries. Structures are listed by predominant land use categories. The table was compiled with data from the Dakota County Office of GIS and Assessor's Office.

**Table 8: Total Floodplain Structure and Value Inventory, Lilydale**

Structure Type	Total Structures	Estimated Land Value	Estimated Building Value	Total Value
Commercial	3	\$323,500	\$548,600	\$872,100
Exempt	8	\$211,700	\$0	\$211,700
<b>TOTAL</b>	<b>11</b>	<b>\$535,200</b>	<b>\$548,600</b>	<b>\$1,083,800</b>

### Strategy Review and Development

In 2016, Lilydale representatives reviewed their strategies from the 2011 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2016 Plan update as ongoing efforts or project that have not been completed. City staff considered and addressed FEMA requirements for:

1. A mitigation strategy that identifies and analyzes a comprehensive range of specific mitigation actions and projects and further identifies which actions were selected for implementation
2. At least one strategy to reduce risk to buildings and infrastructure

City staff also developed new strategies reflective of remaining concerns and vulnerabilities. Table 9 lists the City's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

**Table 9: Lilydale All-Hazard Mitigation Plan Strategies**

LILYDALE MITIGATION STRATEGIES			
<b>1. Implement and maintain Stormwater Management Plan.*</b>			
<i>Priority:</i> (21)^		<i>Hazards:</i> Flash Flooding	
<i>Lead:</i> City Engineer, City Administration		<i>Status/Completion:</i> Existing-New / Ongoing	
<i>Implementation:</i> Ordinances, PUD Requirements		<i>Est. Cost/Funding Source:</i> \$1,000 / Property Owners, Budget	
<b>2. Promote recycling of household hazardous waste at the County Recycling Zone</b>			
<i>Priority:</i> 20		<i>Hazards:</i> Hazmat Incident	
<i>Lead:</i> City Administrator		<i>Status/Completion:</i> Existing-New / Ongoing	
<i>Implementation:</i> Information provided from City Staff, public safety representatives		<i>Est. Cost/Funding Source:</i> \$1,000 yearly / Budget	
<b>3. Educate the public on enrolling in reverse 911 services.</b>			
<i>Priority:</i> 21		<i>Hazards:</i> All	
<i>Lead:</i> City Administrator		<i>Status/Completion:</i> Ongoing	
<i>Implementation:</i> Public information in city newsletter		<i>Est. Cost/Funding Source:</i> \$200 yearly / Budget	
<b>4. Evaluate cyber vulnerabilities of city resources.</b>			
<i>Priority:</i> 18		<i>Hazards:</i> Cyber Attack	
<i>Lead:</i> City Administrator		<i>Status/Completion:</i> Ongoing	
<i>Implementation:</i> Contracted review		<i>Est. Cost/Funding Source:</i> \$1,000 / Budget	



**LILYDALE MITIGATION STRATEGIES****5. Implement storm sewer management project to increase capacity and direct flow.***Priority:* 21*Lead:* City Engineer, City Administrator*Implementation:* Project Plan*Hazards:* Flash Flood, Overland Flood*Status/Completion:* Existing / 2016*Est. Cost/Funding Source:* \$700,000 / Budget

\*Reduces risk to buildings or infrastructure

\*\* Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

^Modified STAPLEE evaluation score; higher scores generally correlated to fewer implementation barriers

**Implementation Resources:**

Table 10 identifies staff resources and roles in implementing its mitigation strategies. Table 12 identifies process and ordinance resources.

**Table 10: Lilydale Mitigation Implementation Resources**

Department, Responsible Position	General Role	Processes for Implementing Mitigation Strategies
<b>Building Inspections</b> - contract	Building inspections, regulation of new housing development	<i>E.g., enforce safety restrictions including setbacks, building materials, and fire suppression systems</i>
<b>Planning/Zoning/Engineer</b> contracted	Zoning, development siting and restrictions, Comprehensive Plans	<i>E.g., floodplain ordinances and compliance</i>
<b>Police</b> , Police Chief (Mendota Heights)	Public safety, law enforcement, emergency response	<i>E.g., response training, public safety education</i>
<b>Public Works</b> , Public Works Director (Mendota Heights)	Development and operations of public infrastructure (roads, utilities)	<i>E.g., City well inspection and maintenance</i>
<b>Fire Department</b> , Fire Chief (shared)	Public-fire safety enforcement, emergency response	<i>E.g., inspect commercial structures for fire hazards</i>
<b>City Council</b>	Establish policy, enact budget	<i>E.g., budget allocations or plan initiatives</i>
<b>City Administration</b>	Decision-support for Council, City operations	

**Table 12: Lilydale Additional Implementation Resources**

Lilydale Program/Policy/Technical Documents	Year adopted/revised	Method of incorporation into the hazard mitigation plan
Engineering Study & Ordinance	2007	Reviewed
Program	2010	Building safety/Fire Safety/Fire Code
Documents - Public Safety	2011	Updating in 2011
Program - Public Safety	2011	Updating in 2011
Information Documents	2011	Building Codes, Building Safety
Emergency Preparedness Plan - Public Safety	2011	Reviewed
Stormwater Management Plan	2011	To be reviewed by 2020
Comprehensive plan	2008	To be reviewed 2017-2018
MS4 Permit (Stormwater runoff management)	2016	Annually Reviewed

## CITY OF MENDOTA

Table 1: Mendota Community Data

<b>Population (2014):</b>	202
<b>Households:</b>	80
<b>Employment/Jobs:</b>	250
<b>Area:</b>	0.3 Sq. Mi.
<b>Major Land Uses:</b>	34.3% Park and Recreational 24.2% Residential 15.2% Agricultural/Undeveloped
<b>Community Type:</b>	Suburban
<b>Undeveloped Area:</b>	15.2%

Source: Metropolitan Council Community Profiles

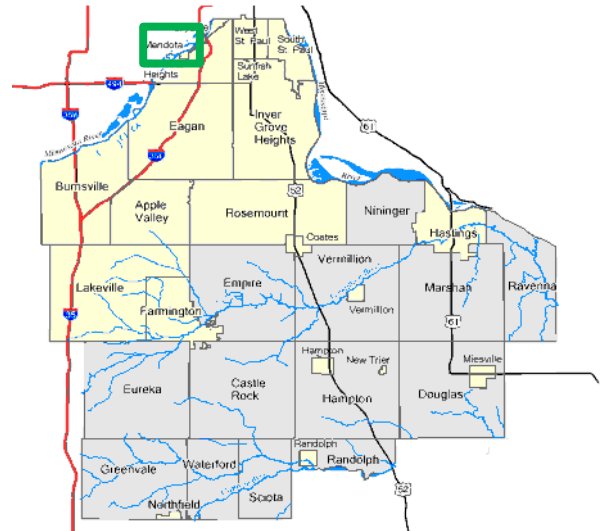


Figure 1: City of Mendota Location

## Hazards of Concern

Mendota representatives evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

Table 2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
<b>Frequency</b>	Unlikely: <1% chance in 100 years	Occasional: 1 to 10% chance in next year	Likely: >10 to <100% chance in next year	Highly Likely: 100% chance in next year
<b>Warning Time</b>	More than 12 hours	6-12 hours	3-6 hours	None-minimal
<b>Geographic Extent</b>	Localized	Community-wide	County-wide or greater	
<b>Likely Impact</b>	Negligible	Limited	Critical	Catastrophic

Table 3: Mendota Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Landslide	3	4	1	4	12
Violent Summer Storms	3	1	3	3	10
Tornado	3	1	3	3	10
Flash Flood	3	1	3	3	10
Violent Winter Storms	2	1	3	3	9
Structural Fire	2	4	1	1	8
Extreme Heat	2	2	1	2	7
Extreme Cold	2	2	1	2	7
Cyber Security	1	4	1	1	7
Hazardous / Nuclear Material Incidents	1	1	3	1	6
Terrorism	1	1	3	1	6
Overland Flood	2	1	1	1	5
Infectious Disease	1	1	1	1	4
Water Supply Contamination, including WWTP Failure	1	1	1	1	4
Wildfire	1	1	1	1	4
Drought	1	1	1	1	4
Dam Failure	1	1	1	1	4

\*New Hazards considered in 2016

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

### General Land Use

Figure 2 depicts general land use in Mendota, with park-recreation and residential being the predominant land uses.

### Structural Inventory Value

Table 4 provides a current total and estimated value for structures in the City of Mendota.

Data are from the Dakota County's Offices of Assessor Services and Geographic Information Services. Structures identified as residential, commercial, industrial, and agricultural have the types of structures associated with those land uses. "Exempt" includes all buildings not subject to property taxes, such as government buildings, schools, and places of worship. "Utilities" includes fixed sites with infrastructure for electricity, sewer, and water. "Other" includes structures that do not fall into preceding categories.

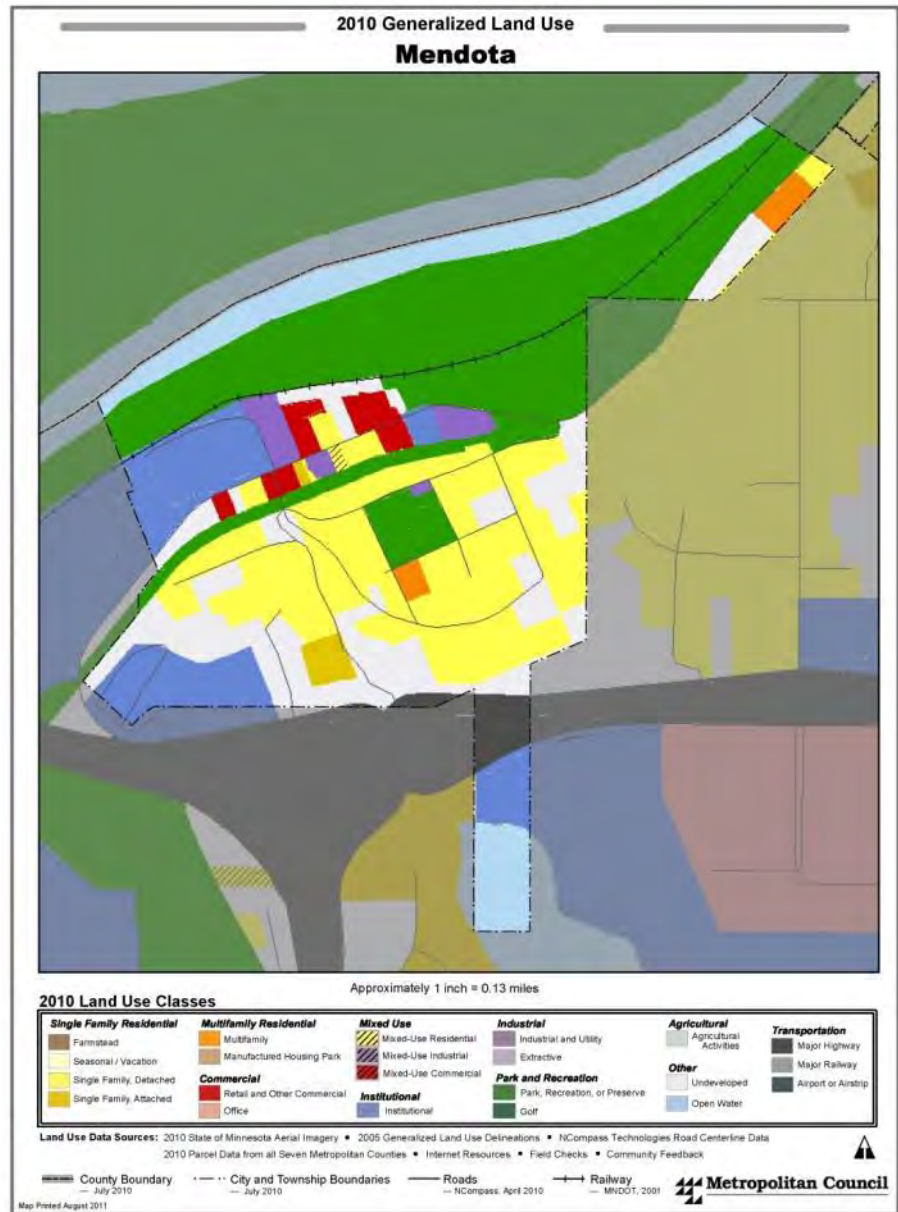


Figure 2: Mendota 2010 Land Use Map, Metropolitan Council

Table 4: Structural Inventory and Value, Mendota

Use Type	Number of Structures	Structural Value	Land Value	Total Value
Commercial	16	\$2,259,100	\$1,245,700	\$3,504,800
Exempt	11	\$1,570,000	\$1,235,800	\$2,805,800
Industrial	2	\$641,900	\$490,700	\$1,132,600
Residential	121	\$17,118,100	\$9,297,200	\$26,415,300
<b>TOTAL</b>	<b>150</b>	<b>\$21,589,100</b>	<b>\$12,269,400</b>	<b>\$33,858,500</b>

## Vulnerability

### Vulnerable Populations

Table 5 provides current estimates of populations in Mendota considered by FEMA to be at potentially increased risk during hazard events.

**Table 5: Mendota Potentially Vulnerable Populations, American Community Survey 2010-2014 Estimates**

Potentially Vulnerable Population	Number (#)	Percentage (%)	U.S. (%)	Mendota, MN – U.S. Difference
Under Age 5	14	6.3%	6.4%	-0.1%
Over Age 65	13	5.9%	13.7%	-7.8%
Below Federal Poverty Line	36	16.3%	15.6%	0.7%
Living with a Disability	18	8.1%	12.3%	-4.2%

### Vulnerability of Critical Assets to Hazards

Mendota staff evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table 6. Figure 3 provides general locations for selected critical assets in Mendota.

**Table 6: Mendota Assessment of Critical Assets**

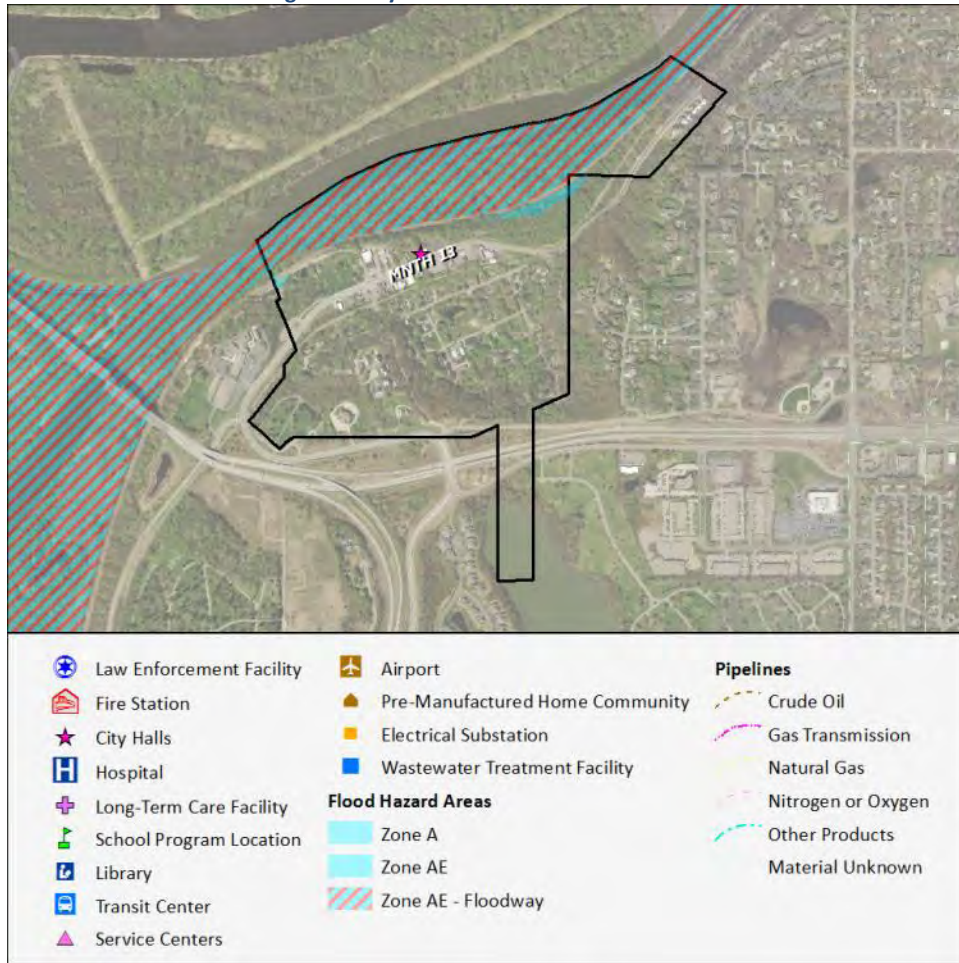
Critical Facilities	Violent Summer Storms	Tornado	Structure Fire	Hazmat Incidents	Flash Flood	Violent Winter Storms	Infectious Disease	Water Supply Contamination	Overland Flood	Terrorism	Wildfire	Drought	Extreme Temps	Dam Failure	Landslide	Cyber Threats

### Changes since the 2011 Plan

Mendota representatives identified no significant changes to critical facilities since the plan update in 2011.

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

Figure 3: City of Mendota – Critical Facilities



### National Flood Insurance Program Participation and Compliance

Table 7 includes information on Mendota's participation in the National Flood Insurance Program (NFIP). Additional information follows about City compliance with the terms of the NFIP.

Table 7: Mendota NFIP Participation

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Mendota	270109	12/2/11	-	-

### Compliance:

Compliance is ensured through use of the City's official flood zoning map and enforcement of City Ordinances related to floodplain zones, allowed/prohibited uses, standards, and addressing violations: **Ordinance 809.01.**



## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

GIS analyses revealed no floodplain structures in Mendota. The table was compiled with data from the Dakota County Office of GIS and Assessor's Office.

**Table 8: Total Floodplain Structure and Value Inventory, Mendota**

Structure Type	Total Structures	Estimated Land Value	Estimated Building Value	Total Value
<b>TOTAL</b>	<b>0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

### Strategy Review and Development

In 2016, Mendota representatives reviewed their strategies from the 2011 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2016 Plan update as ongoing efforts or project that have not been completed. City staff considered and addressed FEMA requirements for:

1. A mitigation strategy that identifies and analyzes a comprehensive range of specific mitigation actions and projects and further identifies which actions were selected for implementation
2. At least one strategy to reduce risk to buildings and infrastructure

City staff also developed new strategies reflective of remaining concerns and vulnerabilities. Table 9 lists Mendota's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

**Table 9: Mendota All-Hazard Mitigation Plan Strategies**

<b>MENDOTA MITIGATION STRATEGIES</b>			
<b>1. Complete de-slope project.* **</b>			
<i>Priority:</i> 14^		<i>Hazards:</i> Landslide	
<i>Lead:</i> Contractor-MSA		<i>Status/Completion:</i> New / Summer2016	
<i>Implementation:</i> Soil erosion and sedimentation control projects		<i>Est. Cost/Funding Source:</i> \$345,000 / Bond, FEMA funded	
<b>2. Enforce-maintain stormwater management ordinances.</b>			
<i>Priority:</i> 9		<i>Hazards:</i> Erosion control	
<i>Lead:</i> Community Development		<i>Status/Completion:</i> Existing / Ongoing	
<i>Implementation:</i> Local Ordinance		<i>Est. Cost/Funding Source:</i> Staff Time / City Budget	
<b>3. Continue sanitary sewer management.</b>			
<i>Priority:</i> 13		<i>Hazards:</i> Sewer back-ups	
<i>Lead:</i> City Council, City Clerk		<i>Status/Completion:</i> Existing / Ongoing	
<i>Implementation:</i> Sewer Maintenance Schedule		<i>Est. Cost/Funding Source:</i> \$6,000 yearly / City Budget	
<b>4. Continue stormwater pond maintenance.</b>			
<i>Priority:</i> 10		<i>Hazards:</i> Flash Flood	
<i>Lead:</i> Park Commissioner		<i>Status/Completion:</i> Existing / Ongoing	
<i>Implementation:</i> Pond Maintenance Schedule		<i>Est. Cost/Funding Source:</i> \$1,000 yearly / City Budget	

\*Reduces risk to buildings or infrastructure

\*\* Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

^Modified STAPLEE evaluation score; higher scores generally correlated to fewer implementation barriers



## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

### Implementation Resources:

Table 10 identifies staff resources and roles in implementing its mitigation strategies.

**Table 11: Mendota Mitigation Implementation Resources**

Department, Responsible Position	General Role	Processes for Implementing Mitigation Strategies
<b>Building Inspections</b> – contract, A to Z Inspection (M. Andrejka)	Building inspections, regulation of new housing development.	<i>E.g., enforce safety restrictions including setbacks, building materials, and fire suppression systems</i>
<b>Planning/Zoning</b> City Council	Zoning, development siting and restrictions, Comprehensive Plans	<i>E.g., floodplain ordinances and compliance</i>
<b>Police</b> , Police Chief (Mendota Heights)	Public safety, law enforcement, emergency response	<i>E.g., response training, public safety education</i>
<b>Public Works, city sewer</b> contract (McDonough)	Development and operations of public infrastructure (roads, utilities)	<i>E.g., City well inspection and maintenance</i>
<b>Fire Department</b> , Fire Chief (Mendota Heights)	Public-fire safety enforcement, emergency response	<i>E.g., inspect commercial structures for fire hazards</i>
<b>City Council</b>	Establish policy, enact budget	<i>E.g., budget allocations or plan initiatives</i>
<b>City Administration</b>	Decision-support for Council, City operations	

Table 11 identifies process and ordinance resources.

**Table 12: Mendota Additional Implementation Resources**

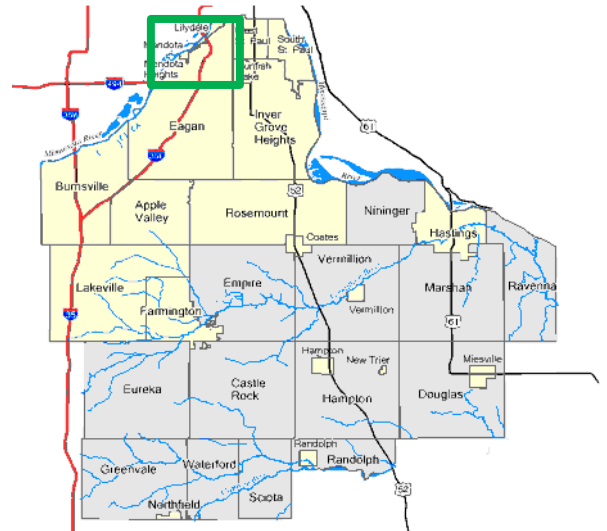
Mendota Program/Policy/Technical Documents	Year adopted/revised	Method of incorporation into the hazard mitigation plan
Storm Water Management Plan	June 2016	Flood Management Reference
Emergency Preparedness Plan	2016	Hazard ID and Ranking
Comprehensive Sewer Plan	May 2016	Infrastructure improvement information
2030 Comprehensive plan	Nov 2015	Mitigation Plan and Comp Plan support one another through sharing consistent objectives in the area of reducing the impacts of known hazards.
City Code Chapter 805, Sec 3-Soil Erosion and Sedimentation Control	Sept 2015	Review control measures to protect exposed slopes.
City Code Chapter 8, Sec 2-Zoning Districts	March 2016	Reviewed to ensure consistent floodplain management objectives.
Storm Water Management Plan	June 2016	Flood Management Reference

## CITY OF MENDOTA HEIGHTS

**Table 1: Mendota Heights Community Data**

<b>Population (2014):</b>	11,124
<b>Households:</b>	4,450
<b>Employment/Jobs:</b>	10,842
<b>Area:</b>	10.0 Sq. Mi.
<b>Major Land Uses:</b>	37% Residential 20% Park and Recreation 11% Institutional
<b>Community Type:</b>	Suburban
<b>Undeveloped Area:</b>	6%

Source: Metropolitan Council Community Profiles



**Figure 1: City of Mendota Heights Location**

### Hazards of Concern

Mendota Heights staff evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

**Table 2: Dakota County Hazard Rating Model**

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
<b>Frequency</b>	Unlikely: <1% chance in 100 years	Occasional: 1 to 10% chance in next year	Likely: >10 to <100% chance in next year	Highly Likely: 100% chance in next year
<b>Warning Time</b>	More than 12 hours	6-12 hours	3-6 hours	None-minimal
<b>Geographic Extent</b>	Localized	Community-wide	County-wide or greater	
<b>Likely Impact</b>	Negligible	Limited	Critical	Catastrophic

**Table 3: Mendota Heights Hazard Rating**

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Cyber Terrorism	4	4	2	3	13
Terrorism	3	4	3	2	12
Violent Summer Storms	4	3	2	2	11
Structural Fire	4	4	1	2	11
Flash Flood	3	3	3	2	11
Water Supply Contamination, including WWTP Failure	1	4	2	4	11
Tornado	3	3	1	3	10
Hazardous / Nuclear Material Incidents	3	4	1	2	10
Violent Winter Storms	3	2	3	2	10
Infectious Disease	2	2	3	3	10
Wildfire	3	4	1	2	10
Drought	3	1	3	2	9
Extreme Heat	3	1	3	2	9
Extreme Cold	3	1	3	2	9
Landslide	3	3	1	2	9
Overland Flood	3	1	1	2	7
Dam Failure	1	0	1	1	3

\*New Hazards considered in 2016

### General Land Use

Figure 2 depicts general land use in Mendota Heights, with park-recreation and residential being the predominant land uses.

### Structural Inventory Value

Table 4 provides a current total and estimated value for structures in the City of Mendota Heights.

Data are from the Dakota County's Offices of Assessor Services and Geographic Information Services. Structures identified as residential, commercial, industrial, and agricultural have the types of structures associated with those land uses. "Exempt" includes all buildings not subject to property taxes, such as government buildings, schools, and places of worship. "Utilities" includes fixed sites with infrastructure for electricity, sewer, and water. "Other" includes structures that do not fall into preceding categories.

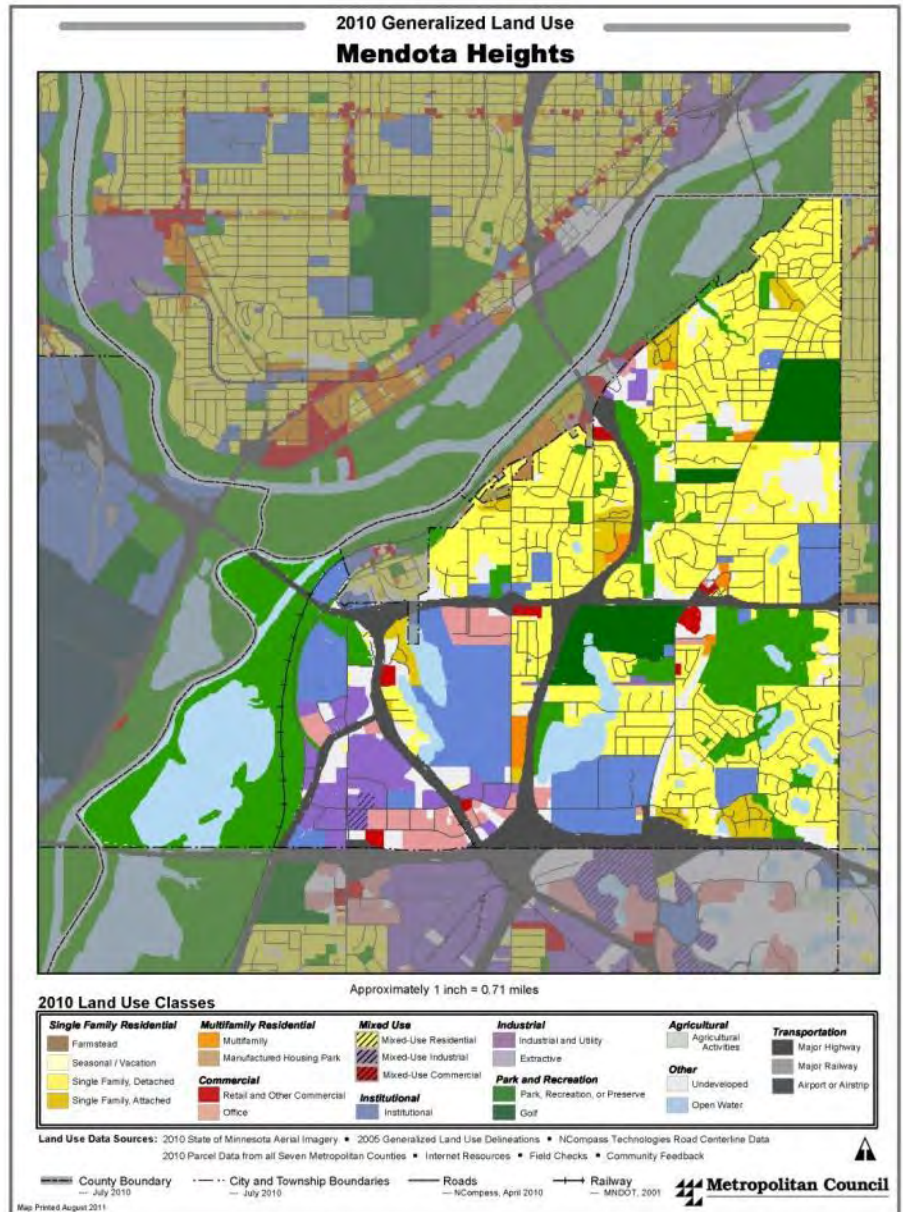


Figure 2: Mendota Heights 2010 Land Use Map, Metropolitan Council

Table 4: Structural Inventory and Value, Mendota Heights

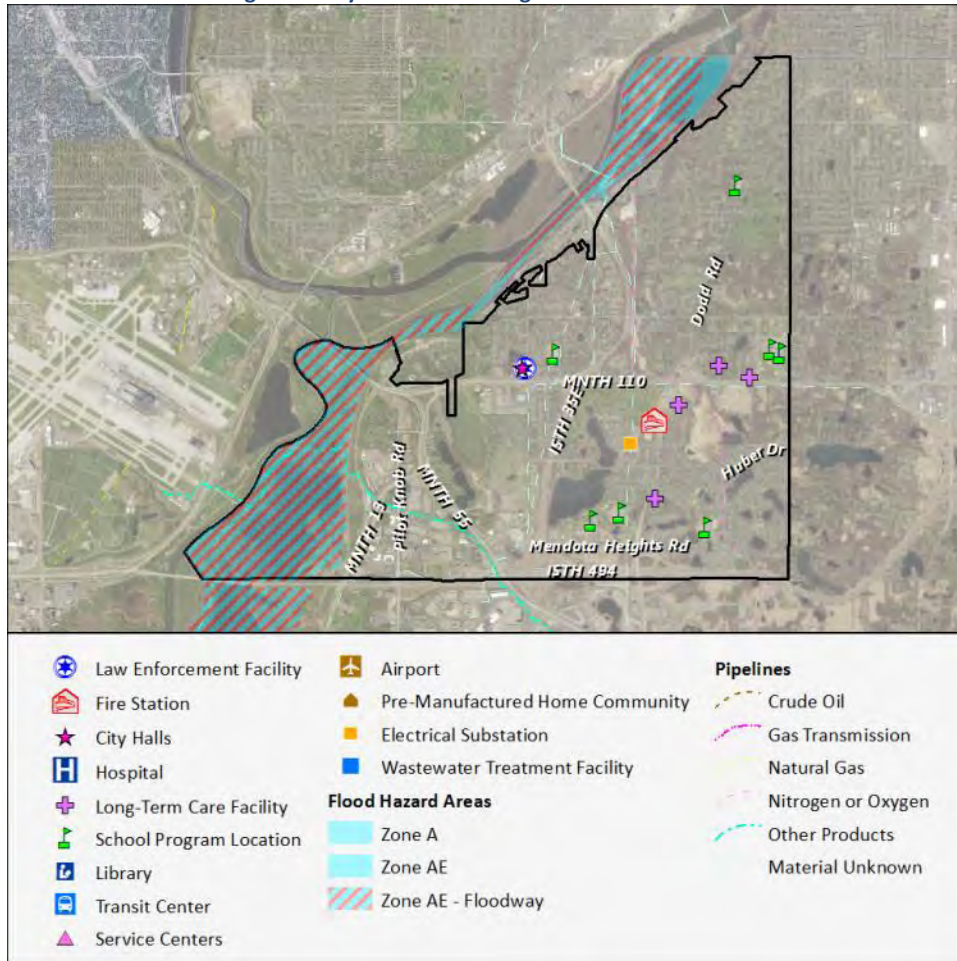
Use Type	Number of Structures	Structural Value	Land Value	Total Value
Commercial	146	\$164,144,200	\$80,916,500	\$245,060,700
Exempt	222	\$89,560,300	\$90,333,300	\$179,893,600
Other	29	\$40,970,100	\$25,113,400	\$66,083,500
Industrial	2	\$486,500	\$68,700	\$555,200
Residential	4,333	\$1,156,205,300	\$412,423,500	\$1,568,628,800
Utilities	62	\$8,722,700	\$2,925,400	\$11,648,100
<b>TOTAL</b>	<b>4,794</b>	<b>\$1,460,089,100</b>	<b>\$611,780,800</b>	<b>\$2,071,869,900</b>





## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

**Figure 3: City of Mendota Heights – Critical Facilities**



### National Flood Insurance Program Participation and Compliance

Table 7 includes information on Mendota Heights' participation in the National Flood Insurance Program (NFIP). Additional information follows about City compliance with the terms of the NFIP.

**Table 7: Mendota Heights NFIP Participation**

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Mendota Heights	270110	2/8/1974	9	\$2,790,000

### Compliance:

Compliance is ensured through the City of Mendota Heights Title 12 Zoning Chapter 3, Critical Area, and Title 12 Zoning Chapter 7, Flood Plain Management. These encompass use of the City official flood zoning map; prohibited, conditional, and allowed uses in the floodway and flood fringe; and required procedures and standards.

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

Table 8 provides an inventory and assessed value of structures in Mendota Heights located within the digital flood insurance rate map (DFIRM) boundaries. Structures are listed by predominant land use categories. The table was compiled with data from the Dakota County Office of GIS and Assessor's Office.

**Table 8: Total Floodplain Structure and Value Inventory, Mendota Heights**

Structure Type	Total Structures	Estimated Land Value	Estimated Building Value	Total Value
Exempt		\$1,093,400	\$70,900	\$1,164,300
<b>TOTAL</b>	<b>25</b>	<b>\$1,093,400</b>	<b>\$70,900</b>	<b>\$1,164,300</b>

### Strategy Review and Development

In 2016, Mendota Heights representatives reviewed their strategies from the 2011 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III), and to identify strategies to carry forward into the 2016 Plan update as ongoing efforts or project that have not been completed. City staff considered and addressed FEMA requirements for:

1. A mitigation strategy that identifies and analyzes a comprehensive range of specific mitigation actions and projects and further identifies which actions were selected for implementation
2. At least one strategy to reduce risk to buildings and infrastructure

City staff also developed new strategies reflective of remaining concerns and vulnerabilities. Table 9 lists Mendota Heights' strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

**Table 9: Mendota Heights All-Hazard Mitigation Plan Strategies**

MENDOTA HEIGHTS MITIGATION STRATEGIES			
<b>1. Remodel / build Fire and Police Department spaces to develop a useable Emergency Operations Center.*</b>			
<i>Priority:</i> Low (16)^		<i>Hazards:</i> All	
<i>Lead:</i> City Administrator		<i>Status/Completion:</i> Existing-New / 2018	
<i>Implementation:</i> Council Approval, CIP		<i>Est. Cost/Funding Source:</i> \$10 Million / Bonding	
<b>2. Conduct GENSET Emergency Generator Test.*</b>			
<i>Priority:</i> Low (15)		<i>Hazards:</i> Severe Storms	
<i>Lead:</i> Police/City Staff		<i>Status/Completion:</i> Existing / Ongoing-Annual	
<i>Implementation:</i> Emergency Preparedness Plan		<i>Est. Cost/Funding Source:</i> Staff Time / Building Maintenance Fund	
<b>3. Enhance computer security and data recovery.*</b>			
<i>Priority:</i> Low (16)		<i>Hazards:</i> Cyber-Attack	
<i>Lead:</i> IT Manager		<i>Status/Completion:</i> Existing-New / 2017	
<i>Implementation:</i> Hire contractor, staff		<i>Est. Cost/Funding Source:</i> \$80,000 / Budget	
<b>4. Conduct a comprehensive review of All Hazard Mitigation Plan every five years.**</b>			
<i>Priority:</i> Med (17)		<i>Hazards:</i> All	
<i>Lead:</i> Emergency Manager		<i>Status/Completion:</i> Existing-New / 2021	
<i>Implementation:</i> Emergency Preparedness Plan		<i>Est. Cost/Funding Source:</i> \$2,000 / Budget	



**MENDOTA HEIGHTS MITIGATION STRATEGIES**

**5. Monitor MANPADS sites.\***

*Priority:* Med (18)

*Lead:* Police Department, Chief

*Implementation:* Emergency Preparedness Plan

*Hazards:* Terrorism

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* Staff Time / Budget

**6. Line sanitary sewers for infiltration and inflow management.**

*Priority:* High (20)

*Lead:* Public Works, Director

*Implementation:* Capital Improvement Program

*Hazards:* Flash Flood

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* \$60,000 / Budget

**7. Continue NIMS training for EOP staff.**

*Priority:* High (20)

*Lead:* Police, Fire departments (Chiefs), city staff

*Implementation:* Emergency Preparedness Plan

*Hazards:* All

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* Staff Time / Budget

**8. Replace outdoor warning sirens.**

*Priority:* High (20)

*Lead:* Police Department, Chief

*Implementation:* Emergency Preparedness Plan

*Hazards:* Severe Storms, Tornado, Hazmat Incident

*Status/Completion:* Existing / June 11

*Est. Cost/Funding Source:* \$77,000 / City, County funds

**9. Clean and expand storm water ponds.**

*Priority:* Low (15)

*Lead:* Public Works, Director

*Implementation:* Council Approval, CIP

*Hazards:* Flash Flood, Severe Storms

*Status/Completion:* Existing-New / 2050

*Est. Cost/Funding Source:* \$5 Million / Grants, Budget

**10. Create a shared database of §302 facilities.**

*Priority:* High (20)

*Lead:* Emergency Manager

*Implementation:* Emergency Preparedness Plan

*Hazards:* Hazmat Incident

*Status/Completion:* Existing-New / 2017

*Est. Cost/Funding Source:* \$2,000 / Budget

**11. Expand wildfire education and mitigation.**

*Priority:* Low (16)

*Lead:* Fire Department, Chief

*Implementation:* Emergency Preparedness Plan

*Hazards:* Wildfire

*Status/Completion:* Existing-New / Ongoing annually

*Est. Cost/Funding Source:* \$1,500 / Budget

**12. Provide landslide prevention and education.**

*Priority:* Med (18)

*Lead:* City Planner

*Implementation:* Emergency Preparedness Plan

*Hazards:* Landslide

*Status/Completion:* Existing-New / Ongoing annually

*Est. Cost/Funding Source:* \$3,000 / Budget

**13. Provide public education on reverse 911 service registration.**

*Priority:* High (20)

*Lead:* Police Chief, Fire Chief, Comm. Dir.

*Implementation:* Emergency Preparedness Plan

*Hazards:* All, notification

*Status/Completion:* New / Ongoing annually

*Est. Cost/Funding Source:* \$5,000 / Budget

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

### MENDOTA HEIGHTS MITIGATION STRATEGIES

#### 14. Provide Knowledge Center training for all staff.

*Priority:* Med (19)

*Lead:* Emergency Manager

*Implementation:* Emergency Preparedness Plan

*Hazards:* All, operations

*Status/Completion:* Existing-new / Ongoing annually

*Est. Cost/Funding Source:* TBD / TBD

\*Reduces risk to buildings or infrastructure

\*\* Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

^Modified STAPLEE evaluation score; higher scores generally correlated to fewer implementation barriers

### Implementation Resources:

Table 10 identifies staff resources and roles in implementing its mitigation strategies.

**Table 10: Mendota Heights Mitigation Implementation Resources**

Department, Responsible Position	General Role	Processes for Implementing Mitigation Strategies
<b>Building Inspections:</b> contracted inspector	Building inspections, regulation of new housing development	<i>E.g., enforce safety restrictions including setbacks, building materials, and fire suppression systems</i>
<b>Planning/Zoning/Engineer:</b> City Planner	Zoning, development siting and restrictions, Comprehensive Plans	<i>E.g., floodplain ordinances and compliance</i>
<b>Police:</b> Police Chief	Public safety, law enforcement, emergency response	<i>E.g., response training, public safety education</i>
<b>Public Works:</b> Director	Development and operations of public infrastructure (roads, utilities)	<i>E.g., City well inspection and maintenance</i>
<b>Fire Department:</b> Fire Chief	Public-fire safety enforcement, emergency response	<i>E.g., inspect commercial structures for fire hazards</i>
<b>City Council</b>	Establish policy, enact budget	<i>E.g., budget allocations or plan initiatives</i>
<b>City Administration</b>	Decision-support for Council, City operations	

Table 11 identifies process and ordinance resources.

**Table 12: Mendota Heights Additional Implementation Resources**

Mendota Heights Program/Policy/Technical Documents	Year adopted/ revised	Method of incorporation into the hazard mitigation plan
Comprehensive Plan	2010	Sets land use vision for community, provides existing and projected information
Capital Improvement Plan	Annually	Ensures equipment necessary to carry out essential functions
Emergency Preparedness Plan	2010	Develops mitigation, response and recovery plans
Street Improvement Plan	2010	Assesses condition of public rights of way, schedule reconstruction
Storm Water Management Ordinance	2009	Establishes standards for runoff controls for all new developments and redevelopments
Floodplain Management Ordinance	2011 (ant.)	Will adopt new FEMA flood maps and ordinance language

# APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

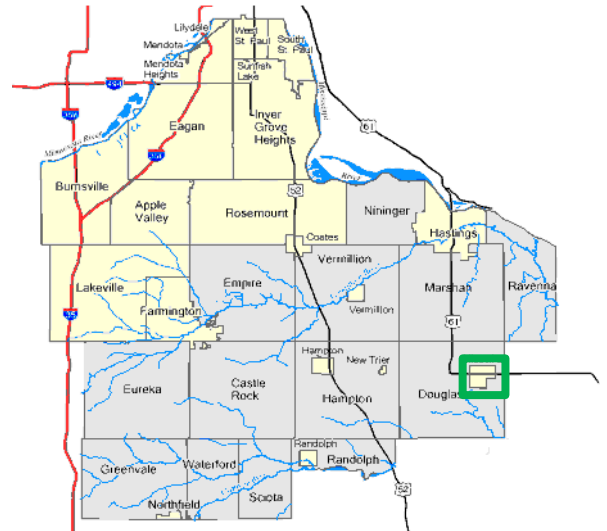
<b>Mendota Heights Program/Policy/Technical Documents</b>	<b>Year adopted/ revised</b>	<b>Method of incorporation into the hazard mitigation plan</b>
Zoning Ordinance	2010	Establishes standards for development
Building Code	Ongoing	City utilizes the State Building Code
Minnesota Uniform Fire Code	Ongoing	City utilizes the State Fire Code

## CITY OF MIESVILLE

**Table 1: Miesville Community Data**

<b>Population (2014):</b>	130
<b>Households:</b>	54
<b>Employment/Jobs:</b>	128
<b>Area:</b>	1.7 Sq. Mi.
<b>Major Land Uses:</b>	90% Agricultural / Undeveloped 6% Residential 1% Commercial
<b>Community Type:</b>	Diversified Rural
<b>Undeveloped Area:</b>	90%

Source: Metropolitan Council Community Profiles



**Figure 1: City of Miesville Location**

## Hazards of Concern

Miesville representatives evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

**Table 2: Dakota County Hazard Rating Model**

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
<b>Frequency</b>	Unlikely: <1% chance in 100 years	Occasional: 1 to 10% chance in next year	Likely: >10 to <100% chance in next year	Highly Likely: 100% chance in next year
<b>Warning Time</b>	More than 12 hours	6-12 hours	3-6 hours	None-minimal
<b>Geographic Extent</b>	Localized	Community-wide	County-wide or greater	
<b>Likely Impact</b>	Negligible	Limited	Critical	Catastrophic

**Table 3: Miesville Hazard Rating**

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Violent Summer Storms	4	2	3	2	11
Tornado	2	4	2	3	11
Hazardous/Nuclear Material Incidents	2	4	2	2	10
Water Supply Contamination, including WWTP Failure	1	4	2	3	10
Terrorism	1	4	1	3	9
Landslide*	1	4	2	2	9
Structural Fire	2	4	1	2	9
Flash Flood	3.5	3	1	1	8.5
Wildfire	1.5	4	1	2	8.5
Violent Winter Storms	2	2	2	2	8
Drought	2	1	2	3	8
Extreme Heat	2	1	2	2	7
Extreme Cold	2	1	2	2	7
Cyber Security Threats*	1	4	1	1	7
Infectious Disease	1	2	1	2	6
Dam Failure	1	2	1	2	6
Overland Flood	1.5	1	1	2	5.5

\*New Hazards considered in 2016

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

### General Land Use

Figure 2 depicts general land use in Miesville, with park-recreation and residential being the predominant land uses.

### Structural Inventory Value

Table 4 provides a current total and estimated value for structures in the City of Miesville.

Data are from the Dakota County's Offices of Assessor Services and Geographic Information Services. Structures identified as residential, commercial, industrial, and agricultural have the types of structures associated with those land uses. "Exempt" includes all buildings not subject to property taxes, such as government buildings, schools, and places of worship. "Utilities" includes fixed sites with infrastructure for electricity, sewer, and water. "Other" includes structures that do not fall into preceding categories.

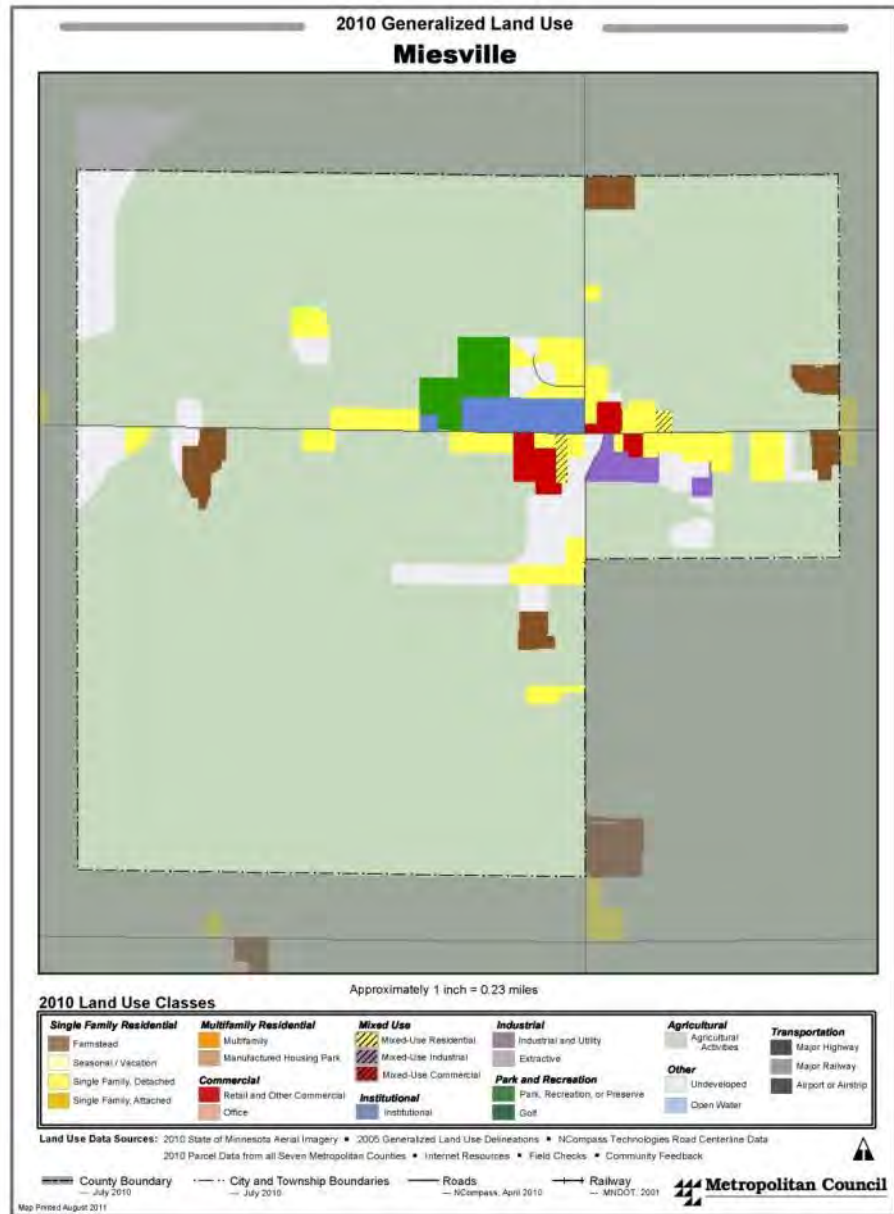


Figure 2: Miesville 2010 Land Use Map, Metropolitan Council

Table 4: Structural Inventory and Value, Miesville

Use Type	Number of Structures	Structural Value	Land Value	Total Value
Agricultural	23	\$745,500	\$7,265,800	\$8,011,300
Commercial	15	\$929,700	\$624,600	\$1,554,300
Exempt	6	\$1,113,200	\$646,000	\$1,759,200
Industrial	3	\$141,400	\$141,300	\$282,700
Residential	68	\$8,067,700	\$2,826,100	\$10,893,800
Utilities	0	\$164,100	\$161,300	\$325,400
<b>TOTAL</b>	<b>115</b>	<b>\$11,161,600</b>	<b>\$11,665,100</b>	<b>\$22,826,700</b>

## Vulnerability

### Vulnerable Populations

Table 5 provides current estimates of populations in Miesville considered by FEMA to be at potentially increased risk during hazard events.

**Table 5: Miesville Potentially Vulnerable Populations, American Community Survey 2010-2014 Estimates**

Potentially Vulnerable Population	Number (#)	Percentage (%)	U.S. (%)	Miesville, MN – U.S. Difference
Under Age 5	15	9.2%	6.4%	2.8%
Over Age 65	24	14.7%	13.7%	1.0%
Below Federal Poverty Line	25	15.3%	15.6%	-0.3%
Living with a Disability	10	6.1%	12.3%	-6.2%

### Vulnerability of Critical Assets to Hazards

Miesville staff evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table 6. Figure 3 provides general locations for selected critical assets in Miesville.

**Table 6: Miesville Assessment of Critical Assets**

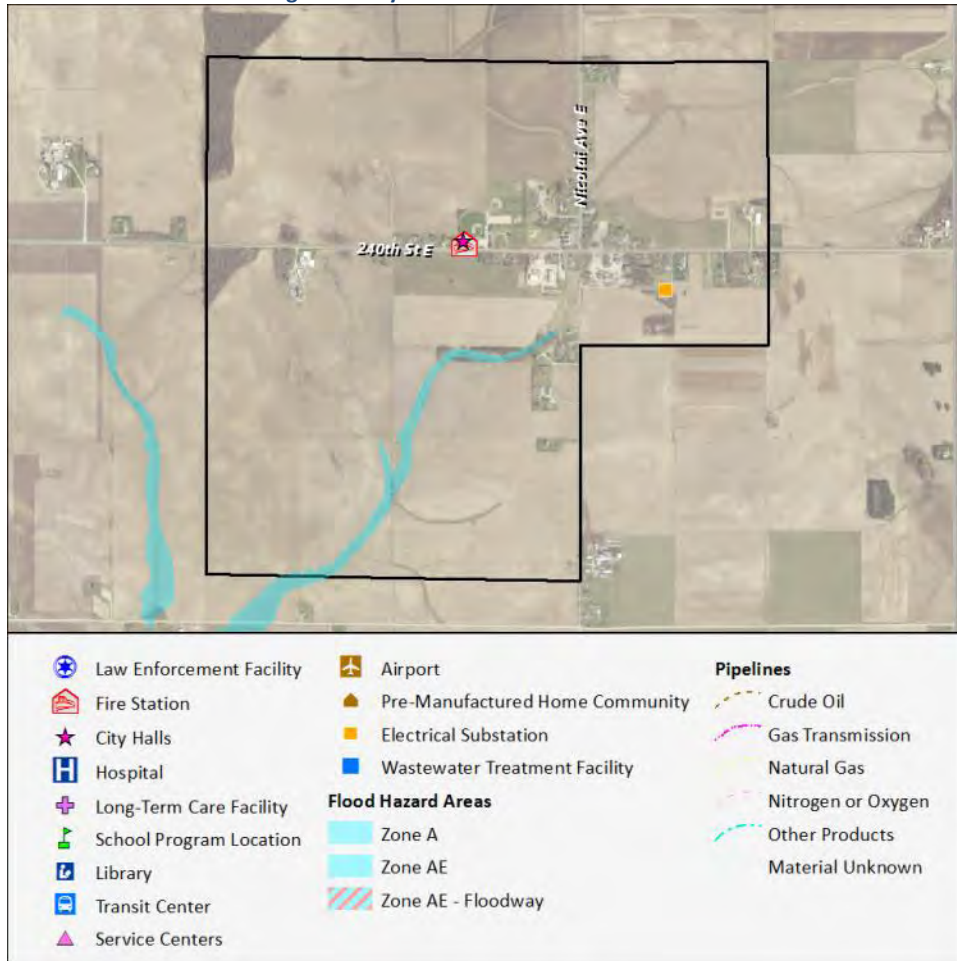
Critical Facilities	Summer Storms	Tornado	Structure Fire	Hazmat	Flash Flood	Winter Storms	Infectious Disease	Water Supply Contamination	Overland Flood	Terrorism	Wildfire	Drought	Extreme Temps	Dam Failure	Landslide	Cyber Threats

### Changes since the 2011 Plan

Miesville officials identified use changes to critical facilities since the plan update in 2011:  
Solar farm addition planned for 2017.



Figure 3: City of Miesville – Critical Facilities



### National Flood Insurance Program Participation and Compliance

Miesville does not participate in the National Flood Insurance Program (NFIP). GIS review of parcel, building, and floodplain data identified no floodplain structures.

### Strategy Review and Development

In 2016, Miesville representatives reviewed their strategies from the 2011 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2016 Plan update as ongoing efforts or project that have not been completed. City staff considered and addressed FEMA requirements for:

1. A mitigation strategy that identifies and analyzes a comprehensive range of specific mitigation actions and projects and further identifies which actions were selected for implementation
2. At least one strategy to reduce risk to buildings and infrastructure

City staff also developed new strategies reflective of remaining concerns and vulnerabilities. Table 7 lists strategies for the City of Miesville, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

**Table 7: Miesville All-Hazard Mitigation Plan Strategies**

<b>MIESVILLE MITIGATION STRATEGIES</b>			
<b>1. Maintain city warning sirens.*</b>			
<i>Priority:</i>		<i>Hazards:</i>	Violent Storms, Tornado
<i>Lead:</i>	City Administration	<i>Status/Completion:</i>	Existing / Ongoing yearly
<i>Implementation:</i>	Yearly inspections	<i>Est. Cost/Funding Source:</i>	City Budget
<b>2. Stormwater management and coulee maintenance</b>			
<i>Priority:</i>		<i>Hazards:</i>	Flash Flood
<i>Lead:</i>	Dakota County	<i>Status/Completion:</i>	Existing / 2017
<i>Implementation:</i>	Stormwater maintenance plan	<i>Est. Cost/Funding Source:</i>	
<b>3. Conduct hazmat training</b>			
<i>Priority:</i>		<i>Hazards:</i>	Structural Fire, Hazmat Incident
<i>Lead:</i>	Miesville Fire Department	<i>Status/Completion:</i>	Existing / Ongoing
<i>Implementation:</i>	Annual training	<i>Est. Cost/Funding Source:</i>	
<b>4. Participate in full-scale exercise with County**</b>			
<i>Priority:</i>		<i>Hazards:</i>	All, Tornado
<i>Lead:</i>	Miesville Fire Department	<i>Status/Completion:</i>	Complete/September 2016
<i>Implementation:</i>	Dakota County EDT	<i>Est. Cost/Funding Source:</i>	

\*Reduces risk to buildings or infrastructure

\*\* Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

^Modified STAPLEE evaluation score; higher scores generally correlated to fewer implementation barriers

### Implementation Resources:

Table 8 identifies staff resources and roles in implementing its mitigation strategies. Table 9 identifies process and ordinance resources.

**Table 8: Miesville Mitigation Implementation Resources**

Department, Responsible Position	General Role	Processes for Implementing Mitigation Strategies
<b>Building Inspections:</b> contracted to Inspectron, Inc.	Building inspections, regulation of new housing	<i>E.g., enforce safety restrictions</i>
<b>Planning/Zoning/Engineer:</b> Contracted to Dean Johnson	Zoning, development, Comprehensive Plans	<i>E.g., floodplain ordinances, compliance</i>
<b>Police:</b> Dakota County Sheriff	Public safety, law enforcement,	<i>E.g., response training</i>
<b>Public Works:</b> County Transportation	Public infrastructure	
<b>Fire Department:</b> Fire Chief, Tom Latuff	Public-fire safety enforcement, emergency response	<i>E.g., inspect commercial structures for fire hazards</i>

**Table 9: Miesville Additional Implementation Resources**

Miesville Program/Policy/Technical Documents	Year adopted/revised	Method of incorporation into the hazard mitigation plan

## CITY OF NEW TRIER

Table 1: New Trier Community Data

<b>Population (2014):</b>	121
<b>Households:</b>	43
<b>Employment/Jobs:</b>	0
<b>Area:</b>	0.2 Sq. Mi.
<b>Major Land Uses:</b>	68% Agricultural / Undeveloped 21% Residential 0% Institutional
<b>Community Type:</b>	Diversified Rural
<b>Undeveloped Area:</b>	68%

Source: Metropolitan Council Community Profiles

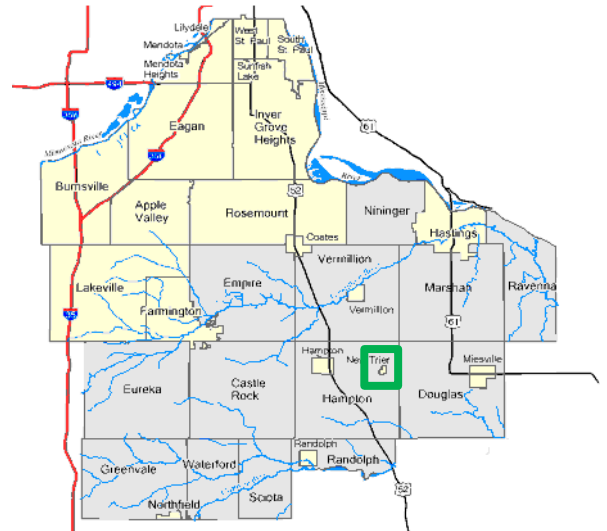


Figure 1: City of New Trier Location

## Hazards of Concern

New Trier representatives evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

Table 2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
<b>Frequency</b>	Unlikely: <1% chance in 100 years	Occasional: 1 to 10% chance in next year	Likely: >10 to <100% chance in next year	Highly Likely: 100% chance in next year
<b>Warning Time</b>	More than 12 hours	6-12 hours	3-6 hours	None-minimal
<b>Geographic Extent</b>	Localized	Community-wide	County-wide or greater	
<b>Likely Impact</b>	Negligible	Limited	Critical	Catastrophic

Table 3: New Trier Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Tornado	4	3	3	4	14
Violent Summer Storms	4	3	3	3	13
Flash Flood	3	4	3	3	13
Hazardous / Nuclear Material Incidents	2	3	3	4	12
Violent Winter Storms	3	3	3	3	12
Landslide	1	4	3	4	12
Structural Fire	3	4	2	2	11
Overland Flood	2	3	3	3	11
Terrorism	2	4	3	2	11
Dam Failure	1	4	3	2	10
Wildfire	1	3	3	2	9
Infectious Disease	1	1	3	3	8
Water Supply Contamination, including WWTP Failure	2	1	2	3	8
Drought	2	1	3	2	8
Extreme Heat	2	1	3	2	8
Extreme Cold	2	1	3	2	8
Cyber Security Threats	2	1	1	1	5

\*New Hazards considered in 2016



## Vulnerability

### Vulnerable Populations

Table 5 provides current estimates of populations in New Trier considered by FEMA to be at potentially increased risk during hazard events.

**Table 5: New Trier Potentially Vulnerable Populations, American Community Survey 2010-2014 Estimates**

Potentially Vulnerable Population	Number (#)	Percentage (%)	U.S. (%)	New Trier, MN – U.S. Difference
Under Age 5	20	13.0%	6.4%	6.6%
Over Age 65	10	6.5%	13.7%	-7.2%
Below Federal Poverty Line	2	1.3%	15.6%	-14.3%
Living with a Disability	24	15.6%	12.3%	3.3%

### Vulnerability of Critical Assets to Hazards

New Trier officials evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table 6. Figure 3 provides general locations for selected critical assets in New Trier.

**Table 6: New Trier Assessment of Critical Assets**

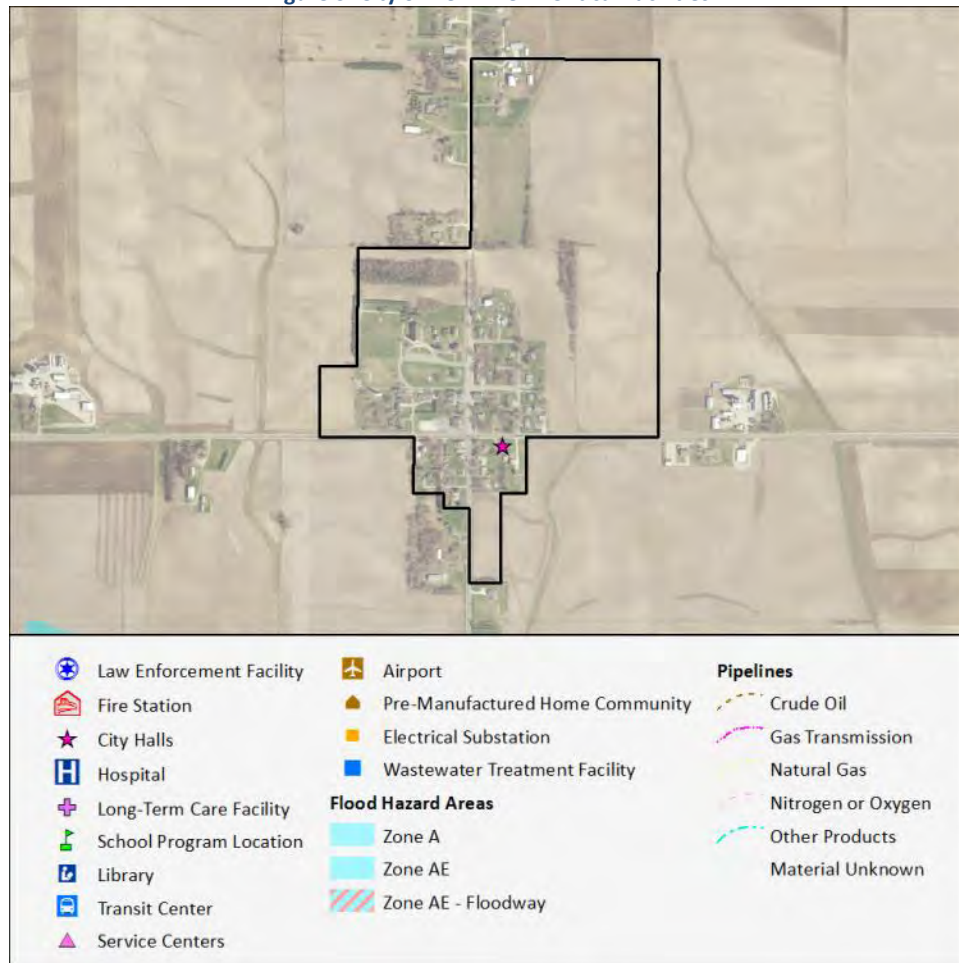
Critical Facilities	Summer Storms	Tornado	Structure Fire	Hazmat Incidents	Flash Flood	Winter Storms	Infectious Disease	Water Supply Contamination	Overland Flood	Terrorism	Wildfire	Drought	Extreme Temps	Dam Failure	Landslide	Cyber Threats

### Changes since the 2011 Plan

New Trier officials identified no changes to critical facilities since the plan update in 2011.



Figure 3: City of New Trier – Critical Facilities



### National Flood Insurance Program Participation and Compliance

New Trier does not participate in the National Flood Insurance Program (NFIP). GIS review of parcel, building, and floodplain data identified no floodplain structures.

### Strategy Review and Development

In 2016, New Trier representatives reviewed their strategies from the 2011 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2016 Plan update as ongoing efforts or project that have not been completed. City staff considered and addressed FEMA requirements for:

1. A mitigation strategy that identifies and analyzes a comprehensive range of specific mitigation actions and projects and further identifies which actions were selected for implementation
2. At least one strategy to reduce risk to buildings and infrastructure

City staff also developed new strategies reflective of remaining concerns and vulnerabilities. Table 8 lists New Trier's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.



## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

**Table 8: New Trier All-Hazard Mitigation Plan Strategies**

### NEW TRIER MITIGATION STRATEGIES

**1. Install backup power at water tower.**

*Priority:* 14<sup>^</sup>

*Lead:* Water Department, Superintendent

*Implementation:* Emergency Preparedness Plan

*Hazards:* Severe Summer and Winter Storms

*Status/Completion:* Existing / December 2012

*Est. Cost/Funding Source:* \$10,000 / Cost share-County

**2. Update Building Ordinance.**

*Priority:* 16

*Lead:* Planning, City Council

*Implementation:* Local building codes

*Hazards:* Structural Fire, Severe Storms

*Status/Completion:* Existing / December 2012

*Est. Cost/Funding Source:* \$16,000 / Cost share-County

**3. Complete parking upgrades.**

*Priority:* 17

*Lead:* City Council

*Implementation:* Emergency Preparedness Plan

*Hazards:* Several – emergency access

*Status/Completion:* Existing / Dec. 2010

*Est. Cost/Funding Source:* \$600 / City

\*Reduces risk to buildings or infrastructure

\*\* Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

<sup>^</sup>Modified STAPLEE evaluation score; higher scores generally correlated to fewer implementation barriers

### Implementation Resources:

Table 9 identifies staff resources and roles in implementing its mitigation strategies.

**Table 9: New Trier Mitigation Implementation Resources**

Department, Responsible Position	General Role	Processes for Implementing Mitigation Strategies
<b>Building Inspections:</b> contracted	Building inspections, regulation of new housing	<i>E.g., enforce safety restrictions including setbacks, building materials, and fire suppression systems</i>
<b>Planning/Zoning/Engineer:</b>	Zoning, development, Comprehensive Plans	<i>E.g., floodplain ordinances and compliance</i>
<b>Police:</b> contracted	Public safety, law enforcement, emergency response	<i>E.g., response training, public safety education</i>
<b>Public Works:</b> contracted	Development and operations of public infrastructure	<i>E.g., City well inspection and maintenance</i>
<b>Fire Department:</b> contracted	Public-fire safety enforcement, emergency response	<i>E.g., inspect commercial structures for fire hazards</i>
<b>City Council</b>	Establish policy, enact budget	<i>E.g., budget allocations or plan initiatives</i>
<b>City Administration</b>	Decision-support for Council, City operations	

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

Table 10 identifies process and ordinance resources.

**Table 10: New Trier Additional Implementation Resources**

<b>New Trier Program/Policy/Technical Documents</b>	<b>Year adopted/revised</b>	<b>Method of incorporation into the hazard mitigation plan</b>
Water tower / well back up power	2011	infrastructure upgrades to support hazard mitigation
2030 comprehensive plan	2010	mitigation plan and comp plan support one another
Emergency preparedness plan	2010	hazard identification and ranking

## CITY OF RANDOLPH

Table 1: Randolph Community Data

<b>Population (2014):</b>	465
<b>Households:</b>	176
<b>Employment/Jobs:</b>	142
<b>Area:</b>	1.0 Sq. Mi.
<b>Major Land Uses:</b>	68.7% Agricultural / Undeveloped 18.2% Residential 4.0% Industrial
<b>Community Type:</b>	Diversified Rural
<b>Undeveloped Area:</b>	68.7%

Source: Metropolitan Council Community Profiles

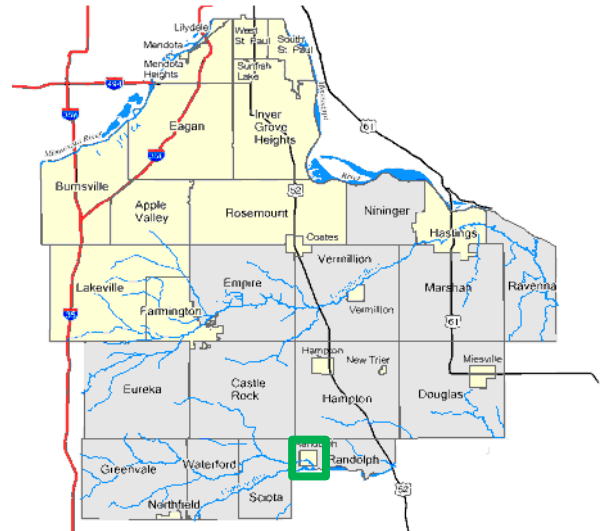


Figure 1: City of Randolph Location

## Hazards of Concern

Randolph representatives evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

Table 2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
<b>Frequency</b>	Unlikely: <1% chance in 100 years	Occasional: 1 to 10% chance in next year	Likely: >10 to <100% chance in next year	Highly Likely: 100% chance in next year
<b>Warning Time</b>	More than 12 hours	6-12 hours	3-6 hours	None-minimal
<b>Geographic Extent</b>	Localized	Community-wide	County-wide or greater	
<b>Likely Impact</b>	Negligible	Limited	Critical	Catastrophic

Table 3: Randolph Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Terrorism	1	4	2	3	10
Hazardous / Nuclear Material Incidents	2.5	4	1	1.5	9
Violent Summer Storms	2	2.5	2	2	8.5
Tornado	1.5	3.5	1	2.5	8.5
Violent Winter Storms	3	1	3	1.5	8.5
Wildfire	1	4	1.5	2	8.5
Flash Flood	1.5	2.5	2	2	8
Infectious Disease	1	1	3	3	8
Drought	2	1	3	2	8
Dam Failure	1	3	2	2	8
Structural Fire	1	4	1	1.5	7.5
Extreme Cold	1.5	1	2	2	7.5
Water Supply Contamination, including WWTP Failure	1	1	2	3	7
Cyber Attacks	1	4	1	1	7
Extreme Heat	1.5	1	2	2	6.5
Overland Flood	1	1	2	2	6
Landslide	1	1	1	1	4

\*New Hazards considered in 2016

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

### General Land Use

Figure 2 depicts general land use in Randolph, with Agriculture/undeveloped and residential being the predominant land uses.

### Structural Inventory Value

Table 4 provides a current total and estimated value for structures in the City of Randolph.

Data are from the Dakota County's Offices of Assessor Services and Geographic Information Services. Structures identified as residential, commercial, industrial, and agricultural have the types of structures associated with those land uses. "Exempt" includes all buildings not subject to property taxes, such as government buildings, schools, and places of worship. "Utilities" includes fixed sites with infrastructure for electricity, sewer, and water. "Other" includes structures that do not fall into preceding categories.

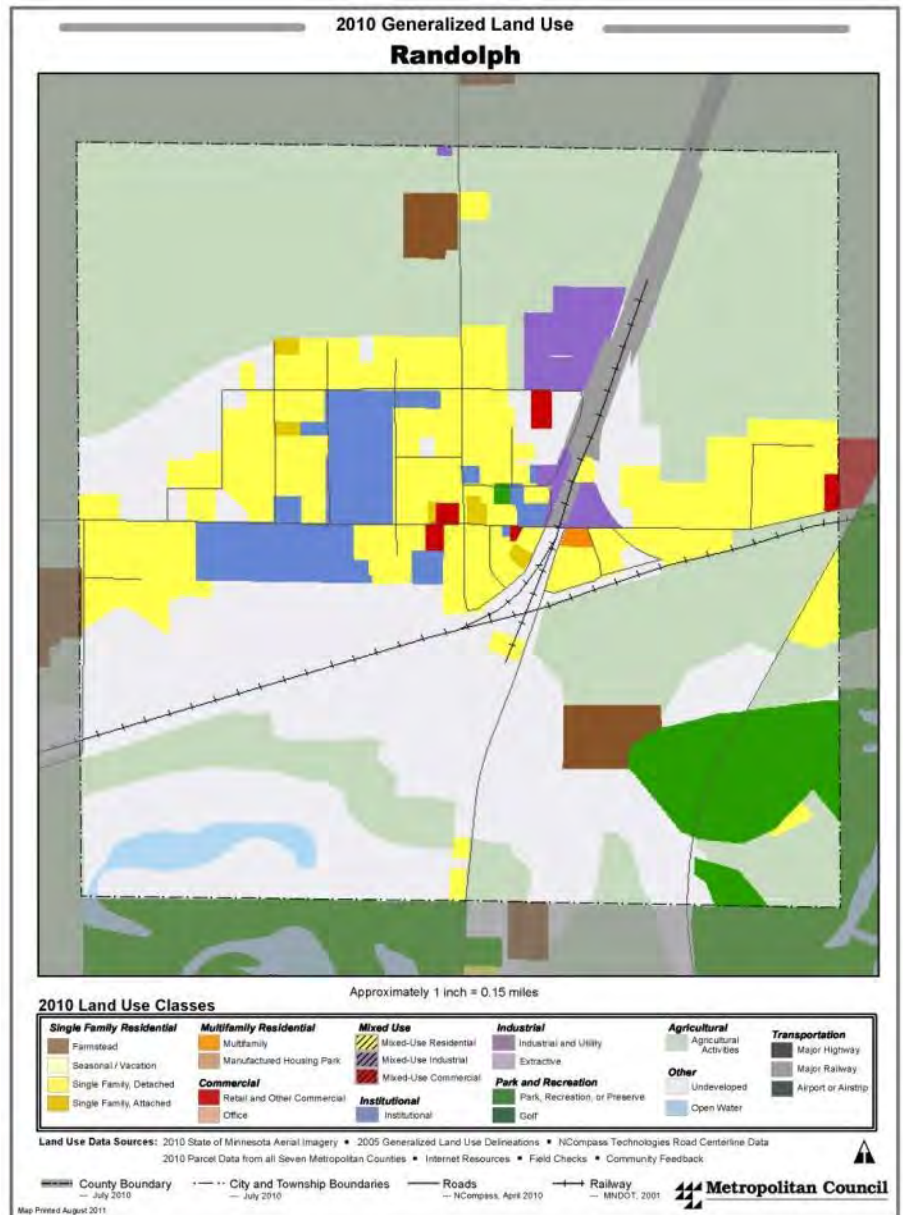


Figure 2: Randolph 2010 Land Use Map, Metropolitan Council

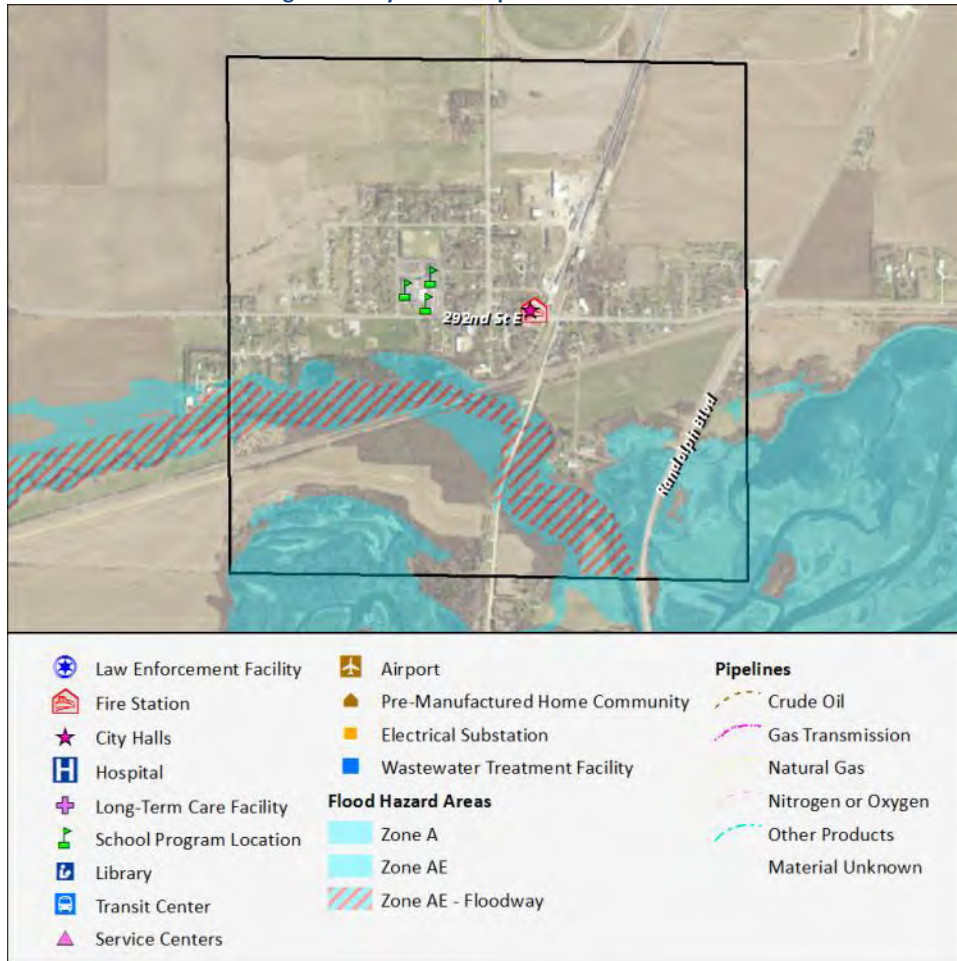
Table 4: Structural Inventory and Value, Randolph

Use Type	Number of Structures	Structural Value	Land Value	Total Value
Agricultural	22	\$118,100	\$2,266,700	\$2,384,800
Commercial	13	\$379,000	\$453,900	\$832,900
Exempt	28	\$4,161,000	\$834,500	\$4,995,500
Industrial	10	\$587,100	\$376,600	\$963,700
Other	5	\$100	\$63,900	\$64,000
Residential	373	\$22,042,300	\$7,625,800	\$29,668,100
Utilities	0	\$29,700	\$14,300	\$44,000
<b>TOTAL</b>	<b>451</b>	<b>\$27,317,300</b>	<b>\$11,635,700</b>	<b>\$38,953,000</b>



## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

**Figure 3: City of Randolph – Critical Facilities**



### National Flood Insurance Program Participation and Compliance

Table 7 includes information on Randolph's participation in the National Flood Insurance Program (NFIP). Additional information follows about City compliance with the terms of the NFIP.

**Table 7: Randolph NFIP Participation**

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Randolph	270112	12/2/2011	-	-

### Compliance:

Compliance is ensured through use of the City's official flood zoning map and enforcement of City Ordinances related to floodplain zones, allowed/prohibited uses, standards, and addressing violations.

### Strategy Review and Development

In 2016, Randolph representatives reviewed their strategies from the 2011 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2016 Plan update as ongoing efforts or project that have not been completed.



## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

City officials considered and addressed FEMA requirements for:

1. A mitigation strategy that identifies and analyzes a comprehensive range of specific mitigation actions and projects and further identifies which actions were selected for implementation
2. At least one strategy to reduce risk to buildings and infrastructure

City officials also developed new strategies reflective of remaining concerns and vulnerabilities. Table 8 lists Randolph's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

**Table 8: Randolph All-Hazard Mitigation Plan Strategies**

### RANDOLPH MITIGATION STRATEGIES

#### 1. Water Tower Inspection.\*

*Priority:* 17<sup>^</sup>

*Lead:* Water Department, Superintendent

*Implementation:* As needed

*Hazards:* Water Supply

*Status/Completion:* Existing / 2011

*Est. Cost/Funding Source:* / City Budget

#### 2. Anhydrous Ammonia Training.

*Priority:* 21

*Lead:* Fire Department, Chief

*Implementation:*

*Hazards:* Hazmat Incident

*Status/Completion:* Existing / 2011

*Est. Cost/Funding Source:* / City Budget

#### 3. Building Code Updates.\*

*Priority:* 20

*Lead:* Dakota Community Development Agency (CDA)

*Implementation:* Local Building Code

*Hazards:* Structural Fire, Violent Storms

*Status/Completion:* New / Every three years

*Est. Cost/Funding Source:* TBD

#### 4. New Sirens.\*

*Priority:* 21

*Lead:* Dakota CDA, contractor

*Implementation:* Grant, City Funding

*Hazards:* Summer Storms, Tornado, Hazmat Incident

*Status/Completion:* New / 2017

*Est. Cost/Funding Source:* \$11,000 / Grants

#### 5. Additional Water Tower.

*Priority:* 18

*Lead:* Water Department, Contract Installer

*Implementation:* City Funding

*Hazards:* Water Supply

*Status/Completion:* New / 2018

*Est. Cost/Funding Source:* \$800,000 / City Budget, Loans

\*Reduces risk to buildings or infrastructure

\*\* Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

<sup>^</sup>Modified STAPLEE evaluation score; higher scores generally correlated to fewer implementation barriers

### Implementation Resources:

Table 9 identifies staff resources and roles in implementing its mitigation strategies.

**Table 9: Randolph Mitigation Implementation Resources**

Department, Responsible Position	General Role	Processes for Implementing Mitigation Strategies
<b>Building Inspections:</b> contracted	Building inspections, regulation of new housing	<i>E.g., enforce safety restrictions including setbacks, building materials, and fire suppression systems</i>

# APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

Department, Responsible Position	General Role	Processes for Implementing Mitigation Strategies
<b>Planning/Zoning/Engineer:</b> City Engineer	Zoning, development, Comprehensive Plans	<i>E.g., floodplain ordinances and compliance</i>
<b>Police:</b> County Sheriff	Public safety, law enforcement, emergency response	<i>E.g., response training, public safety education</i>
<b>Public Works:</b> Water Supervisor	Development and operations of public infrastructure	<i>E.g., City well inspection and maintenance</i>
<b>Fire Department:</b> Fire Chief	Public-fire safety enforcement, emergency response	<i>E.g., inspect commercial structures for fire hazards</i>
<b>City Council</b>	Establish policy, enact budget, enforce ordinances	<i>E.g., budget allocations or plan initiatives</i>

Table 11 identifies process and ordinance resources.

**Table 11: Randolph Additional Implementation Resources**

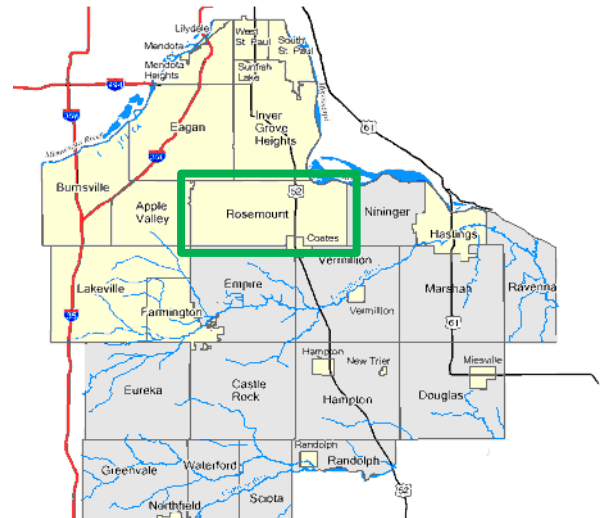
Randolph Program/Policy/Technical Documents	Year adopted/revised	Method of incorporation into the hazard mitigation plan
Comprehensive Plan	2011	Reviewed
Building Ordinance	2011	
Zoning Ordinance	2009	Reviewed
Stormwater Ordinance	2010	Reviewed
Current version of State Building Code	2015	Reviewed
Emergency Operations Guideline		
Uniform Fire Code	2016	Regular enforcement

## CITY OF ROSEMOUNT

**Table 1: Rosemount Community Data**

<b>Population (2014):</b>	22,490
<b>Households:</b>	7,852
<b>Employment/Jobs:</b>	8,528
<b>Area:</b>	35.2 Sq. Mi.
<b>Major Land Uses:</b>	62.4% Agricultural / Undeveloped 14.9% Residential 8.9% Industrial 5% Park and Recreation
<b>Community Type:</b>	Emerging Suburban Edge
<b>Undeveloped Area:</b>	62.4%

Source: Metropolitan Council Community Profiles



**Figure 1: City of Rosemount Location**

## Hazards of Concern

Rosemount staff evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

**Table 2: Dakota County Hazard Rating Model**

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
<b>Frequency</b>	Unlikely: <1% chance in 100 years	Occasional: 1 to 10% chance in next year	Likely: >10 to <100% chance in next year	Highly Likely: 100% chance in next year
<b>Warning Time</b>	More than 12 hours	6-12 hours	3-6 hours	None-minimal
<b>Geographic Extent</b>	Localized	Community-wide	County-wide or greater	
<b>Likely Impact</b>	Negligible	Limited	Critical	Catastrophic

**Table 3: Rosemount Hazard Rating**

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Cyber Threats	4	4	3	4	15
Hazardous / Nuclear Material Incidents	3	4	2	4	13
Terrorism	2	4	3	4	13
Structural Fire	4	4	1	3	12
Violent Winter Storms	4	3	3	2	12
Flash Flood	1	4	3	3	11
Infectious Disease	1	4	3	3	11
Water Supply Contamination, including WWTP Failure	1	4	2	4	11
Extreme Cold	4	1	3	3	11
Violent Summer Storms	4	3	2	1	10
Tornado	2	3	2	3	10
Overland Flood	1	4	3	2	10
Wildfire	2	4	2	2	10
Extreme Heat	3	1	3	2	9
Landslide	1	3	3	2	9
Drought	2	1	3	2	8
Dam Failure	1	1	3	3	8

\*New Hazards considered in 2016

## General Land Use

Figure 2 depicts general land use in Rosemount, with agriculture / undeveloped and residential (single- and multi-family) being the predominant land uses.

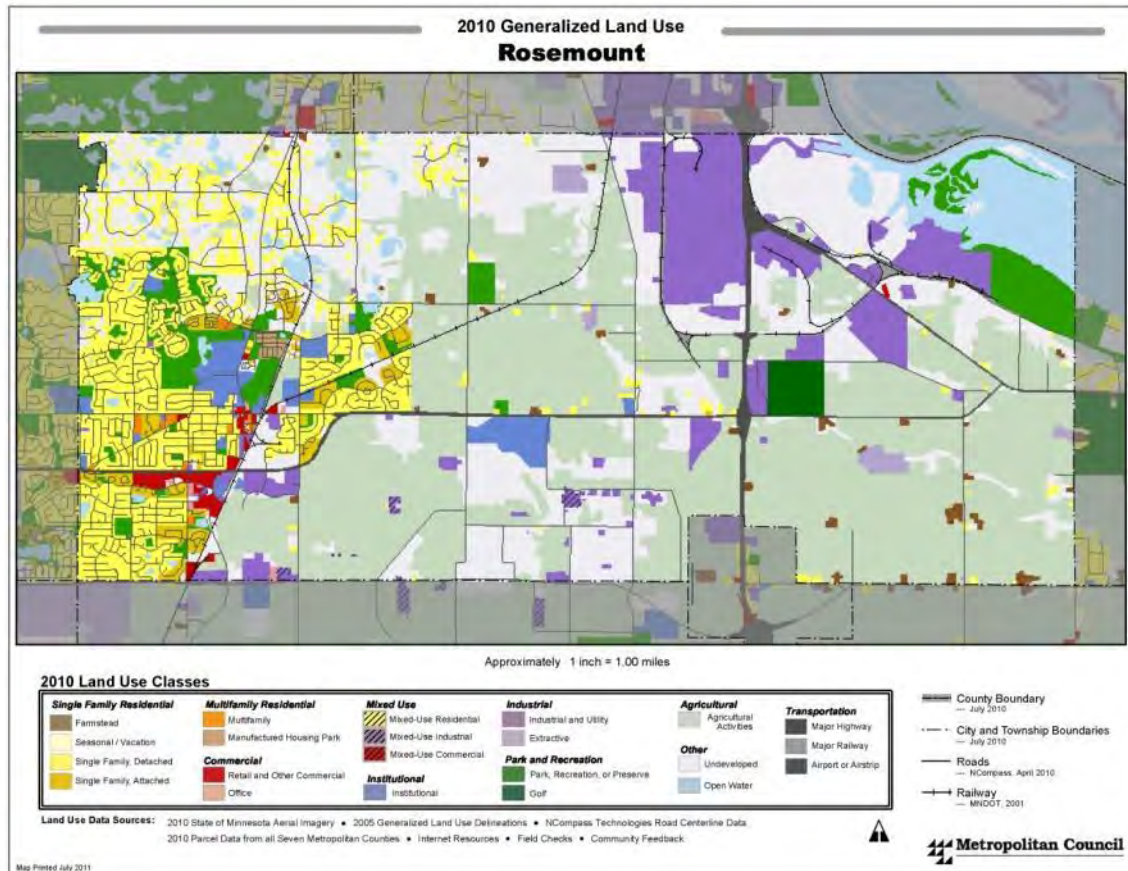


Figure 2: Rosemount 2010 Land Use Map, Metropolitan Council

## Structural Inventory Value

Table 4 provides a current total and estimated value for structures in the City of Rosemount. Data are from the Dakota County's Offices of Assessor Services and Geographic Information Services. Properties identified as residential, commercial, industrial, and agricultural have the types of structures associated with those land uses. "Exempt" includes buildings not subject to property taxes, such as schools, and places of worship. "Utilities" includes infrastructure for electricity, sewer, and water.

Table 4: Structural Inventory and Value, Rosemount

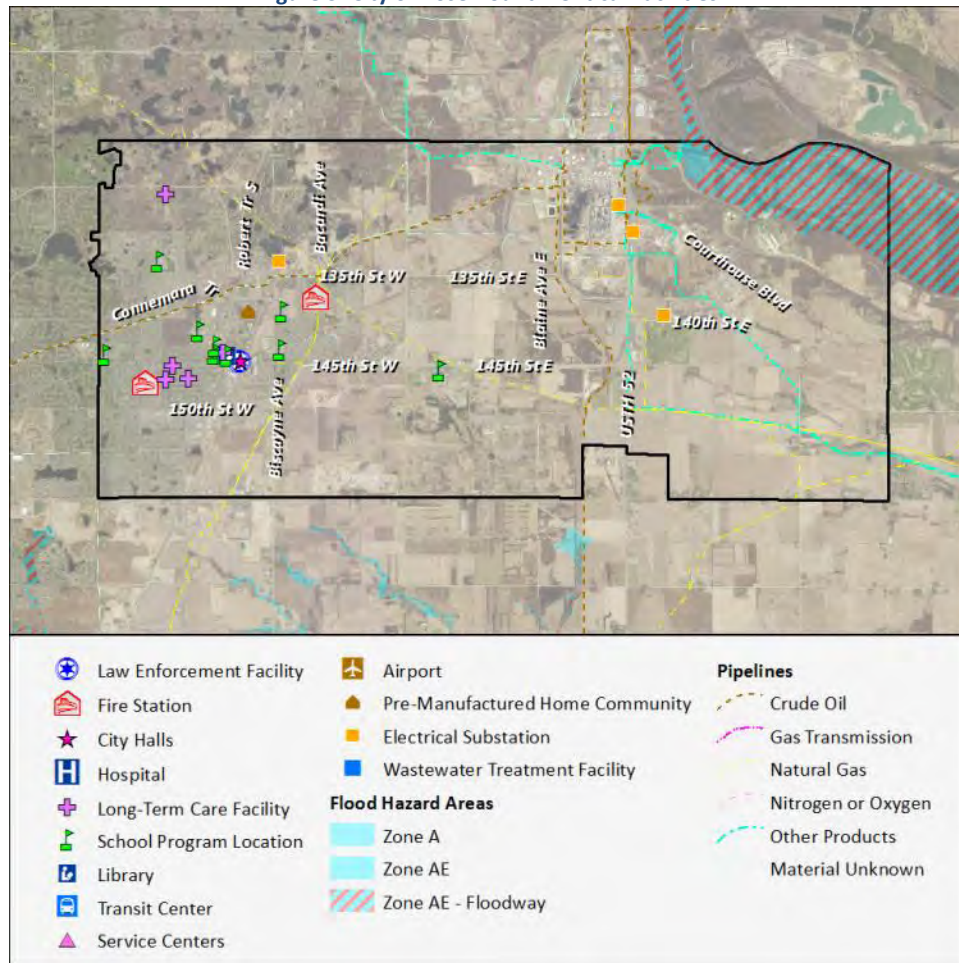
Use Type	Number of Structures	Structural Value	Land Value	Total Value
Agricultural	339	\$4,971,000	\$79,614,400	\$84,585,400
Commercial	172	\$53,161,400	\$50,856,000	\$104,017,400
Exempt	445	\$124,511,500	\$65,245,300	\$189,756,800
Industrial	606	\$126,096,500	\$58,308,000	\$184,404,500
Other	7	\$946,300	\$352,200	\$1,298,500
Residential	8,530	\$1,507,013,600	\$619,595,200	\$2,126,608,800
Utilities	7	\$2,234,500	\$165,500	\$2,400,000
<b>TOTAL</b>	<b>10,106</b>	<b>\$1,818,934,800</b>	<b>\$874,136,600</b>	<b>\$2,693,071,400</b>





## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

Figure 3: City of Rosemount – Critical Facilities



### National Flood Insurance Program Participation and Compliance

Table 7 includes information on Rosemount's participation in the National Flood Insurance Program (NFIP). Additional information follows about City compliance with the terms of the NFIP.

Table 7: Rosemount NFIP Participation

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Rosemount	270113	12/2/11	8	\$1,750,000

**Compliance:** *Purpose And Intent* - The floodplain district is designed to provide floodplain management for the City of Rosemount in accordance with Minnesota statutes. The intent of the floodplain district is to regulate the flood hazard areas for the purposes of reducing the risk of loss of life, loss of property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare. *National Flood Insurance Program Compliance:* This section is adopted to comply



## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

with the rules and regulations of the national flood insurance program codified as 44 Code of Federal Regulations parts 59-78, as amended, so as to maintain the community's eligibility in the national flood insurance program.

Table 8 provides an inventory and assessed value of structures in the City of Rosemount located within the digital flood insurance rate map (DFIRM) boundaries. Structures are listed by predominant land use categories. The table was compiled with data from the Dakota County Office of GIS and Assessor's Office.

**Table 8: Total Floodplain Structure and Value Inventory, Rosemount**

Structure Type	Total Structures	Estimated Land Value	Estimated Building Value	Total Value
Exempt	3	\$2,066,500	\$282,900	\$2,349,400
Industrial	8	\$1,275,000	\$2,064,000	\$3,339,000
<b>Total</b>	<b>11</b>	<b>\$3,341,500</b>	<b>\$2,346,900</b>	<b>\$5,688,400</b>

### Strategy Review and Development

In 2016, Rosemount staff reviewed their strategies from the 2011 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2016 Plan update as ongoing efforts or project that have not been completed. City staff considered and addressed FEMA requirements for:

1. A mitigation strategy that identifies and analyzes a comprehensive range of specific mitigation actions and projects and further identifies which actions were selected for implementation
2. At least one strategy to reduce risk to buildings and infrastructure

City staff also developed new strategies reflective of remaining concerns and vulnerabilities. Table 9 lists Rosemount's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

**Table 9: Rosemount All-Hazard Mitigation Plan Strategies**

ROSEMOUNT MITIGATION STRATEGIES	
<b>1. Maintain a rental property license and inspection program.</b> <i>Priority:</i> 9 <sup>A</sup> <i>Lead:</i> Building Inspection Staff <i>Implementation:</i> City code, enforcement	<i>Hazards:</i> Structural Fire <i>Status/Completion:</i> Ongoing / Each unit inspected every two years <i>Est. Cost/Funding Source:</i> \$12,000 / Rental License Fee
<b>2. Emergency siren replacement and updates.</b> <i>Priority:</i> 15 <i>Lead:</i> Police Department, Chief <i>Implementation:</i> Emergency Operations Plan (EOP), Capital Improvement Program (CIP)	<i>Hazards:</i> Severe Storms, Tornado, Hazmat Incident <i>Status/Completion:</i> Existing / 2018 <i>Est. Cost/Funding Source:</i> \$30,000 / General Fund, Grants
<b>3. Fire truck replacement or refurbishment.</b> <i>Priority:</i> 15 <i>Lead:</i> Fire Department, Chief <i>Implementation:</i> EOP, CIP	<i>Hazards:</i> Structural Fire, Multiple Hazards-Emergencies <i>Status/Completion:</i> Existing / Ongoing <i>Est. Cost/Funding Source:</i> \$100,000 yearly / General Fund

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

### ROSEMOUNT MITIGATION STRATEGIES

**4. Police car replacement.**

*Priority:* 15

*Lead:* Police Department, Chief

*Implementation:* EOP, CIP

*Hazards:* Structural Fire, Multiple Hazards-Emergencies

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* \$100,000 yearly / General Fund

**5. Increase water storage and redundancy.\***

*Priority:* 20

*Lead:* Public Works, Director

*Implementation:* Comprehensive Water Supply Plan

*Hazards:* Water Supply, Fire Suppression

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* \$5,000,000 yearly / General Fund, Development Fees

**6. Implement North Central Sanitary Sewer Plan.\*\***

*Priority:* 20

*Lead:* Public Works and Community Development

*Implementation:* Comprehensive Plan, Sanitary Sewer Plan

*Hazards:* Water Supply Contamination (failed septic sys.)

*Status/Completion:* Existing / TBD

*Est. Cost/Funding Source:* \$1,500,000 / General Fund, Property Assessments

**7. Code review and revision.**

*Priority:* 11

*Lead:* Community Development, Director

*Implementation:* City code

*Hazards:* Structural Fire, multiple hazards

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* \$5,000 yearly / General Fund

\*Reduces risk to buildings or infrastructure

\*\* Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

^Modified STAPLEE evaluation score; higher scores generally correlated to fewer implementation barriers

### Implementation Resources:

Table 10 identifies staff resources and roles in implementing its mitigation strategies.

**Table 10: Rosemount Mitigation Implementation Resources**

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
<b>Building Inspections,</b> City building inspector	Building inspections, regulation of new housing development.	Enforce current codes related to building and property maintenance
<b>Planning and Zoning,</b> Planning Director	Zoning, development siting and restrictions, Comprehensive Plans	Follow the Floodplain Regulations set forth in City code
<b>Police,</b> Police Chief	Public safety and law enforcement, emergency response	Provide response training to all current and new employees through annual training and Field Training processes; Community outreach programs through the community resource division, Blue in the School program, and other committees
<b>Public Works,</b> Public Works Director	Development and operations of public infrastructure (roads, utilities)	Follow the replacement schedule for infrastructure and capital improvement plans

# APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
<b>Fire Department, Fire Chief</b>	Public and fire safety enforcement, emergency response	Inspect commercial buildings, Plan review, CERT training for community, Public Education, community engagement through various committees and partnerships

Table 11 identifies process and ordinance resources.

**Table 11: Rosemount Additional Implementation Resources**

Rosemount Program, Policy, and Technical Documents	Year adopted-revised	Method of incorporation into the hazard mitigation plan
Emergency Operations Plan	2016	City follows the Emergency Operations Plan when an emergency or natural disaster occurs.
Minnesota State Building Code	2007	All new buildings must meet building code.
Minnesota State Fire Code	2007	All new buildings and changes in use must meet fire code.
Rental Licensing and Inspection Code	2008	All rental units must be inspected at least once every two years to ensure compliance with City, building, and fire codes.
Municipal Water and Sewer Code	2007	Controls the use and connection onto the City water and sewer system. Requires failing private systems to connect to public system when available to eliminate health issues from failed private systems.
Right-of-Way Management Ordinance	2008	Controls the location and construction of public and private utilities. Provides accurate records of utility locations for use in emergencies and requires separation of utility that may damage or impact each other if the utility line were to leak.
Health and Sanitation Ordinance	2012	Regulates solid waste (garbage), weeds and vegetation, and composting. The regulation is to minimize the chance or impact of health issues that could arise from unsanitary conditions.
Police Regulations Code	2015	Controls and regulates alarm systems, alcohol, animals, drugs, firearm discharge, graffiti, and minors to discourage terroristic acts, property damage, and physical crimes.
Traffic and Motor Vehicle Code	2008	Controls the use and parking of vehicles in the right-of-way to allow free travel for public works vehicles during winter storm events and emergency vehicles during an emergency event.
Surface Water and Storm water Management Ordinance	2015	Controls the use of existing surface water bodies and the construction and management of stormwater infrastructure. The controls intend to limit health impacts from exposure to surface water bodies and control flood damage due to weather events.
Zoning and Subdivision Ordinance	2016	Controls the development of land and buildings to ensure that there is enough space and distance between buildings and uses to reduce the chance an emergency at a building or use would affect the neighboring buildings/uses. Also regulates streets and utilities in developments to ensure that emergency vehicles and personnel can reach and react at locations if an emergency event occurs.
Rosemount Comprehensive Plan	2008 In progress	Guides the future development of the City including adequate roads, utilities, and emergency facilities.
Capital Improvement Plan	2016	Plans and budgets to ensure that roads, utilities, and emergency vehicles and facilities are purchased, constructed, and maintained.

## CITY OF SOUTH ST. PAUL

Table 1: South St. Paul Community Data

<b>Population (2014):</b>	20,146
<b>Households:</b>	8,311
<b>Employment/Jobs:</b>	6,795
<b>Area:</b>	6.2 Sq. Mi.
<b>Major Land Uses:</b>	43% Residential 12% Industrial 10% Park and Recreational
<b>Community Type:</b>	Urban Center
<b>Undeveloped Area:</b>	9%

Source: Metropolitan Council Community Profiles

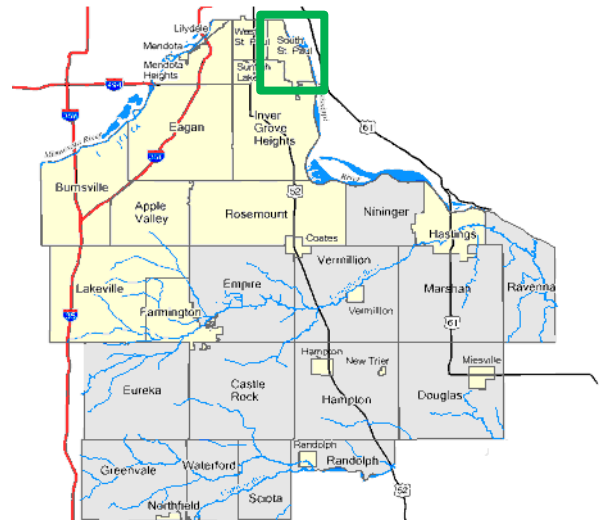


Figure 3: City of South St. Paul Location

## Hazards of Concern

South St. Paul staff evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

Table 2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
<b>Frequency</b>	Unlikely: <1% chance in 100 years	Occasional: 1 to 10% chance in next year	Likely: >10 to <100% chance in next year	Highly Likely: 100% chance in next year
<b>Warning Time</b>	More than 12 hours	6-12 hours	3-6 hours	None-minimal
<b>Geographic Extent</b>	Localized	Community-wide	County-wide or greater	
<b>Likely Impact</b>	Negligible	Limited	Critical	Catastrophic

Table 3: South St. Paul Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Cyber Security Threats*	3	4	2	4	13
Structural Fire	4	4	1	2	11
Summer Storms	3	3	2	2	10
Hazardous / Nuclear Material Incidents	3	4	1	2	10
Water Supply Contamination, including WWTP Failure	1	4	2	3	10
Flash Flood	3	3	1	2	9
Infectious Disease	2	2	3	2	9
Terrorism	2	4	1	2	9
Drought	3	1	3	2	9
Tornado	2	3	1	2	8
Winter Storms	2	1	3	2	8
Wildfire	1	4	1	2	8
Extreme Heat	3	1	3	1	8
Extreme Cold	3	1	3	1	8
Overland Flood	3	1	1	2	7
Dam Failure	1	3	1	2	7
Landslide*	1	3	1	2	7

\*New Hazards considered in 2016

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

### General Land Use

Figure 2 depicts general land use in South St. Paul, with residential (single- and multi-family) being the predominant land use.

### Structural Inventory Value

Table 4 provides a current total and estimated value for structures in the South St. Paul.

Data are from the Dakota County's Offices of Assessor Services and Geographic Information Services. Structures identified as residential, commercial, industrial, and agricultural have the types of structures associated with those land uses. "Exempt" includes all buildings not subject to property taxes, such as government buildings, schools, and places of worship. "Utilities" includes fixed sites with infrastructure for electricity, sewer, and water. "Other" includes structures that do not fall into preceding categories.

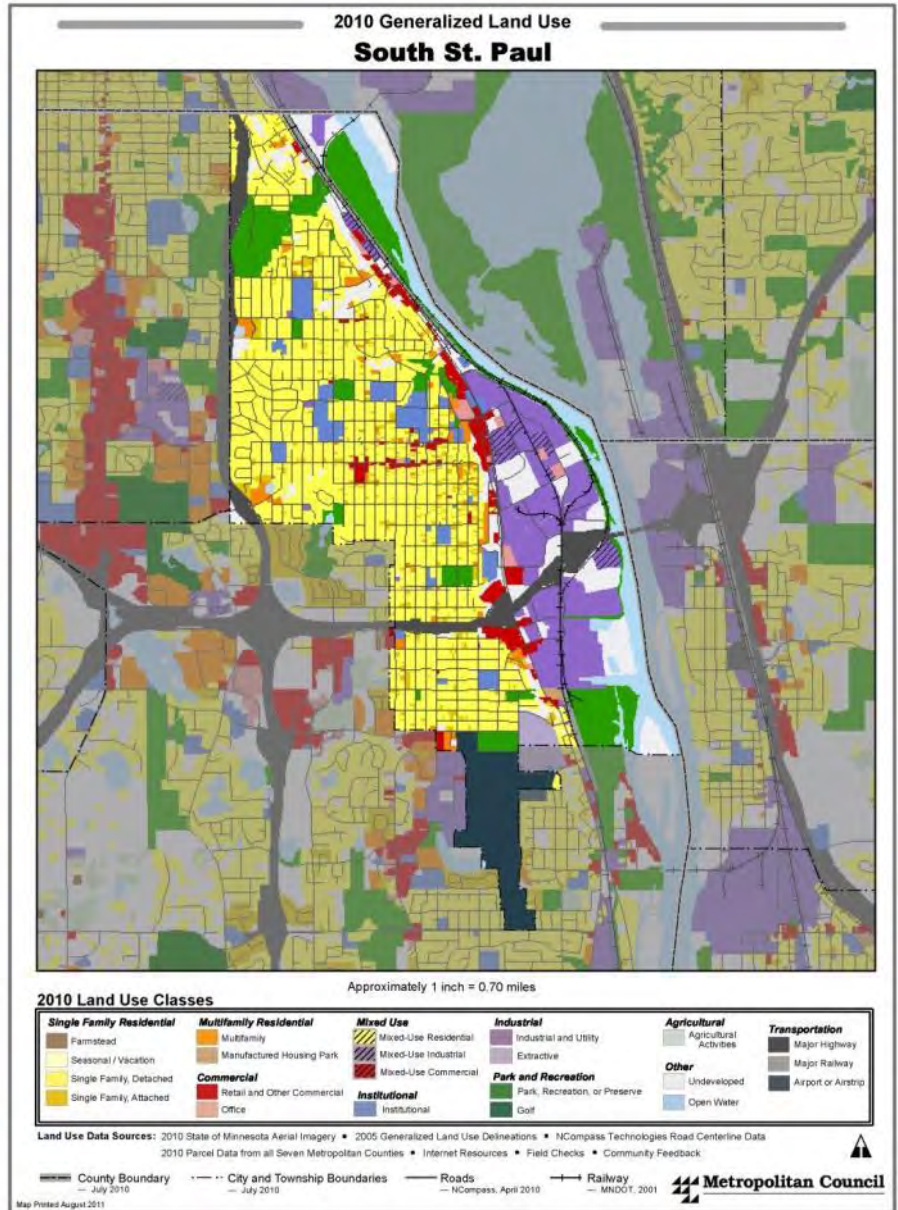


Figure 4: South St. Paul 2010 Land Use Map, Metropolitan Council

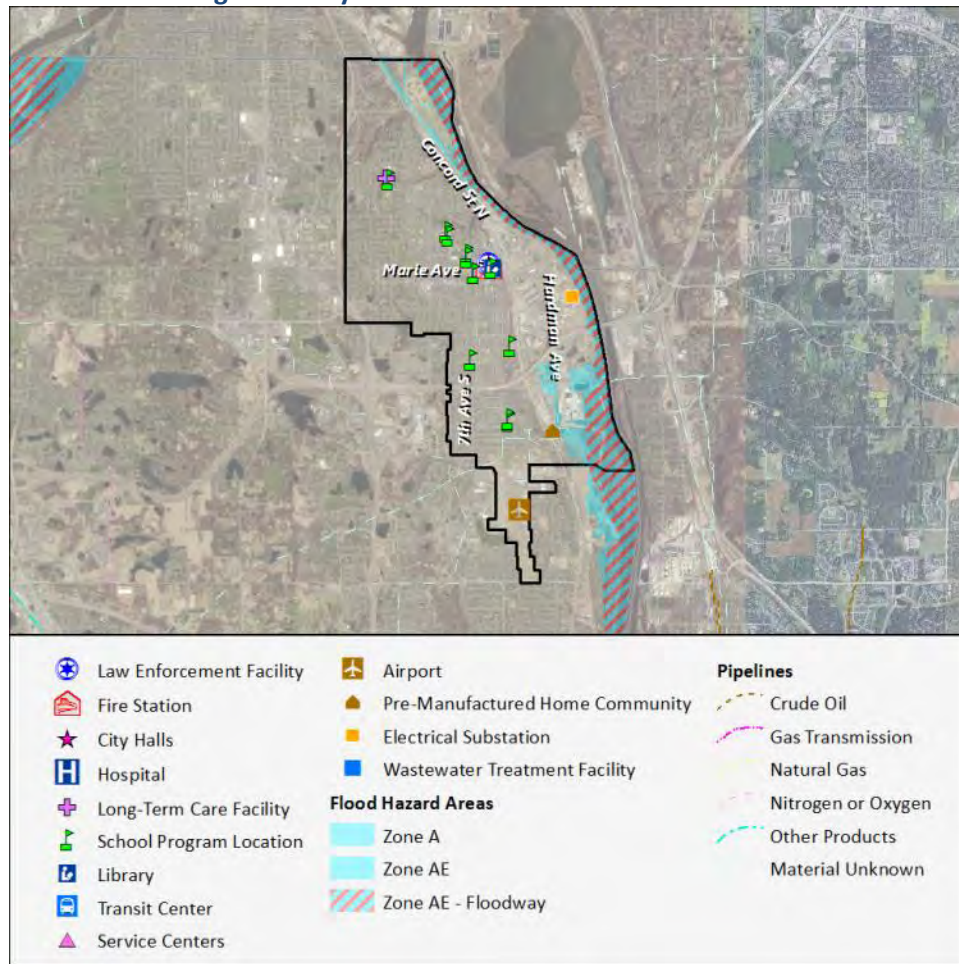
Table 4: Structural Inventory and Value, South St. Paul

Use Type	Number of Structures	Structural Value	Land Value	Total Value
Commercial	264	\$80,994,600	\$48,230,700	\$129,225,300
Exempt	335	\$85,354,900	\$49,939,600	\$135,294,500
Industrial	93	\$43,826,000	\$27,537,100	\$71,363,100
Other	0	\$0	\$96,100	\$96,100
Residential	11,718	\$872,221,000	\$290,260,600	\$1,162,481,600
Utilities	5	\$1,748,900	\$297,700	\$2,046,600
<b>TOTAL</b>	<b>12,415</b>	<b>\$1,084,145,400</b>	<b>\$416,361,800</b>	<b>\$1,500,507,200</b>







**Figure 3: City of South St. Paul – Critical Facilities**

### National Flood Insurance Program Participation and Compliance

Table 7 includes information on South St. Paul's participation in the National Flood Insurance Program (NFIP). Additional information follows about City compliance with the terms of the NFIP.

**Table 7: South St. Paul NFIP Participation**

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
South St. Paul	270114	12/2/11	20	\$13,637,100

### Compliance:

The City of South St. Paul Planning and Zoning Department monitors compliance with the terms of the City's floodplain management ordinance, which states: "No new structure or land shall hereafter be used and no structure shall be constructed, located, extended, converted, or structurally altered without full compliance with the terms of this Ordinance and other applicable regulations which apply to uses within the jurisdiction of this section. Within the Floodway and Flood Fringe districts, all uses not listed as permitted uses or conditional uses in subsections (d) and (e) that follow, respectively, shall be prohibited." The Ordinance covers permitted and prohibited uses, permitting processes, variances, non-conforming uses, and violations.

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

Table 8 provides an inventory and assessed value of structures in the City of South St. Paul located within the digital flood insurance rate map (DFIRM) boundaries. Structures are listed by predominant land use categories. The table was compiled with data from the Dakota County Office of GIS and Assessor's Office.

**Table 8: Total Floodplain Structure and Value Inventory, South St. Paul**

Structure Type	Total Structures	Estimated Land Value	Estimated Building Value	Total Value
Commercial	17	\$2,496,000	\$1,871,800	\$4,367,800
Exempt	8	\$899,800	\$670,400	\$1,570,200
Industrial	18	\$5,467,300	\$6,857,300	\$12,324,600
<b>Total</b>	<b>43</b>	<b>\$8,863,100</b>	<b>\$9,399,500</b>	<b>\$18,262,600</b>

### Strategy Review and Development

In 2016, South St. Paul staff reviewed strategies from the 2011 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2016 Plan update as ongoing efforts or project that have not been completed. City staff considered and addressed FEMA requirements for:

1. A mitigation strategy that identifies and analyzes a comprehensive range of specific mitigation actions and projects and further identifies which actions were selected for implementation
2. At least one strategy to reduce risk to buildings and infrastructure

City staff also developed new strategies reflective of remaining concerns and vulnerabilities. Table 10 presents South St. Paul's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

**Table 9: South St. Paul All-Hazard Mitigation Plan Strategies**

SOUTH ST. PAUL MITIGATION STRATEGIES			
<b>1. Develop debris management plan/strategies.**</b>			
<i>Priority:</i> High (21)^		<i>Hazards:</i> All	
<i>Lead:</i> Public Works Director		<i>Status/Completion:</i> New / 2017	
<i>Implementation:</i> Emergency Operations Plan		<i>Est. Cost/Funding Source:</i> \$5,000 / Staff Time-Budget	
<b>2. Complete annual inspections on all high risk properties and biennial inspections on all other businesses.*</b>			
<i>Priority:</i> High (21)		<i>Hazards:</i> Structural Fire	
<i>Lead:</i> South Metro Fire Dept. (SMFD), Commercial		<i>Status/Completion:</i> Existing / Ongoing	
<i>Implementation:</i> Fire Inspection Program		<i>Est. Cost/Funding Source:</i> \$100,000 / Staff Time-SMFD	
<b>3. Assess and upgrade city outdoor weather sirens - narrow banding. Increase public awareness related to outdoor sirens.</b>			
<i>Priority:</i> High (21)		<i>Hazards:</i> Violent Storms, Tornado	
<i>Lead:</i> Public Safety, Police Chief		<i>Status/Completion:</i> Existing / Ongoing	
<i>Implementation:</i> Project development		<i>Est. Cost/Funding Source:</i> up to \$100,000 / Police Protection Budget	

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

### 4. Continue updates of the City of South St. Paul Emergency Operations Plan.

*Priority:* High (21)

*Lead:* Public Safety, Police Chief

*Implementation:* Emergency Operations Plan

*Hazards:* All

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* \$26,000 / Police Protection Budget

### 5. Re-certification of the levee with FEMA and revamping of the entire operation, maintenance, and preparation manual for the levee and floods.

*Priority:* High (21)

*Lead:* Engineering, City Engineer

*Implementation:* Project development

*Hazards:* Overland Flood

*Status/Completion:* Existing-New / TBD

*Est. Cost/Funding Source:* \$4.8 Million / \$2.4 M Grant, City Funds

### 6. Updates to firewalls with advanced intrusion detection/prevention capabilities.

*Priority:* Med (20)

*Lead:* Information Technology, Director

*Implementation:* Project development

*Hazards:* Cyber Terrorism

*Status/Completion:* Existing / ongoing

*Est. Cost/Funding Source:* \$100,000 / IT Budget

### 7. Evaluate \$15 Million upgrade to Concord Street.

*Priority:* Low (18)

*Lead:* Engineering, City Engineer

*Implementation:* Project development

*Hazards:* Flash Flood

*Status/Completion:* Existing-New / TBD

*Est. Cost/Funding Source:* \$1.5 Million / Federal Funding Anticipated

\*Reduces risk to buildings or infrastructure

\*\* Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

^Modified STAPLEE evaluation score; higher scores generally correlated to fewer implementation barriers

## Implementation Resources:

Table 11 identifies South St. Paul staff resources and their roles in mitigation. Table 12 identifies resources related to processes and ordinances.

**Table 11: South St. Paul Mitigation Implementation Resources**

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
<b>Building Inspections,</b> Building Official (J. Heimkes)	Building inspections, regulation of new housing development	Enforce safety restrictions including setbacks, building materials, spacing, and location to hydrants in new construction areas
<b>Planning and Zoning,</b> Planning Director (P. Hellegers)	Zoning, development siting and restrictions, Comprehensive Plans	Enforce floodplain ordinances and compliance, proper land use per ordinances
<b>Police,</b> Police Chief (W. Messerich)	Public safety and law enforcement, emergency response	Emergency response; update and exercise EOP; incident command training; training for public safety, City, schools, and businesses
<b>Public Works,</b> Public Works Director (P. Dunn)	Development and operations of public infrastructure (roads, utilities)	City well inspections and maintenance, partnership with all city departments, level improvement projects

# APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

<b>Fire Department, South Metro Fire Chief (M. Pott)</b>	Public and fire safety enforcement, emergency response	Inspect buildings for code compliance: annual inspection of high risk buildings, biennial inspection of other businesses
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**Table 12: South St. Paul Additional Implementation Resources**

<b>Program/Ordinance/Study/ Technical Document</b>	<b>Adopted or Revised</b>	<b>Method of incorporation into the hazard mitigation plan</b>
1. Comprehensive Storm Water Management Plan	Jan. 2012	Planning document for local drainage system
2. 2016-2020 Capital Improvement Program	Dec. 2015	Infrastructure upgrades to support hazard mitigation
3. 2016 Annual Budget and Financial Plan	Dec. 2015	Allocates annual operational funding for departments and staff implementing the City's mitigation strategies
4. Emergency Operations Plan	November 2015	Response, recovery, and mitigation plan; ongoing training
5. Special Zoning Ordinance, Floodplain map	<u>Adopted:</u> November 7, 2011 <u>Revised Flood Map:</u> January 14, 2013	Floodplain regulation
6. Comprehensive Plan	June 2009	Sets land use vision for community, provides existing and projected information

## CITY OF SUNFISH LAKE

Table 1: Sunfish Lake Community Data

<b>Population (2014):</b>	516
<b>Households:</b>	187
<b>Employment/Jobs:</b>	0
<b>Area:</b>	1.7 Sq. Mi.
<b>Major Land Uses:</b>	46% Agricultural & Undeveloped 30% Residential 3% Park and Recreation
<b>Community Type:</b>	Rural Residential
<b>Undeveloped Area:</b>	46%

Source: Metropolitan Council Community Profiles

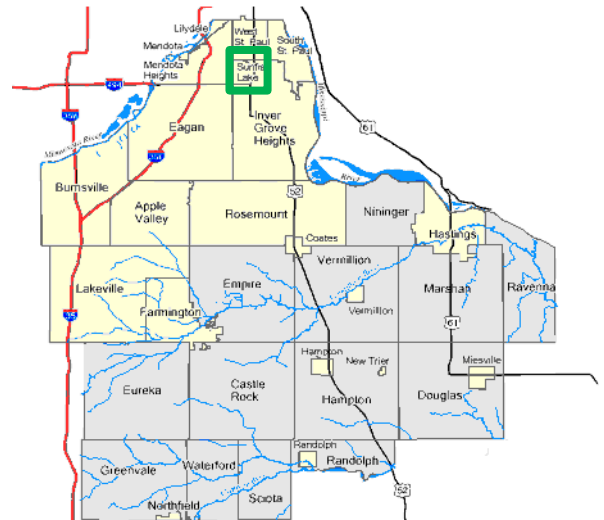


Figure 5: City of Sunfish Lake Location

## Hazards of Concern

Sunfish Lake officials evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

Table 2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
<b>Frequency</b>	Unlikely: <1% chance in 100 years	Occasional: 1 to 10% chance in next year	Likely: >10 to <100% chance in next year	Highly Likely: 100% chance in next year
<b>Warning Time</b>	More than 12 hours	6-12 hours	3-6 hours	None-minimal
<b>Geographic Extent</b>	Localized	Community-wide	County-wide or greater	
<b>Likely Impact</b>	Negligible	Limited	Critical	Catastrophic

Table 3: Sunfish Lake Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Tornado	3	4	3	3	13
Summer Storms	4	3	3	2	12
Winter Storms	3	3	3	2	11
Structural Fire	2	4	1	2	9
Wildfire	2	3	2	2	9
Extreme Heat	3	1	3	2	9
Extreme Cold	3	1	3	2	9
Hazardous / Nuclear Material Incidents	2	3	1	2	8
Flash Flood	2	4	1	1	8
Drought	2	1	2	2	7
Landslide*	1	4	1	1	7
Infectious Disease	1	1	2	1	5
Overland Flood	1	2	1	1	5
Terrorism	1	1	2	1	5
Water Supply Contamination, including WWTP Failure	1	1	1	1	4
Dam Failure	NA	NA	NA	NA	NA
Cyber Attack*					

\*New Hazards considered in 2016



## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

### General Land Use

Figure 2 depicts general land use in Sunfish Lake, with undeveloped open space and residential (single- and multi-family) being the predominant land uses.

### Structural Inventory Value

Table 4 provides a current total and estimated value for structures in the Sunfish Lake.

Data are from the Dakota County's Offices of Assessor Services and Geographic Information Services. Structures identified as residential, commercial, industrial, and agricultural have the types of structures associated with those land uses. "Exempt" includes all buildings not subject to property taxes, such as government buildings, schools, and places of worship. "Utilities" includes fixed sites with infrastructure for electricity, sewer, and water. "Other" includes structures that do not fall into preceding categories.

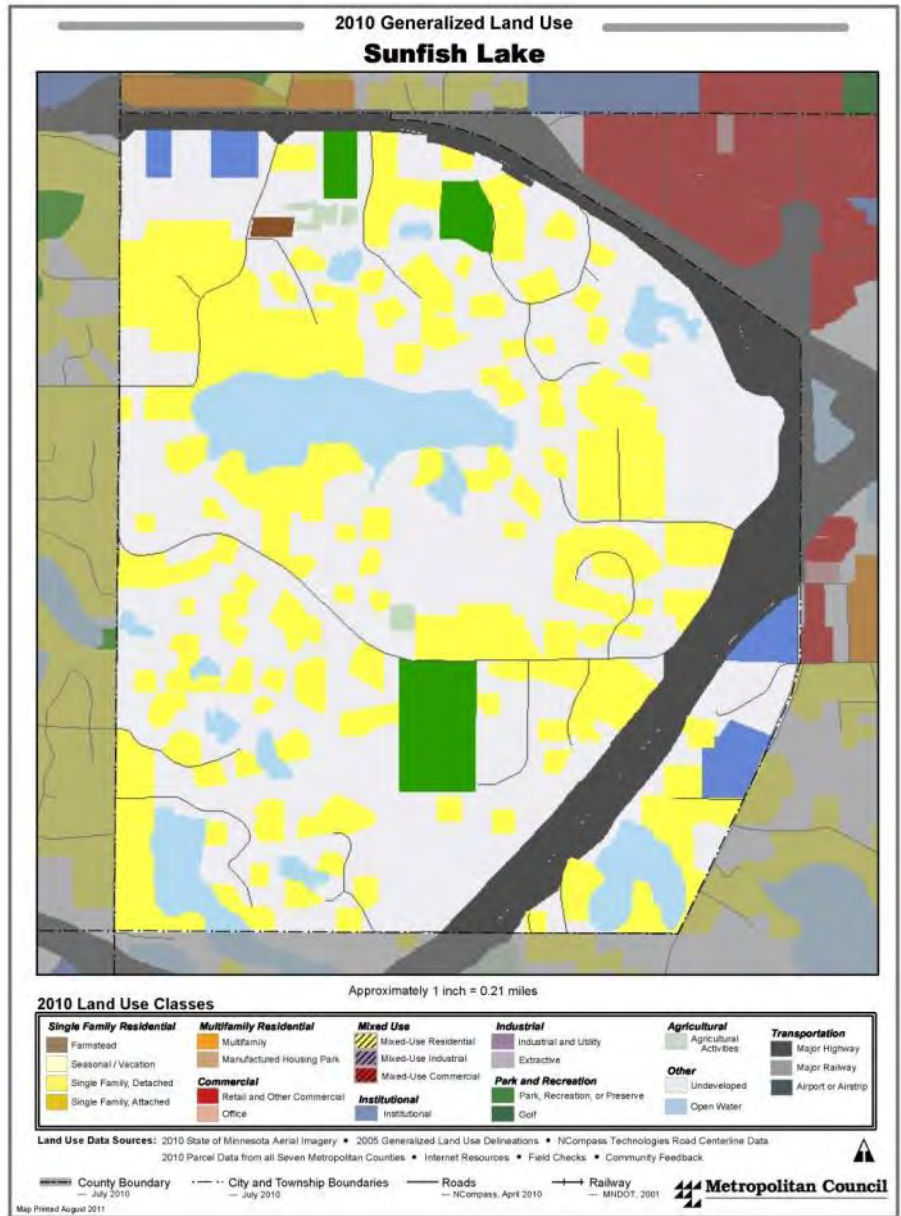


Figure 6: Sunfish Lake 2010 Land Use Map, Metropolitan Council

Table 4: Structural Inventory and Value, Sunfish Lake

Use Type	Number of Structures	Structural Value	Land Value	Total Value
Exempt	8	\$4,051,700	\$3,242,300	\$7,294,000
Residential	289	\$101,133,400	\$72,387,500	\$173,520,900
<b>TOTAL</b>	<b>297</b>	<b>\$105,185,100</b>	<b>\$75,629,800</b>	<b>\$180,814,900</b>



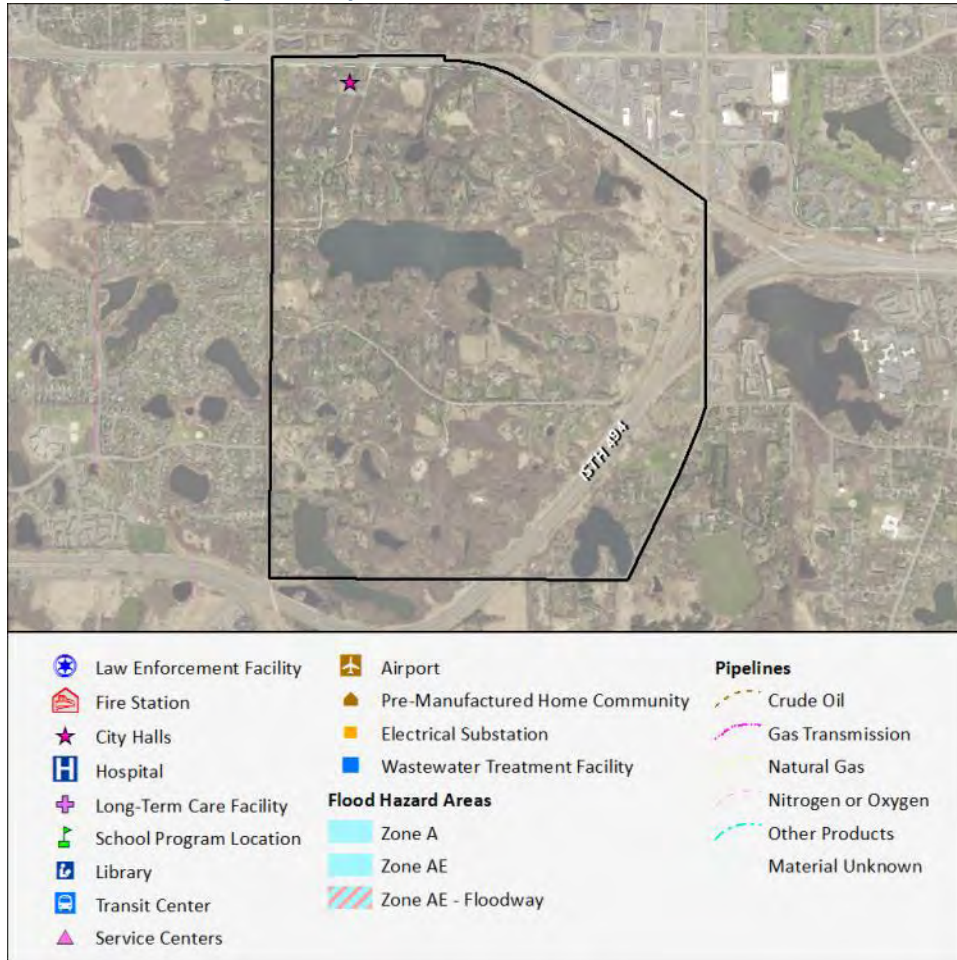


### Changes since the 2011 Plan

City staff identified land use changes and additions to critical facilities since the last plan update in 2011:

- Improved roadway design for increased drainage and runoff flow

**Figure 3: City of Sunfish Lake – Critical Facilities**



### National Flood Insurance Program Participation and Compliance

The City of Sunfish Lake does not participate in the National Flood Insurance Program.

Table 7 provides an inventory and assessed value of structures in the City of Sunfish Lake located within the digital flood insurance rate map (DFIRM) boundaries. Structures are listed by predominant land use categories. The table was compiled with data from the Dakota County Office of GIS and Assessor's Office.

**Table 7: Total Floodplain Structure and Value Inventory, Sunfish Lake**

Structure Type	Total Structures	Estimated Land Value	Estimated Building Value	Total Value
Total	0	\$0	\$0	\$0

## Strategy Review and Development

In 2016, Sunfish Lake representatives reviewed strategies from the 2011 Dakota County All-Hazard Mitigation Plan for progress (See **Appendix III**) and to identify strategies to carry forward into the 2016 Plan as ongoing or incomplete efforts. The City considered and addressed FEMA requirements for:

1. A mitigation strategy that identifies and analyzes a comprehensive range of specific mitigation actions and projects and further identifies which actions were selected for implementation
2. At least one strategy to reduce risk to buildings and infrastructure

City staff also developed new strategies reflective of remaining concerns and vulnerabilities. Table 8 presents Sunfish Lake's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

**Table 8: Sunfish Lake All-Hazard Mitigation Plan Strategies**

### SUNFISH LAKE MITIGATION STRATEGIES

#### 1. Stormwater Ponding Expansion and Maintenance

*Priority:* 16^

*Lead:* City Engineer

*Implementation:* Stormwater Management Plan, Local Ordinance

*Hazards:* Flash Flood

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* Varies / General Fund

#### 2. Culvert/Drainage Improvements

*Priority:* 17

*Lead:* City Engineer

*Implementation:* Stormwater Management Plan, Local Ordinance

*Hazards:* Flash Flood

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* Varies / General Fund

#### 3. Obtain Drainage Easements

*Priority:* 11

*Lead:* City Engineer

*Implementation:* Stormwater Management Plan, Local Ordinance

*Hazards:* Flash Flood

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* Varies / General Fund

#### 4. Enforcement of Burning Permits

*Priority:* 17

*Lead:* City Forester

*Implementation:* Local Ordinance

*Hazards:* Wildfire, Structural Fire

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* Varies / General Fund

#### 5. Well Management

*Priority:* 12

*Lead:* Dakota County, MN Dept. of Health

*Implementation:* Local Ordinance

*Hazards:* Water Supply Contamination

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* Varies / General Fund

#### 6. Subsurface Sewage treatment System Maintenance

*Priority:* 11

*Lead:* City of Sunfish Lake

*Implementation:* Local Ordinance

*Hazards:* Flash Flood, Water Supply Contamination

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* Varies / General Fund

\*Reduces risk to buildings or infrastructure

\*\* Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

^Modified STAPLEE evaluation score; higher scores generally correlated to fewer implementation barriers

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

### Implementation Resources:

Table 9 identifies Sunfish Lake resources and their roles in mitigation.

**Table 9: Sunfish Lake Mitigation Implementation Resources**

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
<b>Building Inspections,</b> Building Inspector (M. Andrejka)	Building inspections, regulation of new housing development	<i>E.g., enforce safety restrictions including setbacks, building materials, and fire suppression systems</i>
<b>Planning and Zoning,</b> City Planner (R. Grittmann)	Zoning, development siting and restrictions, Comprehensive Plans	<i>E.g., floodplain ordinances and compliance</i>
<b>Police,</b> West St. Paul Police Chief (M. Shaver)	Public safety and law enforcement, emergency response	<i>E.g., response training, public safety education</i>
<b>Public Works,</b> City Engineer (D. Sterna)	Development and operations of public infrastructure (roads, utilities)	<i>E.g., City well inspection and maintenance</i>
<b>Fire Department,</b> Mendota Heights Fire Chief (J. Maczko)	Public and fire safety enforcement, emergency response	<i>E.g., inspect commercial structures for fire hazards</i>

Table 10 identifies resources related to processes and ordinances.

**Table 10: Sunfish Lake Additional Implementation Resources**

Program/Ordinance/Study/ Technical Document	Adopted or Revised	Method of incorporation into the hazard mitigation plan
1. Comprehensive Plan	2009 - adopted	Assessing development trends and future vulnerabilities
2. Storm Water Management Plan 2009	2009 - adopted	Provides inventory of land and water resources; water resource management related goals and policies; assessment of existing and potential water resource related concerns; and implementation priorities
3. City Code, Article XII - Zoning Ordinance	2010 - revised	Used for assessing growth
4. City Code, Article XII, Section 1216.04 - Storm Water Management Ordinance	2007 - revised	References drainage, erosion control, and storm sewer system pollution prevention
5. City Code, Article IV, Chapter 402 - Subsurface Sewage Treatment Systems	2010 - revised	Reference document related to preventing and controlling water-borne diseases, groundwater related hazards, and public nuisance conditions
6. City Code, Article IV, Chapter 404 - Wells and Water Supply Management	1998 - adopted	Reference document related to drinking water protection hazard

## CITY OF VERMILLION

Table 1: Vermillion Community Data

<b>Population (2014):</b>	429
<b>Households:</b>	159
<b>Employment/Jobs:</b>	158
<b>Area:</b>	1.0 Sq. Mi.
<b>Major Land Uses:</b>	82% Agriculture & Undeveloped 13% Residential 2% Park and Recreational
<b>Community Type:</b>	Rural Center
<b>Undeveloped Area:</b>	82%

Source: Metropolitan Council Community Profiles

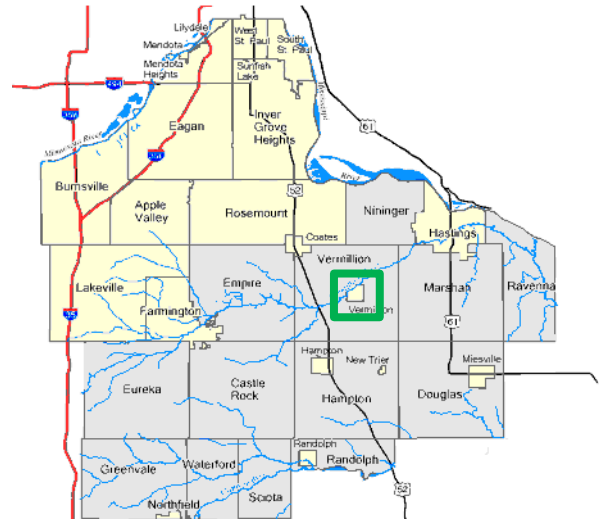


Figure 7: City of Vermillion Location

## Hazards of Concern

Vermillion staff evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

Table 2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
<b>Frequency</b>	Unlikely: <1% chance in 100 years	Occasional: 1 to 10% chance in next year	Likely: >10 to <100% chance in next year	Highly Likely: 100% chance in next year
<b>Warning Time</b>	More than 12 hours	6-12 hours	3-6 hours	None-minimal
<b>Geographic Extent</b>	Localized	Community-wide	County-wide or greater	
<b>Likely Impact</b>	Negligible	Limited	Critical	Catastrophic

Table 3: Vermillion Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Summer Storms	2	3	2	3	10
Tornado	2	3	2	3	10
Terrorism	1	4	3	1	9
Wildfire	1	1	3	3	8
Extreme Heat	2	1	3	2	8
Extreme Cold	2	1	3	2	8
Structural Fire	1	4	1	1	7
Winter Storms	2	2	2	1	7
Water Supply Contamination, including WWTP Failure	2	1	2	1	6
Drought	1	1	3	1	6
Flash Flood	1	1	2	1	5
Infectious Disease	1	1	2	1	5
Hazardous / Nuclear Material Incidents	1	1	1	1	4
Overland Flood	1	1	1	1	4
Dam Failure	1	1	1	1	4
Landslide*	1	1	1	1	4
Cyber Threats*	1	1	1	1	4

\*New Hazards considered in 2016

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

### General Land Use

Figure 2 depicts general land use in Vermillion, with agriculture and open space being the predominant land use.

### Structural Inventory Value

Table 4 provides a current total and estimated value for structures in the City of Vermillion.

Data are from the Dakota County's Offices of Assessor Services and Geographic Information Services. Structures identified as residential, commercial, industrial, and agricultural have the types of structures associated with those land uses. "Exempt" includes all buildings not subject to property taxes, such as government buildings, schools, and places of worship. "Utilities" includes fixed sites with infrastructure for electricity, sewer, and water. "Other" includes structures that do not fall into preceding categories.

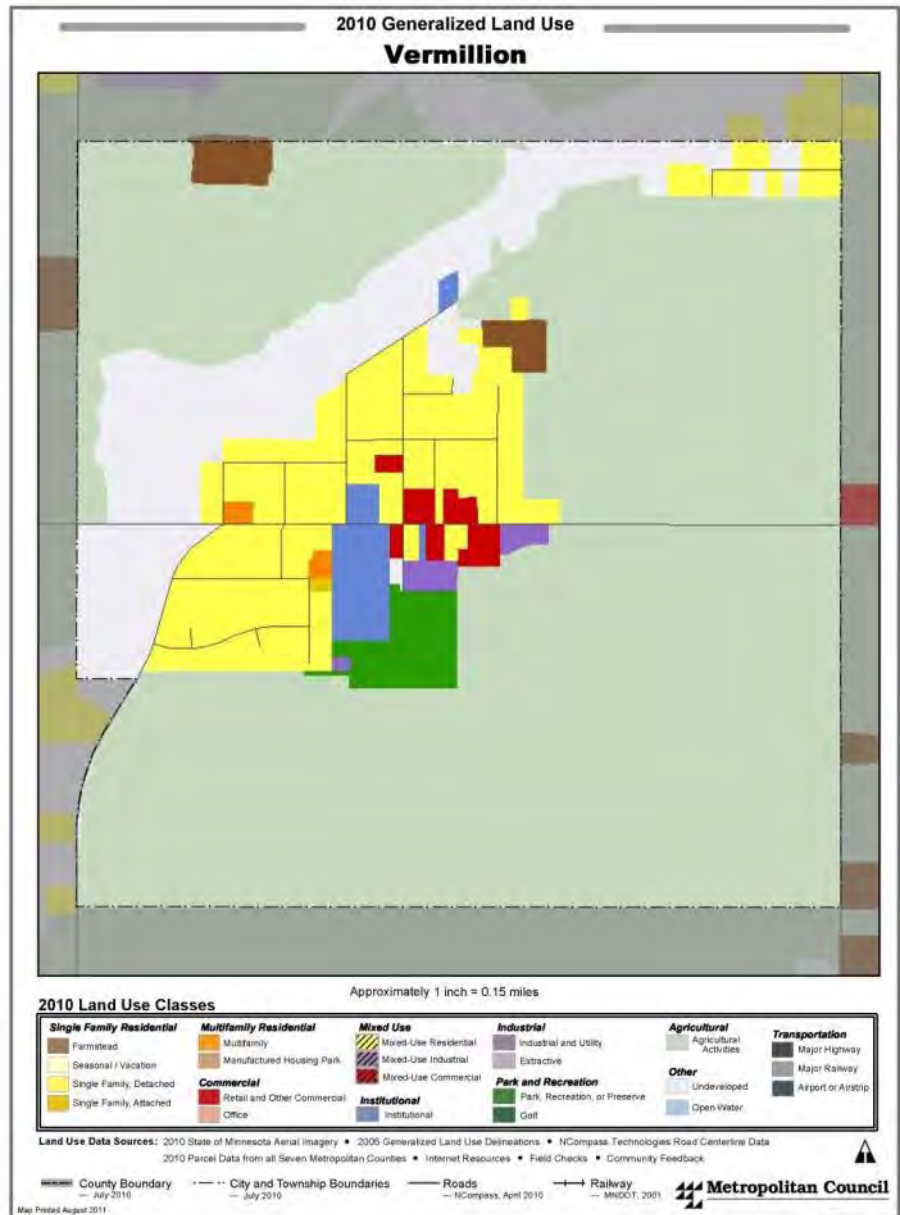


Figure 8: Vermillion 2010 Land Use Map, Metropolitan Council

Table 4: Structural Inventory and Value, Vermillion

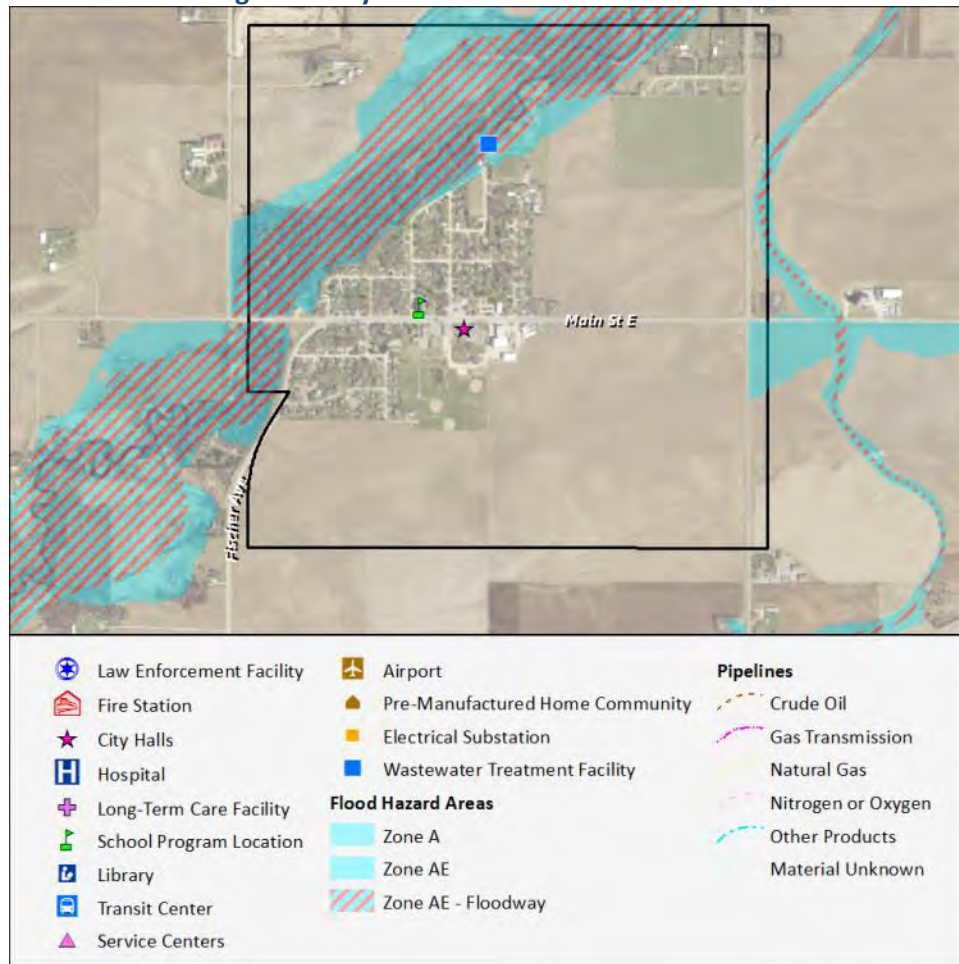
Use Type	Number of Structures	Structural Value	Land Value	Total Value
Agricultural	14	\$478,800	\$3,379,600	\$3,858,400
Commercial	12	\$1,487,400	\$781,700	\$2,269,100
Exempt	8	\$2,720,700	\$1,195,900	\$3,916,600
Industrial	1	\$39,700	\$154,300	\$194,000
Residential	171	\$20,869,400	\$7,905,200	\$28,774,600
<b>TOTAL</b>	<b>206</b>	<b>\$25,596,000</b>	<b>\$13,416,700</b>	<b>\$39,012,700</b>





## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

**Figure 3: City of Vermillion – Critical Facilities**



### National Flood Insurance Program Participation and Compliance

Table 7 includes information on the City of Vermillion's participation in the National Flood Insurance Program (NFIP). Additional information follows about City compliance with the terms of the NFIP.

**Table 7: Vermillion NFIP Participation**

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Vermillion	270115	12/2/11	2	\$700,000

### Compliance:

The development of the flood hazard areas of the City of Vermillion could result in the potential loss of life and property, create health and safety hazards, and lead to extraordinary public expenditures for flood protection and relief. Since development of these areas is not essential to the orderly growth of the community, and since these lands are suitable for open space uses that do not require structures, fill, obstructions, or any other form of development as defined in Section 7.0 of this Ordinance, the City Council of the City of Vermillion does ordain as follows. This ordinance was adopted in 2011 and prepared by FEMA.

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

Table 8 provides an inventory and assessed value of structures in the City of Vermillion located within the digital flood insurance rate map (DFIRM) boundaries. Structures are listed by predominant land use categories. The table was compiled with data from the Dakota County Office of GIS and Assessor's Office.

**Table 8: Total Floodplain Structure and Value Inventory, Vermillion**

Structure Type	Total Structures	Estimated Land Value	Estimated Building Value	Total Value
<b>Total</b>	<b>0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

### Strategy Review and Development

In 2016, Vermillion officials reviewed strategies from the 2011 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2016 Plan update as ongoing efforts or project that have not been completed. City staff considered and addressed FEMA requirements for:

1. A mitigation strategy that identifies and analyzes a comprehensive range of specific mitigation actions and projects and further identifies which actions were selected for implementation
2. At least one strategy to reduce risk to buildings and infrastructure

City staff also developed new strategies reflective of remaining concerns and vulnerabilities. Table 9 presents Vermillion's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

**Table 9: Vermillion All-Hazard Mitigation Plan Strategies**

VERMILLION MITIGATION STRATEGIES			
<b>1. Maintain road grading.</b>			
<i>Priority:</i> First (20)^		<i>Hazards:</i> Flash Flood	
<i>Lead:</i> Street Department, Superintendent		<i>Status/Completion:</i> Existing / Ongoing	
<i>Implementation:</i> As needed		<i>Est. Cost/Funding Source:</i> Varies / City Budget	
<b>2. Maintain outdoor warning sirens.</b>			
<i>Priority:</i> Second (20)		<i>Hazards:</i> Violent Storm, Tornado	
<i>Lead:</i> TBD		<i>Status/Completion:</i> Existing / Yearly	
<i>Implementation:</i> Yearly inspections		<i>Est. Cost/Funding Source:</i> Varies / City Budget	
<b>3. Maintain outdoor burning restrictions.*</b>			
<i>Priority:</i> Third (20)		<i>Hazards:</i> Wildfire	
<i>Lead:</i> City Council		<i>Status/Completion:</i> Existing / Yearly	
<i>Implementation:</i> Quarterly Newsletter		<i>Est. Cost/Funding Source:</i> Varies / City Budget	
<b>4. Outfit well with generator outlet.</b>			
<i>Priority:</i> Fourth (20)		<i>Hazards:</i> Water Supply (power outage)	
<i>Lead:</i> Water Department, Superintendent		<i>Status/Completion:</i> Existing / 2011	
<i>Implementation:</i> TBD		<i>Est. Cost/Funding Source:</i> TBD / City Budget	

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

### VERMILLION MITIGATION STRATEGIES

#### 5. Continue water tower inspection.

*Priority:* Fifth (20)

*Lead:* Water Department, Superintendent

*Implementation:* As needed

*Hazards:* Water Supply, structural integrity

*Status/Completion:* Existing / 2010

*Est. Cost/Funding Source:* / City Budget

\*Reduces risk to buildings or infrastructure

\*\* Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

^Modified STAPLEE evaluation score; higher scores generally correlated to fewer implementation barriers

### Implementation Resources:

Table 10 identifies Vermillion resources and their roles in mitigation.

**Table 11: South St. Paul Mitigation Implementation Resources**

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
<b>Building Inspection:</b> Inspectron, Inc.	Building inspections, regulation of new housing development	Enforce safety restrictions including setbacks and building materials
<b>Planning/Zoning:</b> City Planning Commission	Zoning, development siting and restrictions, Comprehensive Plans	Enforce floodplain ordinances and compliance
<b>Police:</b> Dakota County Sheriff	Public safety and law enforcement, emergency response	Emergency response; update and exercise EOP; incident command training; training for public safety, City, schools, and businesses
<b>Vermillion Public Works</b>	Development and operations of public infrastructure (roads, utilities)	City well inspections and maintenance
<b>Fire Department:</b> Hastings FD	Public and fire safety enforcement, emergency response	Inspect buildings for code compliance: annual inspection of high risk buildings, biennial inspection of other businesses

Table 11 identifies resources related to processes and ordinances.

**Table 11: Vermillion Additional Implementation Resources**

Program/Ordinance/Study/ Technical Document	Adopted or Revised	Method of incorporation into the hazard mitigation plan
1. Capital Improvement Program	2010	Infrastructure upgrades to support hazard mitigation
2. Annual Budget	annually	Allocates annual operational funding for departments and staff implementing the City's mitigation strategies
3. Special Zoning Ordinance, Floodplain map	2011	Floodplain regulation
4. Comprehensive Plan	2009	Sets land use vision for community, provides existing and projected information

## CITY OF WEST ST. PAUL

Table 1: West St. Paul Community Data

<b>Population (2014):</b>	19,800
<b>Households:</b>	8,636
<b>Employment/Jobs:</b>	7,927
<b>Area:</b>	5.0 Sq. Mi.
<b>Major Land Uses:</b>	59% Residential 14% Park and Recreational 11% Commercial
<b>Community Type:</b>	Urban Center
<b>Undeveloped Area:</b>	3%

Source: Metropolitan Council Community Profiles

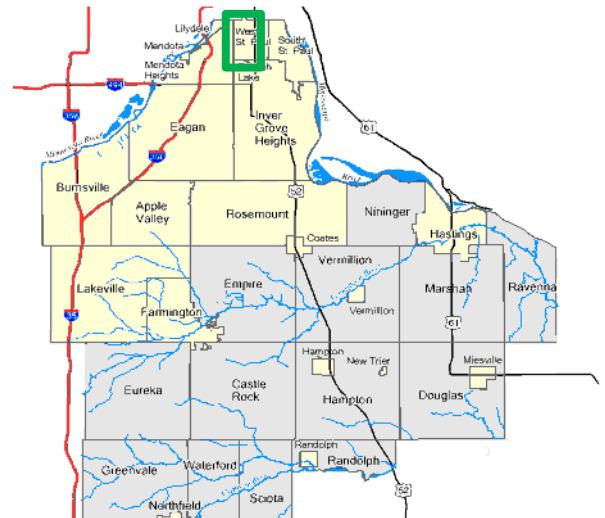


Figure 9: City of West St. Paul Location

## Hazards of Concern

West St. Paul staff evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

Table 2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
<b>Frequency</b>	Unlikely: <1% chance in 100 years	Occasional: 1 to 10% chance in next year	Likely: >10 to <100% chance in next year	Highly Likely: 100% chance in next year
<b>Warning Time</b>	More than 12 hours	6-12 hours	3-6 hours	None-minimal
<b>Geographic Extent</b>	Localized	Community-wide	County-wide or greater	
<b>Likely Impact</b>	Negligible	Limited	Critical	Catastrophic

Table 3: West St. Paul Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Cyber Security*	4	4	2	4	14
Tornado	3	4	3	4	14
Summer Storms	4	3	3	2	12
Flash Flood	3	4	2	2	11
Hazardous / Nuclear Material Incidents	4	4	1	2	11
Structural Fire	4	4	1	2	11
Terrorism	2	4	3	2	11
Winter Storms	3	3	2	2	10
Infectious Disease	3	1	3	3	10
Water Supply Contamination, including WWTP Failure	1	1	3	4	9
Extreme Heat	3	1	3	2	9
Extreme Cold	3	1	3	2	9
Overland Flood	1	2	2	2	7
Wildfire	1	3	2	1	7
Drought	2	1	2	2	7
Landslide*	1	4	1	1	7
Dam Failure	NA	NA	NA	NA	NA

\*New Hazards considered in 2016



## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

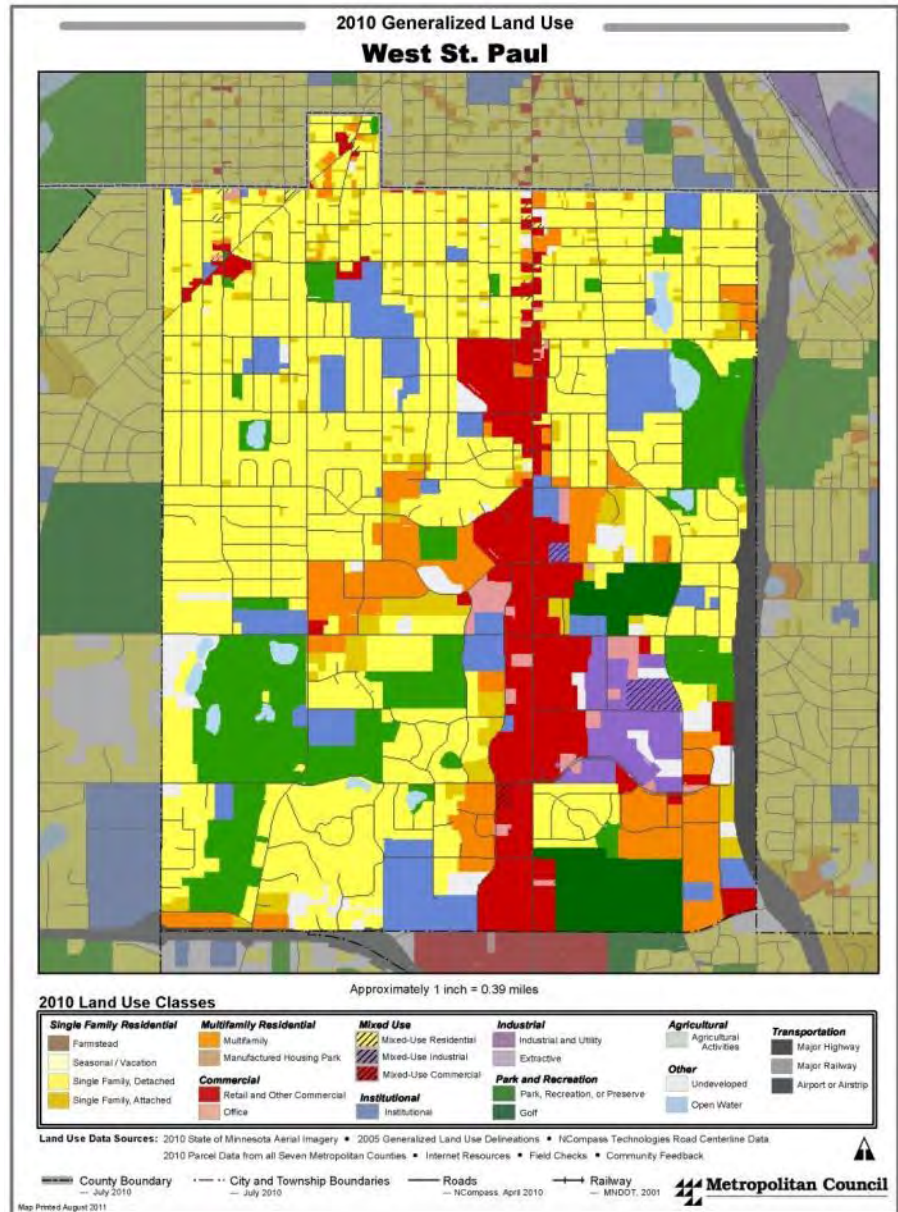
### General Land Use

Figure 2 depicts general land use in West St. Paul, with residential (single- and multi-family) being the predominant land use.

### Structural Inventory Value

Table 4 provides a current total and estimated value for structures in the West St. Paul.

Data are from the Dakota County's Offices of Assessor Services and Geographic Information Services. Structures identified as residential, commercial, industrial, and agricultural have the types of structures associated with those land uses. "Exempt" includes all buildings not subject to property taxes, such as government buildings, schools, and places of worship. "Utilities" includes fixed sites with infrastructure for electricity, sewer, and water. "Other" includes structures that do not fall into preceding categories.



**Table 4: Structural Inventory and Value, West St. Paul**

Use Type	Number of Structures	Structural Value	Land Value	Total Value
Commercial	253	\$117,177,500	\$115,640,500	\$232,818,000
Exempt	234	\$103,378,000	\$60,808,400	\$164,186,400
Industrial	15	\$16,447,500	\$8,901,600	\$25,349,100
Other	2	\$140,900	\$47,800	\$188,700
Residential	7,923	\$940,378,100	\$306,756,700	\$1,247,134,800
<b>TOTAL</b>	<b>8,427</b>	<b>\$1,177,522,000</b>	<b>\$492,155,000</b>	<b>\$1,669,677,000</b>

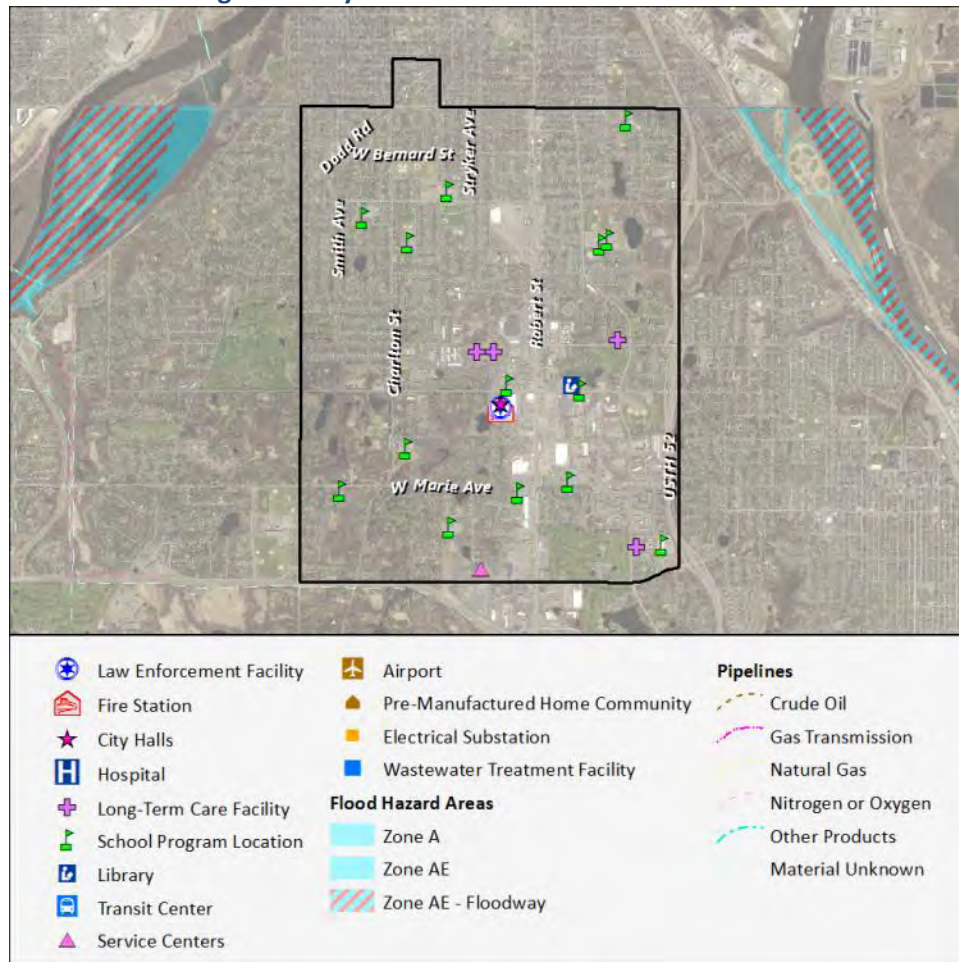




## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

- **New Public Works Facility** – The City replaced its aging public works facility with a much larger, state-of-the-art facility. (Completed)
- **New Sports Dome** – The City built a large sports dome complex. (Completed)
- **Pumping/Lift Stations** – Station upgrades and technology improvements are being done to ensure more consistent water flow, especially during heavy rains and improved monitoring of these pumping stations (In-progress)
- **I/I Program** – For the past several years the City and the residents have been participating in an inflow and infiltration program to reduce excess and unnecessary water flowage into the sanitary sewer system. This program should aid in reducing flood-prone areas. (In process)

**Figure 3: City of West St. Paul – Critical Facilities**



### National Flood Insurance Program Participation and Compliance

Table 7 includes information on West St. Paul's participation in the National Flood Insurance Program (NFIP). Additional information follows about City compliance with the terms of the NFIP.

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

**Table 7: West St. Paul NFIP Participation**

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
West St. Paul	270729	(NSFHA)	12	\$3,024,000

### Compliance:

Data from the County Office of GIS and Assessor's Office showed no structures within DFRIM boundaries.

### Strategy Review and Development

In 2016, West St. Paul staff reviewed strategies from the 2011 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2016 Plan update as ongoing efforts or project that have not been completed. City staff considered and addressed FEMA requirements for:

1. A mitigation strategy that identifies and analyzes a comprehensive range of specific mitigation actions and projects and further identifies which actions were selected for implementation
2. At least one strategy to reduce risk to buildings and infrastructure

City staff also developed new strategies reflective of remaining concerns and vulnerabilities. Table 9 presents West St. Paul's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

**Table 9: West St. Paul All-Hazard Mitigation Plan Strategies**

WEST ST. PAUL MITIGATION STRATEGIES			
<b>1. Mutual aid interagency agreements.</b>			
<i>Priority:</i> High (19)^		<i>Hazards:</i> All	
<i>Lead:</i> Emergency Mgmt., Police Fire Depts., Chiefs		<i>Status/Completion:</i> NA / Ongoing	
<i>Implementation:</i> Emergency Preparedness Plan		<i>Est. Cost/Funding Source:</i> Staff Time / General Budget	
<b>2. Continuity of Operations Planning.</b>			
<i>Priority:</i> Med (17)		<i>Hazards:</i> All	
<i>Lead:</i> Emergency Management, Director		<i>Status/Completion:</i> Existing / December 2010	
<i>Implementation:</i> Emergency Preparedness Plan, update with quarterly meeting		<i>Est. Cost/Funding Source:</i> Staff Time / General Budget	
<b>3. Site Emergency Plans (pre-planning).</b>			
<i>Priority:</i> Med (16)		<i>Hazards:</i> All	
<i>Lead:</i> City Departments, Managers		<i>Status/Completion:</i> Existing / Ongoing	
<i>Implementation:</i> All City Departments		<i>Est. Cost/Funding Source:</i> Staff Time / General Budget	
<b>4. Stormwater Pond Expansion and Maintenance.</b>			
<i>Priority:</i> Med (16)		<i>Hazards:</i> Flash Flood	
<i>Lead:</i> Public Works, Director		<i>Status/Completion:</i> Existing-Additional / Ongoing	
<i>Implementation:</i> City Ordinance, State Law		<i>Est. Cost/Funding Source:</i> Staff Time / City, owners, grants	

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

### WEST ST. PAUL MITIGATION STRATEGIES

**5. Inflow and Infiltration Repair and replacement of infrastructure.**

*Priority:* Med (15)

*Lead:* Public Works, Director

*Implementation:* City Ordinance, State Law

*Hazards:* Flash Flood

*Status/Completion:* Existing-New / Ongoing

*Est. Cost/Funding Source:* \$200,000 yearly / City, Property owners, grants

**6. Familiarization and Maintenance of Personal Protection Equipment (PPE).**

*Priority:* High (21)

*Lead:* Police and Fire Departments, Chiefs

*Implementation:* Department Policy

*Hazards:* Hazmat, Infectious Disease Incidents

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* Staff Time / General Budget

**7. Mission Critical and Vulnerability Assessment.**

*Priority:* Med (15)

*Lead:* Public Works, Director

*Implementation:* County-City Joint Powers Agreements

*Hazards:* Infectious Disease, Public Health Emergencies

*Status/Completion:* Existing / TBD

*Est. Cost/Funding Source:* Staff Time / General Budget

**8. General maintenance and backup systems for lift stations.**

*Priority:* Med (18)

*Lead:* Public Works, Director

*Implementation:* Department Policy

*Hazards:* WWTP Failure

*Status/Completion:* Existing / 2016

*Est. Cost/Funding Source:* Staff Time / General Budget

**9. Provide public education and awareness for emergencies.**

*Priority:* Med (18)

*Lead:* Police and Fire Depts., Chiefs

*Implementation:* Emergency Preparedness Plans

*Hazards:* All

*Status/Completion:* Existing-additional / Ongoing

*Est. Cost/Funding Source:* Staff Time / General Budget

**10. Continue to use and enforce Land Use Planning for hazard avoidance.**

*Priority:* Med (17)

*Lead:* Community Development, Director

*Implementation:* Zoning Ordinance

*Hazards:* All

*Status/Completion:* Existing-additional / Ongoing

*Est. Cost/Funding Source:* Staff Time / General Budget

**11. Education the public on family disaster plans and supply kits.**

*Priority:* Med (17)

*Lead:* Police and Fire Depts., Chiefs

*Implementation:* Emergency Preparedness Plans

*Hazards:* All

*Status/Completion:* New / Ongoing

*Est. Cost/Funding Source:* Staff Time / NA

**12. Burning restriction enforcement.**

*Priority:* Med (18)

*Lead:* Fire Dept., Chief

*Implementation:* City Ordinances, Fire Code

*Hazards:* Structural Fire, Wildfire

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* Staff Time / General Budget

**13. Fireworks regulation enforcement.**

*Priority:* Med (16)

*Lead:* Fire Dept., Chief

*Implementation:* City Ordinances, State Law

*Hazards:* Structural Fire, Wildfire

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* Staff Time / General Budget

**WEST ST. PAUL MITIGATION STRATEGIES**

**14. Waste disposal regulation enforcement.**

*Priority:* Low (14)

*Lead:* Code Enforcement

*Implementation:* City Ordinances

*Hazards:* Structural Fire, Wildfire

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* Staff Time / General Budget

**15. Establish a process to increase monitoring of identified MANPADS sites.**

*Priority:* Med (16)

*Lead:* Police Dept., Chief

*Implementation:* CIKR Planning

*Hazards:* Terrorism

*Status/Completion:* Existing / TBD

*Est. Cost/Funding Source:* Staff Time / General Budget, possible TSA grants

**16. Driver safety education for winter storms.**

*Priority:* Med (15)

*Lead:* Police Dept., Chief

*Implementation:*

*Hazards:* Winter Storms

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* Staff Time / General Budget

**17. Develop a common operating resource database through local deployment of the Knowledge Center System.**

*Priority:* Low (12)

*Lead:* Police and Fire Depts., Public Works

*Implementation:* Emergency Preparedness Plan

*Hazards:* All

*Status/Completion:* New / Ongoing

*Est. Cost/Funding Source:* Staff Time / Civil Defense Budget

**18. Enforce City Ordinance restricting open grills on apartment balconies.**

*Priority:* Med (15)

*Lead:* Fire Depts., Chief

*Implementation:* City Ordinance, Fire Code enforcement

*Hazards:* Structural Fire

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* Staff Time / General Budget

**19. Annual outdoor siren maintenance program.**

*Priority:* Med (15)

*Lead:* Police Dept., Chief

*Implementation:* Emergency Preparedness Plan

*Hazards:* Summer Storms, Tornado, Hazmat Incidents

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* \$1,000 yearly / General Budget

**20. Emergency Response Personnel, Specialized Abilities and Training (SOT).**

*Priority:* Low (13)

*Lead:* Various City Departments, Managers

*Implementation:* Police, Fire Departments

*Hazards:* Winter Storms

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* TBD / Grants, City Training Budgets

**21. Inspect business and multifamily occupancies.**

*Priority:* Med (17)

*Lead:* Community Development, Fire Department

*Implementation:* Department Policy

*Hazards:* Structural Fire, Hazmat Incidents

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* Staff Time / General Budget

**22. Provide NOAA weather radios.**

*Priority:* Med (17)

*Lead:* Police Department

*Implementation:* NA

*Hazards:* Summer Storms, Tornado

*Status/Completion:* New / Ongoing

*Est. Cost/Funding Source:* \$25 per radio / Grants

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

### WEST ST. PAUL MITIGATION STRATEGIES

#### 23. Building construction and code enforcement.

*Priority:* High (19)

*Lead:* Community Development

*Implementation:* Code enforcement

*Hazards:* Summer Storms, Tornado

*Status/Completion:* Existing-additional / Ongoing

*Est. Cost/Funding Source:* Staff Time / General Budget

#### 24. Robert Street Redevelopment (including safety improvements).

*Priority:* Med (17)

*Lead:* Public Works, Director

*Implementation:* City Resolution, CIP

*Hazards:* Flash Floods (evacuation)

*Status/Completion:* Existing / 2017

*Est. Cost/Funding Source:* \$42 Million / Grants, local funds

#### 25. Adopt IPMC code (simpler, increased compliance).\*

*Priority:* Med (17)

*Lead:* Building Official

*Implementation:* Building Code

*Hazards:* Structural Fire, Hazmat Incidents

*Status/Completion:* Existing-New / 2015

*Est. Cost/Funding Source:* Staff Time / General Budget

#### 26. Conduct rental inspections.\*

*Priority:* Low (12)

*Lead:* Community Development, Director

*Implementation:* City Resolution

*Hazards:* Structural Fire, Hazmat Incidents

*Status/Completion:* Existing-New / Ongoing

*Est. Cost/Funding Source:* Staff Time / General Budget

#### 27. Evaluate and reduce cyber threat potential.\*

*Priority:* Low (13)

*Lead:* Information Technology Manager

*Implementation:* Department Policy

*Hazards:* Cyber-Attack

*Status/Completion:* Existing / Ongoing

*Est. Cost/Funding Source:* Staff Time / General Budget, Grants

\*Reduces risk to buildings or infrastructure

\*\* Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

^Modified STAPLEE evaluation score; higher scores generally correlated to fewer implementation barriers

### Implementation Resources:

Table 10 identifies West St. Paul staff resources and their roles in mitigation. Table 11 identifies resources related to processes and ordinances that will assist the implementation of mitigation strategies.

**Table 10: West St. Paul Mitigation Implementation Resources**

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
<b>Building Inspections,</b> Building Official (D. Schilling)	Building inspections, regulation of new housing development	E.g., enforce safety restrictions including setbacks, building materials, and fire suppression systems
<b>Planning and Zoning,</b> City Planner (B. Boike)	Zoning, development siting and restrictions, Comp. Plans	E.g., floodplain ordinances and compliance
<b>Police,</b> Police Chief (M. Shaver)	Public safety, emergency response , law enforcement	E.g., response training, public safety education
<b>Public Works,</b> Public Works Director (R. Beckwith)	Development and operations of public infrastructure	E.g., City well inspection and maintenance



# APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
<b>Fire Department</b> , South Metro Fire Chief (M. Pott)	Public and fire safety enforcement, emergency response	E.g., inspect commercial structures for fire hazards
<b>Communications</b> , Communication Specialist (D. Nowicki)	General and emergency public communications	E.g., develop communication networks, dissemination groups and advance emergency notifications
<b>Emergency Management</b> , Emergency Management Director (M. Shaver)	Emergency response preparedness	E.g., develop, communicate, and practice response plans and strategies

**Table 11: West St. Paul Additional Implementation Resources**

Program/Ordinance/Study/ Technical Document	Adopted or Revised	Method of incorporation into the hazard mitigation plan
Emergency Operations Plan	2015	Used city-wide for Emergency Operations
Public Safety Mutual Aid Document: South Metro Fire Department	Fire 2008	Guides neighboring cities in providing public safety assistance to each other during emergencies
Public Works Mutual Aid Document		Guides neighboring cities in providing public works assistance to each other during emergencies (the City currently does not have an agreement like this but is considering it)
West St. Paul 2030 Comprehensive Plan	2009, being reviewed	Provides overall direction for future land use, transportation, housing, and infrastructure
Zoning Ordinance	1996   2010	Building standards, setbacks, development plan review
Comprehensive Sewer Plan	2009	Infrastructure improvement information
Building and Fire Codes	2012	Standards for new construction and remodeling; MN Version IBC and IFC
City Code, Chapter 400: Construction Licensing, Permits and regulations, etc.	On-going	Adopts the State Building Code and articulates an inspection process
City Code, Chapter 917, adoption of the SMFD fire code	On-going	Reference regarding grill ordinance
Capital Improvement Program	On-going	Infrastructure upgrades to support hazard mitigation
Police Department Policy Manual	On-going	Gives direction for PD staff at emergency incidents
South Metro Fire Department Policy Manual	On-going	Gives direction for FD staff at emergency incidents
Water Quality and Wetland Management Plan	2006	Flood control reference, pond sediment removal
Storm Water Management Plan	2006	Flood management reference
Water Supply Distribution Report and Water Supply Plan (St. Paul Regional Water District)		Reference document related to drinking water protection hazard; West St. Paul obtains its water from SPRWD
Water Resource Management Plan	2006	Used for Evaluating storm water issues and CIP improvements
NPDES Permit	2010	Must manage the City's storm water facilities

## DAKOTA COUNTY FIRE CHIEFS ASSOCIATION

The Dakota County Fire Chiefs Association is a cooperative organization for city fire departments in Dakota County:

- Apple Valley Fire Department
- Burnsville Fire Department
- Eagan Fire Department
- Farmington Fire Department (Farmington and the townships of Castle Rock, Empire, and Eureka)
- Hastings Fire Department (Cities of Hastings, Vermillion, and surrounding townships)
- Inver Grove Heights Fire Department
- Lakeville Fire Department (Lakeville and the surrounding area)
- Mendota Heights Fire Department (Lilydale, Mendota, Mendota Heights and Sunfish Lake)
- Randolph-Hampton Fire District (Hampton, Randolph, parts of six rural townships)
- Rosemount Fire Department
- South Metro Fire Department (South St. Paul and West St. Paul)

Structural fire mitigation strategies led by the Association include the following:

### FIRE CHIEFS ASSOCIATION MITIGATION STRATEGIES

#### **Goal 1: Protect Structures from Fire**

- 1. Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to ensure access for fire and other emergency equipment with cities and townships.**

*Priority:* Medium

*Hazards:* Structural Fire

*Lead:* Dakota County Fire Chiefs Association

*Status/Completion:* Existing / Ongoing

*Implementation:* City code evaluation and improvement

*Est. Cost/Funding Source:* Staff Time / General Budget

- 2. Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.**

*Priority:* Medium

*Hazards:* Structural Fire

*Lead:* Dakota County Fire Chiefs Association

*Status/Completion:* Existing / Ongoing

*Implementation:* Needs evaluation, project identification; capital planning, engineering, and implementation

*Est. Cost/Funding Source:* Staff Time / General Budget

**Cooperating Partners:** Dakota County Office of Planning, Dakota County Transportation Department, Dakota County Board, city planning and zoning commissions, city councils, township officials, and various fire departments

#### **Goal 2: Work Toward an Education and Informed Public on Fire Safety**

- 1. Work through Dakota County Fire Chiefs Association and participating cities to provide public education to a) youth, focusing on stoves, smoke detectors, fire safety, and evacuation; and b) homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals, and evacuation.**

*Priority:* Medium

*Hazards:* Structural Fire

*Lead:* Dakota County Fire Chiefs Association

*Status/Completion:* Existing / Ongoing

*Implementation:* Outreach campaigns, shared informational materials.

*Est. Cost/Funding Source:* Staff Time / General Budget

**Cooperating Partners:** Dakota County Emergency Management personnel, school systems, county news media, and non-profit organizations

## **APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION**

Resolutions of Participation were received from the following cities:

Apple Valley  
Burnsville  
Coates  
Eagan  
Farmington  
Hampton  
Hastings  
Inver Grove Heights  
Lakeville  
Lilydale  
Mendota  
Mendota Heights  
Miesville  
New Trier  
Rosemount  
South St. Paul  
Sunfish Lake  
Vermillion  
West St. Paul

APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

CITY OF APPLE VALLEY  
RESOLUTION NO. 2016-92

RESOLUTION TO PARTICIPATE IN ALL HAZARD MITIGATION PLANNING PROCESS

WHEREAS, the County of Dakota coordinated preparation of an initial multi-jurisdiction all-hazard mitigation planning process as established under the Disaster Mitigation Act of 2000; and

WHEREAS, the City of Apple Valley participated in drafting the plan, and later reviewed and approved the plan; and

WHEREAS, federal law requires the plan be updated every five years; and

WHEREAS, the Act requires public involvement and local coordination among local units of government and businesses as part of the planning process; and

WHEREAS, the plan must include descriptions of land uses and development trends, risk assessment including past hazards, hazards that threaten the county, maps of hazards, and estimates of structures at risk; and

WHEREAS, the plan must include a mitigation strategy including goals and objectives and an action plan identifying specific mitigation projects and costs, in addition to ; and a maintenance or implementation process including plan updates, integration of the plan into other planning documents, and public education components; and

WHEREAS, approval of the all hazard mitigation plan update will continue the County's eligibility to receive federal and state Hazard Mitigation Grant Program project grants; and

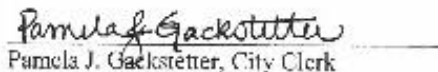
WHEREAS, this resolution does not preclude the City of Apple Valley from preparing its own plans sometime in the future should they desire to do so.

NOW THEREFORE BE IT RESOLVED, that the City Council of the City of Apple Valley, Dakota County, Minnesota, that Apple Valley supports the County all hazard mitigation planning effort, agrees to participate with the County in preparing an update to the multi-jurisdictional plan and recognizes that the plan will apply within the townships.

ADOPTED on this 26th day of May 2016.

  
Mary Hamann-Roland, Mayor

ATTEST:

  
Pamela J. Gackstetter, City Clerk

APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

**RESOLUTION NO. 16-6364**

**CITY OF BURNSVILLE, MINNESOTA**

**RESOLUTION TO ADOPT THE DAKOTA COUNTY  
ALL-HAZARD MITIGATION PLAN UPDATE**

**WHEREAS**, the County of Dakota coordinated preparation of an initial multi-jurisdiction all-hazard mitigation planning process as established under the Disaster Mitigation Act of 2000 (the "Act"); and

**WHEREAS**, the City of Burnsville participated in drafting the All-Hazard Mitigation Plan (the "Plan"), and later reviewed and approved the Plan; and

**WHEREAS**, the Disaster Mitigation Act of 2000 requires the Plan be updated every five years; and

**WHEREAS**, the Act requires public involvement and local coordination among local units of government and businesses as part of the planning process; and

**WHEREAS**, the Plan must include descriptions of land uses and development trends, risk assessment including past hazards, hazards that threaten the county, maps of hazards, and estimates of structures at risk; and

**WHEREAS**, the Plan must include a mitigation strategy including goals and objectives and an action plan identifying specific mitigation projects and costs, in addition to a maintenance or implementation process including Plan updates, integration of the Plan into other planning documents, and public education components; and

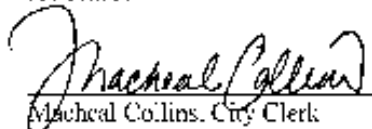
**WHEREAS**, approval of the All-Hazard Mitigation Plan update will continue the county's and participating communities' eligibility to receive federal and state Hazard Mitigation Grant Program project grants; and

**WHEREAS**, this resolution does not preclude the City of Burnsville from preparing its own plans sometime in the future should they desire to do so.

**NOW THEREFORE, BE IT RESOLVED** that the City of Burnsville supports the County all-hazard mitigation planning effort, agrees to participate with the County in preparing an update to the multi-jurisdictional plan, and recognizes that the Plan will apply within the City and County.

Passed and duly adopted by the City Council of the City of Burnsville, Minnesota this 8<sup>th</sup> day of March, 2016.

ATTEST:

  
Michael Collins, City Clerk

  
Elizabeth B. Kaulz, Mayor

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

### City of Coates Resolution Number 2016-3

#### RESOLUTION TO PARTICIPATE IN ALL HAZARD MITIGATION PLANNING PROCESS

WHEREAS, the County of Dakota coordinated preparation of an initial multi-jurisdiction all-hazard mitigation planning process as established under the Disaster Mitigation Act of 2000; and

WHEREAS, the City of Coates participated in drafting the plan, and later reviewed and approved the plan; and

WHEREAS, federal law requires the plan be updated every five years, and

WHEREAS, the Act requires public involvement and local coordination among local units of government and businesses as part of the planning process; and

WHEREAS, the plan must include descriptions of land uses and development trends, risk assessment including past hazards, hazards that threaten the county, maps of hazards, and estimates of structures at risk; and

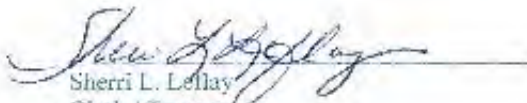
WHEREAS, the plan must include a mitigation strategy including goals and objectives and an action plan identifying specific mitigation projects and costs, in addition to ; and a maintenance or implementation process including plan updates, integration of the plan into other planning documents, and public education components; and

WHEREAS, approval of the all hazard mitigation plan update will continue the County's eligibility to receive federal and state Hazard Mitigation Grant Program project grants; and

WHEREAS, this resolution does not preclude the City of Coates from preparing its own plans sometime in the future should they desire to do so.

NOW THEREFORE BE IT RESOLVED, that the City of Coates supports the County all hazard mitigation planning effort, agrees to participate with the County in preparing an update to the multi-jurisdictional plan and recognizes that the plan will apply within the townships.

Adopted on this 14th day of March 2016.

  
Sherri L. Lefay  
Clerk / Treasurer  
City of Coates



## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

16-24

CITY OF EAGAN  
03/02/2016

**RESOLUTION TO PARTICIPATE IN ALL HAZARD MITIGATION PLANNING PROCESS**

**WHEREAS**, the County of Dakota coordinated preparation of an initial multi-jurisdiction all-hazard mitigation planning process as established under the Disaster Mitigation Act of 2000; and

**WHEREAS**, the City of Eagan participated in drafting the plan, and later reviewed and approved the plan; and

**WHEREAS**, federal law requires the plan be updated every five years; and

**WHEREAS**, the Act requires public involvement and local coordination among local units of government and businesses as part of the planning process; and

**WHEREAS**, the plan must include descriptions of land uses and development trends, risk assessment including past hazards, hazards that threaten the county, maps of hazards, and estimates of structures at risk; and

**WHEREAS**, the plan must include a mitigation strategy including goals and objectives and an action plan identifying specific mitigation projects and costs, in addition to; and a maintenance or implementation process including plan updates, integration of the plan into other planning documents, and public education components; and

**WHEREAS**, approval of the all hazard mitigation plan update will continue the County's eligibility to receive federal and state Hazard Mitigation Grant Program project grants; and

**WHEREAS**, this resolution does not preclude the City of Eagan from preparing its own plans sometime in the future should they desire to do so.

**NOW THEREFORE BE IT RESOLVED**, that the City of Eagan supports the County all hazard mitigation planning effort, agrees to participate with the County in preparing an update to the multi-jurisdictional plan and recognizes that the plan will apply within the townships.

Adopted on this 2<sup>nd</sup> day of March 2016.

CITY OF EAGAN

CITY COUNCIL

By: Mike Maguire  
Its Mayor

Attest: Christina M. Sjogren  
Its Clerk

Motion made by: Hansen

Seconded by: Fields

Those in favor: Maguire, Balden, Fields, Hansen

Those against: None

Dated: 3-2-2016

APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

**CITY OF FARMINGTON  
RESOLUTION NO. R43-16**

**RESOLUTION TO PARTICIPATE IN  
ALL HAZARD MITIGATION PLANNING PROCESS**

Pursuant to due call and notice thereof, a regular meeting of the City Council of the city of Farmington, Minnesota, was held in the Council Chambers of said city on the 16<sup>th</sup> day of May 2016 at 7:00 p.m.

Members Present: Larson, Bartholomay, Bonar, Donnelly, Pitcher  
Members Absent: None

Member Bartholomay introduced and Member Bonar seconded the following:

**WHEREAS**, the County of Dakota coordinated preparation of an initial multi-jurisdiction all-hazard mitigation planning process as established under the Disaster Mitigation Act of 2000; and

**WHEREAS**, the city of Farmington participated in drafting the plan, and later reviewed and approved the plan; and

**WHEREAS**, federal law requires the plan be updated every five years, and

**WHEREAS**, the Act requires public involvement and local coordination among local units of government and businesses as part of the planning process; and

**WHEREAS**, the plan must include descriptions of land uses and development trends, risk assessment including past hazards, hazards that threaten the county, maps of hazards, and estimates of structures at risk; and

**WHEREAS**, the plan must include a mitigation strategy including goals and objectives and an action plan identifying specific mitigation projects and costs, in addition to ; and a maintenance or implementation process including plan updates, integration of the plan into other planning documents, and public education components; and

**WHEREAS**, approval of the all hazard mitigation plan update will continue the county's eligibility to receive federal and state Hazard Mitigation Grant Program project grants; and

**WHEREAS**, this resolution does not preclude the city of Farmington from preparing its own plans sometime in the future should they desire to do so.

**NOW THEREFORE BE IT RESOLVED**, that the city of Farmington supports the county all hazard mitigation planning effort, agrees to participate with the county in preparing an update to the multi-jurisdictional plan and recognizes that the plan will apply within the townships.

Adopted on this 16<sup>th</sup> day of May 2016.

  
\_\_\_\_\_  
Mayor

  
\_\_\_\_\_  
City Administrator

APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

CITY OF HAMPTON  
DAKOTA COUNTY, MINNESOTA

**RESOLUTION**

Number: **2016-02**

Motion By Huddleston

Second By Knetter

**RESOLUTION TO PARTICIPATE IN ALL HAZARD MITIGATION PLANNING PROCESS**

WHEREAS, the County of Dakota coordinated preparation of an initial multi-jurisdiction all-hazard mitigation planning process as established under the Disaster Mitigation Act of 2000; and

WHEREAS, the City of Hampton participated in drafting the plan, and later reviewed and approved the plan; and

WHEREAS, federal law requires the plan be updated every five years, and

WHEREAS, the Act requires public involvement and local coordination among local units of government and businesses as part of the planning process; and

WHEREAS, the plan must include descriptions of land uses and development trends, risk assessment including past hazards, hazards that threaten the county, maps of hazards, and estimates of structures at risk; and

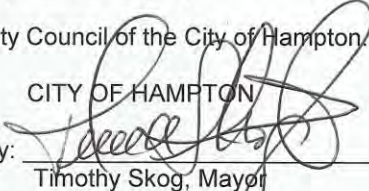
WHEREAS, the plan must include a mitigation strategy including goals and objectives and an action plan identifying specific mitigation projects and costs, in addition to ; and a maintenance or implementation process including plan updates, integration of the plan into other planning documents, and public education components; and

WHEREAS, approval of the all hazard mitigation plan update will continue the County's eligibility to receive federal and state Hazard Mitigation Grant Program project grants; and

WHEREAS, this resolution does not preclude the City of Hampton from preparing its own plans sometime in the future should they desire to do so.

NOW THEREFORE BE IT RESOLVED, that the City of Hampton supports the County all hazard mitigation planning effort, agrees to participate with the County in preparing an update to the multi-jurisdictional plan and recognizes that the plan will apply within the townships.

Adopted this 8<sup>th</sup> day of March, 2016, by the City Council of the City of Hampton.

CITY OF HAMPTON  
By:   
Timothy Skog, Mayor

Attest:  
  
Wendy Carpenter, City Clerk

APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

CITY OF HASTINGS  
DAKOTA COUNTY, MINNESOTA

RESOLUTION 03-08-16

A RESOLUTION TO ADOPT THE DAKOTA COUNTY ALL HAZARD  
MITIGATION PLAN

**WHEREAS**, the County of Dakota coordinated preparation of an initial multi-jurisdiction all-hazard mitigation planning process as established under the Disaster Mitigation Act of 2000; and

**WHEREAS**, the City of Hastings participated in drafting the plan, and later reviewed and approved the plan; and

**WHEREAS**, federal law requires the plan to be updated every five years; and

**WHEREAS**, the Act requires public involvement and local coordination among local units of government as part of the planning process; and

**WHEREAS**, the plan must include descriptions of land uses and development trends, risk assessment including past hazards, hazards that threaten the county, maps of hazards, and estimates of structures at risk; and

**WHEREAS**, the plan must include a mitigation strategy including goals and objectives and an action plan identifying specific mitigation projects and costs, in addition to; and a maintenance or implementation process including plan updates, integration of the plan into other planning documents, and public education components; and

**WHEREAS**, approval of the all hazard mitigation plan update will continue the Dakota County and the City of Hastings' eligibility to receive federal disaster relief and mitigation program project grants; and

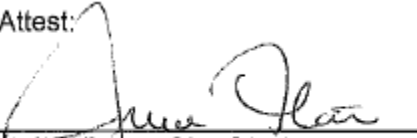
**WHEREAS**, the City of Hastings participated in the planning process to update the plan and developed mitigation strategies that are included in the plan.

**NOW, THEREFORE BE IT RESOLVED**, by the City Council of the City of Hastings, Minnesota;

1. Supports the County All Hazard Mitigation planning effort, agrees to participate with the county in preparing an update to the multi-jurisdictional plan and recognizes that the plan will apply within the City and the townships.

Adopted this 7th day of March, 2016.

Attest:

  
Julie Flaten, City Clerk

  
Paul Hicks, Mayor

APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

**CITY OF INVER GROVE HEIGHTS**

**DAKOTA COUNTY, MINNESOTA**

**RESOLUTION NO. 16-42**

**RESOLUTION TO PARTICIPATE IN ALL HAZARD MITIGATION  
PLANNING PROCESS**

**WHEREAS**, the County of Dakota coordinated preparation of an initial multi-jurisdiction all-hazard mitigation planning process as established under the Disaster Mitigation Act of 2000; and

**WHEREAS**, the City of Inver Grove Heights participated in drafting the plan, and later reviewed and approved the plan; and

**WHEREAS**, federal law requires the plan be updated every five years, and

**WHEREAS**, the Act requires public involvement and local coordination among local units of government and businesses as part of the planning process; and

**WHEREAS**, the plan must include descriptions of land uses and development trends, risk assessment including past hazards, hazards that threaten the county, maps of hazards, and estimates of structures at risk; and

**WHEREAS**, the plan must include a mitigation strategy including goals and objectives and an action plan identifying specific mitigation projects and costs, in addition to; and a maintenance or implementation process including plan updates, integration of the plan into other planning documents, and public education components; and

**WHEREAS**, approval of the all hazard mitigation plan update will continue the County's and participating community's eligibility to receive federal and state Hazard Mitigation Grant Program projects grants; and

**WHEREAS**, this resolution does not preclude the City of Inver Grove Heights from preparing its own plans sometime in the future should they desire so.

**NOW THEREFORE BE IT RESOLVED**, that the City of Inver Grove Heights supports the County all hazard mitigation planning effort, agrees to participate with the County in preparing an update to be the multi-jurisdictional plan and recognizes that the plan will apply within the townships.

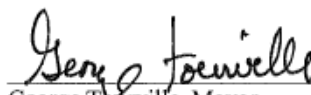
Adopted on this 14 day of March 2016.

Ayes: 5

Nays: 0

Attest:

  
Michelle Tesser, City Clerk

  
George Tourville, Mayor



**CITY OF LAKEVILLE**

**RESOLUTION NO. 16-28**

**RESOLUTION TO PARTICIPATE IN ALL HAZARD MITIGATION PLANNING PROCESS**

**WHEREAS**, the County of Dakota coordinated preparation of an initial multi-jurisdiction all-hazard mitigation planning process as established under the Disaster Mitigation Act of 2000; and

**WHEREAS**, the City of Lakeville participated in drafting the plan and later reviewed and approved the plan; and

**WHEREAS**, federal law requires the plan be updated every five years, and

**WHEREAS**, the Act requires public involvement and local coordination among local units of government and businesses as part of the planning process; and

**WHEREAS**, the plan must include descriptions of land uses and development trends, risk assessment including past hazards, hazards that threaten the county, maps of hazards, and estimates of structures at risk; and


**WHEREAS**, the plan must include a mitigation strategy including goals and objectives and an action plan identifying specific mitigation projects and costs, and a maintenance or implementation process including plan updates, integration of the plan into other planning documents, and public education components; and

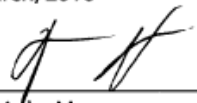
**WHEREAS**, approval of the all hazard mitigation plan update will continue the County's eligibility to receive federal and state Hazard Mitigation Grant Program project grants; and

**WHEREAS**, this resolution does not preclude the City of Lakeville from preparing its own plans sometime in the future should the City desire to do so.

**NOW, THEREFORE, BE IT RESOLVED** that the City of Lakeville supports the County all hazard mitigation planning effort, agrees to participate with the County in preparing an update to the multi-jurisdictional plan and recognizes that the plan will apply within the townships.

**ADOPTED** by the Lakeville City Council this 7<sup>th</sup> day of March, 2016

  
Charlene Friedges, City Clerk

  
Matt Little, Mayor

APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

CITY OF LILYDALE  
COUNTY OF DAKOTA  
STATE OF MINNESOTA

RESOLUTION NO. 16-06  
RESOLUTION TO PARTICIPATE IN THE DAKOTA COUNTY  
ALL-HAZARD MITIGATION PLANNING PROCESS

WHEREAS, the County of Dakota coordinated preparation of an initial multi-jurisdictional All-Hazard mitigation planning process as established under the Disaster Mitigation Act of 2000; and

WHEREAS, the City of Lilydale participated in drafting the previous plan in 2011, and adopted the plan in 2012; and

WHEREAS, the Minnesota Department of Homeland Security and Emergency Management (HSEM) and the Federal Emergency Management Agency (FEMA) are encouraging local units of government to become more involved in disaster preparedness; and

WHEREAS, All-Hazard planning as required by HSEM and FEMA is a disaster preparation and preparedness process; and

WHEREAS, federal law requires the plan be updated every five years, and

WHEREAS, the Act requires public involvement and local coordination among local units of government and businesses as part of the planning process; and

WHEREAS, the plan must include descriptions of land uses and development trends, risk assessment including past hazards, hazards that threaten the county, maps of hazards, and estimates of structures at risk; and

WHEREAS, the plan must include a mitigation strategy including goals and objectives and an action plan identifying specific mitigation projects and costs, in addition to a maintenance or implementation process including plan updates, integration of the plan into other planning documents, and public education components; and

WHEREAS, approval of the All-Hazard mitigation plan update will continue the County's eligibility to receive federal and state Hazard Mitigation Grant Program project grants; and

WHEREAS, this resolution does not preclude the City of Lilydale from preparing its own plans sometime in the future should they desire to do so.

NOW THEREFORE BE IT RESOLVED, that the City of Lilydale supports the County All-Hazard mitigation planning effort and agrees to participate with the County in preparing an update to the multi-jurisdiction plan.

	Yes	No
Anita M. Pampusch	<u>X</u>	___
Robert L. Bullard	<u>X</u>	___
Marilyn D. Lundberg	<u>X</u>	___
Warren E. Peterson	<u>X</u>	___
John E. Diehl	<u>X</u>	___

Adopted this 13<sup>th</sup> day of June 2016, by the Lilydale City Council.

ATTEST:

Mary Schultz  
Mary Schultz, City Administrator  
Date: June 13, 2016

Anita M. Pampusch  
Anita M. Pampusch, Mayor  
Date: June 13, 2016

APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

City of Mendota  
Dakota County

Resolution Number 116-08

RESOLUTION TO PARTICIPATE IN ALL HAZARD MITIGATION PLANNING PROCESS

WHEREAS, the County of Dakota coordinated preparation of an initial multi-jurisdiction all-hazard mitigation planning process as established under the Disaster Mitigation Act of 2000; and

WHEREAS, the City of Mendota participated in drafting the plan, and later reviewed and approved the plan; and

WHEREAS, federal law requires the plan be updated every five years, and

WHEREAS, the Act requires public involvement and local coordination among local units of government and businesses as part of the planning process; and

WHEREAS, the plan must include descriptions of land uses and development trends, risk assessment including past hazards, hazards that threaten the county, maps of hazards, and estimates of structures at risk; and

WHEREAS, the plan must include a mitigation strategy including goals and objectives and an action plan identifying specific mitigation projects and costs, in addition to ; and a maintenance or implementation process including plan updates, integration of the plan into other planning documents, and public education components; and

WHEREAS, approval of the all hazard mitigation plan update will continue the County's eligibility to receive federal and state Hazard Mitigation Grant Program project grants; and

WHEREAS, this resolution does not preclude the City of Mendota from preparing its own plans sometime in the future should they desire to do so.

NOW THEREFORE BE IT RESOLVED, that the City of Mendota supports the County all hazard mitigation planning effort, agrees to participate with the County in preparing an update to the multi-jurisdictional plan and recognizes that the plan will apply within the townships.

	<u>Yes</u>	<u>No</u>
Mayor: Brian Mielke	<u>X</u>	<u>      </u>
Councilmember Perron	<u>X</u>	<u>      </u>
Councilmember Krotter	<u>X</u>	<u>      </u>
Councilmember Rasmussen	<u>X</u>	<u>      </u>
Councilmember Ralston	<u>X</u>	<u>      </u>

APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

Passed by the Mendota City Council this 12 day of July, 2016.

Brian Melke  
Mayor

ATTEST:

Kathy Kuntz  
City Clerk

APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

**City of Mendota Heights  
Dakota County, Minnesota**

**RESOLUTION 2016-39**

**PARTICIPATE IN ALL HAZARD MITIGATION PLANNING PROCESS  
WITH DAKOTA COUNTY**

**WHEREAS**, the County of Dakota coordinated preparation of an initial multi-jurisdiction all-hazard mitigation planning process as established under the Disaster Mitigation Act of 2000; and

**WHEREAS**, the City of Mendota Heights participated in drafting the plan, and later reviewed and approved the plan in 2005/2006 and 2010/2011; and

**WHEREAS**, federal law requires the plan be updated every five years, and

**WHEREAS**, the Act requires public involvement and local coordination among local units of government and businesses as part of the planning process; and

**WHEREAS**, the plan must include descriptions of land uses and development trends, risk assessment including past hazards, hazards that threaten the county, maps of hazards, and estimates of structures at risk; and

**WHEREAS**, the plan must include a mitigation strategy including goals and objectives and an action plan identifying specific mitigation projects and costs, in addition to a maintenance or implementation process including plan updates, integration of the plan into other planning documents, and public education components; and

**WHEREAS**, approval of the all hazard mitigation plan update will continue the County's eligibility to receive federal and state Hazard Mitigation Grant Program project grants; and

**WHEREAS**, this resolution does not preclude the City of Mendota Heights from preparing its own plans sometime in the future should they desire to do so.

**NOW, THEREFORE, BE IT RESOLVED**, that the City Council of the City of Mendota Heights hereby authorizes City staff to participate by RESOLUTION 2016-39 "PARTICIPATE IN ALL HAZARD MITIGATION PLANNING PROCESS WITH DAKOTA COUNTY."

Adopted by the City Council of the City of Mendota Heights this 17th day of May, 2016.

**CITY COUNCIL  
CITY OF MENDOTA HEIGHTS**

  
**Mike Povolny, Acting Mayor**

**ATTEST:**

  
**Lorri Smith, City Clerk**

APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

City of Miesville  
Resolution Number 2016-3

RESOLUTION TO PARTICIPATE IN ALL HAZARD MITIGATION PLANNING PROCESS

WHEREAS, the County of Dakota coordinated preparation of an initial multi-jurisdiction all-hazard mitigation planning process as established under the Disaster Mitigation Act of 2000; and

WHEREAS, the City of Miesville participated in drafting the plan, and later reviewed and approved the plan; and

WHEREAS, federal law requires the plan be updated every five years, and

WHEREAS, the Act requires public involvement and local coordination among local units of government and businesses as part of the planning process; and

WHEREAS, the plan must include descriptions of land uses and development trends, risk assessment including past hazards, hazards that threaten the county, maps of hazards, and estimates of structures at risk; and

WHEREAS, the plan must include a mitigation strategy including goals and objectives and an action plan identifying specific mitigation projects and costs, in addition to ; and a maintenance or implementation process including plan updates, integration of the plan into other planning documents, and public education components; and

WHEREAS, approval of the all hazard mitigation plan update will continue the County's eligibility to receive federal and state Hazard Mitigation Grant Program project grants; and

WHEREAS, this resolution does not preclude the City of Miesville from preparing its own plans sometime in the future should they desire to do so.

NOW THEREFORE BE IT RESOLVED, that the City of Miesville supports the County all hazard mitigation planning effort, agrees to participate with the County in preparing an update to the multi-jurisdictional plan and recognizes that the plan will apply within the townships.

Adopted on this 14<sup>th</sup> day of June 2016.

  
Terri McCarthy  
Miesville City Clerk/Treasurer



APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

CITY OF NEW TRIER  
DAKOTA COUNTY, MINNESOTA

RESOLUTION

Number: 2016-06

Motion By Nicole Fere

Second By Ernie Dale

**RESOLUTION TO PARTICIPATE IN THE DAKOTA COUNTY ALL HAZARD  
MITIGATION PLAN 2016**

WHEREAS, the City of New Trier recognizes that no community is immune from natural hazards whether it be flooding, severe weather, tornadoes, winter storms, earthquakes or wild fires, and recognize the importance of enhancing its ability to resist natural hazards, and the importance of reducing the human suffering, property damage, interruption of public services and economic losses caused by those hazards; and,

WHEREAS, by participating in the Dakota County *All-Hazard Mitigation Plan 2016*, the City of New Trier will be eligible to apply for pre-disaster mitigation grants and funds; and,

WHEREAS, the Federal Emergency Management Agency and the State Emergency Management Agency have developed All-Hazard plan programs that assist communities in their efforts to become disaster resistant communities; and,

WHEREAS, the City of New Trier desires to work towards becoming a disaster resistant City; and,

WHEREAS, the City of New Trier intends to make a good faith effort in implementing mitigation projects or programs by incorporation into the Municipal Code where appropriate; and,

**THEREFORE BE IT RESOLVED THAT: the City of New Trier will use its best efforts to become a disaster-resistant community by participating in the Dakota County All Hazard Mitigation Plan 2016 and hazard identification and risk assessment to implement practices that can reduce vulnerability for the citizens of New Trier.**

Adopted this 9<sup>th</sup> day of May, 2016, by the City Council of the City of New Trier.

CITY OF NEW TRIER

By:

Patti Brown  
Patti Brown, Mayor

Attest:

Hannah Regenscheid  
Hannah Regenscheid, City Clerk

APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

**CITY OF ROSEMOUNT  
DAKOTA COUNTY, MINNESOTA**

**RESOLUTION 2016 - 20**

**RESOLUTION TO PARTICIPATE IN ALL HAZARD MITIGATION PLANNING  
PROCESS**

**WHEREAS**, the County of Dakota coordinated preparation of an initial multi-jurisdiction all-hazard mitigation planning process as established under the Disaster Mitigation Act of 2000; and

**WHEREAS**, the City of Rosemount participated in drafting the plan, and later reviewed and approved the plan; and

**WHEREAS**, federal law requires the plan be updated every five years, and

**WHEREAS**, the Act requires public involvement and local coordination among local units of government and businesses as part of the planning process; and

**WHEREAS**, the plan must include descriptions of land uses and development trends, risk assessment including past hazards, hazards that threaten the county, maps of hazards, and estimates of structures at risk; and

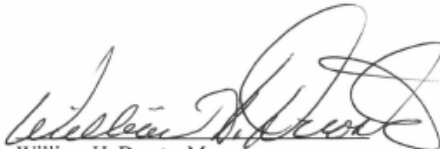
**WHEREAS**, the plan must include a mitigation strategy including goals and objectives and an action plan identifying specific mitigation projects and costs, in addition to ; and a maintenance or implementation process including plan updates, integration of the plan into other planning documents, and public education components; and

**WHEREAS**, approval of the all hazard mitigation plan update will continue the County's eligibility to receive federal and state Hazard Mitigation Grant Program project grants; and

**WHEREAS**, this resolution does not preclude the City of Rosemount from preparing its own plans sometime in the future should they desire to do so.

**NOW THEREFORE BE IT RESOLVED**, that the City of Rosemount supports the County all hazard mitigation planning effort, agrees to participate with the County in preparing an update to the multi-jurisdictional plan and recognizes that the plan will apply within the townships.

**ADOPTED** on this 15th day of March, 2016.

  
William H. Droste, Mayor

**ATTEST:**

  
Clarissa Hadler, City Clerk

**City of South St. Paul  
Dakota County, Minnesota**

**CERTIFICATION**

The undersigned, City Clerk of the City of South St. Paul, Minnesota (the City), hereby certifies as follows:

Attached hereto is a true and correct copy of Resolution No. 2016-45 duly adopted by the City Council of the City at a lawful meeting duly called March 21, 2016, at which meeting a quorum was present and acting throughout, which resolution remains in full force and effect in the form which adopted.

WITNESS my hand and the corporate seal of the City this 22<sup>nd</sup> day of March, 2016.

  
City Clerk

**Seal**

APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

CITY OF SUNFISH LAKE  
COUNTY OF DAKOTA  
STATE OF MINNESOTA

RESOLUTION NO. 16-11  
RESOLUTION TO PARTICIPATE IN THE DAKOTA COUNTY  
ALL-HAZARDS MITIGATION PLANNING PROCESS

WHEREAS, the County of Dakota coordinated preparation of an initial multi-jurisdiction All-Hazard mitigation planning process as established under the Disaster Mitigation Act of 2000; and

WHEREAS, the City of Sunfish Lake is served by Dakota County in the preparation and planning of disaster mitigation strategies; and

WHEREAS, the Minnesota Department of Homeland Security and Emergency Management (HSEM) and the Federal Emergency Management Agency (FEMA) are encouraging local units of government to become more involved in disaster preparedness; and

WHEREAS, All-Hazard planning as required by HSEM and FEMA, is a disaster preparation and preparedness process; and

WHEREAS, federal law requires the plan be updated every five years, and

WHEREAS, the Act requires public involvement and local coordination among local units of government and businesses as part of the planning process; and

WHEREAS, the plan must include descriptions of land uses and development trends, risk assessment including past hazards, hazards that threaten the county, maps of hazards, and estimates of structures at risk; and

WHEREAS, the plan must include a mitigation strategy including goals and objectives and an action plan identifying specific mitigation projects and costs, in addition to ; and a maintenance or implementation process including plan updates, integration of the plan into other planning documents, and public education components; and

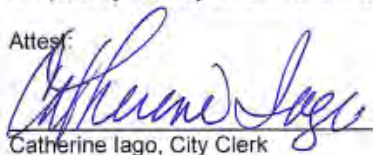
WHEREAS, approval of the All-Hazard mitigation plan update will continue the County's eligibility to receive federal and state Hazard Mitigation Grant Program project grants; and

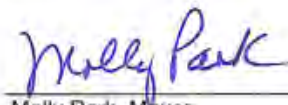
WHEREAS, this resolution does not preclude the City of Sunfish Lake from preparing its own plans sometime in the future should they desire to do so.

NOW THEREFORE BE IT RESOLVED, that the City of Sunfish Lake supports the County All-Hazard mitigation planning effort, agrees to participate with the County in preparing an update to the multi-jurisdictional plan.

Adopted by the City Council of the City of Sunfish Lake on 5th day of April 2016.

Attest:

  
Catherine Iago, City Clerk

  
Molly Park, Mayor

## APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

### City of Vermillion Resolution Number 2016-04

#### RESOLUTION TO PARTICIPATE IN ALL HAZARD MITIGATION PLANNING PROCESS

WHEREAS, the County of Dakota coordinated preparation of an initial multi-jurisdiction all-hazard mitigation planning process as established under the Disaster Mitigation Act of 2000; and

WHEREAS, the City of Vermillion participated in drafting the plan, and later reviewed and approved the plan; and

WHEREAS, federal law requires the plan be updated every five years, and

WHEREAS, the Act requires public involvement and local coordination among local units of government and businesses as part of the planning process; and

WHEREAS, the plan must include descriptions of land uses and development trends, risk assessment including past hazards, hazards that threaten the county, maps of hazards, and estimates of structures at risk; and

WHEREAS, the plan must include a mitigation strategy including goals and objectives and an action plan identifying specific mitigation projects and costs, in addition to ; and a maintenance or implementation process including plan updates, integration of the plan into other planning documents, and public education components; and

WHEREAS, approval of the all hazard mitigation plan update will continue the County's eligibility to receive federal and state Hazard Mitigation Grant Program project grants; and

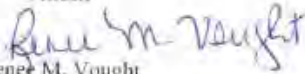
WHEREAS, this resolution does not preclude the City of Vermillion from preparing its own plans sometime in the future should they desire to do so.

NOW THEREFORE BE IT RESOLVED, that the City of Vermillion supports the County all hazard mitigation planning effort, agrees to participate with the County in preparing an update to the multi-jurisdictional plan and recognizes that the plan will apply within the townships.

Adopted on this 5 day of July 2016.

Mayor – Brian Mann - Aye  
Councilmember David Route - Aye  
Councilmember Travis John - Absent  
Councilmember Joseph Munson – Aye  
Councilmember Adam Kasel - Absent

Attest:

  
Renee M. Vought  
City Clerk  
July 5, 2016



APPENDIX I: CITY RESOLUTIONS OF PARTICIPATION

DAKOTA COUNTY  
CITY OF WEST ST. PAUL

RESOLUTION NO. 16-27

RESOLUTION TO PARTICIPATE IN THE DAKOTA COUNTY  
ALL HAZARDS MITIGATION PLANNING PROCESS

WHEREAS, the County of Dakota coordinated preparation of an initial multi-jurisdiction all-hazard mitigation planning process as established under the Disaster Mitigation Act of 2000; and

WHEREAS, the City of West St. Paul participated in drafting the plan, and later reviewed and approved the plan; and

WHEREAS, federal law requires the plan be updated every five years, and

WHEREAS, the Act requires public involvement and local coordination among local units of government and businesses as part of the planning process; and

WHEREAS, the plan must include descriptions of land uses and development trends, risk assessment including past hazards, hazards that threaten the county, maps of hazards, and estimates of structures at risk; and

WHEREAS, the plan must include a mitigation strategy including goals and objectives and an action plan identifying specific mitigation projects and costs, in addition to ; and a maintenance or implementation process including plan updates, integration of the plan into other planning documents, and public education components; and

WHEREAS, approval of the all hazard mitigation plan update will continue the County's eligibility to receive federal and state Hazard Mitigation Grant Program project grants; and

WHEREAS, this resolution does not preclude the City of West St. Paul from preparing its own plans sometime in the future should they desire to do so.

NOW THEREFORE BE IT RESOLVED, that the City of West St. Paul supports the County all hazard mitigation planning effort, agrees to participate with the County in preparing an update to the multi-jurisdictional plan and recognizes that the plan will apply within the townships.

Adopted by the City Council of the City of West St. Paul on 14th day of March 2016.

Ayes: 6 Nays: 0 Attest:

  
David Meisinger, Mayor

  
Chantal Doriotti, City Clerk



## APPENDIX II: COMMUNITY ENGAGEMENT FINDINGS

This appendix includes additional information on community engagement throughout the plan update process, including the public online survey, presentations to the Dakota County Planning Commission, intercepts at the Dakota County Fair, and public review of the draft plan.

### DAKOTA COUNTY ONLINE SURVEY

1,420 people who live or work in the County completed an online survey from February to July, 2016.

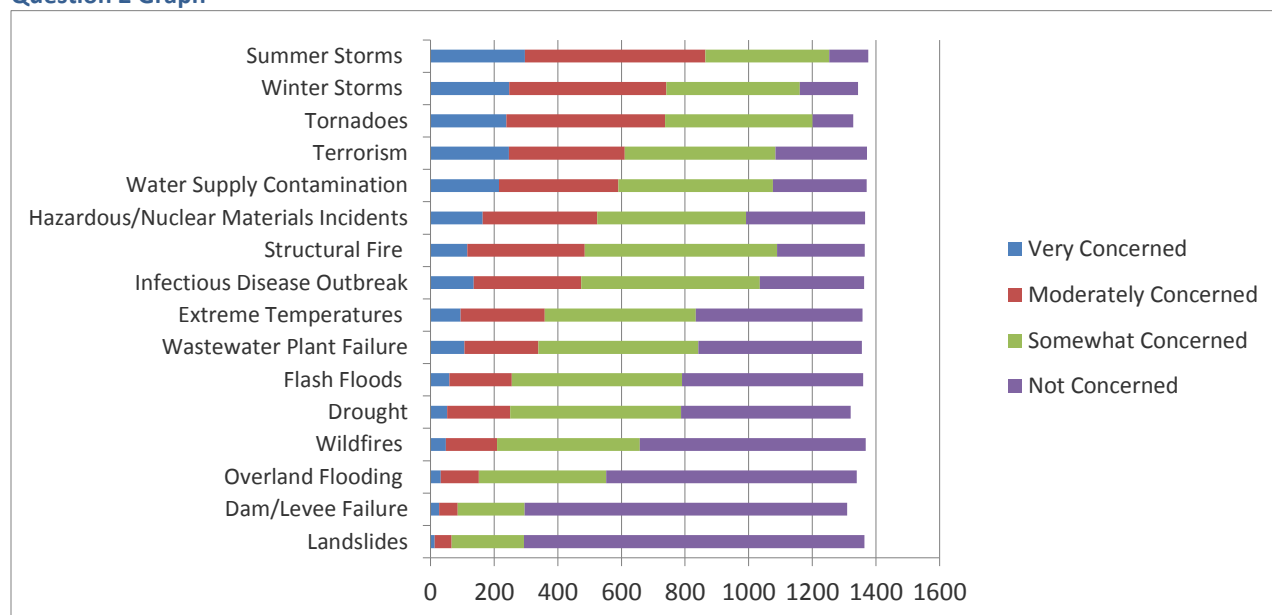
<b>QUESTION 1: In what city or township do you live?</b>		
<b>Answer Options</b>	<b>Percent</b>	<b>Count</b>
Apple Valley	6.6%	94
Burnsville	13.8%	198
Eagan	8.3%	119
Farmington	2.4%	35
Hastings	12.7%	182
Inver Grove Heights	4.4%	63
Lakeville	9.3%	133
Lilydale	0.0%	0
Mendota	0.0%	0
Mendota Heights	0.9%	13
Northfield (formerly part of Greenvale Twp)	0.4%	6
Rosemount	5.1%	73
Rural City (Coates, Hampton, Miesville, New Trier, Randolph, Vermillion)	0.8%	11
Rural Townships (Castle Rock, Douglas, Empire, Eureka, Greenvale, Hampton, Marshan, Nininger, Randolph, Ravenna, Sciota, Vermillion, Waterford)	3.8%	54
South St. Paul	2.8%	40
Sunfish Lake	0.0%	0
West St. Paul	2.0%	29
I live outside Dakota County	26.6%	380
<b>answered question</b>		<b>1430</b>

<b>QUESTION 2: How concerned are you that the following disasters could occur in your community?</b>					
<b>Answer Options</b>	<b>Very Concerned</b>	<b>Moderately Concerned</b>	<b>Somewhat Concerned</b>	<b>Not Concerned</b>	<b>Response Count</b>
Severe Summer Storms	297	567	389	123	1376
Tornadoes	238	499	464	128	1329
Severe Winter Storms	247	494	420	183	1344
Dam/Levee Failure	27	58	211	1013	1309
Flash Floods	59	196	535	570	1360
Overland Flooding	32	120	400	788	1340
Extreme Temperatures	95	264	475	524	1358
Infectious Disease Outbreak	136	338	561	328	1363
Wildfires	48	161	449	710	1368
Drought	52	198	537	533	1320
Hazardous Materials Incidents	164	360	468	374	1366
Structural Fire	116	369	604	276	1365
Water Supply Contamination	215	375	486	295	1371
Wastewater Plant Failure	107	232	503	514	1356

## APPENDIX II: COMMUNITY ENGAGEMENT FINDINGS

Terrorism	246	364	474	288	1372
Landslides	13	53	228	1070	1364
Other (please specify)					40
<b>answered question</b>					<b>1379</b>

**Question 2 Graph**



**QUESTION 3: You may need to survive on your own after a disaster. This means having your own food, water, and other supplies in sufficient quantity to last until help arrives. How prepared is your immediate family to deal with a shortage of basic necessities?**

Answer Options	Percent	Count
Unprepared	20.4%	275
Slightly (three-day supply of food, water and other basic necessities)	46.6%	629
Prepared (one-week supply of food, water and other basic necessities)	25.3%	342
Very prepared (two-week supply of food, water and other basic necessities)	7.8%	105
<b>answered question</b>		<b>1351</b>

**QUESTION 4: It takes an average family a total of 12 hours each year to prepare for natural disasters. How much time would you be willing to spend each year to prepare your home and family for a natural disaster such as severe weather, a structural fire, or a hazardous material spill?**

Answer Options	Percent	Count
None	5.3%	72
Up to 6 hours	41.3%	557
7-12 hours	37.2%	501
13 or more hours	16.2%	218
<b>answered question</b>		<b>1348</b>

## APPENDIX II: COMMUNITY ENGAGEMENT FINDINGS

### QUESTION 5: Which of the following steps have you taken to prepare for a disaster? Please check all that apply.

Answer Options	Percent	Count
Read information	66.1%	893
Received first aid/CPR training in the last year	35.9%	485
Obtained hazard insurance for your property (such as renter's insurance, enhanced homeowner's insurance or flood insurance)	33.5%	452
Obtained a weather radio	30.5%	412
Prepared a Household Emergency Plan (discussed emergency phone numbers, escape plans, meeting procedures, etc.)	27.4%	370
Signed up for Code Red (text or email message alerts)	21.9%	296
Prepared a Disaster Supply Kit (assembled extra food, water, first aid supplies and other basic necessities)	21.3%	287
None of the above	12.2%	165
Attended community meetings or events	7.8%	105
Other (please describe)	3.5%	47
<i>answered question</i>		<b>1350</b>

### QUESTION 6: When buying or building a home, would you be willing to spend slightly more money for a home that has features that offer built-in protection from some natural disasters?

Answer Options	Percent	Count
Yes	82.1%	1102
No	17.9%	240
<i>answered question</i>		<b>1342</b>

### QUESTION 7: What is the most effective way for you to get information about how to plan for disaster? Please Check all that apply

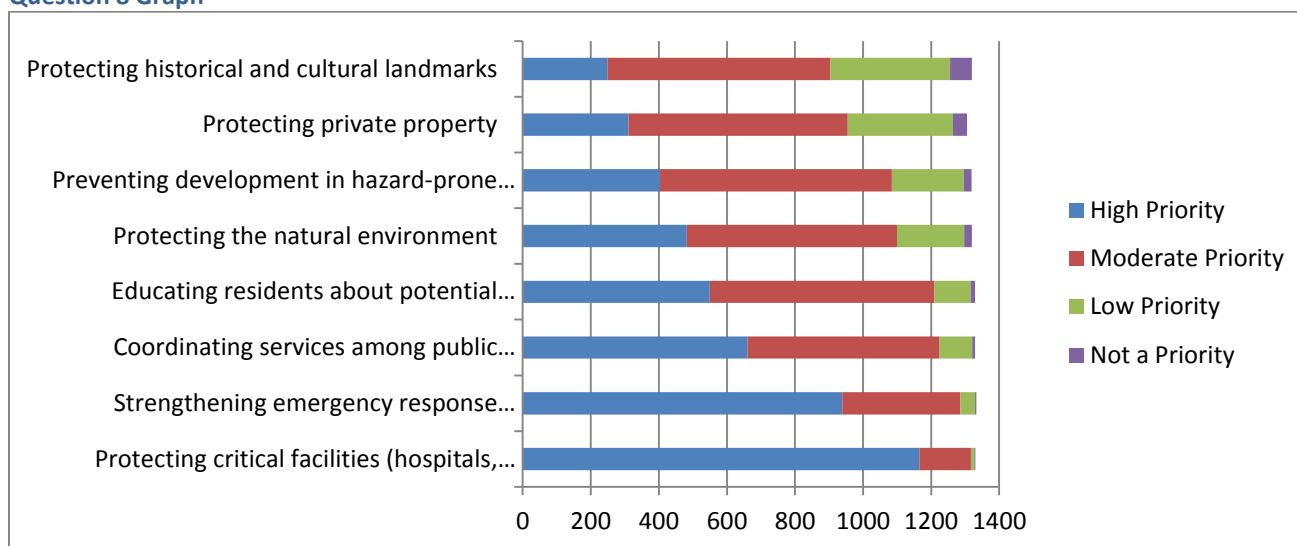
Answer Options	Percent	Count
Local media (TV, radio, newspaper)	62.8%	845
Email notice	55.3%	744
Brochure or fact sheet sent in the mail	44.2%	594
At work	41.2%	554
Social Media (Twitter, Facebook, etc.)	33.6%	452
Dakota County website	33.5%	451
Website for the city where you live	30.6%	412
Other online sources (websites for state, FEMA, Red Cross, etc.)	26.2%	352
Information sent inside a utility bill	19.6%	264
Public meetings/events	14.1%	189
Information sent home from school with my child	12.3%	165
Other (please describe)	3.2%	43
<i>answered question</i>		<b>1345</b>

## APPENDIX II: COMMUNITY ENGAGEMENT FINDINGS

**QUESTION 8: What level of priority would you assign to the following community-wide planning efforts? Please check one response in each row.**

Answer Options	High Priority	Moderate Priority	Low Priority	Not a Priority	Response Count
Protecting critical facilities (hospitals, transportation networks, fire stations, utilities)	1165	152	10	3	1330
Strengthening emergency response services (police, EMS, fire)	939	347	43	4	1333
Coordinating services among public agencies, citizens, non-profit organizations, educational institutions, and businesses	661	564	96	8	1329
Educating residents about potential hazards and how to prepare for each.	550	660	106	13	1329
Protecting the natural environment	482	618	197	23	1320
Preventing development in hazard-prone areas	403	682	211	23	1319
Protecting private property	311	644	309	42	1306
Protecting historical and cultural landmarks	249	655	352	64	1320
<b>answered question</b>					<b>1333</b>

**Question 8 Graph**



**QUESTION 9: If your child attends school in Dakota County, does your child's school have a disaster plan?**

Answer Options	Percent	Count
Yes	15.5%	206
No	0.5%	6
Don't know	13.5%	179
N/A or My child doesn't attend school in Dakota County	70.6%	937
<b>answered question</b>		<b>1328</b>

**QUESTION 10: If you work in Dakota County, does your employer have a disaster plan?**

Answer Options	Percent	Count
Yes	72.1%	962

## APPENDIX II: COMMUNITY ENGAGEMENT FINDINGS

Don't know	14.3%	191
I don't work in Dakota County	9.9%	132
No	3.7%	49
<b>answered question</b>		<b>1334</b>

### QUESTION 11: Where would you go to get information if there were no electricity, radio or phone service? Please check all that apply

Answer Options	Percent	Count
Police or fire station	69.6%	926
Community center or city hall	51.0%	679
County service center	23.9%	318
Library	21.5%	286
Church	17.4%	232
School	15.6%	208
I wouldn't go out to get information	15.0%	200
Other (please describe)	8.0%	106
<b>answered question</b>		<b>1331</b>

### QUESTION 12: When you hear a severe weather warning siren in your community, do you: Please check all that apply

Answer Options	Percent	Count
Turn on the radio or television to find out what's going on	82.1%	1093
Check your cell phone for more information	62.7%	835
Go outside and look at the sky	38.9%	518
Immediately take shelter if you are outside	31.8%	423
Other (please describe)	6.0%	80
Do nothing	3.6%	48
<b>answered question</b>		<b>1331</b>

### QUESTION 13: Your Gender

Answer Options	Percent	Count
Female	63.5%	842
Male	36.5%	483
<b>answered question</b>		<b>1325</b>

### QUESTION 14: Your Age

Answer Options	Percent	Count
45-60	46.3%	614
30-44	32.5%	431
60+	14.2%	188
Under 30	6.9%	92
<b>answered question</b>		<b>1325</b>

## DAKOTA COUNTY PLANNING COMMISSION

The Planning Commission reviews environmental and natural resource proposals and makes recommendations to the County Board; considers conditional use permit requests for actions which will affect shoreland and floodplain areas in the county; reviews planning and program proposals which relate to the County's comprehensive plan; and discusses trails and other transportation issues. The Commission includes 14 appointed members, 2 per Commissioner District. The Commission meets monthly on the fourth Thursday of the month.

### Commission Members

<i>Name</i>	<i>Representing</i>
Michael Greco	District 1
VACANT	District 1
Jeff Busse	District 2
Lori Hansen	District 2
Jill Smith	District 3
Greg Oxley	District 3
Amy Hunting	District 4
Barry Graham	District 4
Ram Singh	District 5
Paul Thomas	District 5
Nate Reitz	District 6
Luke Hellier	District 6
Anthony Nelson	District 7
VACANT	District 7

### Planning Commission Comments

#### February 25, 2016: project introduction and overview

Planning Commission members asked questions and staff responded (*italics*):

How will cities and townships be involved in the update of the plan?

- *Through meetings and works sessions with emergency responders*
- *Township officials will review the plan at the annual township officers meeting*

How is the Mitigation Plan different from emergency response plans? Does the County have emergency response plans?

- *The Mitigation plan is different because preventative measures can be taken to make communities less vulnerable to disasters. Examples of mitigation planning include purchasing and removing homes that are in a floodplain or stabilizing a steep slope that would potentially slump in heavy rains.*
- *The County does have emergency response plans and coordinates with local responders for preparedness.*

Does having a Mitigation Plan position Dakota County to receive Federal or State mitigation funds?

- *Yes, the plan will identify strategies for mitigation. Having individual strategies listed in the plan will increase the likelihood that Dakota County and its communities will be able to access Federal funds.*

#### June 23, 2016: survey results and strategy development

Audience Participation Software (APS) was used to get feedback from Planning Commission members.



## APPENDIX II: COMMUNITY ENGAGEMENT FINDINGS

The top 3 Priority Hazards based on Planning Commissioner votes are:

1. Severe Winter Storm
2. Tornado
3. Water Supply Contamination

Comments/concerns from members:

- Even if we have a good plan we need to make citizens more aware of how to be prepared for hazardous situations or the plan will not play out as well as expected.
- At what speeds does wind cause structural damage?

*Response from staff:*

*47-54 mph light structural damage*

*55-63 mph Trees uprooted. Considerable structural damage*

*64-73 mph widespread structural damage*

- Suggestions to hold trainings or host a hazard preparedness week to educate the public.
- Outreach to townships and Cities.
- Monitoring of floodplains and not allowing building in floodplain areas.

*Response from staff regarding floodplains - Dakota County Ordinance 50 regulates floodplain development in the 13 unincorporated townships. Some development is allowed in the flood fringe if certain performance standards are met. No new structures are allowed to be constructed in the floodway. Individual city ordinances vary, and State and FEMA regulations may allow for structures to be located in flood prone areas if they are elevated above the 1% annual chances of flood (100-year elevation).*

### **August 25, 2016: draft plan**

Staff shared a presentation on Dakota County's All Hazard Mitigation Plan, concentrating on the current status, the plan overview and next steps.

Questions by Commissioners included information regarding which cities/townships do not participate, whether Dakota Electric is consulted regarding this plan and who are the standard reporters.

Commissioners requested to see all the comments gathered. A Commissioner inquired as to why the County has discontinued water testing at the County Fair and noted that a number of citizens had brought water samples in for testing. There was a general discussion on water safety concerns. Staff responded that they will follow up with Environmental Resources staff regarding water testing availability.

### **DAKOTA COUNTY FAIR**

Attendance over seven days:	130,000
Law Enforcement Day (8-9-16) Intercepts:	60-70 people

Staff distributed information on the Dakota County All-Hazard Mitigation Plan, preparedness information from FEMA on household emergency kits and family communications plan, and instructions for enrolling in Dakota County's Emergency Notification System (Everbridge). Fairgoers also discussed some of their hazard concerns with staff.

**DRAFT PLAN PUBLIC REVIEW**

The draft plan was released for public review in August 2016 and posted on the project webpage. No comments were received from the general public.

Reviewer links were sent to cities and townships within the County, neighboring jurisdictions, business chambers, relief organizations, and other interested parties:

Organization Type	Organization	Position
Townships	Castle Rock Township	Town Clerk
Townships	Douglas Township	Town Clerk
Townships	Empire Township	Town Clerk
Townships	Eureka Township	Town Clerk
Townships	Greenvale Township	Town Clerk
Townships	Hampton Township	Deputy Clerk
Townships	Marshan Township	Town Clerk
Townships	Nininger Township	Town Clerk
Townships	Randolph Township	Town Clerk
Townships	Ravenna Township	Clerk/Treasurer
Townships	Sciota Township	Town Clerk
Townships	Vermillion Township	Town Clerk
Townships	Waterford Township	Town Clerk
State	HSEM	State Hazard Mitigation Officer
State	HSEM	RPC
Business/Organizations	American Red Cross	Disaster Program Manager
Business/Organizations	Apple Valley Chamber of Commerce	President
Business/Organizations	Burnsville Chamber of Commerce	President
Business/Organizations	Lakeville Chamber of Commerce	President
Business/Organizations	Hastings Chamber of Commerce	President
Business/Organizations	Dakota County Regional Chamber of Commerce	President
Business/Organizations	River Heights Chamber of Commerce	President
Participating Cities	Apple Valley	PD Captain
Participating Cities	Burnsville	EM Coordinator
Participating Cities	Coates	City Clerk
Participating Cities	Eagan	Emergency Manager
Participating Cities	Farmington	Police Chief
Participating Cities	Hampton	
Participating Cities	Hastings	Fire Chief
Participating Cities	Inver Grove Heights	PD Lieutenant
Participating Cities	Lakeville	Fire Chief
Participating Cities	Lilydale	City Administrator
Participating Cities	Mendota	City Clerk
Participating Cities	Mendota Heights	Police Chief

## APPENDIX II: COMMUNITY ENGAGEMENT FINDINGS

Participating Cities	Miesville	City Clerk
Participating Cities	New Trier	City Clerk
Participating Cities	Randolph	City Clerk
Participating Cities	Rosemount	Police Chief
Participating Cities	South St Paul	Police Chief
Participating Cities	Sunfish Lake	Police Chief
Participating Cities	Vermillion	City Clerk
Participating Cities	West St Paul	Police Chief
Neighboring Counties	Ramsey County	Director of Emergency Management & Homeland Security
Neighboring City	St. Paul	Emergency Management Director
Neighboring Counties	Rice County	Emergency Management Director
Neighboring Counties	Washington County	Emergency Management Director
Neighboring Counties	Scott County	Emergency Management Director
Neighboring Counties	Goodhue County	Emergency Management Director
Collegiate	North Dakota St. University	Associate Professor

## APPENDIX II: COMMUNITY ENGAGEMENT FINDINGS

## APPENDIX III - 2016 PROGRESS ON 2011 PLAN STRATEGIES

### CITIES IN DAKOTA COUNTY

2011 Plan Strategies	Status 2016
<b>City of Apple Valley</b>	
2011 Flood Mitigation Project	Completed
Annual Infrastructure Inspection / Maintenance Program	Completed/Ongoing
Training in National Incident Management System (NIMS)	Ongoing
Training in Haz Mat Handling	Ongoing
Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.	While not specific to snow the MN State Fire Code addresses access to building openings (Section 504.1) using general language (i.e. readily accessible) that would include the removal of snow
Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.	MN State Fire Code addresses this in section 503 Fire Apparatus Access Roads, as such Apple Valley uses this section to enforce the identified action.
Provide school programs to youth, focusing on stoves, smoke detectors, fire safety and evacuation.	The Apple Valley Fire Department provides fire prevention and education programs to all youth in grades K thru 5, to include those topic listed.
Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals and evacuation	The Dakota County Fire Chiefs Association conducts multiple outreach programs throughout the year at civic events around the county. These programs have included those items listed.
<b>City of Burnsville</b>	
Complete Sunset Dam EAP Update	Completed and Updated March 2016
Begin Siren Narrow banding Program	Completed
Continue development of Black Dog Road Flooding Plan	Not In progress/Not moving forward with at this time
Implement Mission Critical Dispensing Plan	Update complete/May 2016
Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.	Ongoing
Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.	Ongoing
Provide school programs to youth, focusing on stoves, smoke detectors, fire safety and evacuation.	Completed-Revise as Needed/Ongoing
Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals and evacuation	Ongoing
<b>City of Coates</b>	
Outdoor warning sirens narrow banding	Completed
Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.	<i>Dakota Fire Chiefs</i>
Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.	<i>Dakota Fire Chiefs</i>
Provide school programs to youth, focusing on stoves, smoke detectors, fire safety and evacuation.	

APPENDIX III: 2016 PROGRESS ON 2011 PLAN STRATEGIES

Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals and evacuation	<i>Dakota Fire Chiefs</i>
<b>City of Egan</b>	
Narrow banding of all outdoor warning sirens in Egan	Completed
Enforcement of garage door stiffener code through permit requirements.	Considered completed (on-going regular business)
Building code update.	On-going
Enforcement of ban on cooking grills on apartment balconies.	Considered completed (on-going regular business)
Upgrade of South Water Treatment Plant.	Completed
Conduct maintenance on water storage facilities.	Completed
Inspect Wells	Considered completed (on-going regular business)
Sanitary sewer lining for I & I management.	Considered completed (on-going regular business)
Storm water pond expansion and maintenance.	On-going
Establish a process to increase monitoring of identified MANPADS sites	Met with TSA spring 2015
Develop a common operating picture and resource database through local deployment of the Knowledge Center system	Considered completed (will be an on-going part of regular business)
Exercise multi-agency response to include supporting groups (building inspectors, public works)	Scheduled Summer 2016
Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.	Pending adoption of 2015 Fire Code
Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.	Pending adoption of 2015 Fire Code
Provide school programs to youth, focusing on stoves, smoke detectors, fire safety and evacuation.	Considered completed (on-going regular business)
Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals and evacuation	Considered completed (on-going regular business)
<b>City of Farmington</b>	
Outdoor warning sirens narrow banding	Completed
Shared County Resource List	Completed
Mission Critical Dispensing Plan	Completed
Continue NIMS Training	On-going
Examine solutions for Vermillion River Flooding	On-going
Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.	On-going
Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.	On-going
Provide school programs to youth, focusing on stoves, smoke detectors, fire safety and evacuation.	On-going
Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals and evacuation	On-going
<b>City of Hampton</b>	
Replace Clay sewer lines	40 to 60% complete



APPENDIX III: 2016 PROGRESS ON 2011 PLAN STRATEGIES

Erect new water tower	Seeking funding for construction. Upgraded water mains in 2012 to prepare for new tower
Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.	<i>Dakota Fire Chiefs</i>
Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.	FD involved in planning 2012 main street project
Provide school programs to youth, focusing on stoves, smoke detectors, fire safety and evacuation.	Do participate as fire district in school preventions programs
Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals and evacuation	Put out free calendar highlighting home safety
<b>City of Hastings</b>	
Narrow banding of all outdoor warning sirens	Completed
Educate the Public on Storm Siren Policy	Completed
Update EOP	Completed
Wellhead Protection	Ongoing
Water Supply	Completed
Storm Water Management	Ongoing
Mississippi River Flooding	Completed – sand and bags provided
Drainage and erosion control plans	Ongoing
Continue to enforce Zoning and permits regulations in floodplains	Ongoing
Monitor construction, improvements, alterations and development in floodplains	Ongoing
Ensure Building Code Compliance	Ongoing
Mixed Occupancy Fire Alarm Ordinance	Completed and ongoing
Update Water Rescue Equipment	Completed
Enforcing Burning Bans	Completed and ongoing
EOC Drill	Completed and ongoing
Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.	<i>Dakota Fire Chiefs</i>
Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.	<i>Dakota Fire Chiefs</i>
Provide school programs to youth, focusing on stoves, smoke detectors, fire safety and evacuation.	<i>Dakota Fire Chiefs</i>
Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals and evacuation	<i>Dakota Fire Chiefs</i>
<b>City of Inver Grove Heights</b>	
Mass Dispensing Site	Completed
Joint COOP w/ Mendota Hts., South St Paul and West St Paul	Completed
Narrow banding of all outdoor warning sirens in IGH	Completed
Identify 302 Facilities, Debris Management and Staging Plans	Completed
CI/KR Catalog Development	Completed
Joint Closed Point Dispensing Site Plan w/ South St Paul and West St Paul	Completed

APPENDIX III: 2016 PROGRESS ON 2011 PLAN STRATEGIES

Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.	Ongoing
Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.	Ongoing
Provide school programs to youth, focusing on stoves, smoke detectors, fire safety and evacuation.	Ongoing
Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals and evacuation	Ongoing
<b>City of Lakeville</b>	
Narrow banding of all outdoor warning sirens in Lakeville.	Completed
Replace aging Outdoor warning sirens that are now 35 years old	Completed
Backup activation and outdoor warning monitoring system	Completed
Shelter Planning with local partners	In Progress
Examine solutions for storm water runoff in Valley Park neighborhood	Completed
Implement Solutions for Valley Park Neighborhood	Completed
Storm Watershed maintenance	In Progress
Develop a common operating picture and resource database through local deployment of the	Completed – Knowledge Center
Exercise and drill EOC and supervisory staff on storm or transportation accident	On going
Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.	In Progress
Provide school programs to youth, focusing on stoves, smoke detectors, fire safety and evacuation.	In Progress
Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals and evacuation	<i>Dakota Fire Chiefs</i>
Storm Siren Maintenance	In progress
<b>City of Lilydale</b>	
Adopt Storm water Mgmt. Plan	Adopted 11-2013/ Switch to implement and maintain
Send Information to Property Owners Hydrant Clearing -Winter	Ongoing
Send Information to Property Owners Nat Gas Meters Warnings	Ongoing
Information to Property Owners Structure Fires Townhomes/ Condos/Apartments	Will not rollover
Information to Property Owners Garage Hurricane Clips & Storm Protected Rooms	Will not rollover
Information to Residents Emergency Preparedness Plan Hazardous Materials/ Disposal/ Accidents & Transport of Haz. Materials. (Promoting recycling of HHW- Cycling zone)	Ongoing
Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.	Ongoing
Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.	Ongoing
Provide school programs to youth, focusing on stoves, smoke detectors, fire safety and evacuation.	Ongoing

APPENDIX III: 2016 PROGRESS ON 2011 PLAN STRATEGIES

Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals and evacuation	Ongoing
<b>City of Mendota</b>	
Narrow banding of outdoor warning siren in Mendota Heights	Completed
Stormwater Management Ordinances	Ongoing
Sanitary Sewer Management	Ongoing
Stormwater Pond Maintenance	Ongoing
Provide information to property owner regarding garage hurricane clips and storm protected rooms	Completed
Wildfire Public Education	Completed through newsletter
Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.	<i>Dakota Fire Chiefs</i>
Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.	<i>Dakota Fire Chiefs</i>
Provide school programs to youth, focusing on stoves, smoke detectors, fire safety and evacuation.	<i>Dakota Fire Chiefs</i>
Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals and evacuation	<i>Dakota Fire Chiefs</i>
<b>City of Mendota Heights</b>	
Replacement of all outdoors warning sirens	Completed
Joint COOP Mendota Hts. & West St Paul	Completed
GENSET (emergency generator test)	Partially completed repaired and monthly testing
Sanitary Sewer lining for I & I management	In progress
Monitoring MANPADS sites	Ongoing
Refine/Review EOP	Ongoing
NIMS Training for EOP Staff	Ongoing, documenting who is trained and updating
Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.	<i>Dakota Fire Chiefs</i>
Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.	<i>Dakota Fire Chiefs</i>
Provide school programs to youth, focusing on stoves, smoke detectors, fire safety and evacuation.	<i>Dakota Fire Chiefs</i>
Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals and evacuation	<i>Dakota Fire Chiefs</i>
<b>City of Miesville</b>	
Outdoor warning sirens narrow banding	Completed
Warning Siren Maintenance	Ongoing
Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.	<i>Dakota Fire Chiefs</i>

APPENDIX III: 2016 PROGRESS ON 2011 PLAN STRATEGIES

Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.	<i>Dakota Fire Chiefs</i>
Provide school programs to youth, focusing on stoves, smoke detectors, fire safety and evacuation.	<i>Dakota Fire Chiefs</i>
Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals and evacuation	<i>Dakota Fire Chiefs</i>
<b>City of New Trier</b>	
Install backup power at water tower	Ongoing
Building Ordinance update	Ongoing
Complete parking upgrades	Ongoing
Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.	Ongoing
Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.	Ongoing
Provide school programs to youth, focusing on stoves, smoke detectors, fire safety and evacuation.	Ongoing
Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals and evacuation	Ongoing
<b>City of Randolph</b>	
Narrow banding outdoor warning siren in Randolph	Completed
Wellhead Protection Maintenance	Completed
Water Tower Inspection	Ongoing
Anhydrous Ammonia Training	Ongoing
Building Code Updates	Ongoing
Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.	<i>Dakota Fire Chiefs</i>
Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.	<i>Dakota Fire Chiefs</i>
Provide school programs to youth, focusing on stoves, smoke detectors, fire safety and evacuation.	<i>Dakota Fire Chiefs</i>
Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals and evacuation	<i>Dakota Fire Chiefs</i>
<b>City of Rosemount</b>	
Maintain Rental License and Inspection Program	Ongoing
Emergency Sirens Updates / Replacement	Ongoing
Fire Truck Replacement or Refurbishment	Ongoing
Police Car Replacement	Ongoing
Increase Water Storage and Redundancy	Ongoing
Implement North Central Sanitary Sewer Plan	Ongoing
Code Review and Revision	Ongoing

# APPENDIX III: 2016 PROGRESS ON 2011 PLAN STRATEGIES

Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.	Ongoing
Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.	Ongoing
Provide school programs to youth, focusing on stoves, smoke detectors, fire safety and evacuation.	Ongoing
Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals and evacuation	Ongoing
<b>City of South St. Paul</b>	
Assess and upgrade city outdoor weather sirens - narrow banding. Increase public awareness related to outdoor sirens	Completed/Ongoing
Partnering with city, state, federal, private businesses to identify types and locations where hazardous material is stored or used that has the potential to affect the City of South St. Paul, Dakota County, and surrounding cities	Completed/Ongoing
Final approval for new City of South St. Paul Emergency Operations Plan	Completed/Ongoing
Multiple flood levee improvement projects. Re-certification of the levee with FEMA and revamping of the entire operations/maintenance and preparation manual for the levee and floods	Completion expected late 2016
Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.	Required by the Minnesota State Fire Code for all occupied and vacant buildings
Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.	Completed/Ongoing
Provide school programs to youth, focusing on stoves, smoke detectors, fire safety and evacuation.	Completed/Ongoing
Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals and evacuation	Completed/Ongoing
<b>City of Sunfish Lake</b>	
Storm water Ponding Expansion & Maintenance	On-going
Culvert/Drainage Improvements	On-going
Obtain Drainage Easements	On-going
Enforcement of Burning Permits	On-going
Well Management	On-going
Subsurface Sewage Treatment System Maintenance	On-going
Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.	Completed
Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.	As Needed
Provide school programs to youth, focusing on stoves, smoke detectors, fire safety and evacuation.	On-going
Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals and evacuation	On-going

APPENDIX III: 2016 PROGRESS ON 2011 PLAN STRATEGIES

<b>City of Vermillion</b>	
Road Grading	SAME
Warning Siren Maintenance	SAME
Outdoor Burning Restrictions	SAME
Outfit Well w/Generator Outlet	SAME
Water Tower Inspection	2015
<b>City of West St. Paul</b>	
Mutual Aid/Interagency Agreements	On-going; Emergency Manager
Continuity of Operations Planning	Needs Up-dating; Emergency Manager
Site Emergency Plans (Pre-Planning)	On-going; City staff
Storm Water Pond Expansion and Maintenance	On-going; Public Works Director
Inflow and Infiltration	On-going; Public Works Director
Familiarization and Maintenance of PPE	On-going; Police and Fire Chiefs
Mission Critical	Plans Developed, periodic updates; Fire Chief
Replacement of all warning sirens (30+ years old) to reduce siren failure, improve electronic siren monitoring	Completed; Emergency Manager
Narrow banding of all outdoor warning sirens to be FCC complaint	Completed; Emergency Manager
Vulnerability Assessment	On-going; Police Chief
General Maintenance of Backup Systems (i.e. lift stations)	In-process; Public Works Director
Public Education and Awareness	On-going; Police and Fire Chiefs
Land Use Planning	On-going; Community development Director
Family Disaster Plans and Supply Kits	On-going; Police and Fire Chiefs
Burning Restriction	On-going; Fire Chief
Fireworks	On-going; Fire Chief
Waste Disposal	On-going; Community Development Director
Establish a process to increase monitoring of identified MANPADS sites	On-going; Police Chief
Driver Safety	On-going; Police Chief
Develop a common operating resource database through local deployment of the Knowledge Center System	On-going; Emergency Manager, Police and Fire Chiefs
Enforcement of City Ordinance restricting open grills on apartment balconies	On-going; Fire Chief
Annual outdoor Siren maintenance program	On-going; Emergency Manager
Emergency Response Personnel, Specialized Abilities and Training (SOT)	On-going; Police and Fire Chiefs
IMT	Disbanded
Vacant Structures	On-going; Community Development Director
Fire Department, Full Time	On-going; Fire Chief
Smoke/Fire Detectors and Sprinklers	On-going; Fire Chief
Inspect Business and Multi-family Occupancies	On-going; Fire Chief Community Development Director



# APPENDIX III: 2016 PROGRESS ON 2011 PLAN STRATEGIES

NOAA Weather Radio	On-going; Emergency Manager
Building Construction and Code Enforcement	On-going; Building Inspector
Robert Street Redevelopment	On-going; Public Works Director
Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.	Completed
Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.	As Needed
Provide school programs to youth, focusing on stoves, smoke detectors, fire safety and evacuation.	On-going
Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals and evacuation	On-going

## DAKOTA COUNTY

<b>PUBLIC COMMUNICATION AND EDUCATION</b>	<b>Status 2016</b>
<b>Goal 1: Increase awareness of hazard mitigation and preparedness</b>	
1. Design / implement a comprehensive campaign of community education on disaster preparedness, including: strategies for communications without power, outdoor warning sirens, maintenance of weather alert radios, severe weather awareness week, design / construction methods to mitigate building damage, protection from lightning, protection from flash flooding and sewer backups, evacuation routes and disaster recovery plans (businesses and family). Implementation of a comprehensive communications strategy including Fact Sheet development and web site enhancements.	Ongoing
<b>VIOLENT STORMS/EXTREME TEMPERATURES</b>	<b>Status 2016</b>
<b>Goal 1: Ensure safe and accessible shelter from violent storms</b>	
1. On an annual basis the Dakota County Preparedness Committee (DPC) will review the status of City AHMP strategies.	Ongoing
2. Develop a safe shelter plan for publicly owned facilities including shelters, shelter capacity, evacuation routes, and transportation.	Ongoing
3. Identify and map community shelters that could be used by residents that need a safe shelter and identify evacuation routes for residents that must seek safe shelter off-site	Red Cross shelters identified, ongoing
4. Investigate feasibility of providing safe shelter at county campgrounds parks and publicly owned golf courses	Ongoing
5. Reevaluate where shelter agreements are in place in relation to auxiliary power availability, power demands, and availability of portable power	Mass shelter plans drafted, ongoing
6. Identify a list of local vendors of mobile power generators and explore opportunities for good-Samaritan agreements or mutual aid agreements.	List included in EOP, countywide MAA completed
<b>VIOLENT STORMS/EXTREME TEMPERATURES</b>	<b>Status 2016</b>
<b>Goal 2: Improve severe storm warning system for all residents</b>	
1. Inventory and assess adequacy of the county outdoor warning system equipment	Completed
2. Evaluate the county's current warning system activation policy and procedures: how county is notified, who is notified, how people and organizations within the county are notified. Update as needed.	Completed siren policy
3. Develop a communications plan to notify vulnerable populations to take steps to protect their health.	Weather radios, EAS and Everbridge
4. Encourage more volunteers to become active in the severe storm spotters network and communications network (RACES)	Ongoing

APPENDIX III: 2016 PROGRESS ON 2011 PLAN STRATEGIES

5. Continue participation in the Metropolitan Emergency Managers Association's (MEMA) efforts to improve the Emergency Alert System (EAS).	Ongoing
<b>VIOLENT STORMS/EXTREME TEMPERATURES Goal 3: Protect People and Public Infrastructure</b>	<b>Status 2016</b>
1. Enhance communications with public safety officials, county/city/township transportation departments and Minnesota Department of Transportation to limit travel on major transportation routes during hazardous driving conditions	GIS and Trans. link
2. Continue to maintain cooperative arrangements with cities and townships to make the most efficient and effective use of road maintenance equipment. Implement a Public Works JPA. Cross train County Parks staff for road maintenance activities.	Complete
3. Complete storm debris management guidelines	Revisiting guidelines
4. Evaluate installation of lightning indicator and alert systems for outdoor public venues, such as the Dakota County Fairgrounds or Dakota County Park System.	Work with fair board on procedures and development
<b>FLOOD Goal 1: Address 100-year Flood Risk in all county jurisdictions</b>	<b>Status 2016</b>
1. Complete countywide FEMA floodplain restudy by 2011.	Complete
2. Amend city and county shoreland/floodplain ordinances to recognize new 2011 Flood Insurance Study.	Complete
3. Review current floodplain zoning ordinances for noncompliance with state and federal regulations with respect to nonconforming structures.	Ongoing Review
4. Encourage continued county and municipal compliance with NFIP standards	Ongoing
5. Encourage city and county participation in FEMA Community Rating System program. *Townships coordinate with County Floodplain Manager on floodplain permit review.	Partial
<b>FLOOD Goal 2: Monitor Wastewater Treatment Plant Safety and Security</b>	<b>Status 2016</b>
1. Review plans and strategies that have been developed for flood protection with those rural Dakota County communities that have wastewater treatment plants.	Not complete, no authority
2. Review the plans and strategies that have been developed for flood protection for wastewater treatment plants located in Dakota County with Metropolitan Council Environmental Services.	Not complete, no authority
<b>FLOOD Goal 3: Pursue Acquisition of Repetitive Loss Structures</b>	<b>Status 2016</b>
1. Coordinate with MN HSEM Staff and MN DNR Flood Damage Reduction Program Staff to secure funding for acquisition of repetitive loss structures from willing sellers.	Ongoing
<b>DROUGHT Goal 1: Adequate Wellhead Protection</b>	<b>Status 2016</b>
1. Encourage and assist well owners in developing wellhead protection plans.	Ongoing
<b>DROUGHT Goal 2: Monitor Ground Water Quantity, Supply, Demand</b>	<b>Status 2016</b>
1. Review existing groundwater monitoring and modeling programs and determine any needs for additional groundwater monitoring.	Ongoing
2. Continue to participate in the Metropolitan Area Water Supply Advisory Committee, Southwest Groundwater Work Group, and Southeast Groundwater Work Group.	Ongoing
<b>WILDFIRE Goal 1: Reduce Wildfire Risk</b>	<b>Status 2016</b>
1. Coordinate with MN DNR on wildfire information and seasonal risk.	Ongoing
2. Evaluate annually prescribed burning on all county lands and parks with Minnesota DNR.	Ongoing
3. Education program for property owners in identified risk areas on practices for reducing or minimizing wildfire risk.	Ongoing
<b>INFECTIOUS DISEASE Goal 1: Effective / Coordinated Prevention and Control</b>	<b>Status 2016</b>
1. Work with state and federal agencies to identify infectious diseases that have the potential to affect the county and region	Ongoing
2. Utilize state and federal and local resources to prevent and control infectious diseases in the county	Ongoing
3. Work with the Minnesota Department of Health (MDH) to develop training programs for private health care providers and public health staff in infectious disease monitoring and response.	Ongoing
4. Provide information on the recognition, testing, treating, and reporting of infectious diseases to healthcare providers in clinics, hospitals, and other healthcare settings.	Ongoing
5. Work with clinics and hospitals to improve infectious disease reporting.	Ongoing

# APPENDIX III: 2016 PROGRESS ON 2011 PLAN STRATEGIES

6. Maintain an up-to-date Health Alert Network system to keep clinics, hospitals, other health care providers, public safety agencies, schools, local governments and others informed of urgent health /infectious disease events	Ongoing
7. On an annual basis, review and update the public health emergency response operations plan that outlines procedures for dealing with infectious diseases.	Complete
8. Continue to work with local hospitals and clinics in developing plans and roles in infectious disease response, including quarantine.	Ongoing
9. Continue to work with the MDH in surveillance of infectious diseases in the county. For diseases that may transfer from livestock to humans, continue to work with the State Departments of Health and Agriculture, the University of MN Veterinary College, and Agricultural Extension.	Ongoing
10. Work closely with MDH, CDC, and regional public health partners to plan the receipt and dispensing of the Strategic National Stockpile.	Ongoing
11. Continue to develop a human quarantine plan collaborating with state, regional, and local partners including emergency managers.	Complete, revisions' 75% complete
12. Work closely with the MDH and regional public health partners to refine the region's all-hazard response plan.	Ongoing 50% complete
<b>INFECTIOUS DISEASE Goal 2: Provide Public Information on Infectious Disease Threats</b>	<b>Status 2016</b>
1. Work with the Minnesota Public Health Department (MDH) to develop fact sheets, media releases, and educational programs for the public.	Ongoing
2. Continue to work with local media to disseminate information about infectious diseases, risk potential, and prevention through education articles and news releases.	Ongoing
3. Maintain up-to-date website information and/or links to other sources of reliable information about infectious diseases and prevention.	Ongoing
<b>STRUCTURAL FIRE Goal 1: Structure Protection</b>	<b>Status 2016</b>
1. Evaluate ordinances requiring prompt removal of snow around commercial and industrial buildings in order to insure access for fire and other emergency equipment with cities and townships.	Revisiting with Fire Chiefs
2. Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.	Revisiting with Fire Chiefs
<b>STRUCTURAL FIRE Goal 2: Public Education</b>	<b>Status 2016</b>
1. Provide school programs to youth, focusing on stoves, smoke detectors, fire safety and evacuation.	Ongoing
2. Work through Dakota County Fire Chiefs Association, including participant cities, to provide public education to homeowners, focusing on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals and evacuation	Ongoing
<b>HAZMAT Goal 1: Build and Share Information with Emergency Personnel, Others</b>	<b>Status 2016</b>
1. Work with township, city, state, and federal agencies and private industries to share information on types and locations of hazardous material that have the potential to affect the county and region.	Ongoing
2. Support the use of the Eco-Site to minimize the quantities of household hazardous materials/waste in the community and encourage cities to promote household hazardous waste collection.	Ongoing
3. Encourage hazardous materials awareness training for hospitals and clinics and share information on hazardous materials and storage locations in the county. Provide training / education for hospitals and clinics on proper storage / disposal of hazardous waste.	Ongoing
4. Continue to develop new capabilities to predict the direction and velocity of groundwater flow, surface water runoff, and windborne transport; to integrate these results in the county GIS system; and to share these results with appropriate users.	Ongoing
<b>HAZMAT Goal 2: Improve Policies and Planning for Hazmat/Waste</b>	<b>Status 2016</b>
1. Review and update the County policies and environmental plans that address hazardous material/waste storage and transportation in Dakota County.	Ongoing
2. Develop and distribute debris management guidelines	Ongoing
3. Coordinate and facilitate discussion between the cities and the County on policies related to hazardous materials/waste storage and transportation.	Ongoing

APPENDIX III: 2016 PROGRESS ON 2011 PLAN STRATEGIES

4. Continue to participate in Wakota CAER (Community Awareness and Emergency Response) as a coordinating and information-sharing organization and promote the organization within the County	Ongoing
5. Design and implement hazardous material scenarios for practice exercise and to create community awareness (consistent with National Planning Scenarios)	Exercises Completed and Ongoing
6. Encourage training to at least the Hazardous Materials Awareness and Weapons of Mass Destruction (CBRNE) level training for the ten Office of Domestic Preparedness disciplines (law enforcement, fire, EMS, dispatch, public health, health care, emergency management, public works, administration, and hazmat).	Training Held and Ongoing
7. Continue to expand the use of mutual aid agreements and memoranda of understanding to improve response coordination between local, state, and federal agencies and appropriate private sectors.	Countywide Mutual Aid Agreement Completed and Ongoing
<b>DAM FAILURE Goal 1: Maintain Lock and Dam Structural Safety</b>	<b>Status 2016</b>
1. Continue engagement with the mandated Federal Energy Regulatory Commission (FERC) annual and 5-year inspection regimes for Byllesby Dam and implement recommendations in a timely manner.	Ongoing
2. Review the maintenance and emergency procedures for Lock and Dam No. 2 and the South St. Paul-Inver Grove Heights Mississippi River levee.	Not initiated
<b>DAM FAILURE Goal 2: Downstream Resident Safety Strategies</b>	<b>Status 2016</b>
1. Continue to coordinate with Goodhue County and other emergency providers in the preparation and execution of the Emergency Action Plan (EAP) so that it remains an effective tool.	Ongoing
2. Emphasize coordination of EAP implementation with the City of Cannon Falls as they are most rapidly affected in the event of a dam failure.	Ongoing
3. Continue to monitor reservoir elevations and effectively communicate conditions to downstream interests as warranted.	Ongoing
4. Enforce the Byllesby Dam security plan elements and public safety rules.	Ongoing
<b>WATER SUPPLY CONTAMINATION Goal 1: Protect the Quality of the County's Groundwater</b>	<b>Status 2016</b>
1. Continue to regulate well construction, sealing, and the annual registration of monitoring/remedial wells.	Ongoing
2. Inspect feedlots regularly, correcting violations	Discontinued (re-delegated to State)
3. Continue providing a well-testing service for private well owners.	Ongoing
4. Continue to review well disclosure documents for the purpose of sealing wells at property sale.	Ongoing
5. Continue to regulate new well construction and old well sealing through a permitting process that includes inspection in accordance with Dakota County Ordinance No. 114 and Minnesota Chapter 4725.	Ongoing
6. Continue to administer a well seal – cost share grant with the assistance of the Dakota County Community Development Agency (CDA) and continue to administer our Well Seal-Cost Share Grant Program.	Ongoing
7. Continue to enforce well water quality standards at the time of property sale.	Ongoing
8. Continue to enforce septic system construction standards at the time of property sale or bedroom addition.	Ongoing
9. Continue to administer a septic system maintenance program that requires that every system is pumped or inspected every three years.	Ongoing
10. Explore ways to reduce impacts of non-point source contaminants on groundwater and surface water through: outreach on adoption of agricultural Best Management Practices (BMPs) and availability of financial support; and expansion of ground- and surface water monitoring for nitrates, pesticides, and herbicides.	Ongoing
11. Educate floodplain well owners about protecting drinking water wells from flooding.	Ongoing
12. Evaluate wastewater treatment plant hazard mitigation plans for opportunities for the County to assist in case of emergency.	Not Initiated
13. Encourage the use of local zoning regulations to prohibit new feedlots in karst areas of the county which are characterized by sinkholes, depressions, caves, and underground drainage.	Discontinued (re-delegated to State)

# APPENDIX III: 2016 PROGRESS ON 2011 PLAN STRATEGIES

14. Request the Metropolitan Council and MPCA communicate wastewater treatment plant hazard mitigation information to local units of government.	Incomplete
<b>WATER SUPPLY CONTAMINATION Goal 2: Protect Residents from Contaminated Ground Water</b>	<b>Status 2016</b>
1. Identify sources for obtaining bottled water, including bottled water distributors and local grocery stores for unincorporated areas of the county.	Assessment Required
2. Facilitate well testing and disinfection in case of contamination.	Ongoing
3. Assist cities and the State Health Department in public notification and coordination in the event of a municipal well contamination incident.	Ongoing
4. Communicate risk of water contamination to residents downstream of a wastewater treatment plant in case of flood.	As Needed; Ongoing
5. Provide well disinfection brochures to impacted well owners.	Ongoing
6. Provide education materials on monitoring private wells	Ongoing
7. Encourage local jurisdictions to evaluate and test their ability to isolate contaminants in their water distribution systems.	Ongoing
<b>WATER SUPPLY CONTAMINATION Goal 3: Supply Protection Strategies</b>	<b>Status 2016</b>
1. Maintain and review copies of Wellhead Protection Plans and GIS coverages of the Wellhead Protection Areas (WHPAs) and Drinking Water Supply Management Areas (DWSMAs) as they are developed by Public Water Supply Well owners and submitted to the Minnesota Department of Health. Provide comments.	Ongoing
2. Encourage and assist communities in developing groundwater protection plans.	Ongoing
3. Encourage cities to enhance security of their wells, reservoirs, and treatment facilities.	
<b>TERRORISM Goal 1: Reduce Risk to Public Facilities and Infrastructure</b>	<b>Status 2016</b>
1. Enhance public employee training on facility security awareness and incident reporting	Ongoing
2. Review recommendations made in FEMA 426 Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings for possible incorporation into county building design standards. Share applicable information with cities.	Ongoing
3. Communicate with cities regarding strategies for infrastructure protection and cyber-security.	Ongoing
4. Discuss opportunities to share public building specifications and plans with police and fire.	Ongoing

## **Terrorism Goal 2: Assure an effective and coordinated public health response to prevent and control injury, disease, and death as a result of bioterrorism.**

Objectives and strategies under this goal are the same as goals and objectives listed under the hazard ***“Infectious Diseases.”*** The County Public Health Department is developing its infectious disease strategies under the philosophy that these strategies will be equally important whether an infectious disease occurs naturally or a bioterrorist event occurs.