DAKOTA COUNTY, MINNESOTA ALL-HAZARD MITIGATION PLAN 2022

Dakota
COUNTY

Adopted by the Dakota County Board of Commissioners

September 20, 2022

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The Dakota County All-Hazard Mitigation Plan was conditionally approved by FEMA on August 4, 2022, and adopted by the County Board on September 20, 2022.

This plan is valid until its expiration on September 20, 2027.

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

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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, 2016, and 2021.

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 and implement 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.

Recent Hazard Declarations

Six federal disasters have been declared in Dakota County since the 2016 Plan update: severe storms and flooding in 2016, severe storms/tornadoes/straight-line winds/flooding and severe storms/flooding in 2018, severe storms/tornadoes/straight-line winds/flooding and spring flooding in 2019 and the on-going COVID-19 pandemic in 2020. Statewide, disasters between 2000 and 2020 cost roughly $340

million in Federal Emergency Management Agency (FEMA) public assistance, largely attributable to severe summer storms and flooding.

Table 1.1: Minnesota Major Disaster Declarations: 2000-2020

ID #	Date	Event	MN Public Assistance	Dakota Co. 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*	6/1-7/11/2014	Severe Storms/ Straight-line Winds/ Flooding/ Landslides / Mudslides	N/A	$1,448,811
DR-4290	9/21-9/24/2016	Severe Storms/Flooding	$7,013,278	N/A
DR-4390	6/15-7/12/2018	Severe Storms/Tornadoes/Straight-line Winds/Flooding	N/A	N/A
DR-4414	10/9-10/11/2018	Severe Storms/Flooding	N/A	N/A
DR-4442	3/12-4/28/2019	Severe Winter Storm/Straight-line Winds/Flooding	N/A	N/A
SD-036	3/12-4/28/2019	Spring Flooding	N/A	N/A
DR-4531, EM-3453	1/20/20 – Ongoing	Minnesota COVID-19 Pandemic	N/A	N/A
		Total Public Agency Assistance	**$340,812,161**	**$8,654,973**

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

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

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

Unincorporated Townships Covered under the County Plan

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

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
- Acquiring repetitive loss structures
- Developing mitigation standards, regulations, policies, and programs
- Reviewing, updating, and enforcing building/zoning codes
- Increasing public awareness and education programs
- Developing and improving warning systems

2022 Update

This multi-jurisdiction plan is an update of the 2016 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 an increased role in the 2016 update and this update. The County and each city developed hazard ratings for their own community, evaluated their community's vulnerabilities, and 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 reports the progress in local mitigation efforts over the past five years. The status of 2016 action items presented in **Appendix III – 2016 All-Hazard Mitigation Plan Progress.**

Hazards Profiled in 2021

Hazard profiling was a first step in updating this plan. Based on events since the 2016 plan and new concerns, Civil Disturbance was considered in partnership with cities and included as a hazard in 2021.

Table 1.2   Hazards Profiled

Hazard	Reason for Identification
Civil Disturbance	Recent occurrences, likely adverse impact, increasing threat
Cyber-Attack	Frequency, likely adverse impact, increasing threat
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
Landslide	Frequency, likely adverse impact, occurrence in 2014
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

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 1.3   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

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. 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:
Provides a ranking of hazard concern at a countywide level and describes vulnerable populations and infrastructure.

Section 6 – Strategies and Priorities:
Establishes County goals and strategies for each hazard area and discusses implementation processes and roles.

Section 7 – 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 2016 plan. Sets forth each city's strategies for addressing hazard vulnerabilities and discusses implementation processes and roles.

Appendix I – Resolutions of Support and Adoption from Participating Cities

Appendix II – Public Survey and Engagement Results, 2021

Appendix III – 2016 Plan Progress Review for County- and City-Led Strategies

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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 (2016-2021) and initiates the next five-year planning cycle (2021-2026).

Table 1 summarizes the plan update process, which began in late 2020 with organization of the effort (Start-Up). The first three quarters of 2021 focused on engaging participant communities and stakeholders to assess hazards and vulnerabilities, develop mitigation actions, and prepare the plan document (Update Plan). The fourth quarter of 2021 and first quarter of 2022 focused on plan review and adoption. Because of the ongoing COVID-19 pandemic, engagement methods relied more on virtual meetings instead of in-person events.

Table 2.1   Dakota County All-Hazard Mitigation Planning Process, 2020-2021

Key Tasks
Start-up: 4th Quarter, 2020
• Organized AHMP Planning Team including municipal participation
• Reviewed 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 and requested resolutions of participation from member cities
• Developed public engagement strategies and project communication plan
New Strategies, Update Plan: 1st to 3rd Quarters, 2021
• Provided plan update information to townships covered under the County Plan
• Updated the County Board of Commissioners and Planning Commission (citizen advisory committee)
• Met with County departments to track status of current mitigation actions and update strategies
• Updated website, developed-promoted online public survey on concerns, priorities, and preparedness
• Met with participating cities on 2016 Plan progress, vulnerabilities, and new strategies.
• Updated plan data and GIS maps
• Completed City and County level hazard and vulnerability assessments
• Engaged public through flyers at vaccination clinics, library intercept displays, and information at the County Fair
• Drafted City and County mitigation strategies/actions, developed draft plan
Plan Review and Adoption: 4th Quarter, 2021, early 2022
• Updated the County Board and Planning Commission on new strategies, opened public review
• Submitted draft plan to MN HSEM/FEMA for technical pre-review
• Public comment on draft plan: media releases, plan online and at libraries, public intercepts
• Revision of draft addressing HSEM, FEMA, and public comments
• Final submittal to MN HSEM/FEMA
• Formal adoption of plan by County and Cities

Community Participation

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

Participating Cities

Municipalities played the lead role in reviewing progress made on their strategies from the 2016 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 during the 2016 and 2021 updates. Templates were sent to designated contacts in all participating jurisdictions in 2021, requesting the following:

CITY PLANNING TEMPLATE: Dakota County All-Hazard Mitigation Plan Update 2021

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 four-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 2016 Plan update.
3. Rate the Vulnerabilities of Critical Assets to each hazard of concern (Y/N/NA). Matrix included.
4. Identify mitigation implementation resources: departments, roles, and specific tools such as ordinances and programs.
5. Document participation in the National Flood Insurance Program (NFIP) and how the City maintains compliance.

C] Report Progress on 2016 Plan strategies

D] Develop New City Strategies for 2022 Plan Update
1. Identify carryover strategies from 2016 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.

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

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

The following city representatives participated in developing and updating plan content. One-on-one sessions or calls were held with cities through the summer of 2021. All cities were consulted in the course of the plan update.

City	Contact and Position
Apple Valley:	Greg Dahlstrom, Police Department Captain
Burnsville:	Patrick Gast, Police Department Sergeant
Coates:	Sherri Leflay, Clerk
Eagan:	Jeremy Klein, Emergency Manager
Farmington:	Gary Rutherford, Chief of Police
Hampton:	John Knetter, Council Member
Hastings:	Dave Wilske, Chief of Police
Inver Grove Heights:	Joshua Otis, Police Department Commander
Lakeville:	Mike Meyer, Fire Chief
Lilydale:	Mary Schultz, City Administrator
Mendota:	Steve Golias, Council Member
Mendota Heights:	Kelly McCarthy, Chief of Police
Miesville:	Terri McCarthy, Clerk
New Trier:	Brenda Leifeld, Clerk and Nicole Peine, Mayor
Randolph:	Mary Haro, Clerk
Rosemount:	Mikael Dahlstrom, Chief of Police
South St. Paul:	Bill Messerich, Chief of Police
Sunfish Lake:	Brian Sturgeon, Chief of Police
Vermillion:	Lisa Rowan, Clerk
West St. Paul:	Brian Sturgeon, Chief of Police

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 20, 2021. 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 2021 All-Hazard Plan update were provided to the DPC at several points in the 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.

Apple Valley Chamber of Commerce

Hastings Chamber of Commerce

Burnsville Chamber of Commerce

Lakeville Chamber of Commerce

Dakota County Regional Foundation

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

The county website (see below), municipal websites, municipal notices, flyers at County COVID-19 Vaccination Clinics, intercept displays at County Libraries, a staffed booth at the County Fair and targeted outreach to Community Liaisons promoted ways in which residents could contribute to the planning process. Public comment was accepted throughout the planning process.

Figure 2.1 Plan Webpage

Online Mitigation Planning Survey (May 2021 – September 2021)

More than 1,000 people who live or work in Dakota County completed an ADA-accessible 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**.

Public Intercepts on Hazards and Household Preparedness

Poster boards asking people to identify their top hazard concerns were displayed at six County libraries in the summer of 2021. Intercepts at the Dakota County Fair in August 2021 distributed information to fairgoers on emergency preparations people should do at home, including registration for the County's mass notification system. An interactive display asked people to identify which household preparedness measures they had already taken.

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

February 25, 2021	Project Introduction, Hazard Discussion
July 22, 2021	Project Update, Draft Strategies and Priorities
January 27, 2022	Draft Plan Review

Public Comment Period (Winter, 2021-2022)

Public comment was accepted throughout the process. 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-Hazard Planning Team and incorporated, where appropriate, into the final version of this plan.

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
- 2019 US Census American Community Survey Data (five-year), 2010 and 2020 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
- Metropolitan Council, waste management and transit data
- Dakota County All-Hazard Mitigation Plan, 2006, 2011, and 2016
- Dakota County Emergency Operations Plan, 2020
- Dakota County Comprehensive Plan, 2019, amended 2021
- Dakota County Hazardous Waste Ordinance
- Dakota County Shoreland and Floodplain Ordinance
- Dakota County Indicators, 2019-2021
- Dakota County Office of GIS data
- Local Watershed Plans
- Dakota County Groundwater Protection Plan, 2021
- Dakota County Land Conservation Plan, 2021

Municipal Level (Record of Review)

At the municipal level, 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 county departments, municipalities, and other implementation partners to identify required resources, assign 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, Emergency Preparedness, Transportation, Public Health, Environmental Resources, Parks, and the County Shoreland Zoning Administrator. Each municipality evaluated how local strategies could best be incorporated into existing planning mechanisms. At both levels, jurisdictions will implement the plan through 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. County staff also will keep the committee up to date on the status of county-level strategies. (See page 10 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 assist with 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 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 were 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.

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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 Location

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

- US Census Bureau
- US National Weather Service
- 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 Public Health Department
- Dakota County Transportation Department
- Dakota County Office of Planning
- Dakota County Office of Performance 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, 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 population of 439,882 (US Census, 2020). Most of its population is concentrated in the northern one-third of the county, while the southern two-thirds of the county are largely rural. Dakota County is one of the fastest growing counties in 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 and Townships

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 Indigenous people. In 1689, Nicholas Perrot, a French fur trader, proclaimed possession of Dakota, Ojibwa, and other Native American lands for France without the consent of the tribes. The Louisiana Purchase annexed French-held lands west of the Mississippi River into the United States. The City of Mendota in northwestern Dakota County became the first European settlement in Minnesota. Indigenous peoples, systematically removed from their lands, were forced to move further west.

The Minnesota Territorial legislature created nine original counties, including Dakota, in 1849. 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 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

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 on the county's southern, following the Cannon River. 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 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, 1962.

From precipitation recorded from 1991 to 2020 (Table 3.1), the total average annual precipitation in Dakota County is 32.8 inches. Seasonal and yearly rainfall amounts vary, and long-term averages indicate that rainfall is higher in the north and central regions of the county (Figure 3.3). Table 3. shows mean monthly precipitation at various county locations 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 period.

Table 3.1 1991-2020 Precipitation Normals in Dakota County (inches)

Weather Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Year
Farmington	1.05	0.81	1.66	2.72	3.93	4.89	4.24	4.42	33.20	2.75	1.64	1.01	32.32
Rosemount	0.96	0.9	1.8	3.1	4.32	4.88	4.51	4.43	3.44	2.86	1.71	1.21	34.12
Hastings	.90	.91	1.78	3.10	4.33	4.94	4.37	4.23	3.21	2.61	1.72	1.23	33.33
MSP Airport	.89	.87	1.68	2.91	3.91	4.58	4.06	4.34	3.02	2.58	1.61	1.17	31.62

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").

Table 3.2 Dakota County Monthly Average Temperatures and Precipitation, 1991-2020

Month	Avg. High Temperature	Avg. Low Temperature	Avg. Temperature	Avg. Inches Rain	Avg. Inches Snow
January	23.2	6.4	14.8	0.95	10.8
February	28.2	10.0	19.1	0.87	8.0
March	41.0	22.8	31.9	1.73	8.1
April	56.3	35.8	46.1	2.96	2.7
May	68.6	48.1	58.3	4.12	0.0
June	78.3	58.7	68.5	4.82	0.0
July	82.4	63.0	72.7	4.30	0.0
August	79.9	60.7	70.3	4.36	0.0
September	72.6	52.4	62.5	3.22	0.0
October	58.5	39.3	48.9	2.70	0.6
November	42.0	26.1	34.0	1.67	6.9
December	28.5	13.5	21.0	1.16	9.2
Annual	54.9	36.4	45.7	32.8	46.1

Source – National Weather Service

Compared to the previous three-decade period (1981-2010), the average winter low temperature has increased by 1.5 degrees, and average annual precipitation has increased by 1.4 inches. The Minnesota Climatology Office describes the likely future climate for Minnesota as warmer and wetter.

An estimated 76 percent of precipitation evaporates/transpires to the atmosphere (25 inches), 22 percent runs off (7 inches), and 2 percent (less than an inch) recharges groundwater. Shallow and/or coarse soils may recharge groundwater more rapidly with less runoff. Since 2016, annual precipitation in Dakota County has been above normal. Figure 3.4 shows precipitation departures from normal amounts for April 1 to November 17, 2020, a slightly above normal water year for the county.

Figure 3.4 Minnesota Precipitation Departures

Much of the aquifer recharge used for drinking water in Dakota County relies on rainfall and snowmelt. Water levels in surface or near surface aquifers generally drop quickly during drought and rebound quickly when water is available for recharge. Water levels in deeper bedrock aquifers are also affected during periods of drought and may take much longer 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.

Figure 3.5 Geologic Column of Dakota County

Sand and gravel deposits are associated with glacial outwash, or materials deposited beyond the terminal margin of the ice. The well-sorted gravel deposits mined in Dakota County are generally found in glacial outwash. Their coarse texture allows for the formation of surficial aquifers. Where 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 of the hydrologic connection between the surface and all of the bedrock aquifers used for drinking water supplies in the County.

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 formation, 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. Figure 3.6 shows the uppermost bedrock layer in the county.

<u>Proterozoic (Basement) Geology</u>
Made up of basalts and crystalline igneous rock, this geology has little impact on land use or hazards risk.

Topography

Dakota County's highest elevations are on its northern and western moraines. The highest point is Buck Hill in the City of Burnsville, with an elevation of over 1,195 feet above mean sea level. The lowest point is 675 feet, where the Mississippi River leaves the county. Apart from the Mississippi and Minnesota River Valleys, the overall slope of the county is southeastward with an elevation change of 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

<u>Glacial moraines</u>
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 glacial moraines ranges from 5 to 200 feet from hill base to hilltop. Slopes vary from 1-6 percent in gently rolling areas, to 12-18 percent 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.

<u>Outwash plains</u>
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.

<u>Bedrock areas</u>
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 can include sinkholes, disappearing streams, and underground drainage. Karst provides conduits that directly connect surface water to the ground water and are particularly susceptible to ground water contamination.

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

Figure 3.6 Dakota County Uppermost Bedrock Geology

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.

Figure 3.7 Karst Areas, Sinkholes, and Springs in Dakota County

Well-developed natural terraces along the Minnesota and Mississippi River valleys are floodplains formed when the river flowed at a higher elevation than at 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)

Figure 3.8 Steep Slopes

Figure 3.9 is a generalized map of major soil units in Dakota County. Soil properties reflect:

- Parent material properties
- 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 hold water and slow the rate of contaminant entry into groundwater. Coarser soils hold less water and contaminants travel through them faster. Soils along the Mississippi and Minnesota rivers and in the Vermillion River and Chub and Pine creek floodplains are loamy, silty, clayey, level, and poorly drained. Soils in the remainder of the county are well drained to excessively well drained and occur on gentle to steep slopes. Soils are shallower to the east and southeast of the county.

Figure 3.9 Generalized Soils in Dakota County

Groundwater

Most of the drinking water in Dakota County is sourced from groundwater. The six major aquifers beneath Dakota County 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 limestone or sandstone bedrock formations or glacially derived gravel deposits. Limestone formations in the county have considerable vertical fracturing and zones of weakness between bedding planes allowing 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, permitting an unchecked downward and lateral flow of contaminants.

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.

Figure 3.10   Aquifer Sensitivity (1991, Dakota County Geologic Atlas)

Rivers

Major rivers are shown in the Watershed Map in Figure 3.11. 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 in Hastings) and several river terminals.

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 is voluntary and consists of additional land, water use, resource protection, and open space policies, and guidelines 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 originates in Scott County and flows northeast 38 miles through Dakota County, dropping 90 feet at its falls in the City of Hastings, where 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 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, Eagan-Inver Grove Heights, 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 (WMO) was authorized through the Metropolitan Surface Water Management Act of 1982. WMO boundaries do not exactly match the hydrologic boundaries of individual watersheds. The seven managing organizations and their boundaries are show in Figure 3.11:

- 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 3.11 Watershed Management Organizations

Land Cover and Use

Land Cover

The most recent land cover data compilation by the Metropolitan Council in 2020 shows that Dakota County is 62 percent agricultural or undeveloped land, and 38 percent urban or suburban development. In 1992, the percentage of county acreage defined as agricultural and undeveloped was 65 percent, with close to 13,000 agricultural or open land acres transitioning to development over the last thirty years.

The Minnesota Landcover Classification System (MLCCS) is a hierarchical 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 pavement, which increases runoff and may increase flooding risk.   Figure 3.12 displays the MLCCS percentages of impervious surface throughout the county.

Figure 3.12 Percentage of Impervious Surface

Land Use

Dakota County was mostly agricultural before 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 intensive land use to the county. During the 1990s, Dakota County continued evolving from suburbs of "bedroom communities" to more diversified patterns of land use. Figure 3.13 shows current (2020) land use.

The Metropolitan Council, a regional government and planning body, forecasts that Dakota County's population will grow by 9 percent between 2020 and 2030, and nearly 18 percent between 2020 and 2040.

Figure 3.13 Existing Land Use, 2020, Metropolitan Council

Residential Development Trends 1990 - 2020

From the mid-1990s through 2008, more than 3,000 housing units per year were built in the county's urban areas at densities of two to three units per acre, consuming 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 far fewer new houses were built in rural areas 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, 2,000 to 3,000 acres of land were converted from agricultural use to suburban residential use each year.

With the Great Recession that began in 2008, county development rates 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 in recent years, with multi-family permits expanding to 1,766 in 2017 and a total of 2,480 housing permits in 2019, more than double the 1,084 permits issued in 2014.

Future Land Use

Figure 3.14 shows projected land use in the year 2040. Lakeville, Farmington, Rosemount, and Empire Township are expected to receive most of the forecast residential growth.

Figure 3.14 Forecast Land Use, 2040

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.

Park and Recreation: 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 in manufacture and/or product processing; could include light or heavy industry, large warehouses, or utilities.

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 land use authority is limited to permitting in shoreland/floodplain areas of the rural townships, and access spacing control in County Road right-of-way, shown in Figure 3.15.

Figure 3.15 Dakota County Land Use Areas

Community Infrastructure

Important public facilities include school districts, city and county public buildings, and 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 3.16 shows 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.

Figure 3.16 Public School Districts and Schools

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	15
ISD 192	Farmington	8
ISD 194	Lakeville	15
ISD 195	Randolph	2
ISD 196	Rosemount Apple Valley Eagan	30
ISD 197	West St. Paul, Mendota Heights, Eagan	8
ISD 199	Inver Grove Heights	5
ISD 200	Hastings	6
	Public Charter Schools	6
	Private Schools	30

County Public Facilities

Dakota County owns and/or operates more than 65 buildings with 1,700,000 square feet of space, including office space for services, courts, park buildings, libraries, and maintenance buildings. All major buildings incorporate severe weather shelter facilities. County facilities are shown in Figure 3.17

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

Dakota County Park 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. Annual use of the park system is roughly two million visits. County facilities are listed below by geographic area:

Eastern Locations
- Administration Center, Hastings (County Seat)
- Judicial Center, Hastings
- Law Enforcement Center, Hastings
- Juvenile Center, Hastings
- Spring Lake Park Reserve, Nininger and Rosemount
- 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
- Wescott Library, Eagan
- 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
- SMART Center, 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 and large picnic shelter

Figure 3.17 County Facilities, Buildings, and Parks

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, 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.

Historical Resources

Dakota County has more than 900 properties on the Minnesota State Historical Preservation Office's database, with 38 properties or structures listed on the National Register of Historic Places. Nearly one-half of the 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

The Dakota County Historical Society maintains its archives and museum in 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, several sites 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 (under new ownership, potential for redevelopment)
- Twin Cities Premium Outlets, Eagan
- Central Commons shopping complex, Eagan
- Minnesota Vikings Complex and TCO Performance Center, Eagan
- Dakota County Fairgrounds and Dakota City Heritage Village, Farmington

Transportation

Roads

The existing Dakota County highway system has a total of 414 centerline miles, of which 366 miles are paved and 48 miles are gravel-surfaced. Dakota County has oversight on and maintains 96 bridges, 238 traffic signals, and 18,200 signs. Dakota County coordinates its roadway efforts with those of city, state and federal governments.

Functional classification systems group highways based on the type of trips they are intended to serve. The Metropolitan Council and the Transportation Advisory Board (TAB), working together as the Metropolitan Planning Organization for the Twin Cities, have adopted a series of functional classification system criteria for the Twin Cities region. Figure 3.18 shows Dakota County's road system and connections to adjacent counties in terms of roadway functional classes.

More residents are driving significantly more miles on County highways each year 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 2020 and 2040, vehicle miles traveled is estimated to grow 20 percent, compared with an estimated 21 percent population growth. Vehicle miles driven are a measure of highway demand, especially when compared to growth.

Figure 3.18 Road Classifications in Dakota County

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 3.19, 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 3.19 Major Bridges Serving Dakota County

Four bridges across the Mississippi River – the Robert Street Bridge, Wabasha Bridge, the St. Paul High Bridge (Smith Avenue) and the TH 52 (Lafayette Freeway) Bridge - are just north of Dakota County, but provide important links between Dakota County and St. Paul and Ramsey County. All bridges linking Dakota County with Hennepin, Ramsey, and Washington Counties are part of the state trunk highway system and are a strategic concern of Dakota County.

Transit

Although the automobile is the dominant mode of transportation, transit systems in Dakota County provide alternate means of transportation. The level of transit service ranges from relatively high in the older fully developed communities to minimal or none in the southern rural areas. Figure 3.20 shows current transit routes.

Figure 3.20 Transit Services in Dakota County

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 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, 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 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

Minnesota Valley Transit Authority	Capacity
Burnsville Transit Station	1,428
Apple Valley Transit Station	1,160
Eagan Transit Station	719
Cedar Grove Transit Station	166
Blackhawk Park and Ride	370
Heart of City Park and Ride	343
Palomino Hills Park and Ride	318
157th St Park and Ride	258
Lakeville-Cedar Park and Ride	190
Rosemount Park and Ride	102
Metro Transit	**Capacity**
West St. Paul Sports Complex	100
I-35/Kenrick	750

Railroads

Railroads are a significant element in the county's transportation system, moving freight to and between ports and major urban areas. Railroads have influenced land use, the physical environment of the county, and other components of the transportation system. Canadian Pacific Railway and Union Pacific Railroad are the two Class I rail carriers operating in Dakota County.

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 3.21 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 4,850 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 2019, MSP served 39.5 million passengers and accommodated 406,076 landings and takeoffs making it 17th in North America for the number of travelers served. MSP has four runways of 11,000, 10,000, 8,200, and 8,000 feet in length. Busy southern runway approaches cut across a large portion of Dakota County.

Figure 3.21 Freight, Rail, and Ports in 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 percent 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 3.21.

Table 3.5   Major River Terminals in or 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 Crop Nutrients, CHS	Savage (Scott County)

Trucking

Trucking of freight contributes to the economic vitality of the county and region. Trucks are the mode of 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.

Several truck terminals with over 1,000 trucks are located in Dakota County along major transportation routes.

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, based on 2017 data from the Minnesota Department of Transportation:

Table 3.6   Heavy Truck Traffic Areas in Dakota County

Location	Heavy commercial vehicles per day
Highway 13 at 35W	4,700
35W from split to Highway 13	4,750-9,500
Highway 52 at Highway 55 (Flint Hills Refinery)	4,200-6,500
Highway 55 from Highway 52 to Minnesota River	2,600-2,900
Highway 494 in Eagan and South St. Paul	6,000-7,500

Energy, Utilities, Communication Infrastructure

Telecommunication Facilities

Community cable television, local weekly newspapers, and electronic and print media in the 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 and participate in emergency planning and response efforts. Detailed information on power facilities is not provided in this 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. 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, ensuring adequate wastewater treatment facilities 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 region, with four plants serving Dakota County. The Empire treatment facility was expanded from 12 to 24 million gallons per day (MGD) in 2008, allowing the closure of the 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 3.22.

Table 3.7 Metropolitan 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

Metro Council Environmental Services (2021)

Municipal Treatment Facilities

The cities of Vermillion and Hampton own and manage separate wastewater treatment facilities. Both facilities have capacity to handle additional growth. See Figure 3.22.

Table 3.8   Rural City Wastewater Plants

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

Figure 3.22 Wastewater Treatment Facilities

Individual Sewage Treatment Systems (SSTS - subsurface treatment systems)
More than 8,000 individual sewage treatment systems serve rural Dakota County. Per Ordinance No. 113, the County oversees construction, design, and inspection of septic systems in unincorporated shoreland. Outside of rural shoreland, communities oversee septic systems within their jurisdiction.

Demographic and Economic Conditions

Population
Dakota County is the third most populous county in Minnesota, with a population of 439,882 (2020 US Census). The Metropolitan Council projects the county will have more than 515,000 people by 2040. Lakeville, Rosemount, and Farmington are expected to lead growth on the urban fringe.

Table 3.9: Dakota County City and Township Populations in 2000, 2010, and 2020 (U.S. Census)

City or Township	2000 Census	2010 Census	2020 Census	Percent Change 2010-2020
Apple Valley	45,527	49,084	56,374	14.9
Burnsville	60,220	60,306	64,317	6.7
Castle Rock Township	1,495	1,342	1,350	0.6
Coates	163	161	147	-8.7
Douglas Township	760	716	748	4.5
Eagan	63,557	64,206	68,855	7.2
Empire Township	1,638	2,444	3,177	30.0
Eureka Township	1,490	1,426	1,373	-3.7
Farmington	12,365	21,086	23,632	12.1
Greenvale Township	684	803	796	-0.9
Hampton	434	689	744	8.0
Hampton Township	986	903	832	-7.9
Hastings (part)	18,201	22,172	22,152	-0.1
Inver Grove Heights	29,751	33,880	35,791	5.6
Lakeville	43,128	55,954	69,490	24.2
Lilydale	552	623	809	29.9
Marshan Township	1,263	1,106	1,153	4.2
Mendota	197	198	183	-7.6
Mendota Heights	11,434	11,071	11,744	6.1
Miesville	135	125	138	10.4
New Trier	116	112	86	-23.2
Nininger Township	865	950	865	-8.9
Northfield (part)	557	1,147	1,261	9.9
Randolph	318	436	466	6.9
Randolph Township	536	659	760	15.3
Ravenna Township	2,355	2,336	2,354	0.8
Rosemount	14,619	21,874	25,650	17.3
Sciota Township	285	414	460	11.1
South Saint Paul	20,167	20,160	20,769	3.0
Sunfish Lake	504	521	522	0.2
Vermillion	437	419	441	5.3
Vermillion Township	1,243	1,192	1,290	8.2
Waterford Township	517	497	538	8.2
West Saint Paul	19,405	19,540	20,615	5.5
Dakota County Total	**355,904**	**398,552**	**439,882**	**10.4**

The following map shows population concentrations in the county, with highest densities in older communities of West St. Paul, South St. Paul, and Hastings. New high-density housing areas are also found in parts of Burnsville, Apple Valley, and Eagan.

Figure 3.23 Population Densities, 2020 Census

Diversity

The 2019 US Census Bureau ACS 5-Year data show that 18 percent of the county population identified as a group other than "White alone." Since 2000, racial and ethnic diversity has doubled in Dakota County.

School children in the county are more diverse than the countywide data suggest. Data from the Minnesota Department of Education (MDE) show 37 percent of students enrolled in county schools were from Communities of Color in 2020. School children in Dakota County 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 3.24 illustrates these trends.

Figure 3.24   Median Sales Price of Residential Property for Dakota County

Median Appraised Value of Single Family Properties in Dakota County

About 70 percent of Dakota County's housing stock is of free-standing single-family dwellings. Multi-unit or attached dwellings are about 20 percent of the county's housing.

Seventeen manufactured housing parks are located within cities in 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 3.25.

Figure 3.25 Manufactured Housing Parks in Dakota County

Labor Statistics

In 2018, Dakota County had a monthly average of 241,966 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 51 percent of residents travel elsewhere for work, with Hennepin County, MN being the most likely destination. This is higher compared to the State as a whole, which is only 34 percent. Commute times for residents are also longer than the state average with almost 37 percent of residents commuting over 30 minutes to work.

191,363 jobs were located in Dakota County in 2019. Approximately 55 percent of workers commute in from other counties. Figure 3.26 shows changes in the job market in Dakota County over time.

The COVID-19 Pandemic has had profound impacts on overall employment levels, earnings, labor markets, and commuting patterns. In mid-2021, the long-term implications of the pandemic and what economic recovery will look like in the near-term are unclear.

Figure 3.26 Jobs in Dakota County

Source: MN Department of Employment and Economic Development

Income Levels

Without adjusting for inflation, Dakota County's median household income (half of households earned less and half earned more) rose from $76,213 in 2014 to $86,036 in 2019. Dakota County ranks fourth out of the seven Twin Cities Metropolitan Area (TCMA) counties, behind Scott ($102,152), Carver ($101,946), and Washington ($96,671) (U.S. Census, American Community Survey). Dakota County's overall poverty rate of 6.27 percent in 2018 ranked in the third highest of metropolitan counties but has decreased from its 2013 high of 7.9 percent.

Figure 3.27 Poverty in Dakota County

Household poverty in Dakota (Counties)
Percent of households below poverty level

Data Source: U.S. Census Bureau American Community Survey

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 34 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)

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 assist 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.
- 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 ¾ 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 938 beds (2021)

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:

- 155 licensed child-care centers with a capacity of 14,296 children (2021)

- Approximately 467 actively licensed family child-care providers with a total capacity of roughly 5,533 children (2021)

Homeless Populations

In recent years in Dakota County, the number of people experiencing homelessness has increased, with nearly 1,750 people homeless and unsheltered in 2020-2021. Reasons for this increase include limitations in the affordable housing supply relative to income levels, but also increased outreach has improved estimation methods for tracking homelessness. The pandemic had multiple impacts on homelessness, including job losses, increased stress, and less ability for households to take in friends and relatives due to the need to work and school from home in limited space.

Sheltering capacity substantially increased due to the pandemic in 2020 with the addition of hoteling agreements. The combination of the existing shelters serving homeless populations and hoteling provided 155 rooms in 2020, which sheltered varying numbers of individuals, couples, and families.

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 has Shelter Facility Agreements with five locations in Dakota County, with a total capacity of 803 beds. Additional and alternate sites can be identified, inspected and opened at the time of an event as needed.

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 requires an inventory and description of hazards that are most likely to occur. The following potential natural and man-made hazards were considered to be most relevant for the purposes of this plan.

Table 4.1   Hazards Profiled

Hazard	Reason for Identification
Civil Disturbance*	Likely Adverse Impact
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 2020 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:

- 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

Hazard Definitions/Classifications
Frequency of Occurrence: Probability - How often hazard can be expected to occur.
1 = Unlikely: <1 percent probability of occurrence in the next 100 years.
2 = Occasionally: 1-10 percent probability of occurrence per year, or at least one chance in next 100 years.
3 = Likely: >10 percent but <100 percent probability per year, at least one chance in next 10 years.
4 = Highly Likely: 100 percent 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

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. Vulnerability is based on the common set of definitions/classifications outlined above.

Natural Hazards in Dakota County

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. Groundwater drawdown may cause wells to go dry, impacting residents with shallow private wells first.

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.

Irrigation wells could also go dry depending upon the severity of the drought and depth of the well. In addition, reductions in crop 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, as can deeper groundwater wells. If drinking water aquifer capacities become depleted, this would potentially impact water availability 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. Drought regularly occurs in Dakota County.

Tracking drought is challenging due to the many definitions and measurement protocols. The *Drought Monitor* website, a partnership among Federal agencies and the National Drought Mitigation Center at the University of Nebraska-Lincoln tracks drought conditions nationwide and provides drought information maps at a county level. The Drought Monitor synthesizes multiple drought related indices and impacts based on consensus of federal and academic scientists. Some of those indices include: the *Palmer Drought Severity Index*, the *Climatic Prediction Center Soil Moisture Model* (which takes observed precipitation and temperature and calculates soil moisture, evaporation, and runoff), the *USGS Weekly Stream Flow Map* (based on an average daily stream flow), the *National Climatic Data Center's Standardized Precipitation Index* (which analyzes precipitation based on soil moisture and groundwater storage), and the *Objective Drought Indicator Blends* (which approximates drought-related impacts that respond to precipitation such as wildfire danger, topsoil moisture, and pasture conditions).

Table 4.3 lists the Drought Monitor's intensity ratings followed by a description of possible impacts. Five of the indices referenced above are also included on the Drought Monitor Severity Classification.

Table 4.3 Drought Monitor: Drought Severity Classification

Description	Possible Impacts	Palmer Drought Index	CPC Soil Moisture Model (Percentiles)	USGS Weekly Streamflow (Percentiles)	Standardized Precipitation Index (SPI)	Objective Drought Indicator Blends
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	21-30
Moderate Drought	Some crop/pasture damage; fire risk high; streams, reservoirs, or wells low; shortages developing, or imminent, voluntary restrictions requested.	-2.0 to -2.9	11-20	11-20	-0.8 to -1.2	11-20
Severe Drought	Crop or pasture losses likely; fire risk very high; water shortages common; restrictions imposed.	-3.0 to -3.9	6-10	6-10	-1.3 to -1.5	6-10
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	3-5
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	0-2

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

The U.S. Drought Monitor (USDM) national map released every Thursday shows parts of the U.S. that are in drought. The USDM synthesizes the best available data and uses ground-truthing and information on drought impacts via a network of more than 450 observers across the country, including state climatologists, National Weather Service staff, Extension agents, and hydrologists.

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. Figure 4.1 shows Dakota County between 2000 and 2021 and indicates extended periods of moderate and/or severe drought in 2012, 2013, 2014, and 2015.

Figure 4.1 U.S. Drought Monitor, Dakota County 2000-2021

Source: https://www.drought.gov/states/minnesota/county/Dakota

As this update was being drafted, Minnesota was experiencing its worst drought in a decade, with substantial areas of the state in extreme and exceptional drought. In prolonged severe droughts, concerns arise in the Twin Cities Metropolitan Area for public water supplies that draw from the Mississippi River. As occurred in the 1980's, August of 2021 saw the drying up of many small streams and exposure of areas of the Mississippi riverbed.

Figure 4.2 Minnesota Drought: August 2021

Table 4.4 shows 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 1971-2020) is 30.60 inches.   Note: data do not reflect the drought of 2021.

Table 4.4   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:	Limited

Plans and Programs for Drought

Water plan. The Dakota County 2040 Comprehensive Plan and the 2020-2030 Dakota County Groundwater Plan identify major and minor aquifers serving the county. The Groundwater Plan identifies goals, strategies, and tactics to address groundwater quantity concerns.

Watering Restrictions. All municipalities in Dakota County have a Water Supply Plan and ordinances in place that allow them to enforce watering restrictions and bans if needed.

Extreme Temperatures

Hazard Description

Extreme heat is a persistent period of temperatures significantly above normal, often accompanied by high humidity. Extreme heat can cause hyperthermia, or "heat stroke," in which the body cannot maintain proper temperatures. Severe cases may result in death. Children, elderly people, persons without air conditioning, the sick, disabled and overweight are at greatest risk of heat stroke, although anyone can be affected. Extreme heat can stress crops and livestock thus reducing yields and can cause widespread power outages from increased electrical demand from air-conditioning. Of weather-related hazards, extreme heat is among the deadliest.

Heat Index (HI) measures the effect of combined heat and humidity on the human body, and accurately measures how hot it 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 daytime heat indices in excess of 105°F (41°C) combined with nighttime low temperatures of 80°F (27°C) or higher are forecast for two consecutive days. The National Weather Service's Heat Index Chart shown below (Figure 4.3) shows the relationship of ambient air temperature and relative humidity to the likelihood of health risk.

Figure 4.3   Heat Index Chart

Temperature (°F)

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

Likelihood of Heat Disorders with Prolonged Exposure or Strenuous Activity
■ Caution ■ Extreme Caution ■ Danger ■ Extreme Danger

Source: National Weather Service

Dew point is the temperature to which air must cool at constant pressure to become saturated. The higher the dew point is, the more uncomfortable people feel. Minnesota's Climatology Working Group found that summer dew points in the Twin Cities increased over the past century by 0.46 of a degree.

Extreme cold is a persistent period of low temperatures with moderate to strong winds resulting in dangerous wind chill temperatures. Exposure to extreme cold can lead to frostbite, hypothermia or death. The National Weather Service updated the Wind Chill Temperature index in 2001 (Figure 4.4) to describe the 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.

Figure 4.4   National Weather Service Wind Chill Chart

Temperature (°F)

Wind (mph)	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Frostbite Times ■ 30 minutes ■ 10 minutes ■ 5 minutes

$$\text{Wind Chill (°F)} = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$$

Where, T= Air Temperature (°F) V= Wind Speed (mph)   *Effective 11/01/01*

Source: National Weather Service, 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. 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 eight 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 provides dates on which the maximum temperature recorded at this station was at or greater than 104°F.

Table 4.5   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 2009 and 2019 in Minnesota, one heat-related fatality occurred in 2011, 3 heat-related fatalities occurred in 2012 and 1 heat-related fatality occurred in 2013.

Winter Cold History - January is typically the coldest month in Dakota County, with average daytime highs of 22°F and average nighttime lows of 6°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 4.6 summarizes dates with a minimum air temperature at or below -33°F in Minneapolis.

Table 4.6   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 4.7   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
5	2009	-	-	-	-
4	2019	-	-	-	-
4	2021	-	-	-	-

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.

From 2009 to 2019, the National Weather Service recorded 30 cold-related fatalities in Minnesota: four in 2019, two in 2018, two in 2017, eight in 2016, one in 2015, six in 2014, two in 2012, one in 2011, and four in 2009. The National Climate Data Center recorded three extreme cold weather events between 2016 and 2019:

1 16-17/2016:   Wind chills in Dakota County reached -40° F

12/18/2016:   Wind chills in Dakota County reached -50° F

1/29-31/2019: Wind chills in Dakota County reached -55° 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 reach or 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 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°F or greater, with a minimum nighttime heat index of 75°F 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°F are expected. A Wind Chill Warning is issued when wind chills of -35°F 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.

Flood (Flash and Overland Flood)

Hazard Description

Flooding is the inundation of land caused 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 potential impacts to public safety, housing, property, and infrastructure.

Two types of flooding occur in Dakota County: riverine (overland) flooding and flash flooding. Riverine flooding occurs when a waterway exceeds its 'bank full' capacity and inundates adjacent floodplain. Floodplain is the 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 localized, resulting from intense rainfall across a limited geographic area. During extended periods of intense rainfall, storm water conveyance systems can be overwhelmed, resulting in neighborhood flooding.

Figure 4.5 1965 Flooding at South St. Paul Stockyards (Dakota County Historical Society)

In 1969, Minnesota enacted the State Floodplain Management Act (Minnesota Statutes, Chapter 103F), which emphasizes a comprehensive flood protection approach that includes 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 residents can purchase flood insurance.

The Floodplain Management Act was amended in 1987 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 comply with federal and state 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 ordinance regulates use and orderly development of shorelands within the unincorporated areas of the County, to promote public health, safety, and welfare, and to protect, preserve, and enhance natural resources. The ordinance also regulates use and development of floodplain areas within the unincorporated areas of the county to minimize loss of life, threats to public health and safety, and private and public economic loss caused by flooding. Floodplain provisions of this ordinance comply with the rules and regulations of the National Flood Insurance Program codified as 44 CFR Parts 59-78, 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 4.8 below gives descriptions of the various flood zone areas as defined on the Flood Insurance Rate Maps for Dakota County.

Table 4.8   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 percent 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 percent annual chance flood; areas of 1 percent 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 percent 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.

Figure 4.6 illustrates flood prone areas in Dakota County and is a generalization of the combined Flood Insurance Rate Map flood boundaries.

The map illustrates 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.

Figure 4.6 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 Xcel Energy's Black Dog plant.

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 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. 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.

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 2005 and 2019, with no deaths and property damage exceeding $1.1 million (Table 4.9).

Table 4.9 Summary of Flood Events for Dakota County, 2000-2019

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

Location	Date	Flood Type	Property Damage
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
Burnsville	8/16/2016	Flash Flood	$0
Lakeville	8/16/2016	Flash Flood	$0
Miesville	7/19/2017	Flash Flood	$0
Burnsville	3/17/2019	Flood	$0
Total			**$221,160,000**

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.

	Overland Flood	Flash Flood
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 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 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 has the authority to administer the National Flood Insurance Program within the 13 unincorporated townships covering the lower two-thirds of the County. Participating cities have their own floodplain ordinances modeled on the DNR minimum standards and administer their own floodplain program. FEMA-designated floodplains 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. 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 programs. FEMA-designated floodplains identified on Flood Insurance Rate Maps have been digitized and incorporated into the County's GIS coverage available to all communities.

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. The DNR provides technical floodplain assistance through 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 National Weather Service program enlists trained volunteers to spot severe storm conditions and report this information to the NWS. Trained severe weather spotters in Dakota County report directly to their respective public safety answering points (PSAP's) when severe weather is observed.

Severe Weather Awareness Week. Dakota County Emergency Management personnel annually conduct severe weather training workshops in the spring 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. Six county public safety answering points (PSAP's) activate 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.

Infectious Disease Outbreak

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 a significant public health problem globally and locally.

The emergence of previously-unknown infectious diseases, the spread of diseases beyond traditional geographic locations, the spread of diseases from animals to humans, and the re-emergence of diseases eliminated or significantly reduced 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 (DCPH) 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. A person inhaling air that contains TB bacteria 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 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 4.10   Number of Active TB Cases/Year Residing in Dakota County

Year	2016	2017	2018	2019	2020
Cases	6	7	14	7	9

Pertussis

Dakota County has been experiencing a resurgence of pertussis (whooping cough) since 2004, and pertussis is considered endemic in Minnesota. Pertussis is caused by the *Bordatella 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. Waning immunity in school age children and adults who have not received a pertussis booster (or Tdap) continue to be sources 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 the county.

Table 4.11 Number of Pertussis Cases Per Year in Dakota County

Year	2016	2017	2018	2019	2020
Cases	82	42	26	47	9

Measles

Measles is a highly contagious disease caused by the measles virus. Initial symptoms often include fever, cough, runny nose, and watery eyes. The most identifiable symptom of measles is a rash that usually starts 3-5 days after symptoms begin. Measles spreads when an infected person coughs or sneezes. When susceptible people breath contaminated air or touch an infected surface and then touch their eyes, nose, or mouth, they can become infected. Measles virus can live for up to 2 hours in an airspace after the infected person leaves. An infected person can spread measles starting four days before through four days after rash onset.

Measles can be effectively prevented with the measles vaccine. Two doses of the measles vaccine are about 97 percent effective at preventing measles disease. Measles is considered to be eliminated from the U.S. which means it is no longer constantly present. However, measles is still common in many parts of the world, and every year there are cases of unvaccinated travelers who bring measles into the U.S. These cases can quickly lead to outbreaks if the disease is spread to other susceptible people.

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 annual influenza-related deaths in the U.S. ranged from 3,000 to 49,000. On average 200,000 people are hospitalized yearly for conditions associated with influenza. 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 expected to circulate 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.

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. 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.

Infectious Disease Pandemic
Hazard Description
A pandemic is a global outbreak of a contagious infectious disease.

SARS-CoV-2 (COVID-19)
SARS-CoV-2 is a novel coronavirus that causes the disease COVID-19. SARS-CoV-2 was first identified at the end of 2019, and it quickly began spreading around the world. In March 2020 the World Health Organization declared the COVID-19 outbreak a global pandemic. On March 6, 2020 the Minnesota Department of Health confirmed the first case of COVID-19 in Minnesota, and on March 12, 2020 the first case was identified in Dakota County.

SARS-CoV-2 is transmitted through virus-containing respiratory droplets and airborne particles that are exhaled by an infected person. The incubation period for SARS-CoV-2 is up to 14 days after exposure, and some people may become infected but never develop symptoms (asymptomatic). Some people who get COVID-19 continue to experience long-term effects weeks or months after they became infected; this is called long COVID.

Treatment of COVID-19 primarily involves treating the symptoms and supportive care. A number of vaccines have been developed that are very effective at preventing COVID-19. Other preventative measures include isolation and quarantine, physical distancing, and face masks and coverings.

COVID-19 is likely to continue to be transmitted in susceptible communities and populations, but effective vaccination strategies can sufficiently reduce transmission and the emergence of viral variants so that community mitigation strategies to control widespread transmission are no longer needed.

Similar to the 1918 Spanish Influenza pandemic, the COVID-19 pandemic has presented distinct surges in infection rates and deaths or "waves." The emergence of SARS-CoV-2 variants (viral mutations) has contributed to resurgences in different parts of the world at different times. As of plan drafting in late 2021, the U.S. was experiencing its fourth and fifth waves, largely driven by the highly contagious Delta and Omicron variants.

Table 4.12 COVID-19 Infections and Deaths (March 2020-December 16, 2021)

Geographic Area	Infections	Deaths
World*	272,683,000	5,334,798
U.S.*	50,453,655	803,181
Minnesota**	975,447	10,057
Dakota County***	70,918	611

* https://coronavirus.jhu.edu/
** https://mn.gov/covid19/data/covid-dashboard/index.jsp
*** https://experience.arcgis.com/experience/a654394207ac44239af0792303664db3

Pandemic Influenza

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 percent 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. Public health pandemic flu preparedness remains a priority at the federal, state and local levels.

Lessons learned from the H1N1 pandemic were extremely valuable in facing the challenges of COVID-19, even with the far greater reach, magnitude, and duration of the COVID-19 pandemic. DCPH continues to learn from the H1N1 and COVID-19 response efforts, especially strategies for reaching marginalized and special needs populations during emergencies.

Previous Occurrences

Dakota County, along with the rest of the world, has been impacted by the COVID-19 pandemic, highlighting the need for infectious disease preparedness and mitigation planning. Dakota County has also continued to experience clusters of other infectious diseases including tuberculosis and pertussis. Dakota County's entire 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 communities 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 Outbreaks and a Pandemic event.

	Infectious Disease Outbreak	**Pandemic**
Frequency of Occurrence:	Likely	Occasional-Likely
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, Pandemic, and Public Health 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.

Disease Prevention & Control 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. Dakota County Public Health operates within a system of guidelines and standards set by the state (MDH).

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

Metro Health & Medical Preparedness Coalition. The coalition is comprised on hospitals, clinics, emergency manager, emergency medical services, long term care, public health, and hospice and home care from across the Twin Cities metro. The goal of the coalition is to facilitate collaboration around planning, response, and recovery activities for events or emergencies with public health and medical implications.

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.

Communication and consultation for local healthcare providers. Dakota County Public Health Department staff provide consultation services on an as-needed basis for healthcare clinics located in the county. The Public Health Department also has various communication channels to reach clinic and hospital partners with important public health news and updates.

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. It primarily provides consultative services to citizens regarding indoor air, radon, and mold and provide inspection services for childhood lead and public health nuisances. Public Health works collaboratively with state agencies to mitigate, respond and recover from environmental emergencies.

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 as a hazard in 2016 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. Areas with potential for landslides are as follows:

- River bluffs along adjacent to the Big Rivers trail in Lilydale, Mendota, and Mendota Heights.
- River bluffs above CSAH 54 in Ravenna Township
- Steep slopes along the MRRT in Inver Grove Heights, Rosemount, and Nininger Township

Previous Occurrences

Dakota County received 12 to 13 inches of rain in 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 landslides at the University of Minnesota Hospital in Minneapolis 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.

Since the last plan update in 2016, landslides have occurred occasionally in the same areas along the Mississippi and Minnesota rivers. Multiple minor slides have occurred on the Big Rivers Trail in the recent past. Two slides in 2020 resulted in trail closures. One slope failure undermined a section of path and a second failure deposited rock and debris on the trail. Landslides and erosion on the bluff above County Highway 54 has deposited debris on the roadway and road closures after large events.

Figure 4.7 June 2014 Mudslide, Big Rivers Regional Trail, Dakota County

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.

Tornado

Hazard Description

The National Weather Service defines a tornado as a "violently rotating column of air extending from a thunderstorm to the ground." Tornados 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 tornados are reported in the United States, resulting in approximately 80 deaths and more than 1,500 injuries.

Although tornados 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. Tornados occur most frequently from April to June. While most tornados 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 4.13 Fujita Scale

Fujita Scale	Wind Estimate (Mph)	Typical Damage
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 thrown 100+ meters (109 yards); trees debarked;

Source: NOAA Storm Prediction Center, 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 accounts for construction type and materials. The Enhanced Fujita Scale is shown in Table 4.14.

Table 4.14 Enhanced Fujita Scale (EF)

Enhanced Fujita Scale (EF)	EF Wind Estimate (MPH)
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

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. Figure 4.8 shows 'Significant' (≥F1) tornados from 1986-2015.

Figure 4.8   Significant Tornado Occurrences by Location, 1986-2015
Source: Storm Prediction Center, NOAA

Previous Occurrences

The National Weather Service documented four tornado fatalities in Minnesota in the past decade. A review of historical tornado events in Dakota County from 1965 to 2019 is presented in Table 4.15.

Table 4.15 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

Location	Date	Magnitude (Fujita Scale)	Property Damage
Dakota	7/27/1987	F1	$250,000
Hastings	7/06/1996	F0	$0
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
Lilydale	11/10/2012	F0	$100,000
Randolph	9/20/2018	F0	$0
New Trier	9/20/2018	F0	$0
Castle Rock	8/13/2019	F0	$0
Total			**$9,280,000**

Source: National Climatic Data Center (NCDC). Note: zero (0) values may indicate missing data.

Figure 4.9 Castle Rock Tornado 1920
Dakota County Historical Society

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

Figure 4.10   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

Plans and Programs for Tornadoes

Skywarn Storm Spotter 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.

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 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. Six county public safety answering points (PSAP's) activate the siren system in Dakota County for either weather or hazardous materials incidents.

Debris Management Plan. Environmental Resources Department regulates and provides guidance on management of solid waste. The County's debris management plan offers general guidance, resources, and an application for emergency waiver of solid waste requirements. An update of the plan was initiated in 2021.

Violent Summer Storms

Hazard Description

Violent summer storms include thunderstorms, lightning, hailstorms and windstorms, which can occur with humid air moving upward because of unequal surface heating, lifting of warm air along a frontal zone or diverging upper-level winds that draw air up beneath them. Major summer storm types include:

Air mass thunderstorms (also called scattered thunderstorms) typically develop in the warm, humid air of summer months; form in the afternoon in response to 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 can produce winds of at least 58 mph (50 knots), hail at least ¾" in diameter, and structural damage.

Derechos are widespread, long-lived, straight-line (non-rotational) windstorms associated with a fast-moving group of severe thunderstorms known as mesoscale convective systems. Derechos can cause hurricane-force winds, tornadoes, heavy rains, flash floods, and destruction over a wide swath that can reach many miles in length.

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, most intense stage of the thunderstorm. Wind speed is measured in knots (1 knot = 1.15 mph). Table 4.16 below shows an appended Beaufort Wind Scale and the relationship of wind speed in knots, miles per hour, and typical effects on land.

Table 4.16 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

Figure 4.11 illustrates strong wind events (straight line) that have occurred in Dakota County.

Figure 4.11   Significant 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 are 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 are struck in an average year. Lightning is a deadly natural hazard in the U.S., just 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 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 4.12 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 4.17.

Figure 4.12   Significant Hail Events in Dakota County

Table 4.17   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 4.13 below, Dakota County is located along a band of the northern U.S. that experiences winds equal to or greater than 50 knots several times per year.

Figure 4.13   Intense Thunderstorm Wind Regions, U.S. 1986-2015

Mean Number of >50-knot Wind Days per Year
Within 25 Miles of a Point
1986 - 2015

Source: Storm Prediction Center, NOAA, Storm Prediction Center WCM Page (noaa.gov)

Previous Occurrences

According to the National Climatic Data Center, 210 thunderstorms were reported for Dakota County from 1960 through 2019, with nineteen injuries and $181.15 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, and $7 million for sever storm damage in September of 2016.

Lightning impacts all regions of Dakota County. Fifteen reported lighting strikes occurred from 1960 through 2015, with a total of $2.43 million in property damages. Lightning struck a park picnic shelter in Lakeville in August of 2020, with three people requiring medical attention.

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 4.14 Lightning Flash Density per Square Kilometer per Year

Based on NCDC records from 1960 through 2019, there were 190 hail events of at least 0.75" in diameter: on at least 50 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.

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

Plans and Programs for Violent Summer Storms

Skywarn Storm Spotter 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.

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 County Warning Point, with 24-hour capability. The Warning Point is responsible for 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.

Debris Management Plan. Environmental Resources Department is regulator and advisor for management of solid waste. The County's debris management plan offers general guidance, a list of resources, and an application for emergency waiver of solid waste requirements. An update of the plan was initiated in 2021.

Figure 4.15 School Destroyed in 1920 Castle Rock Tornado, 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 six or more inches in a 12-hour period, and eight 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 2019, the National Climatic Data Center recorded the following severe winter events:

- <u>18 heavy snow events</u>, occurring in 1996 (5 events), 1999, 2000, 2001, 2005, 2008 (2 events) and 2019 (3 events)
- <u>4 blizzards</u>, occurring in 2009, 2010, 2018, and 2019
- <u>3 ice storms</u>, occurring in 1996 (2 events) and 1998
- <u>59 total winter storm events</u> over two decades, with an event nearly every year

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 -25ºF are expected. A Wind Chill Warning is issued for wind chills of -35ºF.

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.

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 to tracks is another concern, as sparks from trains can ignite grass fires.

Previous Occurrences

According to the Minnesota State Fire Marshal, more than 1,600 annual wildfires incur estimated losses 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. DNR also monitors wildfires and issues "Red Flag" warnings when conditions are favorable for wildfires.

State land management. The DNR manages Fort Snelling State Park and the Minnesota Valley State Recreation Area, which are both partly within Dakota County and are located within river bottoms where wildfire may be more likely to occur. DNR has established procedures to address wildfires within these areas. DNR also conducts prescribed burns in its Wildlife Management 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 areas, and uses controlled burns as a prairie maintenance tool, under DNR permitting. Prescribed burns temporarily reduce vegetative fuel loads.

Technological and Human-Induced Hazards in Dakota County

Civil Disturbance

Hazard Description

Title 18 of the United States Code defines civil disorder and lists crimes associated with civil disorder. Section 231 of Chapter 12 defines civil disorder as: "any public disturbance involving acts of violence by assemblages of three or more persons, which causes an immediate danger of or results in damage or injury to the property or person of any other individual…(a)(1)…use, application or making of any firearm, or explosive or incendiary device, or technique capable of causing injury or death to persons…or…(a)(2)…transports or manufactures for transportation in commerce any firearm, or explosive or incendiary device, knowing or having reason to know or intending that the same will be used unlawfully in furtherance of a civil disorder…or…(a)(3)…commit any act to obstruct, impede, or interfere with any fireman or law enforcement officer lawfully engaged in the lawful performance of official duties incident to and during the commission of a civil disorder…".

Civil disorder can result when groups or individuals believe that their needs or rights are not being met by society or current political systems. When disruption requires intervention to maintain public safety, prevent injuries and deaths, and avoid significant property damage, it has become civil disturbance.

Civil disturbance covers a broad range of actions, some of which may violate criminal law, and can include riots, acts of violence, insurrections, unlawful obstructions, and protests that disrupt law and order. These actions can be precipitated by a broad range of events, such as economic instability, human-caused or natural disasters that disrupt infrastructure, racial tension, religious conflict, and political conflict. A civil disturbance event may have more than one precipitating situation and can involve multiple groups with different intentions and agendas, making them highly complex situations.

Geographic Location

For Dakota County, civil disturbance may be more likely to occur in urban areas near public institutions (state, county, and city offices) and areas that can accommodate large numbers of people. Civil unrest can occur in commercial areas and can involve major transportation routes, such as freeways.

Previous Occurrences

Civil disturbance events in the Twin Cities Metropolitan Area date back to the 1800's. The following table identifies several events with documented casualties (injuries and/or deaths) and damages.

Table 4.18 Civil Disturbance Events in the Twin Cities with Documented Injuries, Deaths, or Damages

Dates	Event	Injuries	Deaths	Damages
May 16-Aug 21, 1934	Minneapolis General Strike, union strike	26+	4	unknown
July 20-23, 1967	Minneapolis Riots (Long Hot Summer of 1967), racial tensions	24	0	$4.2M
May 26-June, 2020	Aftermath of George Floyd murder by Minneapolis Police, racial tensions. Metro wide impacts, nation-wide impacts		2	$550+M
Aug 26-28, 2020	Minneapolis False Rumors Riot, racial tensions	2	0	
June 13, 2021	Aftermath of Winston Smith killing in Minneapolis, racial tensions	4	1	

Vulnerability

Civil disturbance can affect the following:

Social Element	Potential Impacts
Population:	Physical harm, fear, and disruption from normal activities
Responders:	Targets for violence, encounter interference in carrying out their duties
Operations:	Disruption in normal operations and essential services
Property:	Damage through violence, arson, and looting
Government Facilities:	Targets for protests and/or violence
Infrastructure:	Targets for protests and/or violence
News Media:	Can become targets for violence
Economic Stability:	Long-term impacts to targeted areas
Public Confidence:	Long-term decline in confidence in government to stem violence and damage

The following table summarizes the overall vulnerability to civil disturbance.

Frequency of Occurrence:	Likely
Warning Time:	3 to 6 hours
Geographic Extent:	County-wide or greater
Likely Adverse Impact:	Critical

Plans or Programs for Civil Disturbance

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.

Mutual Aid Agreements. Cities and the county have several mutual aid agreements to ensure assistance to partners in a disaster. Agreements include labor and equipment. The County Special Operations Team (SOT) and South Metro SWAT are supported by mutual aid agreements.

Emergency Operations Plan (EOP). Dakota County's EOP outlines procedures that guide response in a broad range of disasters, and addresses command, operations, logistics, planning, communications, and finance. Procedures for requesting activation of the National Guard are included in the EOP.

Activation of Emergency Operations Center (EOC). Dakota County's secure EOC provides dedicated space for assembling its emergency operations team with the necessary technology, equipment, and resources.

Continuity of Operations Plan (COOP). The COOP guides county response to ensure that its critical business services continue to operate under emergency conditions.

Emergency Response Training and Exercises. The county and its partners regularly conduct training tabletop and field exercises for a range of disasters. The Dakota County Mobile Field Force regularly conducts quarterly training.

County Public Awareness and Information Outlets. County resources to notify and update the public include an Integrated Public Alert and Warning System (IPAWS), webpage, Social Media, and traditional media releases and news conferences.

Curfew Activation. Dakota County has the authority to impose curfews to protect public safety.

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.

As recent headlines attest, no company, organization or government agency is immune to targeted attacks. Data reported by Risk Based Security[1] revealed close to 4,000 publicly reported data breaches in 2020, a total actually lower than in 2019, although the number of records exposed exceeded 37 billion, the most documented to-date. Since the 2016 Plan update, an increase in ransomware attacks and growing sophistication of the types and methods of attacks has raised risk levels to the highest known. Victims have included consumers, government, businesses, healthcare (the most victimized sector in 2020), and even data security/technology firms. Cyber-security stakes were raised in 2020 amid the COVID-19 pandemic, as many workplaces shifted employees to remote work situations and faced enormous challenges in keeping digital work environments secure.

Table 4.19 Recent Cyber Attacks, 2019-2021

Recent Cyber Attacks	# Records Exposed
T-Mobile, 2021	40,000,000
Blackbaud (and clients), 2020, ransomware	3,000,000
Star Tribune, 2020	2,192,857
Netsential (251 client law enforcement agencies), 2020	700,000
Allina and Children's Minnesota Health, 2020, ransomware	200,000
Quest Diagnostics/Optum360, 2019	11,500,000
SolarWinds (18,000 clients), 2019	unknown

Being prepared requires using a multi-layer strategy in which early detection, attack containment and recovery measures are considered together.

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[1] Risk Based Security: *2020 Year End Data Breach QuickView Report*

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 basis, 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:	County-wide or greater
Likely Adverse Impact:	Critical

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 quarterly online courses have been deployed to all staff to increase the awareness of cyber security threats and steps they should 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 1013 Data Practices; 3500 HIPAA; 6001 Acceptable Use of Technology Resources, 6003 Email Management, 6004 Information Security, 6005 Records Retention and Disposition; 6007 Mobile Devices, 6010 Cloud Computing, 6011 Information Security Incident Response.

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.

Organizational Restructuring to Focus on Cyber Security: IT security is a separate function with dedicated staff positions to work on cyber-attack prevention and response.

Annual Network Audit and Penetration Testing: annual audits and testing are conducted to identify potential weaknesses and strengthen system security.

New Software Tools and Analytics: strengthen security of systems. Examples include:

- Multifactor authentication
- Increased stringency of password requirements
- Removal of local administration rights

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 mis-operation 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 mis-operation 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 mis-operation will likely 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.

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 at least 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 4.20   NID Dams in Dakota County

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

Source: National Inventory of Dams, 2021

The two high hazard potential dams in Dakota County are the Lake Byllesby hydroelectric dam system (FERC-regulated) in Randolph Township and the Sunset Lake Dam in Burnsville. Probable maximum flood event studies and dam breach scenarios are required for High Hazard Dams. Potential failure mode analyses and inundation maps for high hazard dams are accompanied by Emergency Action Plans, periodic exercises, and annual safety inspections.

In addition to the NID dams listed above, several flood control levees along major rivers are located in Dakota County. Levees along the Minnesota River and dikes around a Burnsville quarry and floodplain industries (upstream of Interstate 35-W) provide limited flood protection. Flood-proofing measures also protect Northern States Power's Black Dog plant, downstream of Interstate 35-W.

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 protect the packing plants and the South St. Paul sewage plant. The barrier has 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. While the levee effectively prevents overbank flow, the reach is influenced by downstream floodwaters. Because of this, the levee does not provide 1-percent annual chance flood protection. The County Highway 47 bridge was rebuilt in 1958 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:	County-wide or greater
Likely Adverse Impact:	Critical

Sunset Lake Dam, Burnsville
The City of Burnsville maintains the dam and prepares/updates the Emergency Action Plan (EAP). City studies have considered a range of emergency scenarios including a 100-year storm event with and without structural failure of the dam and has identified residential and park properties at risk of flooding.

Byllesby Dam, Randolph Township
Dakota County maintains the Byllesby Dam and updates and exercises the EAP. The potential inundation area with a dam failure is approximately 7,000 acres and is predominantly located in Goodhue County. Much of the inundation area is open space – floodplain, natural areas, and farmland. The area of urban development is mostly in the City of Cannon Falls. Emergency evacuation maps and information about the flood warning system for Cannon Falls are online at: Lake Byllesby Dam & Reservoir| Dakota County.

Plans and Programs for Dam or Levee Failure

Dams and levees in Dakota County are maintained according to federal specifications. Dakota County Water Resources 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. The City of Burnsville owns and maintains the Sunset Lake Dam.

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.

Figure 4.16 High Water at the Lake Byllesby Dam, 2010
Dakota County Water Resources

Byllesby Dam Security & Structural Enhancement. Dakota County Water Resources 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 currently replacing the existing 100+ year old turbines and powerhouse with new, more efficient equipment to continue power production, which assists in offsetting costs associated with dam operations. The $30 million turbine replacement project is scheduled to be completed in 2022. With the upgrades and a projected output of 4 MW, the Byllesby Dam is ineligible for High Hazard Potential Dam grants through FEMA.

Sunset Lake Dam. The City of Burnsville prepares and updates an Emergency Action Plan for the Sunset Lake Dam, as reflected in the city strategies in Section VII. City staff report that they do not intend to pursue HHPD grant funds for the dam.

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 routinely used and stored in homes, businesses, health care facilities, and institutions. These products are also shipped daily on the nation's highways, railroads, waterways, and pipelines. 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 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 available information on materials traveling on the system daily, roads are a major concern in Dakota County.

Rail transportation also poses risks. Valve leakage and safety valve releases can be spill sources on pressurized and general service tank cars, covered hoppers, and inter-modal trailers/containers. Leaks can manifest themselves as odors or vaporous clouds from tanker top valves, spraying or splashing from tanker top valves, wetness on the 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. Facility plans identify significant hazards, likely release scenarios, the estimated population affected by a release, and specific steps to protect that population in the event of a release. The Prairie Island nuclear power facility in Goodhue County (roughly 20 miles southeast of the Dakota County seat of Hastings) also maintains a Nuclear Emergency Plan with the Nuclear Regulatory Commission, that plan lays out contingency actions in the event of a radioactive release.

Compared to most states, Minnesota ranks lower in the number of hazardous materials processing and handling facilities -- 34th in the nation for pounds of on and off-site releases from industrial and federal facilities (22,435,175 pounds) and 28th in the nation for total number of pounds of production-related waste managed (275,684,419 pounds).

The most concentrated and potentially hazardous materials are at fixed industrial facilities including oil and gas processing and storage facilities, pipelines, industrial complexes that use or process chemicals or petroleum products, highways, and railroads. Other sources include 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, this plan does not include detailed locations for hazardous materials handling and transport facilities. The EPA's Toxic Release Inventory database lists 23 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. 502 fixed-site facilities filed reports with the TRI statewide. The following table provides toxic release data by TRI categories for Dakota County in 2019.

Table 4.21   Toxic Release Inventory Category, Dakota County, 2019

Release Category	Pounds Released
Total On-Site and Off-Site Disposal or Other Releases	943,300
Fugitive Air Emissions	70,615
Point Source Air Emissions	502,446
Release to Surface Waters	302,395

Source: TRI Explorer, U.S.EPA. Release year 2019 National Analysis data set made available March 2021.

Previous Occurrences

The Environmental Protection Agency (EPA) maintains the Emergency Response Notification System (ERNS), a national database of oil and hazardous substance releases. 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. ERNS provides the most comprehensive data on release notifications of hazardous substances in the U.S.

Table 4.22   Annual ERNS Incidents Reported, State of Minnesota 2000-2019

Year	Incidents	Fatalities	Hospitalizations	Injuries	Evacuations	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
2015-2019	451	0	-	26	96	$165,600
TOTALS	**3,865**	**233**	**342**	**412**	**7,651**	**$15,372,508**
Average	**193**	**12**	**17**	**21**	**383**	**$768,625.40**

Source: https://rtk.rjifuture.org/rmp/states/

Table 4.22 shows 3,865 hazmat incidents in Minnesota from 2000 through 2019. Data was available in an aggregated format after 2015. Incidents resulted in 12 deaths, 17 hospitalizations, 21 injuries and 383 people evacuated annually (averaged). Property damage averaged nearly $1 million annually.

The U.S. Coast Guard maintains comprehensive data available through the National Response Center (NRC), the national point of contact for reporting all oil, chemical, radiological, and biological discharges into the environment in the United States and its territories. According to the NRC, 133 hazardous materials spills were reported in Dakota County from 2016 through 2020.

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 to Critical

Plans and Programs for Hazardous Material Incidents

State agency cooperation. Dakota County works with the MPCA and Minnesota Department of Health to address response and mitigation needs for hazmat events. MPCA maintains a 24-7 on-call Emergency Response Team to provide 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. Most County residents rely on groundwater for their drinking water, from a public supplier or a domestic well. Hazmat incidents put drinking water wells at contamination risk, and unused, unsealed wells can allow surface contamination to reach aquifers. Dakota County's Delegated Well Program collects well data for the Minnesota Well Index and County well database. In a spill, this data can help responders protect drinking water. 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 to residents with private 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. 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.

Figure 4.17 Anhydrous Ammonia Leak 2010, Randolph

Wakota CAER. Wakota CAER is a coalition of industry and public agencies that provides planning, training, and education for natural disasters, fires and explosions, chemical release emergencies, and mitigation of other major hazards. Wakota CAER serves communities in Washington and Dakota counties.

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

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 year-round threat.

Previous Occurrences
Statewide in 2019, cooking accidents caused the largest percentage of structure fires (49 percent), with careless burning and appliances as the second and third leading causes. Together they accounted for 64.1 percent of all structural fires. Residences are particularly vulnerable as they represent 75 percent of all structural fires and account for 90 percent of all structural fire deaths. Commercial and industrial structures are also vulnerable. Table 4.23 lists recent fire statistics for the County.

Table 4.23 Recent Fire Data for Dakota County

Year	Fire Runs	Damage ($ M)	Deaths	Avg. Loss/Fire
2019	761	$15.3	2	$23,916
2018	690	$13.4	4	$22,736
2017	724	$7.8	3	$12,081
2016	750	$10.3	1	$15,633
2015	766	$14.4	4	$21,505
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. Primary responders for structural fires in their district boundaries. Work with other departments on larger fires.

Fire educational services. Provide education to county residents, including:
- Business inspections
- Woodstove inspections
- Fire safety education at schools, churches, civic groups and county fair
- CPR training
- Coordination of education with other agencies, hospitals and schools
- Education on business fire prevention
- Chimney inspections
- Youth education at schools
- Fire prevention week

Zoning. City zoning departments, which include building inspectors, regulate new housing and enforce safety restrictions including setbacks, lot coverage, building materials and fire suppression systems. City fire marshals inspect commercial structures for fire hazards routinely.

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

Figure 4.18 Propane Explosion and Fire, West St. Paul, 1974
Dakota County Historical Society

Terrorism
Hazard Description

The FBI breaks terrorism into two categories: International Terrorism and Domestic Terrorism. International terrorism is defined as violent, criminal acts committed by individuals and/or groups who are inspired by, or associated with, designated foreign terrorist organizations or nations (state-sponsored). Domestic terrorism is defined as violent, criminal acts committed by individuals and/or groups to further ideological goals stemming from domestic influences, such as those of a political, religious, social, racial, or environmental nature.

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 quickly respond and recover from an attack or 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

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. The table below highlights terrorist incidents in the last 10 years in the United States with mass casualties, defined as 3 or more fatalities and/or wounded victims.

Table 4.24 Recent Terrorist Incidents in the United States (2010-2019)

Date	Incident	City, State	Fatalities	Wounded
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
9/24/17	Burnette Chapel Church of Christ shooting	Antioch, TN	1	7
11/5/17	First Baptist Church shooting	Sutherland Springs, TX	26	20
6/29/18	Capital Gazette shooting	Annapolis, MD	5	2
9/19/18	Masontown Borough Municipal Center shooting	Masontown, PA	0	4
10/27/18	Tree of Life Synagogue shooting	Pittsburgh, PA	11	6
4/27/19	Chabad of Poway Synagogue shooting	Poway, CA	1	3
5/31/19	Virginia Beach Municipal Center shooting	Virginia Beach, VA	12	4
8/3/19	Walmart shooting	El Paso, TX	23	22
12/29/19	West Freeway Church of Christ shooting	White Settlement, TX	2	2
Totals			**172**	**340**

Source: https://www.fbi.gov/investigate/terrorism

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 city, county, state, and federal officials. Dakota County officials work with city, county, 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.

Wastewater Treatment System Failure

Hazard Description

Wastewater Treatment System Failure is the failure or intentional release of part or all of wastewater treatment system that releases septic effluent into surface waters. All wastewater treatment plants are monitored regularly to meet National Pollutant Discharge Elimination System (NPDES) Permit requirements. Biological and chemical contaminants in effluent discharged to local rivers are routinely evaluated. 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, wastewater treatment is the responsibility of the Metropolitan Council Environmental Services Division (MCES.) Dakota County is served by four MCES Wastewater Treatment Plants (WWTP): Metro in Saint Paul (Ramsey County), Seneca in Eagan, Hastings, and Empire on the Vermillion River. The Council also manages a complex collector system. For more on these facilities, please see the Community Profile Section of this plan.

Municipal Treatment Facilities. The cities of Vermillion and Hampton own and manage wastewater treatment facilities, each serving 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, Waterford Township, and the cities of New Trier and Randolph. The City of Randolph is planning to construct a municipal wastewater treatment facility. The project is currently under design, with construction scheduled to begin in the fall of 2021 and finish in 2023. 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 plant 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

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 (microbiological and/or chemical) into public ground water and/or surface 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 pollutant discharges into U.S. waters and regulating surface water quality standards. Under the Clean Water Act, the EPA implemented the National Pollution Discharge Elimination System (NPDES) permit program to control pollutant discharges.

The EPA also is charged with protecting drinking water quality, 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 public water systems to comply with the health-related standards.

Geographic Location
Dakota County has 13 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 more than 100 contaminants, including pesticides, industrial contaminants, bacteria, nitrates, inorganic chemicals, radioactive elements, disinfection by-products, lead, and copper.

In Dakota County, approximately 8,000 homes, housing an estimated 22,000 residents, obtain their drinking water from private wells. Private wells, unlike public drinking water systems, are not federally regulated and therefore are not required to undergo routine monitoring to ensure that water contaminants are present at concentrations below levels of health concerns.

Previous Occurrences
Community Public Water Suppliers
Since 2016, only one municipal system in Dakota County has allowable maximum contaminant levels:

- City of Hastings (pop. 22,637): E. coli bacterial contamination, 2018

Although nitrate has not exceeded maximum contaminant levels, the cities of Hastings and Rosemount have elevated nitrate levels in their water supply. The City of Hastings currently has one water treatment plant to reduce nitrate in water from two of the wells.

Private Wells
The Ambient Groundwater Quality Study (study) sampled 77 private drinking water wells over a 20-year period (1999-2019) to characterize groundwater quality and to monitor long-term trends in groundwater contamination. The study found both natural and manmade chemicals at levels of concern. Of the 77 wells sampled over the course of the study, 62 percent contained concentrations of at least one chemical contaminant exceeding current Minnesota Department of Health (MDH) drinking water guidelines. Below is a summary of the percentage of wells with contaminants exceeding established drinking water guidelines.

Table 4.25 Water Quality Exceedances from the Ambient Groundwater Quality Study

Chemical	Percent of Wells Exceeding Drinking Water Guideline at Least Once between 1999-2019
Manganese	34 percent of wells sampled exceed the guideline of 0.100 mg/L (parts per million)
Nitrate	31 percent exceed the guideline of 10 mg/L
Cyanazine - herbicide breakdown products	22 percent exceed the guideline of 1 µg/L (micrograms per liter or parts per billion)
Gross Alpha	3 percent exceed the guideline of 15 pCi/L (picocuries per liter)

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

Frequency of Occurrence:	Likely
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. The Minnesota Department of Health has the primary responsibility for ensuring that each public water source meets these federal drinking water standards, and in some cases, the 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 Minnesota Well Code location and construction requirements. Community supply wells 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 be tested for nitrate, arsenic, manganese, and coliform bacteria and must meet the standards for nitrate, arsenic, and coliform bacteria at the time of construction and at the time of property transfer, or installation of water treatment system is required. In addition, the County Environmental Resources Department provides education and outreach to private well owners, recommends and facilitates regular, voluntary testing of private wells, and provides homeowners with information on preventative maintenance measures. To ensure safe drinking water, the County encourages private well owners to test their well water for coliform bacteria every year; nitrate at least every other year; and arsenic, lead, and manganese at least once.

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 Groundwater Plan. The 2020-2030 Dakota County Groundwater Plan provides the ten-year strategic plan for ensuring sufficient, high quality groundwater resources. The identified goals are (1) Water Quality: Groundwater and drinking water are free from unhealthy levels of contaminants; (2) Water Quantity: Groundwater is sufficient to meet human needs and sustain groundwater-dependent ecosystems; (3) Education: People who live and work in Dakota County are knowledgeable about water issues, conserve water, and prevent pollution; (4) Governance: Groundwater programs and services are efficient and effective.

Septic System Program. County Ordinance 113, "Subsurface Sewage Treatment Systems", provides standards, guidelines, and regulations for the compliance and enforcement of the proper siting, design, construction, installation, operation, maintenance, repair, reconstruction, inspection, and permanent abandonment of individual sewage treatment systems. Cities and townships administer their own subsurface sewage treatment system program with the exception of those that are under County septic authority. All municipalities within the county must have standards at least as restrictive as Dakota County Ordinance 113.

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SECTION V – DAKOTA COUNTY VULNERABILITIES

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 and vulnerabilities developed for Dakota County, MN, including unincorporated townships covered under this plan.

Hazard Rankings

Table 5.1 displays rankings updated in 2022 for each hazard profiled in Section IV, based on the likely frequency, warning time, geographic extent, and adverse impact. Cyber-attack received the highest ranking, followed by civil disturbance, structural fire, and tornado-violent summer storms.

Table 5.1 Dakota County Ranking of Hazards

Hazards Facing the County, 2021	Frequency	Warning Time	Geographic Extent	Likely Adverse Impact	Total
Cyber Attack	4	4	3	3	**14**
Structural Fire	4	4	1	3	**12**
Tornado	3	4	2	3	**12**
Violent Summer Storms	4	3	2	3	**12**
Hazardous Material Incidents	4	4	1	2.5	**11.5**
Flash Flood	4	4	1	2	**11**
Civil Disturbance	3	3	2	3	**11**
Terrorism	2	4	2	3	**11**
Water Supply Contamination	3	4	2	2	**11**
Pandemic	2.5	1	3	4	**10.5**
Infectious Disease Outbreak	3	1	3	3	**10**
Violent Winter Storms	4	1	2	3	**10**
Dam/Levee Failure	1	2	3	3	**9**
Drought	3	1	3	2	**9**
Landslide	2	4	1	2	**9**
Overland Flood	3	2	2	2	**9**
Extreme Temperatures	3	1	3	2	**9**
Wastewater Treatment Plant Failure	2	2	2	2	**8**
Wildfire	2	4	1	1	**8**

Hazard rankings used the following scoring system:
Frequency of Occurrence: How often is this hazard expected to occur?

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

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

FEMA NRI Natural Hazard Risk Ratings

Compared to the rest of the US, Dakota County has relatively low risk ratings for most natural hazards, according to the Federal Emergency Management Agency (FEMA) National Risk Index (NRI). Released in 2021, the NRI is an online tool and data source for estimating a relative risk index for natural hazards based on *expected annual loss*, *social vulnerability*, and *community resilience*. Dakota County's overall scoring is shown in Table 5.2.

- *Annualized losses* incorporate data for natural hazard exposure, annualized frequency, and historic loss ratios. Dakota County ranks relatively moderate in this score.

- *Social Vulnerability* measures the susceptibility of social groups to adverse impacts of hazards, based on data/models from the University of South Carolina's Hazards and Vulnerability Research Institute (HVRI) Social Vulnerability Index (SoVI).[2] The index uses 29 socioeconomic variables, such as age (very young or very old), income, household structure, housing, ethnicity and race, English proficiency, and others. Dakota County ranks very low in this score.

- *Community Resilience* is the third index, also based on USC-HVRI work. It includes 49 indicators that measure resilience from the social, economic, community capitol, institutional capacity, housing/infrastructure, and environmental perspectives. Dakota County ranks very high in this score.

Table 5.2 NRI Overall Ratings for Dakota County, MN

Measure	Dakota County Score	Comparison to US
Risk Index	10.5	Relatively Low
Expected Annual Loss	26.79	Relatively Moderate
Social Vulnerability	19.75	Very Low
Community Resilience	58.21	Very High

The NRI is included to supplement County information on hazards and vulnerabilities. Table 5.3 summarizes overall NRI scores for natural hazards in the County, compared to the rest of the United States. Strong wind is the only NRI hazard with a high score. The scoring is largely consistent with Table 5.1 which identifies severe summer storms as the natural hazards of greatest concern.

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[2] University of South Carolina's Hazards and Vulnerability Research Institute Social Vulnerability Index (SoVI) - https://artsandsciences.sc.edu/geog/hvri/sovi-data.

Table 5.3 NRI Hazard Ratings and Scores for Dakota County, MN

Hazard	Index Rating	Score
Strong Wind	24.69	Relatively High
Cold Wave	18.34	Relatively Moderate
Tornado	17.65	Relatively Moderate
Hail	16.52	Relatively Moderate
Lightning	10.84	Relatively Low
Winter Weather	10.54	Relatively Low
Ice Storm	10.08	Relatively Low
Landslide	8.02	Relatively Low
Riverine Flooding	6.74	Relatively Low
Drought	3.28	Very Low
Wildfire	3.07	Very Low
Earthquake	0.85	Very Low

Community Perception of Hazard Risks

An online survey asked people who live and work in Dakota County their degree of concern about potential hazards that could occur. More than 1,000 respondents participated in the survey in 2021. Figure 5.1 ranks citizen concerns related to potential hazards, using weighted scores: Very Concerned=3, Moderately Concerned=2, Not Concerned=1. For each hazard, small numbers of respondents selected "Not Sure/Don't Know" and those results are not included in the graph. The results of the full survey are provided in **Appendix II**.

Figure 5.1 Public Levels of Concern for Specific Hazards

2021 marked a major departure from past Dakota County surveys in terms of hazards of greatest concern, with pandemic and drought receiving the highest rankings. As the survey was administered,

Dakota County was in the fourth wave of the SARS-CoV-2 pandemic, as was the entire nation, and Minnesota was experiencing its worst drought since the 1980s. Cyber-attack was not included in prior surveys but received the third highest ranking. Civil Unrest was also a new hazard in the survey and received a relatively high ranking, with events following the murder of George Floyd in recent memory of Twin Citians.

In previous online surveys, people expressed the greatest concern about severe summer storms, tornadoes, and severe winter storms, which remained as strong concerns. It is important to note that this survey was not scientifically sampled and cannot be considered statistically representative of County residents.

Vulnerability

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 are also important factors in evaluating risk potential.

Population Vulnerability

Dakota County's population was 439,882 in the 2020 US Census, an increase of 10.4 percent since 2010, and 23.6 percent since the 2000. The last decade's growth rate is slightly slower than the 12% change in the decade between 2000 and 2010.

Table 5.4 Population Growth in Dakota County

County	2000 Census Population	2010 Census Population	2020 Census Population	2000-2020 Change	2010-2020 Change
Dakota	355,904	398,552	439,882	23.6%	10.4%

Source: U.S. Census Bureau

Vulnerable populations include people 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 5.5 summarizes data on vulnerable populations for Dakota County.

Table 5.5 Vulnerable Populations, Dakota County

Dakota County	Dakota (percent)	U.S. (percent)	Dakota County - U.S. Difference (percent)
Under Age 5	6.5%	6.1%	+0.4%
Age 65 and Over	13.6%	15.6%	-2.0%
Income Below Poverty Level (based on 418,832 with known status)	6.0%	13.4%	-7.4%
Having a Disability (based on 419,507 civilian, non-institutionalized)	8.9%	12.6%	-3.7%

Source: U.S. Census Bureau, American Community Survey 2014-2019 Five-Year Estimates

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 growth from 2000 to 2010 (1.2 percent annually, 12 percent over the decade). Since 2010, annual growth rates have been slower but steady, at about one percent.

Figure 5.2 Population Growth in Dakota County over Time

Dakota County Population 1970 - 2020

Year	Population
1970	139,808
1980	194,279
1990	275,227
2000	355,904
2010	398,552
2020	439,882
2030	477,600
2040	515,780

Source: U.S. Census Bureau, Metropolitan Council

2. Aging of the Population: Since Dakota County's rapid suburbanization in the 1980s, children have outnumbered seniors. This trend may reverse, according to the Minnesota State Demographers Office:

- The number of Minnesotans turning 65 in this decade (about 285,000) will be greater than the past four decades combined.
- By 2020, Minnesota's age 65+ population is expected to eclipse the age 5-17 population for the first time in history.
- The number of adults age 65+ is expected to double between 2010 and 2030, when 20+ percent of Minnesotans will be an older adult.

Figure 5.3 Projected Age Shift in Dakota County

Dakota County Population shift: seniors and children

Children ages 5 to 19
Seniors age 65+

Sources: U.S. Census Bureau & Minnesota State Demographic Center

3. **Economic recovery from the 2008 Recession has been steady, with uncertain COVID impacts**. Dakota County's unemployment rates have dropped steadily from the Recession high level of 7.2 percent until the emergence of the SARS-CoV-2 pandemic, as shown in Figure 5.4. Pandemic restrictions had a broad range of impacts on the economy, notably for the hospitality, entertainment, and personal

service industries. Healthcare also suffered losses due to deferment of elective procedures. While some businesses have rebounded as restrictions were lifted, successive waves related to COVID variants over the past 18 months have not allowed for full recovery. The long-term economic impacts of COVID may not be realized for several years. As shown in Figure 5.5, unemployment rates in Dakota County reached 10 percent by mid-2020, dropping to 3 percent over the following year.

Figure 5.4 Economic Recovery and Unemployment Rates

Figure 5.5 Unemployment during the Sars-CoV-2 Pandemic

Recovery has been steady, although economic conditions have not improved for everyone. Figure 5.6 shows that Dakota County's poverty rate has hovered between 6 and 8 percent in the decade since the Recession, with a drop below 5 percent (comparable to pre-Recession figures) only in 2016.

Figure 5.6 People Living in Poverty in Dakota County

Although median household income level has gradually increased in recent years, Figure 5.7 shows that when adjusted for inflation, Dakota County households have less to spend now than before the

Recession, which is true for much of the Twin Cities Metropolitan Area. Dakota County's median household income was $92,640 in 2007, and its inflation-adjusted median household income for 2019 was $88,864.

Figure 5.7 Median Household Income

The NRI Social Vulnerability Rating for Dakota Country overall is very low, compared to the rest of the US. Vulnerability varies within the county (Figure 5.8), with parts of West St. Paul receiving a relatively high rating. Portions of Apple Valley, Burnsville, Eagan, Hastings, Inver Grove Heights, Sunfish Lake, Rosemount, South St. Paul, and Nininger Township have relatively moderate vulnerability.

Figure 5.8 NRI Social Vulnerability Map by Census Tract for Dakota County, MN

Potential Losses

The NRI calculates expected losses from natural hazards based on consequences to *buildings*, *population death and injuries*, and *agricultural losses*. Table 5.6 reports loss ratings, scores, dollar estimates and sectors of greatest impact for the range of natural hazards reviewed for Dakota County, MN. Strong wind is expected to incur the greatest losses at nearly $15M per year, with the greatest impact on built structures. Several hazards have significant impacts on more than one sector, including tornado,

lightning, and landslide. Extreme temperatures (heat and cold), ice storms, and lightning are expected to incur the greater losses on populations, with nearly all impacts of extreme heat on people.

Table 5.6 NRI Expected Annual Losses for Natural Hazards, Dakota County, MN

Hazard	Annual Loss Rating	Annual Loss Score	Total Annual Loss	Sector of Greatest Impact, Percent
Strong Wind	Very High	93.51	$14,665,676	Buildings, 79%
Tornado	Relatively High	38.76	$8,163,706	Buildings, 63%
Hail	Relatively High	39.47	$4,121,745	Buildings, 86%
Heat Wave	Relatively High	29.52	$1,805,750	Population, 99%
Riverine Flooding	Relatively Moderate	14.81	$1,626,654	Buildings, 73%
Cold Wave	Relatively High	42.05	$483,696	Population, 72%
Lightning	Relatively High	35.62	$382,824	Population, 67%
Ice Storm	Relatively Moderate	28.66	$258,471	Population, 86%
Winter Weather	Relatively Moderate	28.82	$154,156	Buildings, 95%
Landslide	Relatively Moderate	22.44	$98,166	Buildings, 58%
Drought	Relatively Low	6.88	$79,932	Agriculture, 100%
Wildfire	Relatively Low	6.74	$48,543	Buildings, 87%
Earthquake	Very Low	2.17	$19,556	Buildings, 94%

Figure 5.9 shows the variability of expected annual losses within the county. Roughly half of the county's land area falls within a moderate expected loss category, with the other half in the low expected loss category. No clear differentiation of expected losses exists between rural and urbanized areas.

Figure 5.9 NRI Expected Annual Loss Ratings

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 ….

The County's hazard mitigation approach estimates potential structural losses related to hazards for the County as a whole and for townships covered under the County Plan. Calculated potential loss projections are seen as the "likely worst-case scenario" for any hazard where physical damage is likely. Potential flood loss assessments are also provided, as the affected areas are limited. Comparable information for cities is provided in Section 6.

Total Structures Countywide

Table 5.7 lists the total number and value of all structures county-wide as of 2021, using data from the Dakota County's Offices of Assessor Services and Geographic Information Services. Structures are identified by the associated land use: residential, commercial, industrial, and agricultural. "Exempt" buildings are not subject to property taxes, such as government buildings, schools, and places of worship. "Utilities" include fixed sites with infrastructure for electricity, sewer, and water.   "Other" includes structures that do not fall into preceding categories. The table also provides this information for individual townships, which are covered under the county plan. Information for participating cities is provided by city in Section VII.

Table 5.7 Structure Value Inventory, Dakota County 2021

Community	Total Structures	Estimated Building Value	Estimated Land Value	Total Value
Dakota County (*all*)				
Agricultural	5,263	$282,963,700	$1,542,413,200	$1,825,376,900
Commercial	3,336	$2,767,145,704	$1,740,543,200	$4,507,688,900
Exempt	3,812	$2,483,327,796	$1,518,277,400	$4,001,605,204
Industrial	2,471	$2,151,608,400	$948,079,600	$3,099,688,000
Other	118	$17,323,900	$10,127,100	$27,451,000
Residential	152,664	$37,019,020,900	$12,174,561,800	$49,193,567,700
Utilities	536	$293,574,096	$53,070,200	$346,644,304
Dakota County Total	**168,200**	**$45,014,964,496**	**$17,987,072,500**	**$63,002,022,008**
Castle Rock Township				
Agricultural	429	$29,387,900	$138,139,900	$167,527,800
Commercial	28	$6,244,300	$2,947,000	$9,191,300
Exempt	67	$3,772,600	$3,305,300	$7,077,900
Industrial	47	$3,018,000	$1,540,400	$4,558,400
Other	4	$0	$0	$0
Residential	853	$113,366,100	$36,746,700	$150,112,800
Utilities	0	$172,500	$26,100	$198,600
Castle Rock Total	**1,428**	**$155,961,400**	**$182,705,400**	**$338,666,800**
Douglas Township				
Agricultural	486	$24,059,400	$132,705,800	$156,765,200
Commercial	9	$1,151,800	$2,069,200	$3,221,000
Exempt	11	$13,400	$14,026,500	$14,039,900
Residential	499	$58,227,500	$24,674,900	$82,902,400
Douglas Total	**1,005**	**$83,452,100**	**$173,476,400**	**$256,928,500**
Empire Township				
Agricultural	220	$12,213,600	$75,601,200	$87,814,800
Commercial	20	$3,108,400	$3,193,100	$6,301,500
Exempt	87	$26,629,800	$46,650,300	$73,280,100
Industrial	19	$3,725,400	$8,534,800	$12,260,200
Other	0	$0	$0	$0
Residential	1,392	$257,738,900	$82,646,400	$340,385,300
Utilities	2	$609,900	$157,900	$767,800

Community	Total Structures	Estimated Building Value	Estimated Land Value	Total Value
Empire Total	**1,740**	**$304,026,000**	**$216,783,700**	**$520,809,700**
Eureka Township				
Agricultural	486	$37,767,800	$127,011,000	$164,778,800
Commercial	12	$1,460,600	$1,018,800	$2,479,400
Exempt	17	$6,783,800	$4,147,100	$10,930,900
Industrial	1	$608,200	$2,978,500	$3,586,700
Residential	904	$128,319,500	$52,407,500	$180,727,000
Utilities	5	$838,500	$94,600	$933,100
Eureka Total	**1,425**	**$175,778,400**	**$187,657,500**	**$363,435,900**
Greenvale Township				
Agricultural	332	$22,747,900	$108,322,800	$131,070,700
Commercial	7	$179,500	$317,800	$497,300
Exempt	0	$136,800	$1,024,800	$1,161,600
Industrial	3	$422,900	$201,400	$624,300
Residential	548	$68,064,500	$24,721,400	$92,785,900
Greenvale Total	**890**	**$91,551,600**	**$134,588,200**	**$226,139,800**
Hampton Township				
Agricultural	575	$32,839,000	$143,769,300	$176,608,300
Commercial	28	$763,000	$708,800	$1,471,800
Exempt	1	$0	$1,487,200	$1,487,200
Industrial	6	$617,200	$530,000	$1,147,200
Residential	488	$73,272,800	$27,439,300	$100,712,100
Utilities	0	$1,215,700	$52,700	$1,268,400
Hampton Total	**1,098**	**$108,707,700**	**$173,987,300**	**$282,695,000**
Marshan Township				
Agricultural	414	$25,595,300	$136,589,800	$162,185,100
Commercial	23	$3,373,300	$4,598,600	$7,971,900
Exempt	5	$1,596,400	$2,974,300	$4,570,700
Industrial	10	$2,086,400	$1,149,500	$3,235,900
Other	1	$0	$0	$0
Residential	669	$97,431,600	$39,190,500	$136,622,100
Utilities	1	$668,800	$149,500	$818,300
Marshan Total	**1,123**	**$130,751,800**	**$184,652,200**	**$315,404,000**
Nininger Township				
Agricultural	307	$10,336,500	$42,927,100	$53,263,600
Commercial	8	$1,084,000	$3,202,500	$4,286,500
Exempt	53	$1,088,000	$10,084,100	$11,172,100
Industrial	0	$0	$1,129,100	$1,129,100
Other	14	$0	$0	$0
Residential	677	$89,148,800	$39,886,500	$129,035,300
Utilities	3	$3,011,500	$966,800	$3,978,300
Nininger Total	**1,062**	**$104,668,800**	**$98,196,100**	**$202,864,900**
Randolph Township				
Agricultural	78	$5,061,700	$31,549,800	$36,611,500
Commercial	19	$2,047,800	$2,632,600	$4,680,400
Exempt	20	$3,561,000	$3,298,800	$6,859,800
Industrial	5	$10,078,500	$5,448,400	$15,526,900
Other	0	$0	$0	$0
Residential	452	$78,966,000	$49,299,700	$128,265,700

Community	Total Structures	Estimated Building Value	Estimated Land Value	Total Value
Utilities	3	$2,983,700	$174,600	$3,158,300
Randolph Total	**577**	**$102,698,700**	**$92,403,900**	**$195,102,600**
Ravenna Township				
Agricultural	159	$6,530,200	$31,749,100	$38,279,300
Commercial	3	$7,700	$90,200	$97,900
Exempt	0	$149,100	$4,013,600	$4,162,700
Other	2	$342,100	$98,700	$440,800
Residential	1,616	$234,893,600	$85,931,900	$320,825,500
Ravenna Total	**1,780**	**$241,922,700**	**$121,883,500**	**$363,806,200**
Sciota Township				
Agricultural	186	$11,655,200	$61,622,600	$73,277,800
Exempt	2	$406,000	$223,800	$629,800
Industrial	3	$0	$1,004,500	$1,004,500
Residential	284	$35,240,100	$14,448,400	$49,688,500
Sciota Total	**475**	**$47,301,300**	**$77,299,300**	**$124,600,600**
Vermillion Township				
Agricultural	504	$29,639,100	$137,852,500	$167,491,600
Commercial	6	$666,600	$442,600	$1,109,200
Exempt	4	$427,400	$1,819,500	$2,246,900
Industrial	7	$455,900	$778,800	$1,234,700
Other	18	$0	$0	$0
Residential	648	$105,005,300	$33,640,600	$138,645,900
Utilities	0	$4,242,100	$524,100	$4,766,200
Vermillion Total	**1,187**	**$140,436,400**	**$175,058,100**	**$315,494,500**
Waterford Township				
Agricultural	205	$10,948,300	$54,992,800	$65,941,100
Commercial	23	$2,222,500	$2,006,300	$4,228,800
Exempt	3	$42,000	$2,153,600	$2,195,600
Industrial	24	$2,412,600	$1,194,200	$3,606,800
Residential	419	$40,145,800	$17,361,700	$57,507,500
Waterford Total	**674**	**$55,771,200**	**$77,708,600**	**$133,479,800**

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 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 data provided by FEMA Region V in 2022, 12 properties in Dakota County have flood loss histories and meet the definition of repetitive loss properties. Seven are non-residential parcels, four are single family housing, and one is multi-family housing. Table 5.8 summarizes current losses and amounts paid in insurance claims for buildings and their contents.

Table 5.8 Summary of Repetitive Loss Flood Claims, Dakota County

Repetitive Loss Properties	Losses	Total Building Payments	Total Content Payments	Total Payments
12	42	$1,782,720	$814,205	**$2,596,925**

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

Community Participation in the National Flood Insurance Program

Table 5.9 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 5.9 Participating Communities in the NFIP, Dakota County, 2021

Community	CID Number	Current Effective Map Date	Policies In Force	Insurance In Force
Dakota Co.	270101	12/2/11	25	$7,594,800
Apple Valley	270050	12/2/11	23	$5,601,000
Burnsville	270102	12/2/11	29	$9,625,600
Eagan	270103	12/2/11	39	$11,021,600
Farmington	270104	12/2/11	10	$2,878,000
Hastings	270105	3/16/16	13	$3,292,500
Inver Grove Heights	270106	12/2/11	16	$4,395,000
Lakeville	270107	12/2/11	63	$17,555,500
Lilydale	275241	12/2/11	5	$1,811,200
Mendota	270109	12/2/11	-	-
Mendota Heights	270110	12/2/11	9	$2,828,000
Randolph	270112	12/2/11	-	-
Rosemount	270113	12/2/11	6	$1,190,000
South St. Paul	270114	12/2/11	17	$11,652,400
Vermillion	270115	12/2/11	1	$350,000
West St. Paul	270729	(NSFHA)	10	$2,560,000
TOTAL			266	$82,355,600

Source: FEMA NFIP Insurance Report, MN DNR, 9/29/2021

Table 5.10 summarizes NFIP claim activity for the County and participating communities from 1978 to 9/29/2021. A total of 136 claims have been filed, with a total $2,130.834 in payments since 1978.

Table 5.10 Flood Insurance Claims and Payments, Dakota County

Community	Claims	Total Payments
Dakota County	32	$296,616
Apple Valley	3	$15,314
Burnsville	19	$474,030
Eagan	15	$48,485
Farmington	3	$5,519
Hastings	27	$179,056
Inver Grove Heights	7	$31,224
Lakeville	11	$14,809
Lilydale	30	$1,967,707
Mendota Heights	3	$11,520
Rosemount	3	$25,577
South St. Paul	7	$4,2720
West St. Paul	4	$33,637
	164	**$3,146,214**

Source: FEMA NFIP Insurance Report, MN DNR, 9/29/2021

Floodplain Structures Countywide

Table 5.11 provides the total number and value of all structures within the digital flood insurance rate maps boundaries (DFIRM), at a County level and Table 5.12 provides this information for individual townships covered under the County plan. Data for participating cities are provided in Section VII.

This building inventory was established for general risk analysis purposes. A more accurate count of buildings within the floodplain would require site-by-site analyses using lowest adjacent grade and lowest floor elevations; 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 5.11 Total Floodplain Structure and Value Inventory, Dakota County

Structure Type	Total Structures	Estimated Land Value	Estimated Building Value	Total Value
Agricultural	40	$9,328,400	$4,795,400	$14,123,800
Commercial	37	$3,922,000	$4,112,600	$8,034,600
Exempt	140	$22,104,900	$46,175,400	$68,280,300
Industrial	64	$19,140,600	$21,642,500	$40,783,100
Residential	487	$84,688,100	$109,627,900	$194,316,000
Utilities	120	$13,216,300	$153,954,096	$167,170,404
Total	**888**	**$152,400,300**	**$340,307,896**	**$492,708,204**

Source: Dakota County Assessor's Office and Office of GIS

Table 5.12 Total Floodplain Structure and Value Inventory, Dakota County Townships

Structure Type	Total Structures	Estimated Land Value	Estimated Building Value	Total Value
Castle Rock Township				
Agricultural	4	$869,400	$338,000	$1,207,400
Industrial	16	$140,200	$205,000	$345,200
Residential	2	$90,000	$54,400	$144,400
Castle Rock Total	**22**	**$1,099,600**	**$597,400**	**$1,697,000**
Douglas Township				
Agricultural	2	$1,245,200	$834,800	$2,080,000
Douglas Total	**2**	**$1,245,200**	**$834,800**	**$2,080,000**
Empire Township				
Agricultural	1	$4,600	$16,900	$21,500
Residential	32	$1,744,100	$4,892,600	$6,636,700
Empire Total	**33**	**$1,748,700**	**$4,909,500**	**$6,658,200**
Eureka Total	**0**	**$0**	**$0**	**$0**
Greenvale Township				
Agricultural	1	$17,300	$89,600	$106,900
Greenvale Total	**1**	**$17,300**	**$89,600**	**$106,900**
Hampton Township				
Agricultural	1	$691,500	$142,200	$833,700
Hampton Total	**1**	**$691,500**	**$142,200**	**$833,700**
Marshan Township				
Agricultural	1	$164,400	$412,400	$576,800
Residential	4	$449,500	$1,166,000	$1,615,500
Marshan Total	**5**	**$613,900**	**$1,578,400**	**$2,192,300**
Nininger Township				
Exempt	8	$605,500	$102,200	$707,700
Residential	5	$387,600	$136,200	$523,800
Nininger Total	**13**	**$993,100**	**$238,400**	**$1,231,500**
Randolph Township				
Agricultural	6	$1,060,300	$311,200	$1,371,500
Exempt	1	$674,900	$1,984,900	$2,659,800
Residential	1	$9,200	$0	$9,200
Randolph Total	**8**	**$1,744,400**	**$2,296,100**	**$4,040,500**
Ravenna Township				
Residential	4	$252,400	$585,100	$837,500
Ravenna Total	**4**	**$252,400**	**$585,100**	**$837,500**
Sciota Township				
Agricultural	3	$1,853,600	$643,400	$2,497,000
Sciota Total	**3**	**$1,853,600**	**$643,400**	**$2,497,000**
Vermillion Township				
Agricultural	8	$1,843,200	$1,185,100	$3,028,300
Exempt	1	$169,000	$0	$169,000
Residential	9	$630,900	$1,279,300	$1,910,200
Vermillion Total	**18**	**$2,643,100**	**$2,464,400**	**$5,107,500**
Waterford Township				
Agricultural	1	$586,100	$42,400	$628,500
Exempt	1	$66,700	$0	$66,700
Residential	2	$129,300	$159,100	$288,400
Waterford Total	**4**	**$782,100**	**$201,500**	**$983,600**

Source: Dakota County Assessor's Office and Office of GIS

Potential Dollar Loss - Other Hazards

Hypothetical property losses were estimated for the 'most likely worst-case scenario" for each hazard. For potential dollar loss to structures, no differentiation is made for variable impacts across the development types (e.g., residential, commercial, industrial. Loss projections for each hazard type are based on anticipated structural damage and the expected geographic extent of a worst-case event. For example, an F-4 or F-5 tornado might destroy nearly all structures within its path but is unlikely to destroy more than one percent of all structures within Dakota County. A static percentage for estimated losses was used with the total replacement value within each category, shown in Table 5.13.

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

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 percent total damage)	Tornado (1 percent total damage)	Terrorism (1 percent total damage)	Hazmat Incident (0.1 percent total damage)
Agricultural	$1,825,376,900	$18,253,769	$18,253,769	$18,253,769	$1,825,377
Commercial	$4,507,688,900	$45,076,889	$45,076,889	$45,076,889	$4,507,689
Exempt	$4,001,605,204	$40,016,052	$40,016,052	$40,016,052	$4,001,605
Industrial	$3,099,688,000	$30,996,880	$30,996,880	$30,996,880	$3,099,688
Other	$27,451,000	$274,510	$274,510	$274,510	$27,451
Residential	$49,193,567,700	$491,935,677	$491,935,677	$491,935,677	$49,193,568
Utilities	$346,644,304	$3,466,443	$3,466,443	$3,466,443	$346,644
County Total	**$63,002,022,008**	**$630,020,220**	**$630,020,220**	**$630,020,220**	**$63,002,022**

Source: Dakota County Hazard Mitigation Team, 2021

Structure Type continued	Structural Fire (0.1 percent total damage)	Violent Winter Storm (0.01 percent total damage)	Wildfire (0.01 percent total damage)
Agricultural	$1,825,377	$182,538	$182,538
Commercial	$4,507,689	$450,769	$450,769
Exempt	$4,001,605	$400,161	$400,161
Industrial	$3,099,688	$309,969	$309,969
Other	$27,451	$2,745	$2,745
Residential	$49,193,568	$4,919,357	$4,919,357
Utilities	$346,644	$34,664	$34,664
County Total	**$63,002,022**	**$6,300,202**	**$6,300,202**

Vulnerable Structures

Manufactured Home and Recreational Vehicle Parks

Manufactured homes are generally considered more vulnerable to hazard impacts than other housing, based on the method and materials used to fasten them to their foundation, weight to surface area ratios, building material characteristics, and other factors. The safety of inhabitants, bystanders, and first responders is of primary concern as mobile homes can become dislodged from their foundation or break apart during flood, high wind, and tornado events. Other considerations include secondary property and infrastructure damage and the environmental impacts of broken sewer and gas lines. Dakota County has 17 manufactured home parks with roughly 3,800 hundred trailer slots (by review of

available information). Manufactured home parks are shown on the map in **Section III** and on the detailed Critical Infrastructure maps located in **Section VI**.

Recreational vehicles (RV) parks are likewise susceptible to violent storms. The County rents RV slots at the Lebanon Hills and Lake Byllesby park campgrounds. Please refer to park locations in **Section III**.

Vulnerable Facilities by Jurisdiction

Emergency managers from Dakota County's cities have rated the vulnerability of critical assets related to hazards. Table 5.14 lists significant facilities throughout the county.

Table 5.14   Vulnerable Facilities (Table Redacted in Public Version of Plan)

Facility and Location	Potential Vulnerability Description:

Vulnerability of Future Structures

Community growth will be a factor in considering vulnerability to hazards (see Figure 5.11). 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. New housing permits have grown from 1,766 in 2017 and a total of 2,480 housing permits in 2019. Most of the predicted residential growth is expected to occur 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 growth will create demand for an additional 10 to 12 million square feet of commercial/retail space by 2030, or roughly 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. Based on preliminary information provided in city comprehensive plans, land dedicated to commercial uses will expand by 9.2 percent between 2030 and 2040, from approximately 12,600 acres to 13,770 acres on a countywide basis.

All communities within the Twin Cities Metropolitan Area (TCMA) update their comprehensive plans every decade and provide forecasts for growth in various sectors for the next ten and twenty years. Comprehensive plans updates were completed in 2018-2019, with forecasts for 2030 and 2040 population, employment, and land use.

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, roughly 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.

Data compiled from city comprehensive plans shows a slight drop of 2.2 percent in industrial land use acres between 2030 and 2040.

Figure 5.10 Future Land Use, 2040

SECTION VI – DAKOTA COUNTY GOALS AND STRATEGIES

Section IV documents how natural and technological hazards affect Dakota County. **Section V** evaluates risks each hazard poses to the County's people and physical assets and discusses areas of vulnerability. 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 are "action steps" toward reaching the goals and will be implemented under the guidance 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 2016 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 2016 plan progress reports). New strategies were developed with input from County departments, jurisdictions, community groups, and the public.

Strategies are presented 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 (Low, Medium, High)
- 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 lead department and position title responsible for coordinating action

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 6.1: Modified STAPLEE Evaluation of Strategies

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

With a minimum possible STAPLEE score of 7 and a maximum possible score of 21, the following ranges were used to group scores:

17 – 21:   High (easier to implement)
11 – 16:   Medium (moderately easy to implement)
7 – 10:   Low (more challenging to implement)

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

Communication, Coordination, and Education Goals

Communication and education support mitigation efforts for most hazards addressed by this plan:

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

Strategies:

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:**
    *   Getting immediate help
    *   Home emergency planning (e.g., evaluation routes, family communication)
    *   Home emergency kits (water, food, medication, personal care, batteries, rechargers)
    *   Staying informed during emergencies
    *   Learning CPR
    *   Hazard-specific information (e.g., tornadoes, storms, diseases)
    *   County emergency planning

    Priority: High   *Status/Completion:* Ongoing
    STAPLEE: High   *Implementation:* Annual work planning
    Hazards: All   *Funding Source:* Partly Funded/Budget
    Lead: Dakota County Communications, Director (**DCC**-D); Dakota County Emergency Management, Risk and Homeland Security Manager (**DCEM**-RHSM)

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: High   *Status/Completion:* New/Ongoing
    STAPLEE: High   *Implementation:* Annual work planning
    Hazards: All   *Funding Source:* Partly Funded/Budget
    Lead: **DCC**-D, **DCEM**-RHSM

3. **Routinely include questions on household emergency preparedness in scientific residential surveys, to estimate the level of preparedness in Dakota County over time.**
    Priority: Medium   *Implementation:* Biennial survey development
    STAPLEE: High   process
    Hazards: All   *Funding Source:* Partly Funded/Budget
    Status/Completion: Ongoing
    Lead: Office of Performance Analysis (**OPA**), Manager, **DCEM**-RHSM

Communication Goal 2: Communicate and coordinate on hazard mitigation and preparedness.

Strategies:

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: High   *Status/Completion:* Ongoing
    STAPLEE: High   *Implementation:* Regular interagency meetings
    Hazards: All   *Funding Source:* Funded/Budget
    Lead: **DCEM**-RHSM

2. **Annually review status of City and County All-Hazard Mitigation Plan strategies with the DPC.****
    Priority: High   *Status/Completion:* Ongoing
    STAPLEE: High   *Implementation:* Regular interagency meetings
    Hazards: All   *Funding Source:* Funded/Budget
    Lead: Dakota County Emergency Management, Risk and Homeland Security Manager (**DCEM**-RHSM)

3. **Enhance media communications training opportunities for staff and elected officials.**
    Priority: Medium   *Status/Completion:* New/Ongoing
    STAPLEE: High   *Implementation:* Training Planning
    Hazards: All   *Funding Source:* Funded-Staff Time/Budget
    Lead: **Dakota County Communications**

4. **Coordinate training, exercise, and response opportunities with Minnesota Volunteers Assisting in Disasters (MNVOAD).**

Priority: Medium	*Status/Completion:* New/Ongoing
STAPLEE: High	*Implementation:* Training Planning
Hazards: All	*Funding Source:* Funded-Staff Time/Budget
Lead: **DCEM**-RHSM	

*Reduces risk to buildings or infrastructure

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

Natural Disaster Mitigation Goals

Drought Mitigation Goals

Drought Goal 1: Work toward adequate water supply protection in Dakota County.

Strategies:

1. **Encourage and assist public water suppliers in developing and implementing Water Supply plans.**

Priority: Medium	*Status/Completion:* Ongoing
STAPLEE: High	*Implementation:* Program operations
Hazards: Drought	*Funding Source:* Partly Funded/Budget
Lead: **DCER**-Groundwater Protection Program Supervisor **(DCER-**GPPS**)**	

Drought Goal 2: Monitor the County's ground water quality, supplies, and demands.

Strategies:

1. **Review existing groundwater monitoring and modeling programs and determine any needs for additional groundwater monitoring.**

Priority: Medium	*Status/Completion:* Ongoing
STAPLEE: High	*Implementation:* Program operations
Hazards: Drought	*Funding Source:* Funded/Budget
Lead: **DCER-**GPPS	

2. **Participate in the Metropolitan Area Water Supply Advisory Committee, Southwest Groundwater Work Group, and Southeast Groundwater Work Group.**

Priority: Medium	*Status/Completion:* Ongoing
STAPLEE: High	*Implementation:* Meeting attendance
Hazards: Drought	*Funding Source:* Funded/Budget
Lead: **DCER-**GPPS	

Drought Goal 3: Preserve existing groundwater resources.

Strategies:

1. **Promote and support water conservation and water reuse projects.**

Priority: High	*Status/Completion:* New
STAPLEE: High	*Implementation:* Interagency coordination
Hazards: Drought	*Funding Source:* Partly Funded/Budget, potential grants
Lead: **DCER**-Groundwater Protection Program Supervisor **(DCER-**GPPS**)**	

2. **Protect and improve high quality groundwater recharge areas.**

Priority: Medium	*Status/Completion:* New
STAPLEE: Medium	*Implementation:* Secure grant funding
Hazards: Drought	*Funding Source:* Not Funded, grants needed
Lead: **DCER**-Groundwater Protection Program Supervisor **(DCER-**GPPS**)**	

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.

Flood Mitigation Goals

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

Strategies:

1. **Annually review floodplain zoning ordinance (Ordinance No. 50) for compliance with state and federal regulations with respect to nonconforming structures and update as necessary.**

Priority: Medium	*Status/Completion:* Ongoing
STAPLEE: High	*Implementation:* Ordinance updates
Hazards: Flood	*Funding Source:* Partly Funded/Budget
Lead: Shoreland Floodplain Prog. Supv. **(DCER**-SFPS	

2. **Encourage city and county participation in FEMA Community Rating System program. Coordinate with townships on floodplain permit review.**

Priority: Low	*Status/Completion:* New
STAPLEE: High	*Implementation:* Code/ordinance enforcement
Hazards: Flood	*Funding Source:* Not Funded
Lead: **DCER**-SFPS	

Flood Goal 2: Pursue acquisition of repetitive loss structures.

Strategies:

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

Priority: High	*Status/Completion:* Ongoing
STAPLEE: High	*Implementation:* Grant requests
Hazards: Flood	*Funding Source:* Not Funded
Lead: **DCER**-SFPS	

Flood Goal 3: Use land protection and natural resource management to mitigate flood risks.

Strategies:

1. **Protect and restore larger cultivated-drained wetlands for water retention to reduce flood severity.***

Priority: Medium	*Status/Completion:* New
STAPLEE: Low	*Implementation: Install BMPs*
Hazards: Water Supply Contamination	*Funding Source:* External funds will be sought
Lead: **DCER**-GPPS, DCER-Land Conservation	

2. **Use Conservation Focus Areas** to prioritize, protect, and restore wetlands, shoreland, headwaters and significant groundwater recharge areas to reduce flood impacts.**

Priority: Medium	*Status/Completion:* New
STAPLEE: Medium	*Implementation: Program operations*
Hazards: Water Supply Contamination	*Funding Source:* External funds will be sought
Lead: **DCER**-GPPS, DCER-Land Conservation, SWCD	

*Reduces risk to buildings or infrastructure
** Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

Principal Contact: Dakota County Environmental Resources-Shoreland Floodplain Program Supervisor
Cooperating Partners: city planning/zoning commissions, councils, and administrators; township officials; MN DNR

Infectious Disease Outbreak Mitigation Goals

Infectious Disease Goal 1:   Ensure effective and coordinated response to preventing and controlling infectious disease.

Strategies:

1. **Work with state and federal agencies to identify infectious diseases that could affect the county and region.**

    Priority: High
    STAPLEE: Medium
    Hazards: Infectious Disease
    Status/Completion: Ongoing
    Lead: County Public Health, Director (**DCPH**-D)

    Implementation: Coordinate with MDH, monitor/report via MDH infectious disease reporting protocol
    Funding Source: Funded/Budget

2. **Utilize federal, state, and local resources to prevent and control infectious diseases in the county.**

    Priority: High
    STAPLEE: High
    Hazards: Infectious Disease
    Status/Completion: Ongoing

    Implementation: Seek Federal/State Public Health Emergency Preparedness grants. Use State Community Health funding to maintain-improve disease prevention and control.
    Funding Source: Funded/Budget

    Lead: **DCPH**-D

3. **Maintain regular communication with clinic and hospital partners to share information about infectious disease preparedness and response.**

    Priority: High
    STAPLEE: Medium
    Hazards: Infectious Disease
    Status/Completion: Ongoing
    Lead: **DCPH**-D

    Implementation: Maintain Health Alert Network (HAN), regularly meet with Dakota County Hospitals
    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: High
    STAPLEE: High
    Hazards: Infectious Disease
    Status/Completion: Ongoing
    Lead: **DCPH**-D

    Implementation: Maintain HAN, meet regularly with Dakota County hospital partners.
    Funding Source: Funded/Budget

5. **Work with clinics and hospitals to improve infectious disease reporting.**

    Priority: High
    STAPLEE: High
    Hazards: Infectious Disease
    Status/Completion: Ongoing
    Lead: **DCPH**-D

    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: High
    STAPLEE: High
    Hazards: Infectious Disease
    Status/Completion: Ongoing
    Lead: **DCPH**-D

    Implementation: Periodic HAN evaluation and update
    Funding Source: Funded/Budget

7. **Annually review and update the public health emergency response operations plan that outlines procedures for dealing with infectious diseases.**

   Priority: High
   STAPLEE: High
   Hazards: Infectious Disease
   Status/Completion: Ongoing/each fall
   Lead: **DCPH**-D

   Implementation: Review, update, approve plans. Coordinate with partners to identify gaps in plans.
   Funding Source: Funded/Budget

8. **Continue to work with local hospitals and clinics to coordinate an effective infectious disease response.**

   Priority: High
   STAPLEE: High
   Hazards: Infectious Disease
   Status/Completion: Ongoing
   Lead: **DCPH**-D

   Implementation: Coordinated, regular partner meetings with hospitals and Public Health
   Funding Source: Funded/Budget

9. **Work with the MDH in surveillance of infectious diseases in the county. For diseases that may transfer from livestock to humans, continue work with MDH, MN Department of Agriculture, the University of MN Veterinary College, and Agricultural Extension.**

   Priority: High
   STAPLEE: Medium
   Hazards: Infectious Disease
   Status/Completion: Ongoing
   Lead: **DCPH**-D

   Implementation: Coordinated interagency surveillance and communications with MDH, per protocol
   Funding Source: Funded/Budget

10. **Work closely with MDH, CDC, and regional public health partners to plan receipt and dispensing of the Strategic National Stockpile.**

    Priority: High
    STAPLEE: High
    Hazards: Infectious Disease
    Status/Completion: Ongoing
    Lead: **DCPH**-D

    Implementation: Plan, drill, exercise SNS emergency plans, per MDH grant guidelines/agreements
    Funding Source: Funded/Budget

11. **Maintain a human quarantine plan collaborating with state, regional, and local partners including emergency managers.**

    Priority: High
    STAPLEE: Medium
    Hazards: Infectious Disease
    Status/Completion: ongoing
    Lead: **DCPH**-D

    Implementation: Review/update isolation-quarantine plans annually. Coordinate with partners.
    Funding Source: Partly Funded/Budget

12. **Work closely regional partners In the Metro Health & Medical Preparedness Coalition to stay informed about planning, response, and recovery activities for events or emergencies with public health and medical implications.**

    Priority: High
    STAPLEE: High
    Hazards: Infectious Disease
    Status/Completion: Ongoing
    Lead: **DCPH**-D

    Implementation: Coordination-collaboration with partners
    Funding Source: Funded/Budget

*Reduces risk to buildings or infrastructure. ** Evaluates a comprehensive range of specific mitigation actions; identifies actions selected for implementation. Modified STAPLEE implementation score: higher scores indicate fewer barriers

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.

Strategies:

1. **Work with the Minnesota Public Health Department (MDH) to develop and distribute fact sheets, media releases, and educational programs for the public.**

   Priority: High

   STAPLEE: Medium

   Hazards: Infectious Disease

   Status/Completion: New/TBD

   Lead: **DCPH**-D

   Implementation: Coordinate-collaborate with MDH and regional and local partners

   Funding Source: Partly Funded/Budget

2. **Continue to work with local media to disseminate information about infectious diseases, risk potential, and prevention through education articles and news releases.**

   Priority: High

   STAPLEE: High

   Hazards: Infectious Disease

   Status/Completion: Ongoing

   Lead: **DCPH**-D

   Implementation: Coordinate news releases with County Communications, 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: Medium

   STAPLEE: High

   Hazards: Infectious Disease

   Status/Completion: Ongoing

   Lead: **DCPH**-D

   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

Infectious Disease Pandemic Mitigation Goals

Pandemic Goal 1: Maintain public health response preparedness.

Strategies:

1. **Develop and exercise Public Health pandemic preparedness plans.**

   Priority: High

   STAPLEE: Medium

   Hazards: Pandemic

   Status/Completion: Ongoing

   Implementation: Review-update public health preparedness plans used for pandemic response (e.g. Isolation & Quarantine, Mass Dispensing,

   Lead: County Public Health, Director (**DCPH**-D)

   Strategic National Stockpile, Pandemic Influenza). 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

2. **Maintain adequate levels of PPE.**

   Priority: High

   STAPLEE: Medium

   Hazards: Epidemic/ Pandemic

   Status/Completion: New/Ongoing

   Implementation: Review current PPE supply and establish baseline quantities of PPE based on

   Lead: County Public Health, Director (**DCPH**-D)

   quantities used during COVID-19 pandemic. Maintain PPE at baseline levels and replace when supply is expired/used.

   Funding Source: TBD

3. **Conduct after-action reviews to identify needs and update response, continuity of operations, and mitigation plans accordingly.**

   Priority: High
   STAPLEE: Medium
   Hazards: Epidemic/ Pandemic
   Status/Completion: New/Ongoing
   Lead: County Public Health, Director (**DCPH**-D)

   Implementation: Complete after-action review of the COVID-19 pandemic response. Develop plan for implementing improvement items.
   Funding Source: Funded/Budget

4. **Develop/maintain a communication strategy for hard-to-reach/limited English proficiency populations and ADA accessible communications.**

   Priority: Medium
   STAPLEE: High
   Hazards: Infectious Disease
   Status/Completion: New/Ongoing
   Implementation: Collaborate with county communications to develop targeted
   Lead: **DCPH**-D

   information for defined populations through a variety of communication channels. Continue annual review of Public Health Risk Information & Communication plan with focus on planning for LEP and ADA accessible communications.
   Funding Source: Funded/Budget

5. **Ensure that Continuity of Operations Plans address potential needs during a long-term pandemic with adequate technological systems, staff ability to work remotely, supplies and vehicles, and new service delivery methods.**

   Priority: Medium
   STAPLEE: Medium
   Hazards: Infectious Disease
   Status/Completion: New/Ongoing
   Lead: **DCEM**-RMHS, DC IT, County Admin.

   Implementation: COOP plan updates every other year, annual purchasing practices, program operations.
   Funding Source: Funded/Budget, potential grants

Principal Contact: Dakota County Public Health Department, Director. **Responsible Parties:** Dakota County Public Health Department, Minnesota Department of Health, Dakota County Public Information Officer, Dakota County Emergency Management, Dakota County Information Technology, Dakota County Administration. **Cooperating Partners**: public media, Dakota County cities

Infectious Disease strategies also apply to Pandemic preparedness goals.

Landslide Mitigation Goals

Landslide Goal 1: Reduce vulnerability of infrastructure to landsides in Dakota County.*

Strategies:

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: Medium
   STAPLEE: Low
   Hazards: Landslide
   Lead: **Dakota County Transportation,** County Engineer **(DCT**-CE)

   Status/Completion: Ongoing
   Implementation: Capital improvement planning
   Funding Source: Partly Funded/CIP

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: Medium
   STAPLEE: Low
   Hazards: Landslide
   Lead: **DCT**-CE; Facilities Maintenance, Parks

   Status/Completion: Ongoing
   Implementation: Capital improvement planning
   Funding Source: Partly Funded

*Reduces risk to buildings or infrastructure
** Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

Violent Storms and Extreme Temperatures Mitigation Goals

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

Strategies:

1. **Maintain safe shelter plans for County-owned facilities including shelters, shelter capacity, and exit routes.**

   Priority: High
   STAPLEE: High
   Hazards: Violent Storms, 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 safe shelter locations across the County and surrounding area (as needed) are evaluated by or for the Red Cross as approved shelters with agreements in place.**

   Priority: Medium
   STAPLEE: High
   Hazards: Violent Storms, Extreme Temperatures
   Lead: **DCEM**-RHSM

   Status/Completion: Ongoing
   Implementation: Interagency coordination
   Funding Source: Part Funded/Budget

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

   Priority: High
   STAPLEE: Medium
   Hazards: Violent Storms, Extreme Temperatures
   Lead: **DCEM**-RHSM

   Status/Completion: Ongoing
   Implementation: Capital planning, grants
   Funding Source: Part Funded/CIP

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

Strategies:

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: High
   STAPLEE: High
   Hazards: Violent Storms, 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 the Integrated Public Awareness Warning System (IPAWS) emergency notifications from DCC.**

   Priority: High
   STAPLEE: High
   Hazards: Violent Storms, Extreme Temperatures
   Lead: **DCC,** Operations Manager

   Status/Completion: Ongoing/TBD
   Implementation: Interagency coordination
   Funding Source: Funded/Budget

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

   Priority: Medium
   STAPLEE: High
   Hazards: Violent Storms, Extreme Temperatures
   Lead: **DCEM**-RHSM

   Status/Completion: Ongoing
   Implementation: Work plan, interagency coordination
   Funding Source: Not Funded

4. **Continue participation with Amateur Radio Emergency Services (ARES) group for severe storm spotters and communications network volunteers.**

   Priority: Low
   STAPLEE: High
   Hazards: Violent Storms, 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

Principal Contact: Dakota County Emergency Management-Risk and Homeland Security Manager. **Cooperating Partners:** city emergency managers, city and county parks, townships, National Weather Service, County GIS, county law enforcement, County Transportation, and Amateur Radio Emergency Services (ARES)

Storms Goal 3: Protect people and public infrastructure

Strategies:

1. **Communicate with public safety officials and State/county/city/township transportation departments to limit travel on major transportation routes during hazardous driving conditions.**
   Priority: High
   STAPLEE: Medium
   Hazards: Violent Storms, Extreme Temperatures
   Status/Completion: Ongoing
   Lead: **DCEM**-RHSM
   Implementation: Interagency coordination, emergency operations
   Funding Source: Funded/Budget

2. **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: High
   STAPLEE: High
   Hazards: Violent Storms, Extreme Temperatures
   Lead: **DCEM**-RHSM
   Status/Completion: Ongoing
   Implementation: Annual work planning
   Funding Source: Partly Funded/Budget

3. **Periodically evaluate and update systems for lightning detection and notification protocols for outdoor public venues, such as the Dakota County Fairgrounds or Dakota County Park System.**
   Priority: High
   STAPLEE: High
   Hazards: Violent Storms, Extreme Temperatures
   Status/Completion: Ongoing
   Lead: **DCEM**-RHSM
   Implementation: Capital improvement planning
   Funding Source: Not Funded/Capital Improvement Plan

4. **Maintain storm debris management guidelines and update as necessary.**
   Priority: High
   STAPLEE: High
   Hazards: Violent Storms, Extreme Temperatures
   Lead: Environmental Resources-Director (**DCER**-D)
   Status/Completion: Ongoing
   Implementation: Debris Mgmt. Plan updates
   Funding Source: Partly Funded/Budget

5. **Proactively manage stormwater infrastructure (e.g., maintain drainage ditches, replace culverts). Conduct hydrological assessments based on NOAA Atlas 14 Precipitation Frequency estimates to determine appropriate capacity.***
   Priority: High
   STAPLEE: Medium
   Hazards: Violent Storms, Extreme Temperatures
   Status/Completion: Ongoing
   Lead: Transp.-County Engineer (**DCT**-CE); **DCER**-D
   Implementation: Service level agreement, annual work planning
   Funding Source: Partly Funded/Budget, CIP

6. **Evaluate and modify/rebuild roads and trails that become vulnerable to repetitive flooding and washouts.***
   Priority: Medium
   STAPLEE: Medium
   Hazards: Violent Storms, Extreme Temperatures
   Lead: **DCT**-CE
   Status/Completion: Ongoing
   Implementation: Capital improvement planning
   Funding Source: Partly Funded/CIP

7. **Maintain river flow by clearing debris from under bridges during storm-flooding events.***
   Priority: High
   STAPLEE: High
   Hazards: Violent Storms, Extreme Temperatures
   Lead: **DCT**-CE
   Status/Completion: Ongoing
   Implementation: Annual work planning
   Funding Source: Partly Funded/Budget

8. **Install power back-up systems to maintain traffic signal operation at high-volume intersections in outages.**
   Priority: Medium-High
   STAPLEE: Medium
   Hazards: Violent Storms, Extreme Temperatures
   Lead: **DCT**-CE

   Status/Completion: New/TBD
   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

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

Wildfire Mitigation Goals

Wildfire Goal 1: Reduce wildfire risk.

Strategies:

1. **Annually evaluate prescribed burning on all county lands and parks with Minnesota DNR and local jurisdictions.**
   Priority: High
   STAPLEE: High
   Hazards: Wildfire
   Status/Completion: Ongoing
   Lead: Dakota County Parks, Natural Resources Manager

   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: Low
   STAPLEE: High
   Hazards: Wildfire
   Lead: **DCEM**-RHSM

   Status/Completion: Ongoing, as needed
   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

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

Technological and Human-Induced Disaster Mitigation Goals

Civil Disturbance Mitigation Goals

Civil Disturbance Goal 1: Improve situational awareness and monitoring efforts.

Strategies:

1. **Monitor situations with potential for inciting disturbance across a wide range of communication channels, including social media.**

Priority: Medium	*Status/Completion:* New/ongoing
STAPLEE: Medium-High	*Implementation: Program operations*
Hazards: Civil Unrest	*Funding Source:* Existing Budget
Lead: **Dakota County Sheriff's Office,** Risk/Emergency Management	

Principal Contact: Dakota County Sheriff, Risk/Emergency Management. **Cooperating Partners**: MN Fusion Center, Dakota County Crime Analysts, Dakota County Communications.

Civil Disturbance Goal 2:   Build community partnerships to promote timely response.

Strategies:

1. **Maintain a coordinated joint emergency operation center to improve response.**

Priority: High	*Status/Completion:* New/ongoing
STAPLEE: High	*Implementation: Program operations*
Hazards: Civil Unrest	*Funding Source:* Existing Budget
Lead: **Dakota County Sheriff's Office,** Risk/Emergency Management	

2. **Build partnerships and agreements to enhance communications, with cities, key community liaisons, and community groups.**

Priority: Medium	*Status/Completion:* New/ongoing
STAPLEE: Medium	*Implementation: Program operations*
Hazards: Civil Unrest	*Funding Source:* Existing Budget
Lead: **Dakota County Sheriff's Office,** Risk/Emergency Management, City police chiefs.	

3. **Work on curfew implementation plan template with community emergency managers and local law enforcement.**

Priority: Medium	*Status/Completion:* New/
STAPLEE: Medium	*Implementation: Interagency coordination*
Hazards: Civil Unrest	*Funding Source:* Existing Budget
Lead: **Dakota County Sheriff's Office,** Risk/Emergency Management	

Principal Contact: Dakota County Sheriff, Risk/Emergency Management. **Cooperating Partners**: City law enforcement, city administration, elected officials, Dakota County Communications.

Civil Disturbance Goal 3:   Increase training to reduce injuries and damages from civil disturbance.

Strategies:

1. **Train response personnel to protect the health and safety of the public in events, including de-escalation and non-lethal methods of riot control.**

Priority: Medium	*Status/Completion:* New/ongoing
STAPLEE: High	*Implementation: Program operations*
Hazards: Civil Unrest	*Funding Source:* Existing budget
Lead: **Dakota County Sheriff's Office,** Risk/Emergency Management.	

2. **Develop plans to improve two-way communications between public authorities and participants, and strengthen outgoing public communications including social media and IPAWS.**

Priority: Medium	*Implementation:* Program operations, work planning
STAPLEE: High	
Hazards: Civil Unrest	*Funding Source:* Existing budget
Status/Completion: New/	

   Lead: **Dakota County Sheriff's Office,** Risk/Emergency Management, Communications, Dakota County Communications Center

3. **Regularly exercise plans that address response to civil disturbance.**
   Priority: High
   STAPLEE: Low-Medium
   Hazards: Civil Unrest
   Lead: **Dakota County Sheriff's Office,** Risk/Emergency Management

   Status/Completion: New/ongoing
   Implementation: Program operations
   Funding Source: Existing budget

Principal Contact: Dakota County Sheriff, Risk/Emergency Management. **Cooperating Partners**: Communications, Dakota County Communications Center, City law enforcement.

Civil Disturbance Goal 4:   Reinforce security and resilience of County facilities and infrastructure likely to be targeted during civil disturbance.

Strategies:

1. **Evaluate options to strengthen building security infrastructure, including windows, doors, and entry points, and implement improvements.**
   Priority: Medium
   STAPLEE: Medium
   Hazards: Civil Unrest
   Status/Completion: New/ongoing
   Lead: **Dakota County Facilities Management,** Dakota County Sheriff's Office, Risk/Emergency Management.

   Implementation: Program operations, work planning
   Funding Source: CIP, grants

2. **Develop and update a facility preparedness checklist for civil disturbance situations.**
   Priority: High
   STAPLEE: High
   Hazards: Civil Unrest
   Status/Completion: New/ongoing
   Lead: **Dakota County Facilities Management,** Dakota County Sheriff's Office, Risk/Emergency Management.

   Implementation: Program operations, work planning
   Funding Source: Existing budget

3. **Compile detailed site maps and make improvements to facilitate rapid deployment of security barriers, such as pre-placement of fence post sleeves.**
   Priority: High
   STAPLEE: Medium
   Hazards: Civil Unrest
   Status/Completion: New
   Lead: **Dakota County Facilities Management,** Dakota County Sheriff's Office, Risk/Emergency Management

   Implementation: Program operations, work planning
   Funding Source: CIP

Principal Contact: Dakota County Sheriff, Dakota County Facilities Management, Risk/Emergency Management. **Cooperating Partners**: City law enforcement.

Civil Disturbance Goal 5:   Restore and maintain public confidence in County governance in the aftermath of civil disturbance.

Strategies:

1. **Evaluate civil disturbance causes and the County's response through after-action review with partner agencies and community groups.**
   Priority: High
   STAPLEE: Medium
   Hazards: Civil Unrest
   Lead: **Dakota County Sheriff's Office,** Risk/Emergency Management.

   Status/Completion: New/ongoing
   Implementation: Program operations
   Funding Source: Budget

Principal Contact: Dakota County Attorney, Sheriff, Risk/Emergency Management. **Cooperating Partners**: City law enforcement, elected officials.

Cyber-Attack Mitigation Goals
Cyber-Attack Goal 1: Reduce Cyber Security Risk to County Network Infrastructure and Software

Strategies:

1. **Continue completing cyber security exercises as part of COOP planning**
   Priority: High
   STAPLEE: Medium
   Hazards: Cyber-Attack
   Status/Completion: Ongoing
   Lead: **IT**/ DCEM-RHSM.
   Implementation: Regular COOP training/exercises
   Funding Source: Budget/Grants

2. **Regularly develop programs and projects to identify and address cyber-security weaknesses and new threats (e.g., USB lockdown, vendor management)**
   Priority: High-Medium
   STAPLEE: High-Medium
   Hazards: Cyber-Attack
   Lead: **IT**
   Status/Completion: Ongoing
   Implementation: Project development
   Funding Source: Funded/Budget/Grants

3. **Continue ongoing staff training in cyber security and new threats.**
   Priority: High
   STAPLEE: High
   Hazards: Cyber-Attack
   Lead: **IT**
   Status/Completion: Ongoing
   Implementation: Regular scheduling
   Funding Source: Funded/Budget

4. **Invest in hardware and IT infrastructure improvements (e.g., encrypted storage).**
   Priority: High
   STAPLEE: Medium
   Hazards: Cyber-Attack
   Lead: **IT**
   Status/Completion: Ongoing
   Implementation: CEP Planning
   Funding Source: Funded/Budget/Grants

5. **Periodically review best practices through the IT Change Advisory Team and Information Management Security Committee (IMSC).**
   Priority: Medium
   STAPLEE: High
   Hazards: Cyber-Attack
   Lead: **IT**
   Status/Completion: Ongoing
   Implementation: Team coordination
   Funding Source: Funded/Budget

6. **Communicate with cities regarding strategies for infrastructure protection and cyber-security and participate in local forums such as League of MN Cities, Association of MN Counties, on information sharing.**
   Priority: Medium
   STAPLEE: High
   Hazards: Cyber-Attack
   Lead: **IT** / DCEM-RHSM
   Status/Completion: Ongoing
   Implementation: Interagency coordination
   Funding Source: Funded/Budget

Principal Contact: Dakota County Information Technology (IT)-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.

Dam, Bridge, and Structural Failure Mitigation Goals

Structural Failure Goal 1: Maintain continued structural integrity of dams and bridges in Dakota County.

Strategies:

1. **Continue implementation of Federal Energy Regulatory Commission (FERC) dam safety requirements at the County-owned Byllesby Dam.**

   Priority: High

   STAPLEE: High

   Hazards: Dam, Bridge, Structural Failure

   Lead: **DC Senior Water Resources Engineer)**

   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: High

   STAPLEE: High

   Hazards: Dam, Bridge, Structural Failure

   Lead: **DCT**-CE

   Status/Completion: Ongoing

   Implementation: Annual work planning

   Funding Source: Partly Funded/Budget

Principal Contact: Dakota County Water Resources-Senior Water Resources Engineer, 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.

Strategies:

1. **Annually coordinate Dakota County Environmental Resources, Goodhue County, Cannon Falls, and other emergency providers to exercise the Lake Byllesby Dam Emergency Action Plan (EAP) required by FERC.***

   Priority: Medium

   STAPLEE: High

   Hazards: Dam, Bridge, Structural Failure

   Status/Completion: Ongoing

   Lead: **DC Senior Water Resources Engineer**

   Implementation: Exercise planning, interagency coordination

   Funding Source: Partly Funded/Budget

2. **Monitor reservoir elevations and effectively communicate conditions to downstream interests as warranted.**

   Priority: High

   STAPLEE: High

   Hazards: Dam, Bridge, Structural Failure

   Lead: **DC Senior Water Resources Engineer**

   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: High

   STAPLEE: High

   Hazards: Dam, Bridge, Structural Failure

   Lead: **DC Senior Water Resources Engineer**

   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

Principal Contact: Dakota County Water Resources-Senior Water Resources Engineer. **Cooperating Partners**: Goodhue County, Federal Energy Regulatory Commission, MN Department of Natural Resources, local public safety agencies, County emergency managers, and County sheriffs

Hazardous Material/Waste Mitigation Goals

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.**

Strategies:
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 with potential to affect the county and region.**
   Priority: High   *Status/Completion:* Ongoing
   STAPLEE: High   *Implementation:* Program operations
   Hazards: Hazmat/Hazardous Waste   *Funding Source:* Partly Funded/Budget
   Lead: Dakota **DCER**-Waste Regulation Unit Supervisor (**DCER**-**WRUS**)

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: High   *Status/Completion:* Ongoing
   STAPLEE: High   *Implementation:* Program operations
   Hazards: Hazmat/Hazardous Waste   *Funding Source:* Funded/Budget
   Lead: **DCER**-WRUS

3. **Provide annual training/education for hazardous waste generators on proper hazardous waste storage and disposal.**
   Priority: Medium   *Status/Completion:* Ongoing
   STAPLEE: High   *Implementation:* Program operations
   Hazards: Hazmat/Hazardous Waste   *Funding Source:* Funded/Budget
   Lead: **DCER**-WRUS

4. **Evaluate and develop capabilities to predict the direction and velocity of groundwater flow and surface runoff; integrate these results in the County GIS system; and share results with appropriate users.**
   Priority: Medium   *Status/Completion:* Ongoing
   STAPLEE: High   *Implementation:* Program operations
   Hazards: Hazmat/Hazardous Waste   *Funding Source:* Partly Funded/Budget
   Lead: **DCER**-Groundwater Protection Prog. Supervisor

   As determined by the Environmental Resources Department, conduct periodic hazardous waste compliance inspections to ensure proper management, storage, and training at hazardous waste generator locations.
   Priority: High   *Status/Completion:* Ongoing
   STAPLEE: High   *Implementation:* Code/ordinance enforcement
   Hazards: Hazmat/Hazardous Waste   *Funding Source:* Funded/Budget
   Lead: **DCER**-WRUS

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.**

Strategies:
1. **Review and update the County policies and environmental plans that address hazardous material/waste storage and transportation in Dakota County.**
   Priority: High   *Status/Completion:* Ongoing
   STAPLEE: High   *Implementation:* Program operations
   Hazards: Hazmat/Hazardous Waste   *Funding Source:* Funded/Budget
   Lead: **DCER**-WRUS

2. Update and distribute debris management guidelines.
Priority: High   *Status/Completion:* Ongoing
STAPLEE: High   *Implementation:* Debris Management Plan updates
Hazards: Hazmat/Hazardous Waste   *Funding Source:* Partly Funded/Budget
Lead: **DCER**-WRUS

3. Coordinate and facilitate discussion between the cities and the County on policies related to hazardous materials/waste storage and transportation.
Priority: Medium   *Status/Completion:* Ongoing
STAPLEE: High   *Implementation:* Program operations
Hazards: Hazmat/Hazardous Waste   *Funding Source:* Funded/Budget
Lead: **DCER**-WRUS

4. Design and implement hazardous material scenarios for practice exercise and to create community awareness. (consistent with National Planning Scenarios).
Priority: Medium   *Status/Completion:* Ongoing
STAPLEE: High   *Implementation:* Exercise planning
Hazards: Hazmat/Hazardous Waste   *Funding Source:* Not Funded
Lead: **DCEM**-RHSM

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: Medium   *Status/Completion:* Ongoing
STAPLEE: High   *Implementation:* Interagency coordination
Hazards: Hazmat/Hazardous Waste   *Funding Source:* Not Funded
Lead: **DCEM**-RHSM

6. 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: Medium   *Status/Completion:* Ongoing
STAPLEE: High   *Implementation:* Interagency coordination
Hazards: Hazmat/Hazardous Waste   *Funding Source:* Funded/Budget
Lead: **DCEM**-RHSM

7. Conduct evacuation planning for townships and County facilities for hazardous material incidents.
Priority: Medium   *Status/Completion:* Periodic, as needs identified
STAPLEE: Medium   *Implementation:* Incident response planning
Hazards: Hazmat/Hazardous Waste   *Funding Source:* Not Funded
Lead: **DCEM**-RHSM

8. Evaluate potential safety improvements for rail intersections with major highways, including deeper/wider intersections or grade separated crossings.
Priority: Medium   *Status/Completion:* Periodic, needs identified
STAPLEE: Medium   *Implementation:* Secure grant funding
Hazards: Hazmat/Hazardous Waste   *Funding Source:* Part Funded/Budget, grants
Lead: **DCT**-CE

*Reduces risk to buildings or infrastructure
** Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

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

Structural Fire Mitigation Goals

Structural Fire Goal 1: Protect structures from fire.

Strategies:

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	*Status/Completion:* New/TBD
STAPLEE: High	*Implementation:* Ordinance enforcement
Hazards: Fire	*Funding Source:* Not Funded
Lead: Dakota County 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.***

Priority: Medium	*Implementation:* Interagency coordination,
STAPLEE: Medium	capital improvement planning
Hazards: Fire	*Funding Source:* Not Funded
Status/Completion: New/TBD	
Lead: Dakota County Fire Chiefs	

Structural Fire Goal 2: Work toward an educated and informed public on fire safety.

Strategies:

1. **Work through Dakota County Fire Chiefs Association and participating cities to provide education to youth on stoves, smoke detectors, fire safety, and evacuation; and homeowners on chimney inspections, electrical systems, flammable materials, heating systems, household chemicals, and evacuation.***

Priority: High	*Implementation:* Education and outreach
STAPLEE: High	planning, interagency coordination
Hazards: Fire	*Funding Source:* Partly Funded/Budget
Status/Completion: Ongoing	
Lead: Dakota County Fire Chiefs	

*Reduces risk to buildings or infrastructure
** Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation
Principal Contact: Dakota County Fire Chiefs Association. **Cooperating Partners**: Dakota County Emergency Management personnel, school systems, county news media, and non-profit organizations

Terrorism Mitigation Goals

Terrorism Goal 1: Reduce risk to government and publicly-owned facilities and infrastructure.

Strategies:

1. **Enhance public employee training on facility security awareness and incident reporting via "See Something – Say Something" Campaign.**

Priority: Medium	*Status/Completion:* Ongoing
STAPLEE: High	*Implementation:* Ongoing training, planning
Hazards: Terrorism	*Funding Source:* Funded/Budget
Lead: **DCEM**-RHSM	

2. **Review BIPS 06/FEMA 426 Reference Manual recommendations to mitigate potential terrorist attacks against buildings for possible incorporation into County building design standards. Share applicable information with cities.***

Priority: Medium	*Implementation:* Capital improvement planning,
STAPLEE: High	interagency coordination
Hazards: Terrorism	*Funding Source:* Partly Funded/Budget, CIP
Status/Completion: Ongoing	
Lead: **DCEM**-RHSM	

3. **Continue to explore different methods to share public building specifications and plans with police and fire.**
    Priority: Medium
    STAPLEE: High
    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.**
    Priority: High
    STAPLEE: High
    Hazards: Terrorism
    Lead: **DCEM**-RHSM

    Status/Completion: Ongoing
    Implementation: Exercise planning
    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
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

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.

Wastewater Treatment Facility Failure Mitigation Goals

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.

Water Supply Contamination Mitigation Goals
Water Supply Goal 1: Protect the quality of Dakota County's groundwater.
Strategies:
1. **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: High
    STAPLEE: High
    Hazards: Water Supply Contamination
    Lead: **DCER**-GPPS

    Status/Completion: Ongoing
    Implementation: Code/ordinance enforcement
    Funding Source: Funded/Budget

2. **Provide or identify a well-testing service for private well owners.**
    Priority: High
    STAPLEE: High
    Hazards: Water Supply Contamination
    Lead: **DCER**-GPPS

    Status/Completion: Ongoing
    Implementation: Program operations
    Funding Source: Funded/Budget

3. **Review well disclosure documents for the purpose of sealing wells at property sale.**
    Priority: High
    STAPLEE: High
    Hazards: Water Supply Contamination
    Lead: **DCER**-GPPS

    Status/Completion: Ongoing
    Implementation: Program operations
    Funding Source: Funded/Budget

4. **Administer a well seal-cost share grant with the assistance of the Dakota County Community Development Agency (CDA) and administer the County Well Seal-Cost Share Grant Program.**
    Priority: Medium   *Status/Completion:* Ongoing
    STAPLEE: High   *Implementation:* Program operations
    Hazards: Water Supply Contamination   *Funding Source:* Funded/Budget
    Lead: **DCER**-GPPS

5. **Enforce private well water quality standards at the time of property sale.**
    Priority: High   *Status/Completion:* Ongoing
    STAPLEE: High   *Implementation:* Code/ordinance enforcement
    Hazards: Water Supply Contamination   *Funding Source:* Funded/Budget
    Lead: **DCER**-GPPS

6. **Enforce septic system construction standards at the time of property sale or bedroom addition in areas where the County has jurisdictional authority.**
    Priority: High   *Status/Completion:* Ongoing
    STAPLEE: High   *Implementation:* Code/ordinance enforcement
    Hazards: Water Supply Contamination   *Funding Source:* Funded/Budget
    Lead: **DCER**-GPPS

7. **Administer a septic system maintenance program requiring every system to be pumped or inspected every three years.**
    Priority: High   *Status/Completion:* Ongoing
    STAPLEE: High   *Implementation:* Code/ordinance enforcement
    Hazards: Water Supply Contamination   *Funding Source:* Funded/Budget
    Lead: **DCER**-GPPS

8. **Research methods to reduce non-point source contaminants in groundwater and surface water through outreach on agricultural Best Management Practices (BMPs) adoption and availability of financial support.**
    Priority: High   *Status/Completion:* Ongoing
    STAPLEE: Medium   *Implementation:* Program operations
    Hazards: Water Supply Contamination   *Funding Source:* Not Funded
    Lead: **DCER**-GPPS

9. **Research methods to reduce non-point source contaminants in groundwater and surface waters through targeted nitrate, pesticide, and herbicide monitoring.**
    Priority: High   *Status/Completion:* Ongoing
    STAPLEE: High   *Implementation:* Program operations
    Hazards: Water Supply Contamination   *Funding Source:* Funded/Budget
    Lead: **DCER**-GPPS

10. **Educate floodplain well owners about protecting drinking water wells from flooding.**
    Priority: Medium   *Status/Completion:* New
    STAPLEE: High   *Implementation:* Program operations
    Hazards: Water Supply Contamination   *Funding Source:* Funded/Budget
    Lead: **DCER**-GPPS

11. **Strategically restore drained wetlands to enhance filtration and recharge of groundwater**
    Priority: High   *Status/Completion:* New
    STAPLEE: Medium   *Implementation:* Capital Projects
    Hazards: Water Supply Contamination   *Funding Source:* Seek grant funds
    Lead: **DCER**-GPPS, DCER-Land Conservation

12. **Partner to improve groundwater recharge by promotion and assistance of water quality improvement practices such as low impact development, wetland restoration and permanent vegetation.**
    Priority: High
    STAPLEE: Medium
    Hazards: Water Supply Contamination
    Lead: **DCER**-GPPS, DCER-Land Conservation, SWCD

    Status/Completion: New
    Implementation: Capital Projects
    Funding Source: Seek grant funding

13. **Use Land Conservation Focus Areas to prioritize, protect, and restore wetlands, shoreland, headwaters and significant groundwater recharge areas for water quality and supply.**
    Priority: High
    STAPLEE: Medium
    Hazards: Water Supply Contamination
    Lead: **DCER**-GPPS, DCER-Land Conservation, SWCD

    Status/Completion: New
    Implementation: Program operations
    Funding Source: Seek grant funding

*Reduces risk to buildings or infrastructure
** Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

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.

Strategies:

1. **Identify sources for obtaining bottled water, including bottled water distributors and local grocery stores for unincorporated areas of the county.**
    Priority: High
    STAPLEE: High
    Hazards: Water Supply Contamination
    Status/Completion: Ongoing
    Lead: **DCEM**-RHSM

    Implementation: Emergency response planning
    Funding Source: Funded/Budget

2. **Facilitate well testing and disinfection in case of contamination.**
    Priority: High
    STAPLEE: High
    Hazards: Water Supply Contamination
    Status/Completion: Ongoing
    Lead: **DCER**-GPPS

    Implementation: Program operations
    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: High
    STAPLEE: High
    Hazards: Water Supply Contamination
    Lead: **DCER**-GPPS

    Status/Completion: Ongoing
    Implementation: Program operations
    Funding Source: Funded/Budget

4. **Provide well disinfection information to impacted well owners.**
    Priority: Medium
    STAPLEE: High
    Hazards: Water Supply Contamination
    Lead: **DCER**-GPPS

    Status/Completion: Ongoing
    Implementation: Program operations
    Funding Source: Funded/Budget

5. **Provide education materials on monitoring private wells.**
    Priority: Medium
    STAPLEE: High
    Hazards: Water Supply Contamination
    Lead: **DCER**-GPPS

    Status/Completion: Ongoing
    Implementation: Program operations
    Funding Source: Funded/Budget

6. **Facilitate installation of appropriate, effective drinking water treatment systems for low-income private well households with contaminated groundwater.**
   Priority: High   *Status/Completion:* Ongoing
   STAPLEE: Medium   *Implementation:* Program operations
   Hazards: Water Supply Contamination   *Funding Source:*
   Lead: **DCER**-GPPS

*Reduces risk to buildings or infrastructure
** Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

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.
Strategies:
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: High   *Status/Completion:* Ongoing
   STAPLEE: High   *Implementation:* Program operations
   Hazards: Water Supply Contamination   *Funding Source:* Funded/Budget
   Lead: **DCER**-GPPS

2. **Encourage and assist communities in developing groundwater protection plans.**
   Priority: Medium   *Status/Completion:* Ongoing
   STAPLEE: High   *Implementation:* Program operations
   Hazards: Water Supply Contamination   *Funding Source:* Funded/Budget
   Lead: **DCER**-GPPS

3. **Encourage cities to enhance security of their wells, reservoirs, and treatment facilities.***
   Priority: Medium   *Status/Completion:* Ongoing
   STAPLEE: High   *Implementation:* Interagency planning, grants
   Hazards: Water Supply Contamination   *Funding Source:* Partly Funded/Budget
   Lead: **DCEM**-RHSM

4. **Conduct feasibility study for establishment of a rural water supply.**
   Priority: Medium   *Status/Completion:*
   STAPLEE: Medium   *Implementation:* Interagency planning, grants
   Hazards: Water Supply Contamination   *Funding Source:*
   Lead: **DCER - GPPS**

5. **Advocate for state and federal funding for local water infrastructure improvement projects and encourage municipal projects that improve drinking water quality.**
   Priority: High   *Status/Completion:* New/Ongoing
   STAPLEE: High   *Implementation:* Program Operations
   Hazards: Water Supply Contamination   *Funding Source:* Budget
   Lead: TBD

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

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 6.2: Dakota County Implementation Resources

Hazard Addressed	Dakota County Resources
All	• Annual Budget Process: aligns funding with operational priorities. • Capital Improvement Program: aligns funding with physical project priorities. • Emergency Operations Plan: provides an all hazard response plan for emergencies to mitigate damage that might occur during or after an event. • Dakota County Communications Center: provides communications for first responders and public notifications through mass telephone notification system and e Integrated Public Alert and Warning System (IPAWS). • Dakota County Emergency Personnel: staff support for mitigation and response. • Training Plans: align information needs of the public and staff with training resources. • Office of Geographic Information Systems: provides map data and analysis. • Dakota County Communications: provides public communications through multiple media.
Dam or Structural Failure	• Byllesby Dam FERC Inspection: identifies concerns with physical infrastructure, operations, and emergency plans. • Byllesby Dam Emergency Action Plan: mitigates loss of lives and property damage as a result of dam operations. • Byllesby Security and Structural Enhancement Program: safety and security measures. • Transportation Bridge Inspection and Maintenance Program
Drought	• Comprehensive Water Plan
Flood	• Shoreland and Floodplain Ordinance (No. 50) • Flood Area Map and Controls
Hazardous Materials	• Hazardous Waste Ordinance (No. 111) • Hazardous chemical data collection • Nuclear Emergency Plan Exercises (Prairie Island) • Environmental Health Regulations
Infectious Disease	• Infectious Disease Reporting systems • Health Alert Network • Training services for local health care providers • Vaccination Program • Isolation and Quarantine Plan • Environmental Health Program
Summer Storms and Tornado	• Severe Weather Warning System

Hazard Addressed	Dakota County Resources
Water Supply Contamination	• Wellhead Protection Program • Well sealing grant and program • County Comprehensive Plan: Water Resources Section • Well and Water Supply Ordinance (No. 114)
Wildfire	• County land management protocols, including prescribed burns
Cyber-Attack	• Cyber Security Policies • Network Monitoring programs • Mobile Device Management • Staff Training
Landslide	• Roadway Protection Program • Trail Management Program

Plan Monitoring and Evaluation

Performance Measures

Each Dakota County 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 implementation partners to evaluate progress on an annual basis.

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 accountable for the implementation of County-level actions, responsibility for execution falls to other County departments (e.g., Public Health, Environmental Resources, 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 overcoming implementation barriers.

Plan Updates

Dakota County's Risk and Homeland Security Manager has overseen periodic updates of this Plan on a five-year schedule since the initial Plan was developed in 2005. The next Plan update is anticipated for 2026-2027. The overall process involves assembling an interdisciplinary county staff team from Risk Management/Emergency Management, Sheriff's Office, Physical Development Planning, Communications, Public Health, Environmental Resources, Parks-Fleet-Facilities, and the Office of Performance Analysis. This team works with Police, Fire, and Planning staff from cities participating in the County plan and external partners to review and update hazards and strategies and engage stakeholders and the public. Section II of this Plan identifies the overall process used for the most recent plan update, which will guide the next Plan update.

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 were 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.

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SECTION VII: PARTICIPATING CITY RISKS, STRATEGIES, AND PRIORITIES

Overview

Cities participating in the Dakota County All-Hazard Mitigation Plan 2022 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	Hastings	Mendota Heights	Sunfish Lake
Burnsville	Inver Grove	Miesville	Vermillion
Coates	Heights	New Trier	West St. Paul
Eagan	Lakeville	Randolph	
Farmington	Lilydale	Rosemount	
Hampton	Mendota	South 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 2022 Plan Update
10. Implementation Resources
11. Implementation progress for their strategies in the 2016 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 7.1: Modified STAPLEE Evaluation of Strategies

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

With a minimum possible STAPLEE score of 7 and a maximum possible score of 21, the following ranges were used to group scores:

17 – 21:   High (easier to implement)

11 – 16:   Medium (moderately easy to implement)

7 – 10:   Low (more challenging to implement)

Figure 7.1: Cities and Townships within Dakota County

CITY OF APPLE VALLEY

Table AV.1: Apple Valley Community Data

Population (2020):	56,374
Households:	21,464
Employment/Jobs:	13,016
Area:	17.5 Sq. Mi.
Major Land Uses:	60% Residential
	16% Parks/Rec.
	11% Commercial & Institutional
Community Type:	Suburban
Undeveloped Area:	4%

Source: Metropolitan Council Community Profiles

Hazards of Concern

Apple Valley staff evaluated potential hazards of concern in their community, using the Dakota County Hazard Rating Model (Table AV.2) Apple Valley's hazard ratings are in Table AV.3.

Figure AV.1: City of Apple Valley Location

Table AV.2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
Frequency	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
Warning Time	More than 12 hours	6-12 hours	3-6 hours	None-minimal
Extent	Localized	Community-wide	County-wide or greater	
Likely Impact	Negligible	Limited	Critical	Catastrophic

Table AV.3: Apple Valley Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Cyber Threats	4	4	2	3	**13**
Violent Summer Storms	4	3	2	3	**12**
Civil Unrest	3	3	3	3	**12**
Extreme Heat or Cold	4	1	3	3	**11**
Structural Fire	4	4	1	2	**11**
Hazardous Material Incidents	4	4	1	2	**11**
Water Supply Contamination	2	4	2	3	**11**
Wastewater Plant Failure	2	4	2	3	**11**
Tornado	2	4	1	3	**10**
Violent Winter Storms	3	1	3	3	**10**
Drought	3	1	3	3	**10**
Terrorism	1	4	2	3	**10**
Flash Flood	3	3	1	2	**9**
Infectious Disease /Pandemic	2	1	3	3	**9**
Landslide	1	4	1	2	**8**
Overland Flood (spring snowmelt)	1	1	1	2	**5**
Wildfire	1	1	1	2	**5**
Dam Failure	N/A				**N/A**

General Land Use

Figure AV.2 depicts general land use in Apple Valley, with residential (single- and multi-family) being the predominant land use.

Structural Inventory Value

Table AV.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 AV.2: Apple Valley Land Use 2020, Metropolitan Council

Table AV.4: Structural Inventory and Value, Apple Valley

Land Use	Land Value	Building Value	Total Value	Structure Count
Agricultural	$1,090,000	$372,400	$1,462,400	10
Commercial	$204,636,100	$275,815,500	$480,451,600	247
Exempt	$165,530,100	$306,183,300	$471,713,400	406
Industrial	$46,923,000	$68,566,100	$115,489,100	70
Other	$3,899,300	$5,173,700	$9,073,000	9
Residential	$1,471,331,700	$4,717,310,400	$6,188,627,100	16,196
Utilities	$6,319,300	$6,260,700	$12,580,000	21
TOTAL	**$1,899,729,500**	**$5,379,682,100**	**$7,279,396,600**	**16,959**

Vulnerability

Vulnerable Populations

Table AV.5 provides current estimates of populations in Apple Valley considered by FEMA to be at potentially increased risk during hazard events.

Table AV.5: Apple Valley Potentially Vulnerable Populations, American Community Survey 2015-2019 Estimates

Potentially Vulnerable Population	Percentage (%)	U.S. (%)	Apple Valley, MN – U.S. Difference
Under Age 5	6.3%	6.1%	0.2%
Over Age 65	14.3%	13.7%	.6%
Below Federal Poverty Line	5.4%	13.4%	-8.0%
Living with a Disability	8.4%	15.6%	-7.2%

Vulnerability of Critical Assets to Hazards

Apple Valley staff evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table AV.6. These hazards were identified as having minimal or no likely impact to critical facilities: *wildfire, dam failure, and landslide.* Figure A.3 provides general locations for selected critical assets in Apple Valley.

Table AV.6: Apple Valley Assessment of Critical Assets (Redacted in Public Version of Plan)

	Summer Storms	Tornado	Structure Fire	Hazmat	Flash Flood	Winter Storms	Pandemic	Water Supply Contamination	Overland Flood	Terrorism	Civil Unrest	Drought	Extreme Temps	Cyber Attack

Changes since the 2016 Plan

City staff identified no significant land use changes and additions to critical facilities since the last plan update in 2016.

Figure AV.3: City of Apple Valley – Critical Facilities (Redacted in Public Version of Plan)

National Flood Insurance Program Participation

Table AV.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 AV.7: Apple Valley NFIP Participation

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Apple Valley	270050	12/02/11	23	$5,601,000

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 AV.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 AV.8: Total Floodplain Structure and Value Inventory, Apple Valley

Structure Type	Estimated Land Value	Estimated Building Value	Total Value	Total Structures
Residential	$327,200	$316,600	$643,800	1
Total	**$327,200**	**$316,600**	**$643,800**	**1**

Strategy Review and Development

In 2021, Apple Valley staff reviewed their strategies from the 2016 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2022 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 AV.9 presents Apple Valley's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

Table AV.9: Apple Valley Strategies

APPLE VALLEY MITIGATION STRATEGIES, 2021

1. Provide NIMS and Hazmat training to police, fire, and city department employees

Priority: High	*Status/Completion:* Ongoing
STAPLEE: High	*Implementation:* Patrol online, city EM Representative
Hazards: Multiple	
Lead: City Emergency Management, Police Dept.	*Est. Cost/Funding Source:* $500, local budget

2. Review COOP planning related to emergency medication dispensing planning

Priority: High	*Lead:* Police Dept., Chief
STAPLEE: High	*Status/Completion:* Ongoing
Hazards: Terrorism, Infectious Disease	*Implementation:* City Emergency Management
	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
STAPLEE: High
Hazards: Terrorism

Lead: Police Dept., Chief
Status/Completion: Ongoing
Implementation: PD
Est. Cost/Funding Source: none/N/A

4. Continue to construct mitigation solutions to flood-prone areas of the city to reduce or eliminate damage and improve emergency access during flooding**

Priority: Med
STAPLEE: High
Hazards: Flooding

Lead: Public Works, Director
Status/Completion: New / Ongoing
Implementation: Capital Improvement Program
Est. Cost/Funding Source: TBD/General fund, grant

5. Continue annual infrastructure inspection/maintenance program

Priority: Med
STAPLEE: High
Hazards: Flooding, Water Supply Contamination

Lead: Public Works, Director
Status / Completion: Ongoing
Implementation:
Est. Cost/Funding Source: $1,000,000 / budget

6. Update and implement the City of Apple Valley Emergency Operations Plan (EOP)

Priority: Low
STAPLEE: Medium
Hazards: Multiple

Lead: Police Dept., Chief
Status/Completion: Ongoing
Implementation:
Est. Cost/Funding Source: $7,000 / local budget

7. Regularly train with Apple Valley Fire Dept. relating to coordinated response to hostile event including hands on scenario-based training

Priority: Low
STAPLEE: Medium
Hazards: Terrorism

Lead: Police Dept., Fire Dept.
Status / Completion: Ongoing
Implementation:
Est. Cost/Funding Source: $500 / local budget

8. Reduce Risk to City Network Infrastructure and Software Applications

Priority:
STAPLEE:
Hazards: Cyber-Attack

Lead: City Information Technology
Status/Completion: New/Ongoing
Implementation:
Est. Cost/Funding Source: TBD/city budget

9. Continue completing cyber security exercises as part of COOP planning

Priority:
STAPLEE:
Hazards: Cyber-Attack

Lead: City Information Technology
Status/Completion: New/Ongoing
Implementation:
Est. Cost/Funding Source: TBD/city budget

10. Regularly develop programs and projects to identify and address cyber-security weaknesses and new threats (e.g., USB lockdown, vendor management)

Priority:
STAPLEE:
Hazards: Cyber-Attack

Lead: City Information Technology
Status/Completion: New/Ongoing
Implementation:
Est. Cost/Funding Source: TBD/city budget

11. Continue ongoing staff training in cyber security and new threats

Priority:
STAPLEE:
Hazards: Cyber-Attack

Lead: City Information Technology
Status/Completion: New/Ongoing
Implementation:
Est. Cost/Funding Source: TBD/city budget

12. Invest in hardware and IT infrastructure improvements (e.g., encrypted storage)

Priority:	*Lead:* City Information Technology
STAPLEE:	*Status/Completion:* New/Ongoing
Hazards: Cyber-Attack	*Implementation:*
	Est. Cost/Funding Source: TBD/city budget

13. Periodically review best practices through the IT Advisory Team

Priority:	*Lead:* City Information Technology
STAPLEE:	*Status/Completion:* New/Ongoing
Hazards: Cyber-Attack	*Implementation:*
	Est. Cost/Funding Source: TBD/city budget

*Reduces risk to buildings or infrastructure

** Evaluates comprehensive range of specific mitigation actions/projects; identifies which were selected for implementation

Implementation Resources

Table AV.10 identifies Apple Valley staff resources and their roles in implementing its mitigation strategies.

Table AV.10: Apple Valley Mitigation Implementation Resources

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
Building Inspections, 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
Planning and Zoning, Planning Director	Zoning, development siting, and restrictions, Comprehensive Plans	Enforce floodplain ordinances and compliance, proper land use per ordinances
Police, Police Chief	Public safety and law enforcement, emergency response	Emergency response, incident command training, training for public safety, city, schools, and businesses
Public Works, 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
Fire Department, 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
Information Technology: IT Director	City IT infrastructure management	Up to date and active IT asset monitoring, Firewall update and maintenance, Fiber expansion, Intrusion testing

Table AV.11 identifies Apple Valley's implementation resources related to processes and ordinances.

Table AV.11: Apple Valley Additional Implementation Resources

Program/Ordinance/Study/ Technical Document	Adopted or Revised	Method of incorporation into the hazard mitigation plan
Surface Water Management Plan	2018	Planning document for local drainage system
Capital Improvement Program	2021	Infrastructure upgrades to support hazard mitigation
Annual Budget	2021	Allocates annual operational funding for departments and staff implementing the City's mitigation strategies
NIMS Compliance		Continued education for new and existing employees

CITY OF BURNSVILLE

Table B.1: Burnsville Community Data

Population (2020):	64,317
Households:	25,480
Employment/Jobs:	29,675
Area:	27.0 Sq. Mi.
Major Land Uses:	41% Residential 19% Parks/Rec. 10% Commercial & Institutional 10% Industrial
Community Type:	Suburban
Undeveloped Area:	7%

Source: Metropolitan Council Community Profiles

Hazards of Concern

Burnsville staff evaluated potential hazards using the Dakota County rating model (Table B.2) Burnsville's hazard ratings are in Table B.3.

Figure B.1: City of Burnsville Location

Table B.2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
Frequency	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
Warning Time	More than 12 hours	6-12 hours	3-6 hours	None-minimal
Extent	Localized	Community-wide	County-wide or greater	
Likely Impact	Negligible	Limited	Critical	Catastrophic

Table B.3: Burnsville Hazard Rating

Hazard	Frequency	Warning	Extent	Impact	Total
Tornado	2	3	3	4	**13**
Violent Summer Storms (e.g., wind, hail)	3	3	2	3	**11**
Terrorism	1	4	2	4	**11**
Flash Flood	3	3	1	3	**10**
Structural Fire	4	4	1	1	**10**
Hazardous Material Incidents	4	4	1	1	**10**
Civil Unrest	3	4	1	2	**10**
Violent Winter Storms	3	1	3	2	**9**
Overland Flood (spring snowmelt)	2	1	3	3	**9**
Drought	2	1	3	3	**9**
Extreme Heat or Cold	3	1	3	2	**9**
Landslide	2	3	1	2	**8**
Water Supply Contamination	1	2	2	3	**8**
Wastewater Treatment Plant Failure	1	2	2	3	**8**
Cyber Threats	2	4	1	1	**8**
Wildfire	2	2	1	2	**7**
Infectious Disease Outbreak/Pandemic	2	1	3	1	**7**
Dam Failure	1	2	1	3	**7**

General Land Use

Figure B.2 depicts general land use in Burnsville, with residential (single- and multi-family) being the predominant land use.

Structural Inventory Value

Table B.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.
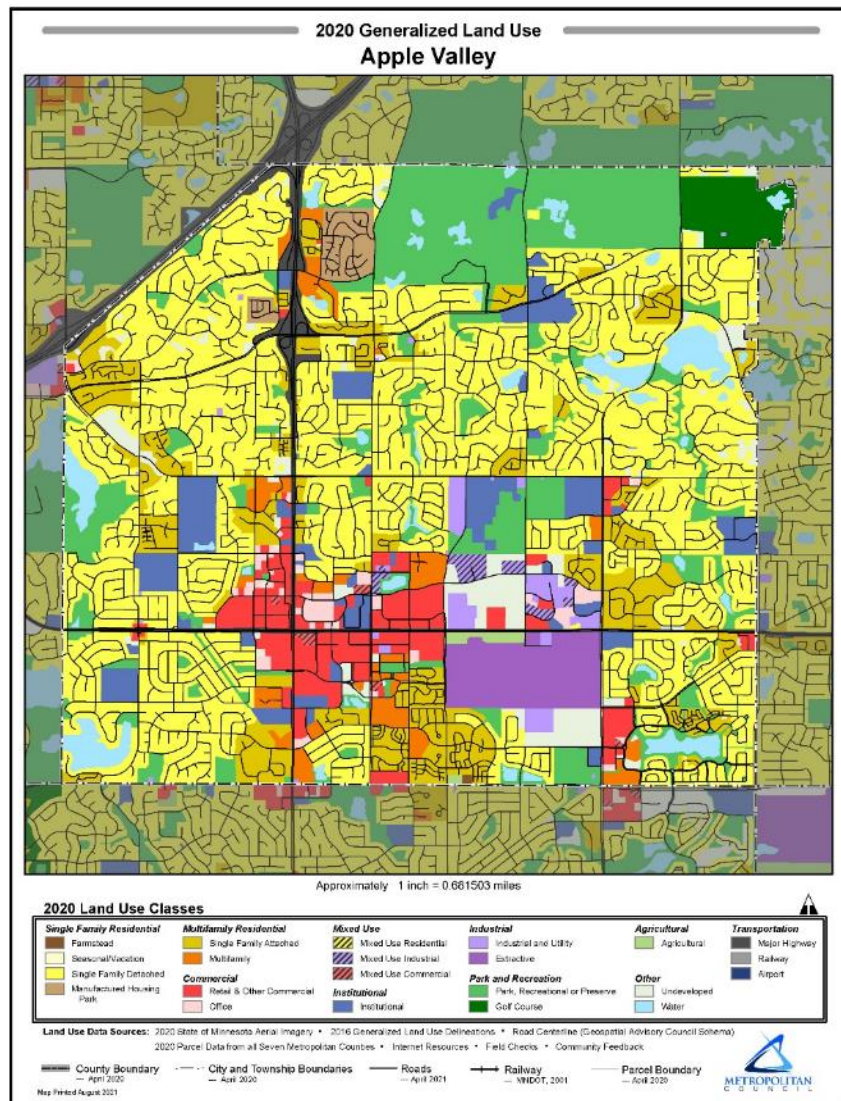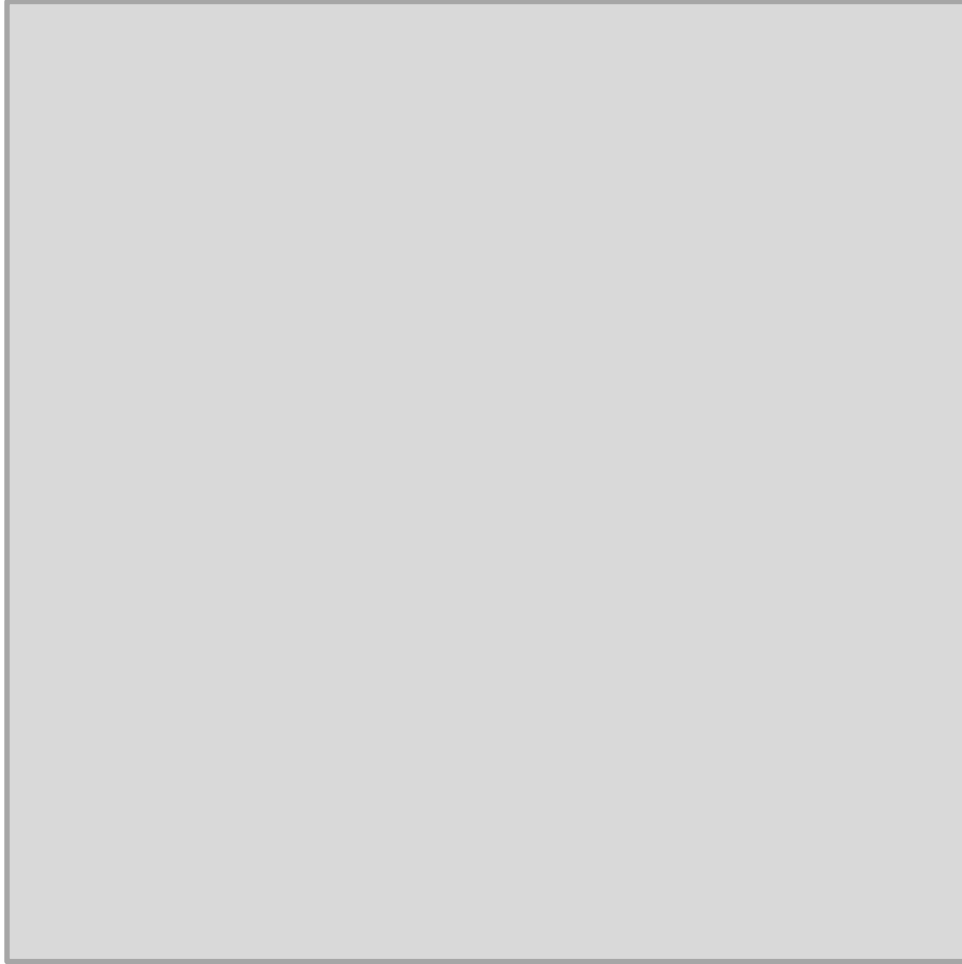

Figure B.2: Burnsville Land Use 2020, Metropolitan Council

Table B.4: Structural Inventory and Value, Burnsville

Land Use	Land Value	Building Value	Total Value	Structure Count
Commercial	$299,029,500	$522,243,900	$821,273,400	514
Exempt	$150,445,400	$277,201,100	$427,646,500	339
Industrial	$190,123,400	$482,595,800	$672,719,200	387
Other	$1,056,900	$4,982,200	$6,039,100	7
Residential	$1,443,521,700	$4,781,152,500	$6,224,674,200	17,428
Utilities	$21,322,400	$151,674,796	$172,997,204	188
TOTAL	**$2,105,499,300**	**$6,219,850,296**	**$8,325,349,604**	**18,863**

Vulnerability

Vulnerable Populations

Table B.5 provides current estimates of populations in Burnsville considered by FEMA to be at potentially increased risk during hazard events.

Table B.5: Burnsville Potentially Vulnerable Populations, American Community Survey 2015-2019 Estimates

Potentially Vulnerable Population	Percentage (%)	U.S. (%)	Burnsville, MN – U.S. Difference
Under Age 5	6.9%	6.1%	0.8%
Over Age 65	15.4%	13.7%	1.7%
Below Federal Poverty Line	7.6%	13.4%	-5.8%
Living with a Disability	10.3%	15.6%	-5.3%

Vulnerability of Critical Assets to Hazards

Burnsville staff evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table B.6. Figure B.3 provides general locations for selected critical assets in Burnsville.

Table B.6: Burnsville Assessment of Critical Assets (Redacted in Public Version of Plan)

	Summer Storms	Tornado	Structure Fire	Hazmat	Flash Flood	Winter Storms	Infectious Disease, Pandemic	Water Supply Contamination	Overland Flood	Terrorism	Civil Unrest	Wildfire	Drought	Extreme Temps	Dam Failure	Landslide	Cyber Attack

Changes since the 2011 Plan

Burnsville staff identified use changes and additions to critical facilities since the plan update in 2016:

1. New Fire Station 1 will be completed in October 2021, old Fire Station 1 will be decommissioned and demolished.

Figure B.3: City of Burnsville – Critical Facilities (Redacted in Public Version of Plan)

National Flood Insurance Program Participation and Compliance

Table B.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 B.7: Burnsville NFIP Participation

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Burnsville	270102	12/02/2011	29	$9,625,600

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 B.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 B.8: Total Floodplain Structure and Value Inventory, Burnsville

Structure Type	Estimated Land Value	Estimated Building Value	Total Value	Total Structures
Exempt	$23,900	$0	$23,900	12
Industrial	$7,360,500	$2,251,400	$9,611,900	14
Residential	$22,874,400	$4,898,800	$27,773,200	35
Utilities	$9,647,900	$133,703,696	$143,351,604	116
Total	**$39,906,700**	**$140,853,896**	**$180,760,604**	**177**

Strategy Review and Development

In 2021, Burnsville staff reviewed their strategies from the 2016 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2022 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 B.9 lists Burnsville's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

Table B.9: Burnsville All-Hazard Mitigation Plan Strategies

BURNSVILLE MITIGATION STRATEGIES, 2016

1. Enhance Information Technology/Fiber Optic Security

Priority: High	*Status/Completion:* Existing / complete updates
STAPLEE: High	*Implementation:* CDA JPA Broadband Assets Inventory; COB Fiber Vault condition review project
Hazards: Water Supply Contamination, Tornado, Terrorism	
Lead: COB	*Est. Cost/Funding Source:* $20,000 / Water, Sewer, IT Enterprise funds

2. Replace aging sewer lines*

Priority: High	*Lead:* City Engineer
STAPLEE: High	*Status/Completion:* Ongoing
Hazards: Flash Flood, Backups	*Implementation:* Capital Improvement Plan
	Est. Cost/Funding Source: Varies / CIP Funds

3. Establish a process to increase monitoring-patrol of identified MANPADS sites

Priority: Low	*Status/Completion:* Ongoing
STAPLEE: High	*Implementation:* Emergency Operations Planning (EOP)
Hazards: Terrorism	
Lead: Police Dept., Chief	*Est. Cost/Funding Source:* Staff time / Budget

4. Continue Emergency Siren Maintenance Plan

Priority: Med	*Lead:* Emergency Management Coordinator
STAPLEE: High	*Status/Completion:* Existing / by Summer 2016
Hazards: Natural Disasters, Weather Events	*Implementation:* EOP
	Est. Cost/Funding Source: $8,000 yearly / Budget

5. Maintain Active List of All 302 Facilities

Priority: High	*Lead:* Emergency Management Coordinator
STAPLEE: High	*Status/Completion:* Existing / Ongoing
Hazards: Hazardous Materials, Weather Events	*Implementation:* EOP
	Est. Cost/Funding Source: Staff time / Budget

6. Conduct EOC Drill Annually

Priority: Med
STAPLEE: High
Hazards: All

Lead: Emergency Management Coordinator
Status/Completion: Existing / each October
Implementation: EOP
Est. Cost/Funding Source: Staff time / Budget

7. Continue NIMS Training for City Staff

Priority: Low
STAPLEE: High
Hazards: Multiple

Lead: Emerg. Mgmt. Coordinator, Police Chief
Status/Completion: Existing / Ongoing
Implementation: EOP
Est. Cost/Funding Source: Staff time / Budget

8. Complete Sunset Dam EAP Update***

Priority: High
STAPLEE: High
Hazards: Flooding

Lead: Public Works Director
Status/Completion: Complete / Ongoing updates
Implementation: Dam EAP
Est. Cost/Funding Source: $20,000/Stormwater Fund

9. Continue Fire Prevention Programs

Priority: Low
STAPLEE: High
Hazards: Structural Fire

Lead: Fire Chief
Status/Completion: Existing / Ongoing
Implementation: Fire Prevention Programs
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
*** The City of Burnsville does not intend to pursue FEMA HHPD grant funds during this five-year planning cycle.

Implementation Resources

Table B.10 identifies Burnsville staff roles in implementing mitigation strategies.

Table B.10: Burnsville Staff Implementation Resources

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
Building Inspections, City Building Inspector	Building inspections, regulation of new housing development	*Enforce current codes related to building and property maintenance*
Planning and Zoning, Planning Director	Zoning, development siting and restrictions, Comprehensive Plans	*Follow the Floodplain Regulations set forth in City code*
Police, 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*
Public Works, Public Works Director	Development and operations of public infrastructure (roads, utilities)	*Follow the replacement schedule for infrastructure and capital improvement plans*
Fire Department, Fire Chief	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 B.11 identifies Burnsville's policy and technical resources for implementing mitigation strategies.

Table B.11: Burnsville Technical Implementation Resources

Burnsville Program/Policy/Technical Documents	Year adopted/revised	Method of incorporation into the hazard mitigation plan
Emergency Operations Plan	07-2021	City wide for Emergency Operations
BPD Policy Manual	2021 - Ongoing	Directs PD staff at emergency incidents
BFD Policy Manual	2021 - Ongoing	Directs FD staff at emergency incidents
Water Resource Management Plan	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
NPDES Permit	04-07-15 Policy Adopted, Annual-2016	Managing City storm water facilities
2040 Comprehensive Plan	2019	Directs future development/operations
Uniform Building/Fire Codes	Building: 03-31/20 rewritten Fire: 02-04-80, many amendments	Standards for new construction and remodeling
Zoning Ordinance	2021	Flood related building standards
Water Supply Plan	04-10-17	Has Emergency Action Plan
Public Safety Mutual Aid Documents	Multiple documents and updates	Guides neighboring cities in providing public safety assistance to each other during emergencies
Public Works Mutual Aid Document	Multiple documents and updates	Guides neighboring cities in providing public works assistance to each other during emergencies

CITY OF COATES

Table C.1: Coates Community Data

Population (2020):	147
Households:	62
Employment/Jobs:	295
Area:	1.4 Sq. Mi.
Major Land Uses:	76% Ag./Undevel.
	6% Industrial
	5% Residential
Community Type:	Diversified Rural
Undeveloped Area:	76%

Source: Metropolitan Council Community Profiles

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.

Figure C.1: City of Coates Location

Table C.2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
Frequency	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
Warning Time	More than 12 hours	6-12 hours	3-6 hours	None-minimal
Extent	Localized	Community-wide	County-wide or greater	
Likely Impact	Negligible	Limited	Critical	Catastrophic

Table C.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					

General Land Use

Figure C.2 depicts general land use in Coates, with agriculture being the predominant land use.

Structural Inventory Value

Table C.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 C.2: Coates Land Use 2020, Metropolitan Council

Table C.4: Structural Inventory and Value, Coates

Use Type	Land Value	Structural Value	Total Value	Number of Structures
Agricultural	$5,500,800	$430,700	$5,931,500	6
Commercial	$1,498,800	$2,268,500	$3,767,300	25
Exempt	$533,200	$204,500	$737,700	2
Industrial	$1,472,800	$3,725,800	$5,198,600	8
Other	$61,500	$0	$61,500	2
Residential	$2,972,400	$8,666,100	$11,638,500	106
TOTAL	**$12,039,500**	**$15,295,600**	**$27,335,100**	**149**

Vulnerability

Vulnerable Populations

Table C.5 provides current estimates of populations in Coates considered by FEMA to be at potentially increased risk during hazard events.

Table C.5: Coates Potentially Vulnerable Populations, American Community Survey 2015-2019 Estimates

Potentially Vulnerable Population	Percentage (%)	U.S. (%)	Coates, MN – U.S. Difference
Under Age 5	4.6%	6.1%	-1.5%
Over Age 65	17.1%	13.7%	3.4%
Below Federal Poverty Line	8.7%	13.4%	-4.7%
Living with a Disability	10.5%	15.6%	-5.1%

Vulnerability of Critical Assets to Hazards

Coates staff evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table C.6. Figure C.3 provides general locations for selected critical assets in Coates.

Table C.6: Assessment of Critical Assets (Redacted in Public Version of the Plan)

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 2016 Plan

City staff identified no significant land use changes or additions to critical facilities since the last plan update in 2016.

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 2021, Coates staff reviewed strategies from the 2016 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2022 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 C.7 presents Coates's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

Table C.7: Coates All-Hazard Mitigation Plan Strategies

COATES MITIGATION STRATEGIES, 2016

1. Maintain warning sirens*

Priority: High (16)	*Status/Completion:* Existing / ongoing
Hazards: Violent Storms, Tornado	*Implementation:* Yearly inspections
Lead: City Administration	*Est. Cost/Funding Source:* $1,000 / City budget

2. Grade roads to repair damage from flash floods*

Priority: High (16)	*Status/Completion:* Existing / ongoing
Hazards: Flash Flood	*Implementation:* As needed
Lead: Street Department,	*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

Implementation Resources

Table C.8 identifies Coates staff resources and roles in implementing its mitigation strategies. Table C.9 identifies implementation resources related to processes and ordinances.

Table C.8: Coates Staff Implementation Resources

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
Building Inspections, contracted	Building inspections, regulation of new housing development	*e.g., enforce safety restrictions including setbacks, building materials and fire suppression systems*
Planning and Zoning, contracted	Zoning, development siting and restrictions, Comprehensive Plans	*e.g., floodplain ordinances and compliance*
Police, Dakota County Sheriff	Public safety and law enforcement, emergency response	*e.g., city well inspection and maintenance*

Table C.9: Coates Additional Implementation Resources

Program/Ordinance/Study/ Technical Document	Adopted or Revised	Method of incorporation into the hazard mitigation plan

CITY OF EAGAN

Table E.1: Eagan Community Data

Population (2020):	68,855
Households:	27,609
Employment/Jobs:	51,341
Area:	33.5 Sq. Mi.
Major Land Uses:	41% Residential
	19% Parks/Rec.
	9% Undeveloped
	7% Industrial
Community Type:	Suburban
Undeveloped Area:	9%

Source: Metropolitan Council Community Profiles

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.

Figure E.1: City of Eagan Location

Table E.2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
Frequency	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
Warning Time	More than 12 hours	6-12 hours	3-6 hours	None-minimal
Extent	Localized	Community-wide	County-wide or greater	
Likely Impact	Negligible	Limited	Critical	Catastrophic

Table E.3: Eagan Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Violent Summer Storms (e.g., wind, hail)	4	2	2	3	**11**
Structural Fire	4	4	1	2	**11**
Cyber Threats	4	4	1	2	**11**
Tornado	3	3	1	3	**10**
Violent Winter Storms	4	1	3	2	**10**
Hazardous Material Incidents	3	4	1	2	**10**
Terrorism	1	4	2	3	**10**
Flash Flood	3	2	1	3	**9**
Infectious Disease Outbreak/Pandemic	2	1	3	3	**9**
Water Supply Contamination	1	3	2	3	**9**
Wastewater Treatment Plant Failure	1	2	3	3	**9**
Civil Unrest	2	4	1	2	**9**
Drought	3	1	2	2	**8**
Extreme Heat or Cold	4	1	2	1	**8**
Overland Flood (spring snowmelt)	3	1	1	2	**7**
Wildfire	2	3	1	1	**7**
Landslide	1	3	1	1	**6**
Dam Failure	NA	NA	NA	NA	**NA**

General Land Use

Figure E.2 depicts general land use in Eagan, with residential (single- and multi-family) being the predominant land use.

Structural Inventory Value

Table E.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 E.2: Eagan Land Use 2020, Metropolitan Council

Table E.4: Structural Inventory and Value, Eagan

Use Type	Land Value	Structural Value	Total Value	Number of Structures
Agricultural	$11,899,500	$53,500	$11,953,000	9
Commercial	$475,186,100	$874,010,604	$1,349,196,700	516
Exempt	$447,957,600	$372,782,000	$820,739,600	416
Industrial	$305,861,600	$669,709,100	$975,570,700	400
Other	$1,104,700	$2,489,300	$3,594,000	10
Residential	$1,924,188,300	$6,388,040,300	$8,312,228,600	19,738
Utilities	$4,732,400	$11,817,100	$16,549,500	38
TOTAL	**$3,170,930,200**	**$8,318,901,904**	**$11,489,832,100**	**21,127**

Vulnerability

Vulnerable Populations

Table E.5 provides current estimates of populations in Eagan considered by FEMA to be at potentially increased risk during hazard events.

Table E.5: Eagan Potentially Vulnerable Populations, American Community Survey 2015-2019 Estimates

Potentially Vulnerable Population	Percentage (%)	U.S. (%)	Eagan, MN – U.S. Difference
Under Age 5	6.1%	6.1%	0.0%
Over Age 65	12.1%	13.7%	-1.6%
Below Federal Poverty Line	5.6%	13.4%	-7.8%
Living with a Disability	7.8%	15.6%	-7.8%

Vulnerability of Critical Assets to Hazards

Eagan staff evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table E.6. City staff identified *dam failure* as not relevant to critical facilities. Figure 3 provides general locations for selected critical assets in Eagan.

Table E.6: Eagan Assessment of Critical Assets (Redacted in Public Version of Plan)

Critical Facilities	Summer Storms	Tornado	Structure Fire	Hazmat Incidents	Flash Flood	Winter Storms	Infectious Disease	Water Supply Contamination	Overland Flood	Terrorism	Civil Unrest	Wildfire	Drought	Extreme Temps	Landslide	Cyber-Attack

Changes since the 2016 Plan

Eagan staff identified use changes and additions to critical facilities since the plan update in 2016:

There has been no new development in hazard prone areas. Development continues in the Viking Lakes area which is bringing more people into the NE corner of the city.

Figure E.3: City of Eagan – Critical Facilities (Redacted in Public Version of Plan)

National Flood Insurance Program Participation and Compliance

Table E.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 E.7: Eagan NFIP Participation

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Eagan	270103	12/2/11	39	$11,021,600

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 E.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 E.8: Total Floodplain Structure and Value Inventory, Eagan

Structure Type	Estimated Land Value	Estimated Building Value	Total Value	Total Structures
Exempt	$10,853,200	$23,133,500	$33,986,700	11
Total	**$10,853,200**	**$23,133,500**	**$33,986,700**	**11**

Strategy Review and Development

In 2021, Eagan staff reviewed their strategies from the 2016 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2022 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 E.9 lists Eagan's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

Table E.9: Eagan All-Hazard Mitigation Plan Strategies

EAGAN MITIGATION STRATEGIES, 2021	
1. Address security needs for ongoing newly identified threats.	
Priority: High *Hazards:* Cyber Security *Lead:* IT Department, IT Network Supervisor	*Status/Completion:* Existing / Ongoing *Implementation:* Risk and Information Security Committee (RISC) *Est. Cost/Funding Source:* Staff time / Budget
2. Continue storm water pond expansion and maintenance.	
Priority: High *Hazards:* Flash Flood *Lead:* Public Works, City Engineer	*Status/Completion:* Existing / Ongoing *Implementation:* Capital Improvement Program *Est. Cost/Funding Source:* $250,000 annually / Local, with County, State, or federal
3. Adopt the most recent Minnesota Fire Code (2020).*	
Priority: Med *Hazards:* Structural Fire *Lead:* Fire Department, Fire Marshal	*Status/Completion:* Existing / Ongoing *Implementation:* City Council Adoption *Est. Cost/Funding Source:* Staff Time / City Budget
4. Conduct Internal and/or External Network Information Security Assessments and Penetration Tests.	
Priority: Med *Hazards:* Cyber Security *Lead:* IT Department, IT Network Supervisor	*Status/Completion:* Existing / Ongoing *Implementation:* RISC *Est. Cost/Funding Source:* $8-16K (assess), $20K (tests) / Local, possible State, or federal
5. Update Building Code with most recent State code changes.	
Priority: Med *Hazards:* Summer Storms, Structural Fire *Lead:* Community Development, Chief Building Official	*Status/Completion:* Existing / Every three years *Implementation:* Local Building Code *Est. Cost/Funding Source:* Staff Time / Budget

6. Continue regular planning meetings with City Staff and NFL franchise.

Priority: Med
Hazards: Summer Storms, Structural Fire, Extreme Heat
Lead: Lead Dept. to vary as development and tenancy progress; responsible position will be head planner

Status/Completion: Existing / Ongoing
Implementation: Cooperative planning: Community Development, Engineering, Police, and Fire
Est. Cost/Funding Source: Staff Time / Budget

7. Train new staff from multiple departments in the proper reporting and response to illicit discharges to storm sewers and surface waters.

Priority: Low
Hazards: Hazmat, Water Supply Contamination
Lead: Water Resources Manager

Status/Completion: Existing / Ongoing
Implementation: Storm Water Pollution Prevention Program (SWPPP)
Est. Cost/Funding Source: Staff Time / Budget

8. Continue to work with State Hazard Mitigation staff to implement lightning detection capabilities at outdoor venues.

Priority: High
Hazards: Summer Storms
Lead: Police, Support Services Manager
Status/Completion: Existing / Ongoing

Implementation: Emergency Preparedness Plan (Notification and Warning)
Est. Cost/Funding Source: Staff Time / Budget

9. Evaluate shelter design opportunities with all new Parks construction projects.

Priority: Low
Hazards: Summer Storms, Tornado
Lead: Police, Support Services Manager

Status/Completion: Existing / Ongoing
Implementation: Emergency Preparedness Plan
Est. Cost/Funding Source: Staff Time / Budget

10. Evaluate physical security needs for government facilities and acquire appropriate resources./*

Priority: High
Hazards: Civil Unrest
Lead: Police
Status/Completion: New / Ongoing

Implementation: Cooperative planning: Police, PW, P&R, DCDPC
Est. Cost/Funding Source: $150,000-200,000 & staff time for assessment / TBD, possible grants

11. Improve situational awareness and monitoring efforts regarding events which may incite civil unrest.

Priority: High
Hazards: Civil Unrest
Lead: Police
Status/Completion: New / Ongoing, Add investigative Specialist by 2022

Implementation: Expand monitoring capabilities of crime analyst and establish new Investigative Specialist position.
Est. Cost/Funding Source: $110,000 / Budget

12. Update EOC technology to improve local emergency response capabilities

Priority: Medium
Hazards: All
Lead: Police, Fire

Status/Completion: New / 2024
Implementation: Acquisition of new technology
Est. Cost/Funding Source: $89,000 / TBD

13. Expand drone capabilities to aid in expediting response size-up and damage assessment.

Priority: Medium
Hazards: Natural Disasters
Lead: Police, Community Development

Status/Completion: New / 2024
Implementation: Police Drone Team coordination with Chief Building Official
Est. Cost/Funding Source: TBD / TBD

*Reduces risk to buildings or infrastructure
** Evaluates comprehensive range of specific mitigation actions/projects; identifies which were selected for implementation

Implementation Resources

Table E.10 identifies staff resources and roles in implementing its mitigation strategies. Table E.11 identifies process and ordinance resources.

Table E.10: Eagan Mitigation Implementation Resources

Department, Responsible Position	General Role	Processes Implementing Mitigation Strategies
Building Inspections, 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.
Planning and Zoning, Planning Director	Zoning, development, Comprehensive Plans	Floodplain management and land use planning.
Police, Police Chief	Public safety, law enforcement, emergency response	Emergency response training, public safety education, emergency operations planning.
Public Works, 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.
Fire Department, Fire Chief	Public and fire safety enforcement, emergency response	Emergency response training, public education, fire code enforcement in construction.
Risk-Security Information Committee	Evaluate, address cyber security concerns for City of Eagan	

Table E.11: 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	2020	Infrastructure upgrades to support hazard mitigation
Emergency Preparedness Plan	2019	Hazard ID and ranking
Water Quality and Wetland Management Plan	2020	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
2040 Comprehensive Plan	2020	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 F.1: Farmington Community Data

Population (2020):	23,632
Households:	7,906
Employment/Jobs:	4,431
Area:	14.8 Sq. Mi.
Major Land Uses:	52% Ag/Undevel.
	27% Residential
	11% Park and Rec
Community Type:	Emerging Suburban Edge
Undeveloped Area:	52%

Source: Metropolitan Council Community Profiles

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.

Figure F.1: City of Farmington Location

Table F.2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
Frequency	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
Warning Time	More than 12 hours	6-12 hours	3-6 hours	None-minimal
Extent	Localized	Community-wide	County-wide or greater	
Likely Impact	Negligible	Limited	Critical	Catastrophic

Table F.3: Farmington Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Water Supply Contamination	2	4	2	4	**12**
Terrorism	2	4	3	3	**12**
Cyber Threats	3	4	2	3	**12**
Violent Summer Storms (e.g., wind, hail)	4	4	1	2	**11**
Structural Fire	4	4	1	2	**11**
Hazardous Material Incidents	2	4	2	3	**11**
Wastewater Treatment Plant Failure	2	4	3	2	**11**
Extreme Heat or Cold	4	1	3	2	**10**
Infectious Disease Outbreak/Pandemic	2	1	3	4	**10**
Civil Unrest	2	4	2	2	**10**
Tornado	2	3	1	3	**9**
Violent Winter Storms	2	2	3	2	**9**
Flash Flood	3	4	1	1	**9**
Drought	3	1	3	1	**8**
Overland Flood (spring snowmelt)	3	1	1	2	**7**
Wildfire	1	4	1	1	**7**
Landslide	1	4	1	1	**7**
Dam Failure	1	4	1	1	**7**

General Land Use

Figure F.2 depicts general land use in Farmington, with agricultural and open being the predominant land use.

Structural Inventory Value

Table F.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 F.2: Farmington Land Use 2020, Metropolitan Council

Table F.4: Structural Inventory and Value, Farmington

Use Type	Land Value	Structural Value	Total Value	Number of Structures
Agricultural	$51,288,900	$4,783,700	$56,072,600	192
Commercial	$28,061,900	$44,133,800	$72,195,700	146
Exempt	$37,066,800	$161,975,400	$199,042,200	199
Industrial	$14,045,300	$32,342,300	$46,387,600	72
Other	$216,700	$804,200	$1,020,900	13
Residential	$559,605,600	$1,702,998,800	$2,262,604,400	8,015
Utilities	$3,737,100	$21,038,500	$24,775,600	46
TOTAL	**$694,022,300**	**$1,968,076,700**	**$2,662,099,000**	**8,683**

Vulnerability

Vulnerable Populations

Table F.5 provides current estimates of populations in Farmington considered by FEMA to be at potentially increased risk during hazard events.

Table F.5: Farmington Potentially Vulnerable Populations, American Community Survey 2015-2019 Estimates

Potentially Vulnerable Population	Percentage (%)	U.S. (%)	Farmington, MN – U.S. Difference
Under Age 5	8.6%	6.1%	2.7%
Over Age 65	7.9%	13.7%	-5.8%
Below Federal Poverty Line	2.2%	13.4%	-11.2%
Living with a Disability	6.0%	15.6%	-9.6%

Vulnerability of Critical Assets to Hazards

Farmington staff evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table F.6. These hazards were identified as having minimal or no likely impact to critical facilities: *flash flood, overland flood, dam failure, wildfire, and landslide*. Figure F.3 provides general locations for selected critical assets in Farmington.

Table F.6: Farmington Assessment of Critical Assets (Redacted in Public Version of Plan)

Critical Facilities	Summer Storms	Tornado	Structure Fire	Hazmat Incidents	Winter Storms	Infectious Disease	Water Supply Contamination	Terrorism	Civil Unrest	Drought	Extreme Temps	Cyber Threats

Changes Since the 2016 Plan

City staff identified land use changes and additions to critical facilities since the last plan update in 2016:

- New city wells

Figure F.3: City of Farmington – Critical Facilities (Redacted in Public Version of Plan)

National Flood Insurance Program Participation and Compliance

Table F.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 F.7: Farmington NFIP Participation

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Farmington	270104	2011	10	$2,878,000

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 F.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 F.8: Total Floodplain Structure and Value Inventory, Farmington

Structure Type	Estimated Land Value	Estimated Building Value	Total Value	Total Structures
Agricultural	$992,800	$779,400	$1,772,200	12
Exempt	$1,396,500	$14,501,600	$15,898,100	9
Residential	$19,158,300	$61,853,300	$81,011,600	228
Utilities	$3,568,400	$20,250,400	$23,818,800	4
Total	**$25,116,000**	**$97,384,700**	**$122,500,700**	**253**

Strategy Review and Development

In 2021, Farmington staff reviewed strategies from the 2016 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2022 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 F.9 presents Farmington's strategies, with information on hazards, priority, implementation lead, and costs.

Table F.9: Farmington All-Hazard Mitigation Plan Strategies

FARMINGTON MITIGATION STRATEGIES

1. Identify 302 Facilities, Debris Management and Staging Plans.**

Priority: High
STAPLEE: High
Hazards: Summer Storms, Tornado, Hazmat Incidents
Lead: Police Dept., Public Works
Status/Completion: Existing / Ongoing
Implementation: Emergency Preparedness Plan
Est. Cost/Funding Source:

2. Continue Water Tower Inspection*

Priority: Medium-High
STAPLEE: High
Hazards: Water Supply Contamination
Lead: Water Department
Status/Completion: Existing / Continual
Implementation: As needed
Est. Cost/Funding Source: City Budget

3. Replace water and sewer lines identified as insufficient*

Priority: High
STAPLEE: High
Hazards: Flash Floods, Backups
Lead: City Engineer
Status/Completion: Existing-New / Ongoing
Implementation: Capital Improvement Program
Est. Cost/Funding Source: varies / City Budget, Bonding

4. Wellhead Protection Maintenance*

Priority: High
STAPLEE: High
Hazards: Water Supply Contamination
Lead: City Administration, MN Dept. of Health
Status/Completion: Existing / Ongoing
Implementation: City Permits
Est. Cost/Funding Source:

5. Fire Truck Replacement or Refurbishment*

Priority: High
STAPLEE: Medium
Hazards: Structural Fire, Multiple Natural Hazards
Lead: Fire Department, Chief
Status/Completion: Existing / TBT
Implementation: Emergency Operations Plan, Capital Improvement Program, Mutual Aid Agreements
Est. Cost/Funding Source: $100,000 yearly / General Fund

6. Police Car Replacement*

Priority: High
STAPLEE: High
Hazards: Multiple
Lead: Police Department, Chief
Status/Completion: Existing / TPT

Implementation: Emergency Operations Plan, Capital Improvement Program, Mutual Aid Agreements
Est. Cost/Funding Source: $170,000 yearly / General Fund

7. Continue NIMS training

Priority: Medium
STAPLEE: High
Hazards: All
Lead: Police Dept., Chief

Status/Completion: Existing / Ongoing
Implementation: Emergency Operations Plan
Est. Cost/Funding Source: Staff Time/ City Budget

8. Examine solutions for Vermillion River Flooding

Priority: High
STAPLEE: High
Hazards: Flood
Lead: Engineering, Public Works, Police
Status / Completion: Existing / Ongoing

Implementation: Engineering, Public Works, Police
Est. Cost/Funding Source: Staff Time / City Budget

14. Continue to construct mitigation solutions to flood-prone areas of city to reduce or eliminate damage and improve emergency access during flooding.

Priority: High
Hazards: Flood
Lead: City Staff-Engineering, Public Works
Status / Completion: Existing / Ongoing

Implementation: Capital Improvement Plan (CIP)
Est. Cost/Funding Source: Staff Time / City Budget

15. Complete Detailed Flood Study

Priority: High
Hazards: Flood
Lead: Staff: Engineering, Public Works

Status / Completion: New / 2022
Implementation: CIP
Est. Cost/Funding Source: TBD / City Budget

16. Reduce Risk to County Network Infrastructure and Software Applications

Priority: High
Hazards: Cyber-Attack
Lead: City IT

Status / Completion: Existing / Ongoing
Implementation: Operations
Est. Cost/Funding Source: TBD / City Budget

17. Continue completing cyber security exercises as part of COOP planning

Priority: High
Hazards: Cyber-Attack
Lead: City IT

Status / Completion: Existing / Ongoing
Implementation: Operations
Est. Cost/Funding Source: TBD / City Budget

18. Regularly develop programs and projects to identify and address cyber-security weaknesses and new threats (e.g., USB lockdown, vendor management)

Priority: High
Hazards: Cyber-Attack
Lead: City IT

Status / Completion: Existing / Ongoing
Implementation: Operations
Est. Cost/Funding Source: TBD / City Budget

19. Continue ongoing staff training in cyber security and new threats

Priority: High
Hazards: Cyber-Attack
Lead: City IT

Status / Completion: Existing / Ongoing
Implementation: Operations
Est. Cost/Funding Source: TBD / City Budget

20. Invest in hardware and IT infrastructure improvements (e.g., encrypted storage)

Priority: High
Hazards: Cyber-Attack
Lead: City IT

Status / Completion: Existing / Ongoing
Implementation: Operations
Est. Cost/Funding Source: TBD / City Budget

21. Periodically review best practices through the IT Advisory Team

Priority: High
Hazards: Cyber-Attack
Lead: City IT

Status / Completion: Existing / Ongoing
Implementation: Operations
Est. Cost/Funding Source: TBD / City Budget

22. Municipal service vehicle replacement

Priority: Low	*Status / Completion:* New / Ongoing
Hazards: Severe Weather, Tornado, Flooding	*Implementation:* CIP
Lead: Public Works	*Est. Cost/Funding Source:* TBD / City Budget

*Reduces risk to buildings or infrastructure
** Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

Implementation Resources:

Table F.10 identifies Farmington staff resources and their roles in implementing its mitigation strategies.

Table F.10: Farmington Mitigation Implementation Resources

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
Building inspections: Ken Lewis	Building inspections, regulation of new housing development	*Enforce safety restrictions, e.g., setbacks, building materials, fire suppression systems*
Planning/Zoning: Tony Wippler	Zoning, development siting and restrictions, Comprehensive Plans	*Floodplain ordinances and compliance*
Police: Chief Gary Rutherford	Public safety and law enforcement, emergency response	*Response training, public safety education*
Public Works: Katy Gehler	Development and operations of public infrastructure (roads, utilities)	*City well inspection and maintenance*
Fire Department: Chief Justin Elvestad	Public and fire safety enforcement, emergency response	*Inspect commercial structures for fire hazards*

Table F.11 identifies implementation resources related to processes and ordinances.

Table F.11: Farmington Additional Implementation Resources

Program/Ordinance/Study/ Technical Document	Adopted or Revised	Relation to the Hazard Mitigation Plan Strategies
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 HM.1: Hampton Community Data

Population (2020):	744
Households:	274
Employment/Jobs:	205
Area:	1.3 Sq. Mi.
Major Land Uses:	74% Ag./Undevel.
	15% Residential
	2% Park and Rec.
Community Type:	Rural Center/Ag.
Undeveloped Area:	74%

Source: Metropolitan Council Community Profiles

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.

Figure HM.1: City of Hampton Location

Table HM.2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
Frequency	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
Warning Time	More than 12 hours	6-12 hours	3-6 hours	None-minimal
Extent	Localized	Community-wide	County-wide or greater	
Likely Impact	Negligible	Limited	Critical	Catastrophic

Table HM.3: Hampton Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Violent Winter Storms	4	2	3	1.5	**10.5**
Terrorism	1	4	2	3	**10**
Wildfire	1.5	4	2.5	2	**9**
Infectious Disease Outbreak/Pandemic	2	1	3	3	**9**
Dam Failure	1	3	2	3	**9**
Violent Summer Storms	2	2.5	2	2	**8.5**
Structural Fire	1.5	4	1	2	**8.5**
Hazardous Material Incidents	2	4	1	1.5	**8.5**
Tornado	1.5	3	1	2.5	**8**
Drought	2	1	3	2	**8**
Extreme Heat or Cold	2	1	3	2	**8**
Civil Unrest	1	4	1	2	**8**
Flash Flood	1	2	2	2.5	**7.5**
Cyber Threats	1	4	1	1	**7**
Overland Flood (spring snowmelt)	1	1	2	2.5	**6.5**
Water Supply Contamination	1	1	2	1	**5**
Wastewater Treatment Plant Failure	1	1	2	1	**5**
Landslide	1	1	1	1	**4**

General Land Use

Figure HM.2 depicts general land use in Hampton, with agricultural and open being the predominant land use.

Structural Inventory Value

Table HM.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 HM.2: Hampton Land Use 2020, Metropolitan Council

Table HM.4: Structural Inventory and Value, Hampton

Use Type	Land Value	Structural Value	Total Value	Number of Structures
Agricultural	$3,853,100	$195,200	$4,048,300	18
Commercial	$1,147,600	$934,500	$2,082,100	12
Exempt	$870,800	$1,381,200	$2,252,000	13
Industrial	$149,000	$455,000	$604,000	7
Residential	$13,698,700	$43,766,700	$57,465,400	327
HAMPTON Total	**$19,719,200**	**$46,732,600**	**$66,451,800**	**377**

Vulnerability

Vulnerable Populations

Table HM.5 provides current estimates of populations in Hampton considered by FEMA to be at potentially increased risk during hazard events.

Table HM.5: Hampton Potentially Vulnerable Populations, American Community Survey 2015-2019 Estimates

Potentially Vulnerable Population	Percentage (%)	U.S. (%)	Hampton, MN – U.S. Difference
Under Age 5	5.5%	6.1%	-0.6%
Over Age 65	4.4%	13.7%	-9.3%
Below Federal Poverty Line	7.7%	13.4%	-5.7%
Living with a Disability	4.5%	15.6%	-11.1%

Vulnerability of Critical Assets to Hazards

Hampton representatives evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table HM.6. These hazards were identified as having minimal or no likely impact to critical facilities: *hazmat incidents, flash flood, winter storms, water supply contamination, overland flood, wildfire, drought, extreme temperatures, dam failure, and landslide*. Figure 3 provides general locations for selected critical assets in Hampton.

Table HM.6: Assessment of Critical Assets, Hampton (Redacted in Public Version of Plan)

	Summer Storms	Tornado	Structure Fire	Hazmat Incidents	Flash Flood	Winter Storms	Infectious Disease / Pandemic	Water Supply Contamination	Overland Flood	Terrorism	Civil Unrest	Wildfire	Drought	Extreme Temps	Dam Failure	Landslide	Cyber Attack

Changes since the 2016 Plan

City staff identified no significant land use changes or additions to critical facilities since the last plan update in 2016.

National Flood Insurance Program Participation and Compliance

The City of Hampton does not participate in 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 2021, Hampton officials reviewed strategies from the 2016 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2022 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: High	*Implementation:* Capital improvement Program (CIP)
STAPLEE: High	*Est. Cost/Funding Source:* Varies / Budget, Bonding
Hazards: Flash Floods, Backups	
Lead: City Engineer, W/S Supt., City Council	
Status/Completion: Nearly complete / Ongoing	

2. Erect new water tower.*

Priority: High	*Status/Completion:* Existing / 2024
STAPLEE: High	*Implementation:* CIP
Hazards: Structural Fire Protection, Supply	*Est. Cost/Funding Source:* $1 Million / Budget, Bonding
Lead: City Engineer, W/S Supt., City Council	

3. Continue to document City critical infrastructure in GIS.

Priority: High	*Status/Completion:* Existing / Ongoing
STAPLEE: High	*Implementation:* Budget and CIP
Hazards: All	*Est. Cost/Funding Source:* Varies / City Budget, Bonding
Lead: City Engineer, Water-Sewer Superintendent	

4. Continue to participate in NIMS training.

Priority: High	*Status/Completion:* Existing / Ongoing
STAPLEE: High	*Implementation:* Budget
Hazards: All	*Est. Cost/Funding Source:* Varies / City Budget
Lead: Randolph-Hampton Fire Dept. and City, Fire Chief	

5. Continue to invest in infrastructure improvements, as funding allows.**

Priority: High	*Status/Completion:* Existing / Ongoing
STAPLEE: High	*Implementation:* Budget
Hazards: All	*Est. Cost/Funding Source:* Varies / City Budget
Lead: City Council	

*Reduces risk to buildings or infrastructure
**Evaluates a comprehensive range of specific mitigation actions; identifies which actions were selected for implementation

Implementation Resources:

Table HM.8 identifies Hampton staff resources and their roles in implementing its mitigation strategies.

Table HM.8: Hampton Staff Implementation Resources

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
Building Inspections, City Building Inspector (MNSPECT, LLC)	Building inspections, regulation of new housing development	*Enforce restrictions: setbacks, building materials and fire suppression systems*
Planning and Zoning: Planning Commission, Consulting Planner (Bolton and Menk)	Zoning, development siting and restrictions, Comprehensive Plans	*Floodplain ordinances and compliance*
Law Enforcement, Dakota County Sheriff's Office	Public safety, law enforcement, emergency response	*Response training, public safety education*
Public Works, City Engineer (Bolton and Menk)	Develop/operate public infrastructure (roads, utilities)	*City well inspection and maintenance*
Fire Department, Fire Chief	Fire safety enforcement, emergency response	*Inspect commercial structures for hazards*

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
City Council and Mayor	City governance	*Policy, annual budgets and CIP*

Table HM.9 identifies implementation resources related to processes and ordinances.

Table HM.9: Hampton Additional Implementation Resources

Program/Ordinance/Document	Adopted-Revised	Relation to Mitigation Plan Implementation
Emergency Operations Plan, EOC Drills		Increases ability to respond in emergencies, enhance communications
Capital Improvement Plan and Annual Budget	Annually	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	12-10-2019	Addresses future growth needs in the City

CITY OF HASTINGS

Table HS.1: Hastings Community Data

Population (2020):	22,154
Households:	9,129
Employment/Jobs:	6,972
Area:	12.0 Sq. Mi.
Major Land Uses:	33% Residential
	21% Ag./Undevel.
	18% Park/Rec.
	5.% Institutional
Community Type:	Emerging Suburb Edge
Undeveloped Area:	21%

Source: Metropolitan Council Community Profiles

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.

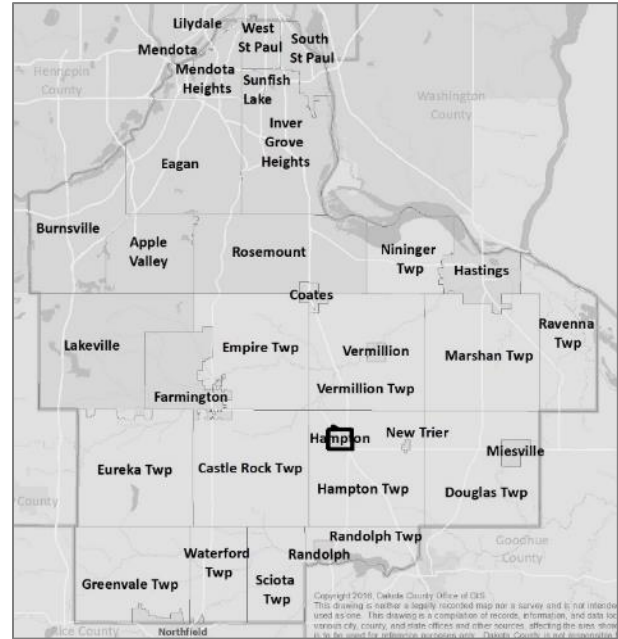**Figure HS.1: City of Hastings Location**

Table HS.2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
Frequency	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
Warning Time	More than 12 hours	6-12 hours	3-6 hours	None-minimal
Extent	Localized	Community-wide	County-wide or greater	
Likely Impact	Negligible	Limited	Critical	Catastrophic

Table HS.3: Hastings Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Violent Summer Storms (e.g., wind, hail)	4	3	3	3	**13**
Tornado	3	4	2	3	**12**
Structural Fire	4	4	1	2	**11**
Hazardous Material Incidents	3	4	1	2	**11**
Infectious Disease Outbreak/Pandemic	4	1	3	3	**11**
Water Supply Contamination	3	4	2	2	**11**
Cyber Threats	4	4	1	2	**11**
Extreme Heat or Cold	4	1	3	2	**10**
Violent Winter Storms	3	1	3	2	**9**
Drought	2	1	3	3	**9**
Wastewater Treatment Plant Failure	2	4	1	2	**9**
Terrorism	2	4	1	2	**9**
Civil Unrest	2	3	2	2	**9**
Dam Failure	1	4	1	3	**9**
Wildfire	1	4	1	2	**8**
Landslide	1	4	1	2	**8**
Flash Flood	2	2	1	2	**7**
Overland Flood (spring snowmelt)	3	1	1	2	**7**

General Land Use

Figure HS.2 depicts general land use in Hastings, with residential (single- and multi-family) being the predominant land use.

Structural Inventory Value

Table HS.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 HS.2: Hastings Land Use 2020, Metropolitan Council

Table HS.4: Structural Inventory and Value, Hastings

Use Type	Land Value	Structural Value	Total Value	Number of Structures
Agricultural	$7,852,600	$725,900	$8,578,500	22
Commercial	$64,508,600	$110,575,900	$175,084,500	255
Exempt	$68,704,800	$310,686,296	$379,391,104	287
Industrial	$12,942,600	$35,722,700	$48,665,300	88
Other	$0	$70,900	$70,900	6
Residential	$473,879,600	$1,607,516,300	$2,081,395,900	9,354
Utilities	$494,100	$1,228,900	$1,723,000	2
TOTAL	**$628,382,300**	**$2,066,526,896**	**$2,694,909,204**	**10,014**

Vulnerability

Vulnerable Populations

Table HS.5 provides current estimates of populations in Hastings considered by FEMA to be at potentially increased risk during hazard events.

Table HS.5: Hastings Potentially Vulnerable Populations, American Community Survey 2015-2019 Estimates

Potentially Vulnerable Population	Percentage (%)	U.S. (%)	Hastings, MN – U.S. Difference
Under Age 5	6.0%	6.1%	-0.1%
Over Age 65	17.0%	13.7%	3.3%
Below Federal Poverty Line	6.8%	13.4%	-6.6%
Living with a Disability	12.2%	15.6%	-3.4%

Vulnerability of Critical Assets to Hazards

Hastings staff evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table HS.6. Figure HS.3 provides general locations for selected critical assets in Hastings.

Table HS.6: Hastings Assessment of Critical Assets (Redacted in Public Version of Plan)

	Summer Storms	Tornado	Structure Fire	Hazmat Incidents	Flash Flood	Winter Storms	Infectious Disease	Water Supply Contamination	Overland Flood	Terrorism	Civil Unrest	Wildfire	Drought	Extreme Temperatures	Dam Failure	Landslide	Cyber Security Threats

Changes since the 2016 Plan

Hastings staff identified no significant land use changes or additions to critical facilities since the plan update in 2016.

Figure HS.3: City of Hastings – Critical Facilities (Redacted in Public Version of Plan)

National Flood Insurance Program Participation and Compliance

Table HS.7 includes information on Hasting's participation in the National Flood Insurance Program (NFIP). Additional information follows about City compliance with the terms of the NFIP.

Table HS.7: Hastings NFIP Participation

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Hastings	270105	3/16/16	13	$3,292,500

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 HS.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 HS.8: Total Floodplain Structure and Value Inventory, Hastings

Structure Type	Estimated Land Value	Estimated Building Value	Total Value	Total Structures
Exempt	$2,151,800	$4,378,400	$6,530,200	38
Residential	$3,466,100	$4,917,600	$8,383,700	54
TOTAL	**$5,617,900**	**$9,296,000**	**$14,913,900**	**92**

Strategy Review and Development

In 2021, Hastings staff reviewed their strategies from the 2016 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2022 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 HS.9 lists Hasting's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

Table HS.9: Hastings All-Hazard Mitigation Plan Strategies

HASTINGS MITIGATION STRATEGIES	
1. Update Emergency Operations Plan (EOP)	
Priority: Low	*Status/Completion:* Existing / Ongoing
STAPLEE: High	*Implementation:* Periodic updates
Hazards: All	*Est. Cost/Funding Source:* Staff Time / General Fund
Lead: Emergency Management, Director	
2. Replace water/sewer/storm sewer lines (new and existing)*	
Priority: Medium	*Status/Completion:* Existing and New /
STAPLEE: High	*Implementation:* Capital Improvement Plan (CIP)
Hazards: Flash Flood, Water supply	
Lead: Public Works, Director	*Est. Cost/Funding Source:* TBD / TBD
3. Continue wellhead protection	
Priority: High	*Implementation:* Wellhead Protection Plan
STAPLEE: High	*Est. Cost/Funding Source:* $1,500 yearly / Water Fund – Commodity Charges
Hazards: Water Supply Contamination	
Lead: Public Works, Director	*Notes: Plan complete, annual reporting and notification requirements*
Status/Completion: Existing / Ongoing	
4. Continue stormwater management (replacing undersized storm sewers and improving water quality)*	
Priority: Medium	*Implementation:* Capital Improvement Plan (CIP)
STAPLEE: High	
Hazards: Flooding, Severe Summer Storms	*Est. Cost/Funding Source:* TBD / Stormwater Utility and City Debt
Lead: Public Works, Director	
Status/Completion: Existing and New / Ongoing	
5. Continue with drainage and erosion control plans	
Priority: Medium	*Status/Completion:* Existing and New / Ongoing
STAPLEE: High	*Implementation:* Building Safety and Community Development
Hazards: Flooding	
Lead: Planning, Building Safety	*Est. Cost/Funding Source:* TBD / General Fund

6. Continue to enforce zoning and permits regulations in floodplains**

Priority: Medium
STAPLEE: High
Hazards: Flooding
Lead: Planning and Building Safety, Director

Status/Completion: Existing and New / Ongoing
Implementation: Building Safety and Community Development
Est. Cost/Funding Source: TBD / General Fund

7. Monitor construction, improvements, alterations, and development in floodplains

Priority: Medium
STAPLEE: Medium
Hazards: Flooding
Lead: Planning and Building Safety, Director

Status/Completion: Existing and New / Ongoing
Implementation: Building Safety and Community Development
Est. Cost/Funding Source: TBD / General Fund

8. Ensure Building Code compliance*

Priority: High
STAPLEE: High
Hazards: Multiple
Lead: Building Safety, Director
Status/Completion: Existing and New / Ongoing

Implementation: Building Safety and Community Development
Est. Cost/Funding Source: TBD / General Fund
Notes: new homes to have two feet of freeboard/runoff area

9. Continue to enforce mixed occupancy fire alarm ordinance

Priority: Medium
STAPLEE: High
Hazards: Structural Fire
Lead: Fire Department, Chief

Status/Completion: Existing and New / Ongoing
Implementation: Community Development
Est. Cost/Funding Source: Staff Time / General Fund

10. Continue to enforce burning bans/restrictions

Priority: Medium
STAPLEE: High
Hazards: Wildfire, Structural Fire
Lead: Fire Department, Chief

Status/Completion: Existing and New / Ongoing
Implementation: Fire Department enforcement
Est. Cost/Funding Source: Staff Time / General Fund

11. Conduct Emergency Operations Center Drills

Priority:
STAPLEE: Medium
Hazards: All
Lead: Emergency Management, Director
Status/Completion: Existing and New / Ongoing

Implementation: Emergency management training
Est. Cost/Funding Source: Staff Time / General Fund

12. Educate and train staff on Illicit Discharge Detection Elimination (IDDE) to eliminate discharge to storm sewers

Priority: Medium
STAPLEE: High
Hazards:
Lead: Public Works/Engineering/Emergency Management, Director

Status/Completion: New / Ongoing
Implementation: Engineering Dept. training
Est. Cost/Funding Source:

13. Evaluate need for additional storm sirens related to community growth

Priority: Medium
Hazards: Severe storms, hazmat incidents
Lead: Public Works/Engineering/Emergency Management, Director

Status/Completion: New / Ongoing
Implementation: Emergency Mgmt.
Est. Cost/Funding Source: TBD / Grant, general fund

14. Conduct water main leak detection survey

Priority: Low
STAPLEE: High
Hazards: Pressure Loss, Road Integrity
Lead: Public Works/Engineering/Emergency Management, Director

Status/Completion: Existing / Ongoing
Implementation: Public Works
Est. Cost/Funding Source: TBD / Water Fund

15. First Street Flooding Mitigation*

Priority:	*Status/Completion:* New / 2026
STAPLEE: Medium	*Implementation:* Wall Dam project
Hazards: Flooding	*Est. Cost/Funding Source:* $1,000,000 / federal FEMA
Lead: Public Works/Engineering/Emergency Management, Director	

16. Remove/Demolish Hazardous Property(-ies)*

Priority:	*Status/Completion:* New / Ongoing
STAPLEE: Medium	*Implementation:* Construction projects
Hazards: Structural Fire	*Est. Cost/Funding Source:* $1,000,000 / HEDRA
Lead: City, HEDRA	

17. Vermillion Corridor Update

Priority:	*Status/Completion:* New / 2025
STAPLEE: Medium	*Implementation:* Roadway project(s)
Hazards: Aging road infrastructure/utilities	*Est. Cost/Funding Source:* $115,000,000 / MNDOT
Lead: MNDOT	

18. Mitigate Civil Unrest

Priority:	*Status/Completion:* New / Ongoing
STAPLEE: High	*Implementation:* Social Impact programs
Hazards: Civil Unrest	*Est. Cost/Funding Source:* $200,000 / City Budget
Lead: Hastings Police, Chief	

*Reduces risk to buildings or infrastructure
** Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

Implementation Resources:

Table HS.10 identifies Hastings staff resources and roles in implementing its mitigation strategies.

Table HS.10: Hastings Staff Mitigation Implementation Resources

Department, Responsible Position	General Role	Processes and Tools for Implementing Mitigation Strategies
Building Inspections, City Building Official	Building inspections, regulation of new housing development	*e.g., enforce safety restrictions including setbacks, building materials and fire suppression systems*
Planning and Zoning Community Development Director	Zoning, development siting and restrictions, Comprehensive Plans	*e.g., floodplain ordinances and compliance*
Police, Police Chief	Public safety and law enforcement, emergency response	*e.g., response training, public safety education*
Public Works, Public Works Director	Develop / operate public infrastructure (roads, utilities)	*e.g., city well inspection and maintenance*
Fire Department, Fire Chief	Public and fire safety enforcement, emergency response	*e.g., response and mitigation, inspect commercial structures for fire hazards, building and fire suppression plan reviews, public education*

Table HS.11 identifies process and ordinance resources.

Table HS.11: Hastings Additional Implementation Resources

Program/Ordinance/Study/ Technical Document	Year adopted/revised	Reviewed during plan update?	Method of incorporation into the hazard mitigation plan
Narrow banding of outdoor sirens	2011 - 2012	Yes Completed	Working with Dakota County
Educate public on Storm Siren Policy	Spring 2011	Yes	Community Relations
Update EOP	2021	Yes	Working with Dakota County
Wellhead Protection	Updated 2021	Yes	Continuous efforts with public
Water Supply	Updated 2018	Yes	Continuous efforts with public
Storm Water Management	Updated 2018	Yes	Continuous efforts with public
Mississippi River Flooding	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	Updated 2010	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	Updated 2018 – follow DNR	Yes	Continuous efforts with public
EOC Drill	2021	Yes	Organize with city staff

CITY OF INVER GROVE HEIGHTS

Table IG.1: Inver Grove Heights Community Data

Population (2020):	35,791
Households:	14,338
Employment/Jobs:	9,602
Area:	30.0 Sq. Mi.
Major Land Uses:	38% Ag./Undevel.
	31% Residential
	9% Park/Rec.
	6% Industrial
Community Type:	Emerging Suburban Edge/Rural Residential
Undeveloped Area:	38%

Source: Metropolitan Council Community Profiles

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.

Figure IG.1: City of Inver Grove Heights Location

Table IG.2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
Frequency	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
Warning Time	More than 12 hours	6-12 hours	3-6 hours	None-minimal
Extent	Localized	Community-wide	County-wide or greater	
Likely Impact	Negligible	Limited	Critical	Catastrophic

Table IG.3: Inver Grove Heights Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Violent Summer Storms (e.g., wind, hail)	4	3	3	3	**13**
Tornado	3	4	2	3	**12**
Structural Fire	4	4	1	2	**11**
Hazardous Material Incidents	3	4	1	2	**11**
Infectious Disease Outbreak/Pandemic	4	1	3	3	**11**
Water Supply Contamination	3	4	2	2	**11**
Cyber Threats	4	4	1	2	**11**
Extreme Heat or Cold	4	1	3	2	**10**
Violent Winter Storms	3	1	3	2	**9**
Drought	2	1	3	3	**9**
Wastewater Treatment Plant Failure	2	4	1	2	**9**
Terrorism	2	4	1	2	**9**
Civil Unrest	2	3	2	2	**9**
Wildfire	1	4	1	2	**8**
Landslide	1	4	1	2	**8**
Dam Failure	1	4	1	2	**8**
Flash Flood	2	2	1	2	**7**
Overland Flood (spring snowmelt)	3	1	1	2	**7**

General Land Use

Figure IG.2 depicts general land use in Inver Grove Heights, with agriculture/undeveloped open space being the predominant land uses.

Structural Inventory Value

Table IG.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 IG.2: Inver Grove Heights Land Use 2020, Metropolitan Council

Table IG.4: Structural Inventory and Value, Inver Grove Heights

Use Type	Land Value	Structural Value	Total Value	Number of Structures
Agricultural	$45,728,900	$4,947,600	$50,676,500	142
Commercial	$141,896,800	$173,966,500	$315,863,300	309
Exempt	$83,317,300	$167,773,200	$251,090,500	227
Industrial	$50,526,700	$115,417,400	$165,944,100	250
Other	$501,100	$359,400	$860,500	0
Residential	$1,027,100,000	$3,042,437,200	$4,069,537,200	13,897
Utilities	$8,440,900	$63,264,000	$71,704,900	127
TOTAL	**$1,357,511,700**	**$3,568,165,300**	**$4,925,677,000**	**14,952**

Vulnerability

Vulnerable Populations

Table IG.5 provides current estimates of populations in Inver Grove Heights considered by FEMA to be at potentially increased risk during hazard events.

Table IG.5: Inver Grove Heights Potentially Vulnerable Populations, American Community Survey 2015-2019 Est.

Potentially Vulnerable Population	Percentage (%)	U.S. (%)	Inver Grove Heights, MN – U.S. Difference
Under Age 5	4.9%	6.1%	-1.2%
Over Age 65	15.7%	13.7%	2.0%
Below Federal Poverty Line	7.6%	13.4%	-5.8%
Living with a Disability	11.6%	15.6%	-4.0%

Vulnerability of Critical Assets to Hazards

Inver Grove Heights staff evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table IG.6. Hazards identified as non-applicable to critical facilities include: *flash flood, overland flood, dam failure, and landslide*. Figure IG.3 provides general locations for selected critical assets in Inver Grove Heights.

Table IG.6: Inver Grove Heights Assessment of Critical Assets (Redacted in Public Version of Plan)

Critical Facilities	Summer Storms	Tornado	Structure Fire	Hazmat Incidents	Winter Storms	Infectious Disease/Pandemic	Water Supply Contamination	Terrorism	Civil Unrest	Wildfire	Drought	Extreme Temps	Cyber Security

Changes since the 2016 Plan

Inver Grove Heights staff identified no changes to critical facilities since the plan update in 2016, but noted the following city improvements:

- Rock Island Swing Bridge recreational area and Heritage Village Park

Figure IG.3: City of Inver Grove Heights – Critical Facilities (Redacted in Public Version of Plan)

National Flood Insurance Program Participation and Compliance

Table IG.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 IG.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	16	$4,395,000

Compliance:

All building permit applications must meet the Flood Plain Ordinance prior to issuance of a building permit. The Flood Plain Ordinance is also a part of our concept review prior to submittal of permit applications. The Community Development Director and City Planner are responsible for issuance of Flood Plain Permits and compliance with the ordinance.

Table IG.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 GIS and Assessor offices.

Table IG.8: Total Floodplain Structure and Value Inventory, Inver Grove Heights

Structure Type	Estimated Land Value	Estimated Building Value	Total Value	Total Structures
Commercial	$1,466,700	$952,700	$2,419,400	12
Exempt	$120,200	$0	$120,200	5
Residential	$1,500,600	$2,654,300	$4,154,900	15
TOTAL	**$3,087,500**	**$3,607,000**	**$6,694,500**	**32**

Strategy Review and Development

In 2021, Inver Grove Heights staff reviewed their strategies from the 2016 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2022 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 IG.9 lists Inver Grove Heights' strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

Table IG.9: Inver Grove Heights All-Hazard Mitigation Plan Strategies

INVER GROVE HEIGHTS MITIGATION STRATEGIES	
1. Address wellhead protection needs.	
Priority: High	*Status/Completion:* Existing / Ongoing
STAPLEE: High	*Implementation:* Wellhead Protection Plans
Hazards: Water Supply Contamination	*Est. Cost/Funding Source:* $2,500 yearly /
Lead: Public Works, Director	Water Fund
2. Conduct maintenance on water storage facilities.	
Priority: High	*Status/Completion:* Existing / Ongoing
STAPLEE: High	*Implementation:* Contract Engineering, Record
Hazards: Water Supply Contamination	Keeping
Lead: Public Works, Director	*Est. Cost/Funding Source:* $10,200 / Water Fund
3. Inspect Wells.	
Priority: High	*Implementation:* Weekly Checks and Record
STAPLEE: High	Keeping
Hazards: Water Supply Contamination	*Est. Cost/Funding Source:* $30,000 per well /
Lead: Public Works, Director	Water Fund
Status/Completion: Existing / Ongoing	
4. Sanitary Sewer Lining for Infiltration and Inflow Management.	
Priority: High	*Status/Completion:* Existing / Ongoing
STAPLEE: High	*Implementation:* Maps, Daily Record Keeping
Hazards: Flash Flooding, Backups	*Est. Cost/Funding Source:* $75,000 yearly /
Lead: Public Works, Director	Sewer Fund
5. Lift Station Maintenance.	
Priority: High	*Implementation:* Weekly Checks, Record
STAPLEE: High	Keeping
Hazards: Flash Flooding, Backups	*Est. Cost/Funding Source:* Staff Time / Sewer
Lead: Public Works, Director	Fund
Status/Completion: Existing / Ongoing	

6.   Risk Management for Water Treatment Plant.

Priority: High
STAPLEE: High
Hazards: Water Supply Contamination (Chlorine)
Lead: Public Works, Director

Status/Completion: Existing / Ongoing
Implementation: Risk Management Plan
Est. Cost/Funding Source: $5,000 yearly / Water Fund

7.   Storm Water Management/MS4/Maintenance.

Priority: High
STAPLEE: Medium
Hazards: Flash Flooding, Severe Storms
Lead: Public Works, Director
Status/Completion: New-Existing / Ongoing

Implementation: Storm sewer repair, improvements
Est. Cost/Funding Source: TBD / Stormwater Utility, General Fund, Bonding

8.   Mississippi River Dike Opening Management/Flood Mitigation.

Priority: Low
STAPLEE: Medium
Hazards: Flooding
Lead: Public Works, Director

Status/Completion: New-Existing / Ongoing
Implementation: Emergency Preparedness Plan
Est. Cost/Funding Source: TBD / General Fund

9.   Mass Dispensing Compliance.

Priority: High
STAPLEE: High
Hazards: Pandemic Influenza, Infectious Disease Outbreak, Terrorism

Lead: Police Department, Chief
Status/Completion: New-Existing / Ongoing
Implementation: Emergency Preparedness Plan
Est. Cost/Funding Source: TBD / General Fund

10. Outdoor Warning Siren Maintenance.

Priority: High
STAPLEE: High
Hazards: Severe Summer Storms, Tornado, Hazmat

Lead: Police Department, Chief
Status/Completion: New-Existing / Ongoing
Implementation: Emergency Preparedness Plan
Est. Cost/Funding Source: TBD / General Fund

11. Debris Management.

Priority: High
STAPLEE: High
Hazards: Severe Summer Storms, Tornado, Hazmat, Terrorism

Lead: Public Works, Director
Status/Completion: New-Existing / Ongoing
Implementation: Emergency Preparedness Plan
Est. Cost/Funding Source: TBD / General Fund

12. Rail/Pipeline Safety.

Priority: High
STAPLEE: High
Hazards: Severe Summer Storms, Tornado, Hazmat, Terrorism

Lead: Police Department, Chief
Status/Completion: New-Existing / Ongoing
Implementation: Emergency Preparedness Plan
Est. Cost/Funding Source: TBD / General Fund

13. Address civil unrest by ensuring that public building security is in place and providing training and appropriate gear to law enforcement

Priority:

STAPLEE: High
Hazards: Civil Unrest
Lead: Police Department, Chief

Status/Completion: New / Ongoing
Implementation: Emergency preparedness training, work planning and operations
Est. Cost/Funding Source: TBD / General Fund

14. Address cybersecurity threats with prevention, detection, and remediation

Priority:
STAPLEE: High
Hazards: Cyber Attack
Lead: City IT staff

Status/Completion: New / Ongoing
Implementation: Emergency preparedness training, work planning and operations
Est. Cost/Funding Source: TBD / General Fund

15. Monitor construction, improvements, alterations and development in floodplains

Priority: *Status/Completion:* New / Ongoing
STAPLEE: Medium   *Implementation:* Land use authority
Hazards: Flooding   *Est. Cost/Funding Source:* TBD / General Fund
Lead: City Planning staff

16. Monitor roadway infrastructure in floodplains

Priority: *Status/Completion:* New / Ongoing
STAPLEE: Medium   *Implementation:* City public works projects,
Hazards: Flooding   land use authority
Lead: City Public Works staff   *Est. Cost/Funding Source:* TBD / General Fund

17. Ensure Building Code compliance

Priority: *Status/Completion:* New / Ongoing
STAPLEE: High   *Implementation:* Code enforcement
Hazards: Structural Fire, Collapse   *Est. Cost/Funding Source:* TBD / General Fund
Lead: City Planning staff

18. Enforcing Burning Bans

Priority: *Status/Completion:* New / Ongoing
STAPLEE: High   *Implementation:* City rule enforcement
Hazards: Structural Fire   *Est. Cost/Funding Source:* TBD / General Fund
Lead: Police Department, Chief

*Reduces risk to buildings or infrastructure
** Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

Implementation Resources:

Table IG.10 identifies Inver Grove Heights resources and roles in implementing its mitigation strategies.

Table IG.10: Inver Grove Heights Mitigation Implementation Resources

Department, Responsible Position	General Role	Processes for Implementing Mitigation Strategies
Building Inspections, Chief Building Official	Building inspections, regulation of new housing development	Enforce safety restrictions, building materials, and fire suppression
Planning and Zoning, City Planner	Zoning, development siting and restrictions, Comprehensive Plans	Floodplain ordinances and compliance
Police, Police Chief	Public safety and law enforcement, emergency response	Response training, public safety education
Public Works, Public Works Director	Development and operations of public infrastructure (roads, utilities)	City well inspection and maintenance
Fire Department, Chief	Public and fire safety enforcement, emergency response	Inspect commercial structures for fire hazards

Table IG.11 identifies process and ordinance resources.

Table IG.11: Inver Grove Heights Additional Implementation Resources

Inver Grove Heights Program/Policy/Technical Documents	Year adopted/revised	Method of incorporation into the hazard mitigation plan
Water Supply Plan	2018	Emergency response procedures for staff
Sewer Plan	2017	Infrastructure information
NPDES Permit	2018	Standards for design, O & M
Water Resources Management Plan	2018	Evaluate storm water issues

CITY OF LAKEVILLE

Table LK.1: Lakeville Community Data

Population (2020):	69,640
Households:	23,265
Employment/Jobs:	15,888
Area:	37.9 Sq. Mi.
Major Land Uses:	30% Ag./Undeveloped
	39% Residential
	14% Park/Recreation
	4% Industrial
Community Type:	Suburban Edge
Undeveloped Area:	30%

Source: Metropolitan Council Community Profiles

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.

Figure LK.1: City of Lakeville Location

Table LK.2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
Frequency	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
Warning Time	More than 12 hours	6-12 hours	3-6 hours	None-minimal
Extent	Localized	Community-wide	County-wide or greater	
Likely Impact	Negligible	Limited	Critical	Catastrophic

Table LK.3: Lakeville Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Civil Unrest	3	3	2	3	**11**
Cyber Threats	2	4	2	3	**11**
Violent Winter Storms	2	2	3	3	**10**
Wildfire	2	4	3	1	**10**
Violent Summer Storms (e.g., wind, hail)	2	2	3	2	**9**
Tornado	2	2	3	2	**9**
Structural Fire	3	4	1	1	**9**
Hazardous Material Incidents	2	4	1	2	**9**
Terrorism	1	4	3	1	**9**
Extreme Heat or Cold	2	2	2	2	**8**
Infectious Disease Outbreak/Pandemic	2	1	3	2	**8**
Flash Flood	1	3	1	2	**7**
Drought	1	1	3	2	**7**
Overland Flood (spring snowmelt)	1	1	3	1	**6**
Water Supply Contamination	1	1	2	1	**5**
Landslide	1	1	1	1	**4**
Wastewater Treatment Plant Failure	1	1	2	2	**4**
Dam Failure	1	1	1	1	**4**

General Land Use

Figure LK.2 depicts general land use in Lakeville, with agriculture-undeveloped open space and residential being the predominant land uses.

Figure LK.2: Lakeville Land Use 2020, Metropolitan Council

Structural Inventory Value

Table LK.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 are identified as residential, commercial, industrial, and agricultural based on associated 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 LK.4: Structural Inventory and Value, Lakeville

Use Type	Land Value	Structural Value	Total Value	Number of Structures
Agricultural	$89,296,700	$5,215,600	$94,512,300	126
Commercial	$238,020,400	$333,369,700	$571,390,100	393
Exempt	$168,871,600	$340,789,900	$509,661,500	448
Industrial	$115,524,000	$268,247,200	$383,771,200	181
Other	$2,178,400	$1,913,400	$4,091,800	4
Residential	$2,250,529,000	$6,382,164,700	$8,632,693,700	22,752
Utilities	$2,121,000	$5,898,200	$8,019,200	26
TOTAL	**$2,866,541,100**	**$7,337,598,700**	**$10,204,139,800**	**23,930**

Vulnerability

Vulnerable Populations

Table LK.5 provides current estimates of populations in Lakeville considered by FEMA to be at potentially increased risk during hazard events.

Table LK.5: Lakeville Potentially Vulnerable Populations, American Community Survey 2015-2019 Estimates

Potentially Vulnerable Population	Percentage (%)	U.S. (%)	Lakeville, MN – U.S. Difference
Under Age 5	7.3%	6.1%	0.8%
Over Age 65	9.5%	13.7%	-4.2%
Below Federal Poverty Line	3.9%	13.4%	-9.5%
Living with a Disability	5.8%	15.6%	-9.8%

Vulnerability of Critical Assets to Hazards

Lakeville staff evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table LK.6. One hazard was identified as non-applicable to critical facilities include: *dam failure*. Figure LK.3 provides general locations for selected critical assets in Lakeville.

Table LK.6: Lakeville Assessment of Critical Assets (Redacted in Public Version of Plan)

Critical Facilities	Summer Storms	Tornado	Structure Fire	Hazmat Incidents	Flash Flood	Winter Storms	Infectious Disease/Pandemic	Water Supply Contamination	Overland Flood	Terrorism	Civil Unrest	Wildfire	Drought	Extreme Temps	Landslide	Cyber Security

Changes since the 2016 Plan

Lakeville staff identified use changes to critical facilities since the plan update in 2016: increase in Senior Care – (the Moments, Beehive, and Kingsley Shores expansion); Expansion of Airlake Airport; additions at three elementary schools; and installation of security fencing at city facility in 2020

National Flood Insurance Program Participation and Compliance

Table LK.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 LK.7: Lakeville NFIP Participation

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Lakeville	270107	12/2/11	63	$17,555,500

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. Chapter 101 in City Ordinance and refers to MN Statues chapters 103F and 462.

Table LK.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 LK.8: Total Floodplain Structure and Value Inventory, Lakeville

Structure Type	Estimated Land Value	Estimated Building Value	Total Value	Total Structures
Commercial	$1,489,300	$2,537,700	$4,027,000	3
Exempt	$1,548,600	$1,132,700	$2,681,300	8
Industrial	$1,563,300	$6,263,500	$7,826,800	5
Residential	$33,632,700	$26,706,700	$60,339,400	94
TOTAL	**$38,233,900**	**$36,640,600**	**$74,874,500**	**110**

Strategy Review and Development

In 2021, Lakeville staff reviewed their strategies from the 2016 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2022 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 LK.9 lists Lakeville's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

Table LK.9: Lakeville All-Hazard Mitigation Plan Strategies

LAKEVILLE MITIGATION STRATEGIES

1. Develop the Citywide Street Reconstruction Plan.*

Priority: First
STAPLEE: High
Hazards: Flash Flooding
Lead: Public Works, Director

Status/Completion: Existing / Ongoing
Implementation: Street reconstruction
Est. Cost/Funding Source: $3,250,000 / CIP

2. Conduct Three Echo / Active / Hostile Event Trainings.**

Priority: Second
STAPLEE: High
Hazards: All
Lead: Police Department, Chief

Status/Completion: Existing / Ongoing Annual Training
Implementation: Public and new staff training, new training models
Est. Cost/Funding Source: Staff Time / Budget

3. Exercise and drill EOC and supervisory staff on storm or transportation accident.

Priority: Third
STAPLEE: High
Hazards: All
Lead: All City Departments
Status/Completion: Existing / Annual
on scope / Budget, possible UASI funds

Implementation: Emergency Preparedness Plan, ongoing review and training with department heads and staff
Est. Cost/Funding Source: Dependent

4. Storm watershed maintenance.

Priority: Fourth
STAPLEE: High
Hazards: Flash Flood
Lead: Public Works, Director

Status/Completion: Existing / Ongoing
Implementation: Department Operations Plan, ongoing maintenance as budget permits
Est. Cost/Funding Source: $10,000 / Budget, taxes

5. Shelter planning with local partners.

Priority: Fifth
STAPLEE: High
Hazards: All
Lead: Police Department, Chief

Status/Completion: Existing / 2012
Implementation: Emergency Preparedness Plan
Est. Cost/Funding Source: TBD / TBD

6. Provide school programs to youth, focusing on stoves, smoke detectors, fire safety, and evacuation.

Priority: Seventh
STAPLEE: High
Hazards: Structural Fire (G2: public education)
Lead: Fire Chiefs
Status/Completion: Existing / Ongoing

Implementation: Public Education: Elementary, Middle school engagement. Annual education and training.
Est. Cost/Funding Source: Staff Time / Budget

7. Storm Siren Maintenance.

Priority: Ninth
Hazards: Severe Summer Storms, Tornado, Hazmat
Lead: Police, Chief
Status/Completion: Existing / Ongoing

Implementation: Emergency Management, contracted annual maintenance/monitoring
Est. Cost/Funding Source: $8,000 / Budget

8. Improve situational awareness and monitoring efforts.

Priority: TBD
Hazards: Civil Unrest
Lead: Police Department, Chief

Status/Completion: New / Ongoing
Implementation: Operations
Est. Cost/Funding Source: TBD / Budget

9. Reduce Risk to City Network Infrastructure and Software Applications.

Priority: TBD
Hazards: Cyber Attack
Lead: IT, Director

Status/Completion: New / Ongoing
Implementation: Operations
Est. Cost/Funding Source: TBD / Budget

10. Continue ongoing staff training in cyber security and new threats.

Priority: TBD
Hazards: Cyber Attack
Lead: IT, Director

Status/Completion: New / Ongoing
Implementation: Operations
Est. Cost/Funding Source: TBD / Budget

11. Build community partnerships to promote timely response.

Priority: TBD
Hazards: Civil Unrest
Lead: Police Department, Chief

Status/Completion: New / Ongoing
Implementation: Operations
Est. Cost/Funding Source: TBD / Budget

12. Increase preparedness training to reduce injuries and damages from civil disturbance.

Priority: TBD
Hazards: Civil Unrest
Lead: Police Department, Chief

Status/Completion: New / Ongoing
Implementation: Operations
Est. Cost/Funding Source: $100,000 (2020) / Budget

*Reduces risk to buildings or infrastructure
** Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

Implementation Resources:

Table LK.10 identifies staff resources and roles in implementing its mitigation strategies.

Table LK.10: Lakeville Mitigation Implementation Resources

Department, Responsible Position	General Role	Processes for Implementing Mitigation Strategies
Building Inspections, Gene Abbott	Building inspections, regulation of new housing development.	*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*
Planning and Zoning, Daryl Morey	Zoning, development siting and restrictions, Comprehensive Plans	*Ensuring compliance with floodplain ordinances and all applicable federal, state, & city zoning compliance*
Police, Jeff Long	Public safety and law enforcement, emergency response	*Public Safety Education, training of officers, community involvement and training in active shooter/hostile events*
Public Works, Paul Oehme	Develop and operate public infrastructure (roads, utilities)	*City well and water system inspections; road reconstruction plans that include updates to storm, water, and sewer systems*

Department, Responsible Position	General Role	Processes for Implementing Mitigation Strategies
Fire Department, Mike Meyer	Public and fire safety enforcement, emergency response	*Annual inspection of high hazard buildings; plan review of all buildings that require fire protection system to ensure compliance of fire code.*

Table LK.11 identifies process and ordinance resources.

Table LK.11: Lakeville Additional Implementation Resources

Lakeville Program/Policy/Technical Documents	Year adopted/revised	Method of incorporation into the hazard mitigation plan
Lakeville Emergency Operations Plan	2020	Action plan for all hazards
Capital Improvements Plan	2020	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	2020	Reviewed ordinances for hazard planning purposes

CITY OF LILYDALE

Table LL.1: Lilydale Community Data

Population (2020):	809
Households:	543
Employment/Jobs:	362
Area:	0.9 Sq. Mi.
Major Land Uses:	49% Park and Rec.
	14% Residential
	4.0% Commercial
Community Type:	Suburban
Undeveloped Area:	2.0%

Source: Metropolitan Council Community Profiles

Hazards of Concern

Lilydale staff evaluated potential hazards of concern in their community, using the same rating model used by Dakota County and other participating cities.

Figure LL.1: City of Lilydale Location

Table LL.2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
Frequency	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
Warning Time	More than 12 hours	6-12 hours	3-6 hours	None-minimal
Geographic Extent	Localized	Community-wide	County-wide or greater	
Likely Impact	Negligible	Limited	Critical	Catastrophic

Table LL.3: Lilydale Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Cyber Threats	4	4	3	3	**14**
Violent Summer Storms (e.g., wind, hail)	4	4	2	3	**13**
Infectious Disease Outbreak/Pandemic	4	2	3	4	**13**
Civil Unrest	3	4	3	3	**13**
Tornado	3	4	2	3	**12**
Flash Flood	3	4	3	2	**12**
Hazardous Material Incidents	3	4	3	2	**12**
Terrorism	2	4	3	3	**12**
Violent Winter Storms	4	2	3	2	**11**
Water Supply Contamination	1	4	2	4	**11**
Wastewater Treatment Plant Failure	1	4	2	4	**11**
Landslide	3	4	1	2	**10**
Structural Fire	2	4	1	3	**10**
Drought	3	1	3	2	**9**
Extreme Heat or Cold	3	1	3	1	**8**
Overland Flood (spring snowmelt)	3	1	1	2	**7**
Wildfire	1	3	1	2	**7**
Dam Failure	1	1	1	2	**5**

General Land Use

Figure LL. depicts general land use in Lilydale, with park-recreation and residential being the predominant land uses.

Figure LL.2: Lilydale Land Use 2020, Metropolitan Council

Structural Inventory Value

Table LL.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.

Table LL.4: Structural Inventory and Value, Lilydale

Use Type	Land Value	Structural Value	Total Value	Number of Structures
Commercial	$4,629,500	$8,586,600	$13,216,100	20
Exempt	$2,892,700	$262,800	$3,155,500	8
Industrial	$725,600	$790,100	$1,515,700	1
Residential	$36,248,300	$176,917,900	$213,166,200	66
TOTAL	**$44,496,100**	**$186,557,400**	**$231,053,500**	**95**

Vulnerability

Vulnerable Populations

Table LL.5 provides current estimates of populations in Lilydale considered by FEMA to be at potentially increased risk during hazard events.

Table LL.5: Lilydale Potentially Vulnerable Populations, American Community Survey 2015-2019 Estimates

Potentially Vulnerable Population	Percentage (%)	U.S. (%)	Lilydale, MN – U.S. Difference
Under Age 5	0.7%	6.1%	-5.4%
Over Age 65	64.9%	13.7%	51.2%
Below Federal Poverty Line	7.0%	13.4%	-6.4%
Living with a Disability	28.8%	15.6%	13.2%

Vulnerability of Critical Assets to Hazards

Lilydale staff evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table LL.6. Hazards identified as non-applicable to critical facilities include: *dam failure*. Figure LL.3 provides general locations for selected critical assets in Lilydale.

Table LL.6: Lilydale Assessment of Critical Assets (Redacted in Public Version of Plan)

Critical Facilities	Summer Storms	Tornado	Structure Fire	Hazmat Incidents	Flash Flood	Winter Storms	Infectious Disease / Pandemic	Water Supply Contamination	Overland Flood	Terrorism	Civil Unrest	Wildfire	Drought	Extreme Temps	Landslide	Cyber Threats

Changes since the 2016 Plan

Lilydale representatives identified no significant use changes to critical facilities since the plan update in 2016.

Figure LL.3: City of Lilydale – Critical Facilities (Redacted in Public Version of Plan)

National Flood Insurance Program Participation and Compliance

Table LL.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 LL.7: Lilydale NFIP Participation

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Lilydale	275241	12/2/11	5	$1,811,200

Compliance:

Compliance is ensured through Floodplain Ordinance review and enforcement per contracted city planner.

Table LL.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 LL.8: Total Floodplain Structure and Value Inventory, Lilydale

Structure Type	Estimated Land Value	Estimated Building Value	Total Value	Total Structures
Commercial	$323,500	$522,500	$846,000	3
Exempt	$270,100	$0	$270,100	8
TOTAL	**$593,600**	**$522,500**	**$1,116,100**	**11**

Strategy Review and Development

In 2021, Lilydale representatives reviewed their strategies from the 2016 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2022 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 LL.9 lists the City's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

Table LL.9: Lilydale All-Hazard Mitigation Plan Strategies

LILYDALE MITIGATION STRATEGIES	
1. Implement and maintain Stormwater Management Plan.*	
Priority: High	*Status/Completion:* Existing / Ongoing
STAPLEE: High	*Implementation:* Ordinances, PUD Requirements
Hazards: Flash Flooding	*Est. Cost/Funding Source:* $1,000 / Property
Lead: City Engineer, City Administration	Owners, Budget
2. Promote recycling of household hazardous waste at the County Recycling Zone	
Priority: Medium	*Status/Completion:* Existing / Ongoing
STAPLEE: High	*Implementation:* Information provided from City
Hazards: Hazmat Incident	Staff, public safety representatives
Lead: City Administrator	*Est. Cost/Funding Source:* $1,000 yearly / Budget
3. Educate the public on enrolling in reverse 911 services.	
Priority: Medium	*Status/Completion:* Ongoing
STAPLEE: High	*Implementation:* Public information in city
Hazards: All	newsletter
Lead: City Administrator	*Est. Cost/Funding Source:* $200 yearly / Budget
4. Enhance computer security and data recovery.	
Priority: High	*Status/Completion:* Ongoing
STAPLEE: High	*Implementation:* Contracted review
Hazards: Cyber Attack	*Est. Cost/Funding Source:* $1,000 / Budget
Lead: City Administrator	
5. Implement storm sewer management project to increase capacity and direct flow.	
Priority: High	*Status/Completion:* Existing / Ongoing
STAPLEE: High	*Implementation:* Project Plan
Hazards: Flash Flood, Overland Flood	*Est. Cost/Funding Source:* TBD / Budget
Lead: City Engineer, City Administrator	
6. Manage surface water runoff.	
Priority: High	*Status/Completion:* Existing / Ongoing
STAPLEE: High	*Implementation:* Ordinance evaluation and
Hazards: Flooding, Landslide	implementation
Lead: City Engineer, City Administrator	*Est. Cost/Funding Source:* $37,000 / Budget
7. Create evacuation plan for City facilities.	
Priority: High	*Status/Completion:* New / Est. Dec. 2022
STAPLEE: TBD	*Implementation:* Needs evaluation
Hazards: Civil Unrest	*Est. Cost/Funding Source:* $5,000 / Budget
Lead: with Mendota Heights Police Dept., Chief**	

8.	**Conduct tabletop exercises.**	

Priority: High

STAPLEE: TBD

Hazards: Civil Unrest

Lead: City Engineer, with Mendota Heights Police Dept., Chief**

Status/Completion: New / Est. April 2022

Implementation: Training program

Est. Cost/Funding Source: $1,000 / Budget

9.	**Secure City Facilities (e.g., fencing).**	

Priority: High

STAPLEE: TBD

Hazards: Civil Unrest

Lead: Public Works (through Mendota Heights)**

Status/Completion: New / Est. 2022

Implementation: Assessment and project development

Est. Cost/Funding Source: TBD / Budget

*Reduces risk to buildings or infrastructure
**Mendota Heights provides Police, Fire, and Public Works services to Lilydale

Implementation Resources:

Table LL.10 identifies staff resources and roles in implementing its mitigation strategies. Table LL.11 identifies process and ordinance resources.

Table LL.10: Lilydale Mitigation Implementation Resources

Department, Responsible Position	General Role	Processes for Implementing Mitigation Strategies
Building Inspections - contract	Building inspections, regulation of new housing development	*Enforce safety restrictions including setbacks, building materials, fire suppression systems*
Planning/Zoning/Engineer contracted	Zoning, development siting and restrictions, Comprehensive Plans	*Floodplain ordinances and compliance*
Police, Police Chief (contracted to Mendota Heights)	Public safety, law enforcement, emergency response	*Response training, public safety education*
Public Works, City Engineer, contracted	Develop and operate public infrastructure (roads, utilities)	*City well inspection and maintenance*
Fire Department, Fire Chief (Mendota Heights)	Public-fire safety enforcement, emergency response	*Inspect commercial structures for fire hazards*
City Council	Establish policy, enact budget	*Budget allocations or plan initiatives*
City Administration	Decision-support for Council, City operations	*Annual budgeting, work planning, and reporting processes*

Table LL.11: Lilydale Additional Implementation Resources

Lilydale Program/Policy/Technical Documents	Year adopted/revised	Method of incorporation into the hazard mitigation plan
Comprehensive Plan	2020	Sets land use vision for community, provides existing and projected information
Surface Water Management Plan	2018	Establishes standards for runoff controls for new developments/redevelopments
Zoning Ordinances	Multiple	Establishes standards for development
Building Code	Ongoing	City utilizes State Building Code
Minnesota Uniform Fire Code	Ongoing	City utilizes State Fire Code

CITY OF MENDOTA

Table M.1: Mendota Community Data

Population (2020):	183
Households:	78
Employment/Jobs:	64
Area:	0.3 Sq. Mi.
Major Land Uses:	31% Park and Rec.
	26% Residential
	16% Ag./Undeveloped
Community Type:	Suburban
Undeveloped Area:	16%

Source: Metropolitan Council Community Profiles

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.

Figure M.1: City of Mendota Location

Table M.2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
Frequency	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
Warning Time	More than 12 hours	6-12 hours	3-6 hours	None-minimal
Geographic Extent	Localized	Community-wide	County-wide or greater	
Likely Impact	Negligible	Limited	Critical	Catastrophic

Table M.3: Mendota Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Infectious Disease Outbreak/Pandemic	4	2	4	4	**14**
Violent Summer Storms (e.g., wind, hail)	4	3	3	3	**13**
Civil Unrest	3	4	3	3	**13**
Tornado	3	3	3	3	**12**
Flash Flood	3	3	3	3	**12**
Wildfire	2	4	2	4	**12**
Landslide	3	4	1	4	**12**
Hazardous Material Incidents	2	4	3	2	**11**
Terrorism	1	4	3	3	**11**
Violent Winter Storms	3	2	3	2	**10**
Drought	3	1	3	3	**10**
Structural Fire	2	4	1	3	**10**
Extreme Heat or Cold	2	1	3	2	**8**
Water Supply Contamination	1	4	1	2	**8**
Wastewater Treatment Plant Failure	1	4	1	2	**8**
Cyber Threats	1	4	1	1	**7**
Overland Flood (spring snowmelt)	2	1	1	2	**6**
Dam Failure	1	1	1	1	**4**

General Land Use

Figure M.2 depicts general land use in Mendota, with park-recreation and residential being the predominant land uses.

Structural Inventory Value

Table M.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 M.2: Mendota Land Use 2020, Metropolitan Council

Table M.4: Structural Inventory and Value, Mendota

Use Type	Land Value	Structural Value	Total Value	Number of Structures
Commercial	$839,300	$2,221,600	$3,060,900	10
Exempt	$1,309,300	$1,713,900	$3,023,200	12
Industrial	$652,200	$1,468,400	$2,120,600	5
Other	$256,900	$122,000	$378,900	2
Residential	$11,825,400	$25,955,000	$37,780,400	124
TOTAL	**$14,883,100**	**$31,480,900**	**$46,364,000**	**153**

Vulnerability

Vulnerable Populations

Table M.5 provides current estimates of populations in Mendota considered by FEMA to be at potentially increased risk during hazard events.

Table M.5: Mendota Potentially Vulnerable Populations, American Community Survey 2015-2019 Estimates

Potentially Vulnerable Population	Percentage (%)	U.S. (%)	Mendota, MN – U.S. Difference
Under Age 5	5.1%	6.1%	-1.0%
Over Age 65	15.3%	13.7%	1.6%
Below Federal Poverty Line	10.9%	13.4%	-2.5%
Living with a Disability	13.4%	15.6%	-2.2%

Vulnerability of Critical Assets to Hazards

Mendota staff evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table M.6. Figure M.3 provides general locations for selected critical assets in Mendota.

Table M.6: Mendota Assessment of Critical Assets (Redacted in Public Version of Plan

Critical Facilities	Violent Summer Storms	Tornado	Structure Fire	Hazmat Incidents	Flash Flood	Violent Winter Storms	Infectious Disease	Water Supply Contamination	Overland Flood	Terrorism	Civil Unrest	Wildfire	Drought	Extreme Temps	Dam Failure	Landslide	Cyber Threats

Changes since the 2016 Plan

Mendota representatives identified no significant changes to critical facilities since the plan update in 2016.

Figure M.3: City of Mendota – Critical Facilities (Redacted in Public Version of Plan)

National Flood Insurance Program Participation and Compliance

Table M.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 M.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.**

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 M.8: Total Floodplain Structure and Value Inventory, Mendota

Structure Type	Total Structures	Estimated Land Value	Estimated Building Value	Total Value
TOTAL	0	$0	$0	$0

Strategy Review and Development

In 2021, Mendota representatives reviewed their strategies from the 2016 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2022 Plan update as ongoing efforts or projects 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 M.9 lists Mendota's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

Table M.9: Mendota All-Hazard Mitigation Plan Strategies

MENDOTA MITIGATION STRATEGIES

1. Enforce-maintain stormwater management ordinances.

STAPLEE: 9	*Status/Completion:* Existing / Ongoing
Hazards: Erosion control	*Implementation:* Local Ordinance
Lead: Community Development	*Est. Cost/Funding Source:* Staff Time / City Budget

2. Continue sanitary sewer management.

STAPLEE: 13	*Implementation:* Sewer Maintenance Schedule
Hazards: Sewer back-ups	*Est. Cost/Funding Source:* $6,000 yearly / City Budget
Lead: City Council, City Clerk	
Status/Completion: Existing / Ongoing	

3. Continue stormwater pond maintenance.

STAPLEE: 10	*Implementation:* Pond Maintenance Schedule
Hazards: Flash Flood	*Est. Cost/Funding Source:* $1,000 yearly / City Budget
Lead: Park Commissioner	
Status/Completion: Existing / Ongoing	

4. Water main loop completion and expansion.

STAPLEE: 19	*Status/Completion:* New / Ongoing
Hazards: Water Supply Contamination, Flood, Drought	*Implementation:* Water Main Project
	Est. Cost/Funding Source: $4.3 M / Bond/Grants
Lead: City contractor	

5. Erosion control for bluffs.

STAPLEE: 16	*Status/Completion:* New / Ongoing
Hazards: Landslide	*Implementation:* Erosion control strategies
Lead: TBD	*Est. Cost/Funding Source:* TBD / TBD

7. Create evacuation plan for City facilities.

Priority: High	*Status/Completion:* New / Est. Dec. 2022
STAPLEE: TBD	*Implementation:* Needs evaluation
Hazards: Civil Unrest	*Est. Cost/Funding Source:* $5,000 / Budget
Lead: with Mendota Heights Police Dept., Chief	

8. Conduct tabletop exercises.

Priority: High	*Status/Completion:* New / Est. April 2022
STAPLEE: TBD	*Implementation:* Training program
Hazards: Civil Unrest	*Est. Cost/Funding Source:* $1,000 / Budget
Lead: City Engineer, with Mendota Heights Police Dept., Chief***	

9. Secure City Facilities (e.g., fencing).

Priority: High	*Status/Completion:* New / Est. 2022
STAPLEE: TBD	*Implementation:* Assessment and project development
Hazards: Civil Unrest	
Lead: Public Works (through Mendota Heights)***	*Est. Cost/Funding Source:* TBD / Budget

*Reduces risk to buildings or infrastructure
** Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

Implementation Resources:

Table M.10 identifies staff resources and roles in implementing its mitigation strategies.

Table M.10: Mendota Mitigation Implementation Resources

Department, Responsible Position	General Role	Processes for Implementing Mitigation Strategies
Building Inspections, contracted, (A to Z Inspection, Mike Andrejka)	Building inspections, regulation of new housing development.	*Enforce safety restrictions including setbacks, building materials, and fire suppression*
Planning/Zoning, City Council / Planning Commission	Zoning, development siting and restrictions, Comprehensive Plans	*Floodplain ordinances and compliance*
Police, Mendota Heights, Chief	Public safety, law enforcement, emergency response	*Response training, public safety education*
Public Works, city sewer contract (McDonough)	Development and operations of public infrastructure (roads, utilities)	*City well inspection and maintenance*
Fire Department, Mendota Heights, Chief	Public-fire safety enforcement, emergency response	*Inspect commercial structures for fire hazards*
City Council	Establish policy, enact budget	*Budget allocations or plan initiatives*
City Administration	Decision-support for County, City operations	*Evaluation of alternative, project identification*

Table M.11 identifies process and ordinance resources.

Table M.11: Mendota Additional Implementation Resources

Mendota Program/Policy/Technical Documents	Year adopted/revised	Method of incorporation into the hazard mitigation plan
Storm Water Management Plan	2021	Flood Management Reference
Emergency Preparedness Plan	2021	Hazard ID and Ranking
Comprehensive Sewer Plan	2021	Infrastructure improvement information
2040 Comprehensive plan	2021	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	2020	Review control measures to protect exposed slopes.
City Code Chapter 8, Sec 2-Zoning Districts	2021	Reviewed to ensure consistent floodplain management objectives.

CITY OF MENDOTA HEIGHTS

Table MH.1: Mendota Heights Community Data

Population (2020):	11,744
Households:	4,787
Employment/Jobs:	10,503
Area:	10.0 Sq. Mi.
Major Land Uses:	37% Residential
	21% Park and Rec.
	9% Institutional
Community Type:	Suburban
Undeveloped Area:	6%

Source: Metropolitan Council Community Profiles

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.

Figure MH.1: City of Mendota Heights Location

Table MH.2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
Frequency	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
Warning Time	More than 12 hours	6-12 hours	3-6 hours	None-minimal
Geographic Extent	Localized	Community-wide	County-wide or greater	
Likely Impact	Negligible	Limited	Critical	Catastrophic

Table MH.3: Mendota Heights Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Infectious Disease Outbreak/Pandemic	4	2	4	4	**14**
Cyber Threats	4	4	3	3	**14**
Violent Summer Storms (e.g., wind, hail)	4	4	2	3	**13**
Terrorism	2	4	3	3	**13**
Civil Unrest	3	4	3	3	**13**
Tornado	3	4	2	3	**12**
Flash Flood	3	3	3	2	**11**
Hazardous Material Incidents	3	4	2	2	**11**
Water Supply Contamination	1	4	2	4	**11**
Wastewater Treatment Plant Failure	1	4	2	4	**11**
Violent Winter Storms	3	2	3	2	**10**
Wildfire	3	4	1	1	**9**
Landslide	3	3	1	2	**9**
Structural Fire	3	4	1	1	**9**
Drought	3	1	3	1	**8**
Extreme Heat or Cold	3	1	3	1	**8**
Overland Flood (spring snowmelt)	3	1	1	2	**7**
Dam Failure	1	1	1	1	**4**

General Land Use

Figure MH.2 depicts general land use in Mendota Heights, with park-recreation and residential being the predominant land uses.

Structural Inventory Value

Table MH.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 MH.2: Mendota Heights Land Use 2020, Metropolitan Council

Table MH.4: Structural Inventory and Value, Mendota Heights

Use Type	Land Value	Structural Value	Total Value	Number of Structures
Commercial	$62,021,100	$146,393,900	$208,415,000	121
Exempt	$95,295,100	$110,461,800	$205,756,900	221
Industrial	$45,251,600	$122,088,700	$167,340,300	51
Other	$108,300	$350,500	$458,800	3
Residential	$551,922,900	$1,569,623,900	$2,121,546,800	4,362
Utilities	$3,119,800	$11,902,400	$15,022,200	62
TOTAL	$757,718,800	$1,960,821,200	$2,718,540,000	4,820

Vulnerability

Vulnerable Populations

Table MH.5 provides current estimates of populations in Mendota Heights considered by FEMA to be at potentially increased risk during hazard events.

Table MH.5: Mendota Heights Potentially Vulnerable Populations, American Community Survey 2015-2019 Estimates

Potentially Vulnerable Population	Percentage (%)	U.S. (%)	Mendota Heights, MN – U.S. Difference
Under Age 5	5.0%	6.1%	-1.1%
Over Age 65	26.0%	13.7%	12.3%
Below Federal Poverty Line	5.0%	13.4%	-8.4%
Living with a Disability	9.4%	15.6%	-4.2%

Vulnerability of Critical Assets to Hazards

Mendota Heights staff evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table MH.6. Figure MH.3 provides general locations for selected critical assets in Mendota Heights.

Table MH.6: Mendota Heights Assessment of Critical Assets (Redacted in Public Version of Plan)

Critical Facilities	Summer Storms	Tornado	Structure Fire	Hazmat Incidents	Flash Flood	Winter Storms	Infectious Disease	Water Supply Contamination	Overland Flood	Terrorism	Civil Unrest	Wildfire	Drought	Extreme Temps	Dam Failure	Landslide	Cyber Threats

Changes since the 2016 Plan

Mendota Heights staff identified use changes to critical facilities since the plan update in 2016:

- New sports complex and swimming pool at Two Rivers High School
- New extended stay hotel near 494.

Figure MH.3: City of Mendota Heights – Critical Facilities (Redacted in Public Version of Plan)

National Flood Insurance Program Participation and Compliance

Table MH.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 MH.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	$2,828,000

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.

Table MH.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 MH.8: Total Floodplain Structure and Value Inventory, Mendota Heights

Structure Type	Estimated Land Value	Estimated Building Value	Total Value	Total Structures
Exempt	$740,300	$70,900	$811,200	25
TOTAL	**$740,300**	**$70,900**	**$811,200**	**25**

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 MH.9 lists Mendota Heights' strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

Table MH.9: Mendota Heights All-Hazard Mitigation Plan Strategies

MENDOTA HEIGHTS MITIGATION STRATEGIES	
1. Remodel / build Police Department spaces to develop a useable Emergency Operations Center.*	
Priority: High STAPLEE: Medium *Hazards:* All *Lead:* City Administrator	*Status/Completion:* Existing/ Fire Station completed 2021 *Implementation:* Council Approval, CIP *Est. Cost/Funding Source:* $10 Million / Bonding
2. Conduct a comprehensive review of All Hazard Mitigation Plan every five years.**	
Priority: Med *STAPLEE:* High *Hazards:* All *Lead:* Emergency Manager	*Status/Completion:* Ongoing / 2021 *Implementation:* Emergency Preparedness Plan *Est. Cost/Funding Source:* $2,000 / Budget
3. Monitor MANPADS sites.*	
Priority: Med *STAPLEE:* High *Hazards:* Terrorism *Lead:* Police Department, Chief	*Status/Completion:* Existing / Ongoing *Implementation:* Emergency Preparedness Plan, monitor development, new construction (2021) *Est. Cost/Funding Source:* Staff Time / Budget
4. Line sanitary sewers for infiltration and inflow management.	
Priority: High *STAPLEE:* High *Hazards:* Flash Flood *Lead:* Public Works, Director	*Status/Completion:* Existing / Ongoing *Implementation:* Capital Improvement Program, monitoring (2021) *Est. Cost/Funding Source:* $200,000 / Budget
5. Continue NIMS training for EOP staff.	
Priority: High *STAPLEE:* High *Hazards:* All *Lead:* Police, Fire departments (Chiefs), city staff	*Status/Completion:* Existing / Ongoing *Implementation:* Emergency Preparedness Plan, continued tabletop exercises *Est. Cost/Funding Source:* Staff Time / Budget
6. Replace outdoor warning sirens.	
Priority: High *STAPLEE:* High *Hazards:* Severe Storms, Tornado, Hazmat Incident *Lead:* Police Department, Chief	*Status/Completion:* Existing / ongoing *Implementation:* Emergency Preparedness Plan *Est. Cost/Funding Source:* $77,000 / City, County funds

7.	Clean and expand storm water ponds.	
	Priority: Low	*Status/Completion:* Existing-New / 2050
	STAPLEE: Medium	*Implementation:* Council Approval, CIP
	Hazards: Flash Flood, Severe Storms	*Est. Cost/Funding Source:* $5 Million / Grants,
	Lead: Public Works, Director	Budget

8.	Create a shared database of §302 facilities.	
	Priority: High	*Status/Completion:* Existing-New / 2017
	STAPLEE: High	*Implementation:* Emergency Preparedness Plan
	Hazards: Hazmat Incident	*Est. Cost/Funding Source:* $2,000 / Budget
	Lead: Emergency Manager	

9.	Expand wildfire education and mitigation.	
	Priority: Low	*Status/Completion:* Existing / Ongoing
	STAPLEE: Medium	*Implementation:* Emergency Preparedness Plan,
	Hazards: Wildfire	monitoring
	Lead: Fire Department, Chief	*Est. Cost/Funding Source:* $1,500 / Budget

10.	Provide landslide prevention and education.	
	Priority: Med	*Status/Completion:* Existing-New / Ongoing annually
	STAPLEE: High	*Implementation:* Emergency Preparedness Plan
	Hazards: Landslide	*Est. Cost/Funding Source:* $3,000 / Budget
	Lead: City Planner	

11.	Provide public education on reverse 911 service registration.	
	Priority: High	*Status/Completion:* New / Ongoing annually
	STAPLEE: High	*Implementation:* Emergency Preparedness Plan, List
	Hazards: All, notification	maintenance
	Lead: Police Chief, Fire Chief, Comm. Dir.	*Est. Cost/Funding Source:* $5,000 / Budget

12.	Create evacuation plans.	
	Priority: High	*Status/Completion:* New / Dec 2022
	STAPLEE: High	*Implementation:* Conduct needs evaluation
	Hazards: Civil Unrest	*Est. Cost/Funding Source:* $5,000 / Budget
	Lead: Police Chief	

13.	Conduct tabletop exercises.	
	Priority: High	*Status/Completion:* New / Ongoing
	STAPLEE: Medium	*Implementation:* Training program
	Hazards: Civil Unrest	*Est. Cost/Funding Source:* $1,000 / Budget
	Lead: Police Chief	

14.	Secure City Facilities (e.g., fencing).	
	Priority: High	*Status/Completion:* New / June 2022
	STAPLEE: Medium	*Implementation:* Engineering Project
	Hazards: Civil Unrest	*Est. Cost/Funding Source:* $5,000 / Budget
	Lead: Public Works, Director	

*Reduces risk to buildings or infrastructure

** Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

Implementation Resources:

Table MH.10 identifies staff resources and roles in implementing its mitigation strategies.

Table MH.10: Mendota Heights Mitigation Implementation Resources

Department, Responsible Position	General Role	Processes for Implementing Mitigation Strategies
Building Inspections: contracted inspector	Building inspections, regulation of new housing development	*Enforce safety restrictions. E.g., setbacks, building materials, and fire suppression*
Planning/Zoning/Engineer: City Planner	Zoning, development siting and restrictions, Comprehensive Plans	*Floodplain ordinances and compliance*

Department, Responsible Position	General Role	Processes for Implementing Mitigation Strategies
Police: Police Chief	Public safety, law enforcement, emergency response	*Response training, public safety education*
Public Works: Director	Development and operations of public infrastructure (roads, utilities)	*Ongoing inspection and maintenance*
Fire Department: Fire Chief	Public-fire safety enforcement, emergency response	*Inspect commercial structures for fire hazards*
City Council	Establish policy, enact budget	*Budget allocations or plan initiatives*
City Administration	Decision-support for Council, City operations	*Evaluation of alternative, project identification*

Table MH.11 identifies process and ordinance resources.

Table MH.11: Mendota Heights Additional Implementation Resources

Mendota Heights Program/Policy/Technical Documents	Year adopted/ revised	Method of incorporation into the hazard mitigation plan
Comprehensive Plan	2020	Sets land use vision, 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
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 MS.1: Miesville Community Data

Population (2020):	138
Households:	57
Employment/Jobs:	79
Area:	1.7 Sq. Mi.
Major Land Uses:	90% Ag./ Undeveloped
	6% Residential
	1% Commercial
Community Type:	Diversified Rural
Undeveloped Area:	90%

Source: Metropolitan Council Community Profiles

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.

Figure MS.1: City of Miesville Location

Table MS.2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
Frequency	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
Warning Time	More than 12 hours	6-12 hours	3-6 hours	None-minimal
Extent	Localized	Community-wide	County-wide or greater	
Likely Impact	Negligible	Limited	Critical	Catastrophic

Table MS.3: Miesville Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Tornado	4	4	2	3	**13**
Violent Winter Storms	4	4	2	3	**13**
Water Supply Contamination	3	4	2	4	**13**
Violent Summer Storms (e.g., wind, hail)	4	4	2	2	**12**
Extreme Heat or Cold	4	2	3	3	**12**
Structural Fire	4	4	1	3	**12**
Flash Flood	4	4	2	1	**11**
Overland Flood (spring snowmelt)	4	4	2	1	**11**
Hazardous Material Incidents	2	4	2	3	**11**
Infectious Disease Outbreak/Pandemic	4	1	3	3	**11**
Terrorism	1	4	3	3	**11**
Drought	4	1	3	2	**10**
Cyber Threats	1	4	3	2	**10**
Civil Unrest	1	2	3	3	**9**
Dam Failure	1	1	3	4	**9**
Wastewater Treatment Plant Failure	1	1	3	1	**6**
Wildfire	1	1	1	1	**4**
Landslide	1	1	1	1	**4**

General Land Use

Figure MS.2 depicts general land use in Miesville, with park-recreation and residential being the predominant land uses.

Structural Inventory Value

Table MS.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 MS.2: Miesville Land Use 2020, Metropolitan Council

Table MS.4: Structural Inventory and Value, Miesville

Use Type	Land Value	Structural Value	Total Value	Number of Structures
Agricultural	$7,545,500	$874,100	$8,419,600	16
Commercial	$639,800	$1,153,900	$1,793,700	15
Exempt	$702,500	$1,016,500	$1,719,000	8
Industrial	$123,700	$136,200	$259,900	4
Residential	$3,697,000	$10,145,500	$13,842,500	73
Utilities	$166,100	$304,700	$470,800	0
TOTAL	**$12,874,600**	**$13,630,900**	**$26,505,500**	**116**

Vulnerability

Vulnerable Populations

Table MS.5 provides current estimates of populations in Miesville considered by FEMA to be at potentially increased risk during hazard events.

Table MS.5: Miesville Potentially Vulnerable Populations, American Community Survey 2015-2019 Estimates

Potentially Vulnerable Population	Percentage (%)	U.S. (%)	Miesville, MN – U.S. Difference
Under Age 5	4.2%	6.1%	-1.9%
Over Age 65	22.7%	13.7%	9.0%
Below Federal Poverty Line	0.8%	13.4%	-12.6%
Living with a Disability	4.2%	15.6%	-11.4%

Vulnerability of Critical Assets to Hazards

Miesville staff evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table MS.6. Figure MS.3 provides general locations for selected critical assets in Miesville.

Table MS.6: Miesville Assessment of Critical Assets (Redacted in Public Version of Plan

Critical Facilities	Summer Storms	Tornado	Structure Fire	Hazmat	Flash Flood	Winter Storms	Infectious Disease / Pandemic	Water Supply Contamination	Overland Flood	Terrorism	Civil Unrest	Wildfire	Drought	Extreme Temps	Dam Failure	Landslide	Cyber Threats

Changes since the 2016 Plan

Miesville officials identified changes to critical facilities since the plan update in 2016:

- Flood mitigation culverts installed on Nicolai Avenue.

Figure MS.3: City of Miesville – Critical Facilities (Redacted in Public Version of Plan)

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 2021, Miesville representatives reviewed their strategies from the 2016 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2022 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 MS.7 lists strategies for the City of Miesville, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

Table MS.7: Miesville All-Hazard Mitigation Plan Strategies

MIESVILLE MITIGATION STRATEGIES	
1. Maintain city warning sirens.*	
Priority: High	*Status/Completion:* Existing / Ongoing yearly
Hazards: Violent Storms, Tornado	*Implementation:* Yearly inspections
Lead: City Administration	*Est. Cost/Funding Source:* City Budget
2. Stormwater management and coulee maintenance.	
Priority: Medium	*Status/Completion:* Existing / Ongoing, as needed
Hazards: Flash Flood	*Implementation:* Stormwater maintenance plan
Lead: Dakota County	*Est. Cost/Funding Source:*
3. Conduct hazmat training.	
Priority: Medium	*Status/Completion:* Existing / Ongoing
Hazards: Structural Fire, Hazmat Incident	*Implementation:* Annual training
Lead: Miesville Fire Department	*Est. Cost/Funding Source:*
4. Participate in full-scale exercise with County.**	
Priority: Medium	*Status/Completion:* Existing/Ongoing, as available
Hazards: All, Tornado	*Implementation:* Dakota County EDT
Lead: Miesville Fire Department	*Est. Cost/Funding Source:*

*Reduces risk to buildings or infrastructure
** Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

Implementation Resources:

Table MS.8 identifies staff resources and roles in implementing its mitigation strategies. Table MS.9 identifies process and ordinance resources.

Table MS.8: Miesville Mitigation Implementation Resources

Department, Responsible Position	General Role	Processes for Implementing Mitigation Strategies
Building Inspections: contracted to Inspectron, Inc.	Building inspections, regulation of new housing	*Enforce safety restrictions*
Planning/Zoning/Engineer: Contracted to Bolton & Menk	Zoning, development, Comprehensive Plans	*Floodplain ordinances, compliance*
Police: Dakota County Sheriff	Public safety, law enforcement,	*Response training*
Public Works: Dakota County Public Works	Public infrastructure	*Maintenance and improvements*
Fire Department: Fire Chief, Tom Latuff	Public-fire safety enforcement, emergency response	*Inspect commercial structures for fire hazards*

Table MS.9: Miesville Additional Implementation Resources

Miesville Program/Policy/Technical Documents	Year adopted/revised	Method of incorporation into the hazard mitigation plan
Comprehensive Plan	2020	Sets land use vision for community, provides existing and projected information
Budget and Capital Improvement Plan	2020	Ensures equipment necessary to carry out essential functions

CITY OF NEW TRIER

Table NT.1: New Trier Community Data

Population (2021):	86
Households:	38
Employment/Jobs:	60
Area:	0.2 Sq. Mi.
Major Land Uses:	68% Ag. / Undeveloped 21% Residential 10% Institutional
Community Type:	Diversified Rural
Undeveloped Area:	68%

Source: Metropolitan Council Community Profiles

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.

Figure NT.1: City of New Trier Location

Table NT.2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
Frequency	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
Warning Time	More than 12 hours	6-12 hours	3-6 hours	None-minimal
Extent	Localized	Community-wide	County-wide or greater	
Likely Impact	Negligible	Limited	Critical	Catastrophic

Table NT.3: New Trier Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Violent Summer Storms (e.g., wind, hail)	3	2	3	4	**12**
Tornado	3	2	2	4	**11**
Violent Winter Storms	4	2	2	3	**11**
Flash Flood	3	2	2	4	**11**
Drought	3	2	3	3	**11**
Extreme Heat or Cold	3	2	3	3	**11**
Structural Fire	3	2	2	4	**11**
Hazardous Material Incidents	2	3	2	4	**11**
Infectious Disease Outbreak/Pandemic	3	1	3	4	**11**
Civil Unrest	3	1	3	4	**11**
Overland Flood (spring snowmelt)	3	2	2	3	**10**
Wastewater Treatment Plant Failure	2	4	3	1	**10**
Terrorism	2	1	3	4	**10**
Cyber Threats	3	1	3	3	**10**
Water Supply Contamination	2	1	2	4	**9**
Wildfire	1	2	2	3	**8**
Landslide	2	2	1	3	**8**

General Land Use

Figure NT.2 depicts general land use in New Trier, with Agriculture/undeveloped and residential being the predominant land uses.

Structural Inventory Value

Table NT.4 provides a current total and estimated value for structures in the City of New Trier.

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 NT.2: New Trier Land Use 2020, Metropolitan Council

Table NT.4: Structural Inventory and Value, New Trier

Use Type	Land Value	Structural Value	Total Value	Number of Structures
Agricultural	$422,600	$29,500	$452,100	5
Commercial	$117,200	$345,300	$462,500	3
Exempt	$456,600	$866,900	$1,323,500	6
Residential	$2,322,000	$4,926,600	$7,248,600	53
TOTAL	**$3,318,400**	**$6,168,300**	**$9,486,700**	**67**

Vulnerability

Vulnerable Populations

Table NT.5 provides current estimates of populations in New Trier considered by FEMA to be at potentially increased risk during hazard events.

Table NT.5: New Trier Potentially Vulnerable Populations, American Community Survey 2015-2019 Estimates

Potentially Vulnerable Population	Percentage (%)	U.S. (%)	New Trier, MN – U.S. Difference
Under Age 5	0.0%	6.1%	-6.1%
Over Age 65	11.8%	13.7%	-1.9%
Below Federal Poverty Line	6.5%	13.4%	-6.9%
Living with a Disability	14.0%	15.6%	-1.6%

Vulnerability of Critical Assets to Hazards

New Trier officials evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table NT.6. Figure Nt.3 provides general locations for selected critical assets in New Trier.

Table NT.6: New Trier Assessment of Critical Assets (Redacted in Public Version of Plan)

Critical Facilities	Summer Storms	Tornado	Structure Fire	Hazmat Incidents	Flash Flood	Winter Storms	Infectious Disease / Pandemic	Water Supply Contamination	Overland Flood	Terrorism	Civil Unrest	Wildfire	Drought	Extreme Temps	Dam Failure	Landslide	Cyber Threats

Changes since the 2016 Plan

New Trier officials identified no changes to critical facilities since the plan update in 2016.

Figure NT.3: City of New Trier – Critical Facilities (Redacted in Public Version of Plan)

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 2021, New Trier representatives reviewed their strategies from the 2016 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2022 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 NT.7 lists New Trier's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

Table NT.7: New Trier All-Hazard Mitigation Plan Strategies

NEW TRIER MITIGATION STRATEGIES	
1. Install backup power at water tower.	
Priority: High	*Status/Completion:* Existing / TBD
STAPLEE: Medium	*Implementation:* Emergency Preparedness Plan
Hazards: Severe Summer and Winter Storms	*Est. Cost/Funding Source:* $10,000 / Cost-share with County
Lead: Water Department, Superintendent	
2. Update Building Ordinance.	
Priority: High	*Status/Completion:* Existing / TBD
STAPLEE: Medium	*Implementation:* Local building codes
Hazards: Structural Fire, Severe Storms	*Est. Cost/Funding Source:* $16,000 / Cost-share with County
Lead: Planning, City Council	
3. Complete parking upgrades.	
Priority: High	*Status/Completion:* Existing / TBD
STAPLEE: High	*Implementation:* Emergency Preparedness Plan
Hazards: Several, emergency access	*Est. Cost/Funding Source:* $600 / City
Lead: City Council	

*Reduces risk to buildings or infrastructure

** Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

Implementation Resources:

Table NT.8 identifies staff resources and roles in implementing its mitigation strategies.

Table NT.8: New Trier Staff Mitigation Implementation Resources

Department, Responsible Position	General Role	Processes for Implementing Mitigation Strategies
Building Inspections: contracted	Building inspections, regulation of new housing	*Enforce safety restrictions, e.g., setbacks, building materials, and fire suppression*
Planning/Zoning/Engineer:	Zoning, development, Comprehensive Plans	*Floodplain ordinances and compliance*
Police: contracted	Public safety, law enforcement, emergency response	*Response training, public safety education*
Public Works: contracted	Develop and operate public infrastructure	*City well inspection and maintenance*
Fire Department: contracted	Public-fire safety enforcement, emergency response	*Inspect commercial structures for fire hazards*
City Council	Establish policy, enact budget	*Budget allocations or plan initiatives*
City Administration	Decision-support for Council,	*City operations*

Table NT.9 identifies process and ordinance resources.

Table NT.9: New Trier Additional Implementation Resources

New Trier Program/Policy/Technical Documents	Year adopted/revised	Incorporation into the hazard mitigation plan
Water tower / well back up power	2011	Infrastructure upgrades to support hazard mitigation
2040 comprehensive plan	2020	Mitigation plan and comp plan support one another
Emergency preparedness plan	2010	Hazard identification and ranking
Wellhead Protection Plan	2020	Mitigation of potential contamination

CITY OF RANDOLPH

Table RN.1: Randolph Community Data

Population (2020):	466
Households:	166
Employment/Jobs:	143
Area:	1.0 Sq. Mi.
Major Land Uses:	67% Ag. / Undeveloped 19% Residential 5% Park and Recreational
Community Type:	Diversified Rural
Undeveloped Area:	67%

Source: Metropolitan Council Community Profiles

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.

Figure RN.1: City of Randolph Location

Table RN.2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
Frequency	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
Warning Time	More than 12 hours	6-12 hours	3-6 hours	None-minimal
Extent	Localized	Community-wide	County-wide or greater	
Likely Impact	Negligible	Limited	Critical	Catastrophic

Table RN.3: Randolph Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Violent Summer Storms (e.g., wind, hail)	3	4	3	3	**13**
Tornado	3	4	2	4	**13**
Extreme Heat or Cold	4	1	3	4	**12**
Hazardous Material Incidents	2	4	2	4	**12**
Terrorism	1	4	3	4	**12**
Violent Winter Storms	4	1	3	3	**11**
Drought	4	1	3	3	**11**
Structural Fire	3	4	1	3	**11**
Water Supply Contamination	1	4	2	4	**11**
Flash Flood	1	4	1	4	**10**
Overland Flood (spring snowmelt)	2	4	1	3	**10**
Wildfire	1	4	2	3	**10**
Infectious Disease Outbreak/Pandemic	2	1	3	3	**9**
Cyber Threats	1	4	1	2	**8**
Landslide	1	4	1	1	**7**
Civil Unrest	1	1	3	2	**7**
Dam Failure	1	1	2	1.5	**5.5**
Wastewater Treatment Plant Failure	N/A	--	--	--	**0**

General Land Use

Figure RN.2 depicts general land use in Randolph, with Agriculture/undeveloped and residential being the predominant land uses.

Structural Inventory Value

Table RN.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 RN.2: Randolph Land Use 2020, Metropolitan Council

Table RN.4: Structural Inventory and Value, Randolph

Use Type	Land Value	Structural Value	Total Value	Number of Structures
Agricultural	$2,290,100	$142,400	$2,432,500	18
Commercial	$396,500	$587,300	$983,800	7
Exempt	$1,470,300	$5,080,800	$6,551,100	28
Industrial	$495,700	$695,500	$1,191,200	13
Other	$48,000	$146,800	$194,800	2
Residential	$10,156,700	$33,962,200	$44,118,900	383
Utilities	$17,000	$66,900	$83,900	0
TOTAL	**$14,874,300**	**$40,681,900**	**$55,556,200**	**451**

Vulnerability

Vulnerable Populations

Table RN.5 provides current estimates of populations in Randolph considered by FEMA to be at potentially increased risk during hazard events.

Table RN.5: Randolph Potentially Vulnerable Populations, American Community Survey 2015-2019 Estimates

Potentially Vulnerable Population	Percentage (%)	U.S. (%)	Randolph, MN – U.S. Difference
Under Age 5	10.4%	6.1%	4.3%
Over Age 65	11.4%	13.7%	-2.3%
Below Federal Poverty Line	7.9%	13.4%	-5.5%
Living with a Disability	7.7%	15.6%	-7.9%

Vulnerability of Critical Assets to Hazards

Randolph officials evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table RN.6. Figure RN.3 provides general locations for selected critical assets in Randolph.

Table RN.6: Randolph Assessment of Critical Assets (Redacted in Public Version of Plan)

Critical Facilities	Summer Storms	Tornado	Structure Fire	Hazmat Incidents	Flash Flood	Winter Storms	Infectious Disease / Pandemic	Water Supply Contamination	Overland Flood	Terrorism	Civil Unrest	Wildfire	Drought	Extreme Temps	Dam Failure	Landslide

Changes since the 2016 Plan

Randolph officials identified no substantial changes to critical facilities since the plan update in 2016.

Figure RN.3: City of Randolph – Critical Facilities (Redacted in Public Version of Plan)

National Flood Insurance Program Participation and Compliance

Table RN.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 RN.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.

Table RN.8 provides an inventory and assessed value of structures in the City of Randolph 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 RN.8: Total Floodplain Structure and Value Inventory, Randolph

Structure Type	Estimated Land Value	Estimated Building Value	Total Value	Total Structures
Exempt	$54,000	$0	$54,000	4
Residential	$35,800	$7,900	$43,700	1
Total	**$89,800**	**$7,900**	**$97,700**	**5**

Strategy Review and Development

In 2021, Randolph representatives reviewed their strategies from the 2016 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2022 Plan update as ongoing efforts or project that have not been completed.

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 RN.9 lists Randolph's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

Table RN.9: Randolph All-Hazard Mitigation Plan Strategies

RANDOLPH MITIGATION STRATEGIES	
1. Water Tower Inspection.*	
Priority:	*Status/Completion:* Existing / 2020, ongoing
STAPLEE: High	*Implementation:* As needed
Hazards: Water Supply	*Est. Cost/Funding Source:* / City Budget
Lead: Water Department, Superintendent	
2. Anhydrous Ammonia Training.	
Priority:	*Status/Completion:* Existing / Ongoing
STAPLEE: *High*	*Implementation:*
Hazards: Hazmat Incident	*Est. Cost/Funding Source:* / City Budget
Lead: Fire Department, Chief	
3. Building Code Updates.*	
Priority:	*Status/Completion:* New / Every three years
STAPLEE: High	*Implementation:* Local Building Code
Hazards: Structural Fire, Violent Storms	*Est. Cost/Funding Source:* TBD
Lead: Dakota Community Development Agency (CDA)	
4. New Sirens.*	
Priority:	*Status/Completion:* New / TBD
STAPLEE: High	*Implementation:* Grant, City Funding
Hazards: Summer Storms, Tornado, Hazmat Incident	*Est. Cost/Funding Source:* $11,000 / Grants
Lead: Dakota CDA, contractor	
5. Additional Water Tower.	
Priority:	*Status/Completion:* New / TBD
STAPLEE: High	*Implementation:* City Funding
Hazards: Water Supply	*Est. Cost/Funding Source:* $800,000 / City Budget, Loans
Lead: Water Department, Contract Installer	

*Reduces risk to buildings or infrastructure
** Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

Implementation Resources:

Table RN.10 identifies staff resources and roles in implementing its mitigation strategies.

Table RN.10: Randolph Mitigation Implementation Resources

Department, Responsible Position	General Role	Processes for Implementing Mitigation Strategies
Building Inspections: contracted	Building inspections, regulation of new housing	*Enforce safety restrictions including setbacks, building materials, fire suppression systems*
Planning/Zoning/Engineer: City Engineer	Zoning, development, Comprehensive Plans	*Floodplain ordinances and compliance*
Police: County Sheriff	Public safety, law enforcement, emergency response	*Response training, public safety education*
Public Works: Water Supervisor	Development and operations of public infrastructure	*City well inspection and maintenance*
Fire Department: Fire Chief	Public-fire safety enforcement, emergency response	*Inspect commercial structures for fire hazards*
City Council	Establish policy, enact budget, enforce ordinances	*Budget allocations, plan initiatives*

Table RN.11 identifies process and ordinance resources.

Table RN.11: Randolph Additional Implementation Resources

Randolph Program/Policy/Technical Documents	Year adopted/revised	Method of incorporation into the hazard mitigation plan
Comprehensive Plan	2020	Reviewed
Building Ordinance	2019	
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 RS.1: Rosemount Community Data

Population (2020):	25,650
Households:	8,931
Employment/Jobs:	7,072
Area:	35.2 Sq. Mi.
Major Land Uses:	58% Ag. / Undeveloped
	17% Residential
	11% Industrial
	5% Park and
	Recreation
Community Type:	Emerging Suburban Edge
Undeveloped Area:	58%

Source: Metropolitan Council Community Profiles

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.

Figure RS.1: City of Rosemount Location

Table RS.2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
Frequency	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
Warning Time	More than 12 hours	6-12 hours	3-6 hours	None-minimal
Extent	Localized	Community-wide	County-wide or greater	
Likely Impact	Negligible	Limited	Critical	Catastrophic

Table RS.3: Rosemount Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Violent Summer Storms (e.g., wind, hail)	4	4	2	3	**13**
Tornado	4	4	1	3	**12**
Violent Winter Storms	3	4	2	3	**12**
Flash Flood	2	4	3	3	**12**
Overland Flood (spring snowmelt)	3	3	3	3	**12**
Drought	4	3	2	2	**11**
Wildfire	2	4	2	3	**11**
Extreme Heat or Cold	4	2	3	2	**11**
Landslide	4	1	3	3	**11**
Structural Fire	1	4	3	3	**11**
Hazardous Material Incidents	2	4	2	2	**10**
Infectious Disease Outbreak/Pandemic	3	1	3	3	**10**
Water Supply Contamination	1	4	2	3	**10**
Wastewater Treatment Plant Failure	1	2	3	3	**9**
Terrorism	1	4	1	2	**8**
Civil Unrest	2	1	2	2	**7**
Cyber Threats	2	2	1	1	**6**
Dam Failure	2	1	1	2	**6**

General Land Use

Figure RS.2 depicts general land use in Rosemount, with agriculture / undeveloped and residential (single- and multi-family) being the predominant land uses.

Figure RS.2: Rosemount Land Use 2020, Metropolitan Council

Structural Inventory Value

Table RS.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 RS.4: Structural Inventory and Value, Rosemount

Use Type	Land Value	Structural Value	Total Value	Number of Structures
Agricultural	$84,613,400	$5,321,900	$89,935,300	292
Commercial	$47,234,400	$60,120,000	$107,354,400	125
Exempt	$75,096,200	$125,004,900	$200,101,100	405
Industrial	$77,688,700	$172,018,600	$249,707,300	590
Other	$499,300	$566,900	$1,066,200	18
Residential	$885,137,800	$2,136,126,600	$3,021,264,400	9,345
Utilities	$171,100	$4,614,400	$4,785,500	7
TOTAL	**$1,170,440,900**	**$2,503,773,300**	**$3,674,214,200**	**10,782**

Vulnerability

Vulnerable Populations

Table RS.5 provides current estimates of populations in Rosemount considered by FEMA to be at potentially increased risk during hazard events.

Table RS.5: Rosemount Potentially Vulnerable Populations, American Community Survey 2015-2019 Estimates

Potentially Vulnerable Population	Percentage (%)	U.S. (%)	Rosemount, MN – U.S. Difference
Under Age 5	7.7%	6.1%	1.6%
Over Age 65	10.1%	13.7%	-3.6%
Below Federal Poverty Line	3.7%	13.4%	-9.7%
Living with a Disability	6.0%	15.6%	-9.6%

Vulnerability of Critical Assets to Hazards

Rosemount staff evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table RS.6. Figure RS.3 provides general locations for selected critical assets in Rosemount. *Dam failure* was removed as a hazard consideration.

Table RS.6: Rosemount Assessment of Critical Assets (Redacted in Public Version of Plan)

Critical Facilities	Summer Storms	Tornado	Structure Fire	Hazmat Incidents	Flash Flood	Winter Storms	Infectious Disease / Pandemic	Water Supply Contamination	Overland Flood	Terrorism	Civil Unrest	Wildfire	Drought	Extreme Temps	Landslide	Cyber Security

Changes since the 2016 Plan

Rosemount staff identified the following significant land use changes and additions to critical facilities since the plan update in 2016: New construction of large gathering spaces including the Hope Fieldhouse and the Flint Hills Sports Complex.

Figure RS.3: City of Rosemount – Critical Facilities (Redacted in Public Version of Plan)

National Flood Insurance Program Participation and Compliance

Table RS.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 RS.7: Rosemount NFIP Participation

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Rosemount	270113	12/2/11	6	$1,190,000

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 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 RS.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 RS.8: Total Floodplain Structure and Value Inventory, Rosemount

Structure Type	Estimated Land Value	Estimated Building Value	Total Value	Total Structures
Exempt	$2,586,400	$282,900	$2,869,300	3
Industrial	$4,244,800	$2,908,700	$7,153,500	7
Total	**$6,831,200**	**$3,191,600**	**$10,022,800**	**10**

Strategy Review and Development

In 2021, Rosemount staff reviewed their strategies from the 2016 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2022 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 RS.9 lists Rosemount's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

Table RS.9: Rosemount All-Hazard Mitigation Plan Strategies

ROSEMOUNT MITIGATION STRATEGIES	
1. Maintain a rental property license and inspection program.	
Priority: Low *STAPLEE:* Low *Hazards:* Structural Fire *Lead:* Building Inspection Staff	*Status/Completion:* Ongoing / Each unit inspected every two years *Implementation:* City code, enforcement *Est. Cost/Funding Source:* $12,000 / Rental License Fee
2. Emergency siren replacement and updates.	
Priority: Medium *STAPLEE:* Medium *Hazards:* Severe Storms, Tornado, Hazmat Incident *Lead:* Police Department, Chief *Status/Completion:* Existing / Ongoing	*Implementation:* Emergency Operations Plan (EOP), Capital Improvement Program (CIP) for ongoing upgrades and preventive maintenance plan *Est. Cost/Funding Source:* $30,000 / General Fund, Grants
3. Fire truck replacement or refurbishment.	
Priority: Medium *STAPLEE:* Medium *Hazards:* Structural Fire, Multiple Hazards-Emergencies *Lead:* Fire Department, Chief	*Status/Completion:* Existing / Ongoing *Implementation:* EOP, CIP *Est. Cost/Funding Source:* $150,000 yearly / General Fund
4. Police car replacement.	
Priority: Medium *STAPLEE:* Medium *Hazards:* Structural Fire, Multiple Hazards-Emergencies *Lead:* Police Department, Chief	*Status/Completion:* Existing / Ongoing *Implementation:* EOP, CIP, evaluation of current leasing program *Est. Cost/Funding Source:* $100,000 yearly / General Fund

5. Increase water storage and redundancy.*

Priority:
STAPLEE: High
Hazards: Water Supply, Fire Suppression
Lead: Public Works, Director

Status/Completion: Existing / Ongoing
Implementation: Comprehensive Water Supply Plan
Est. Cost/Funding Source: $5,000,000 yearly /
General Fund, Development Fees

6. Implement North Central Sanitary Sewer Plan.**

Priority:
STAPLEE: High
Hazards: Water Supply Contamination (failed septic)
Lead: Public Works and Community Development

Status/Completion: Existing / Ongoing
Implementation: Comp. Plan, Sanitary Sewer Plan
Est. Cost/Funding Source: $1,500,000 / General
Fund, Property Assessments

7. Code review and revision.

Priority: Low
STAPLEE: Low
Hazards: Structural Fire, multiple hazards
Lead: Community Development, Director

Status/Completion: Existing / Ongoing
Implementation: City code
Est. Cost/Funding Source: $5,000 yearly / General
Fund

8. Identify methods or strategies to protect critical infrastructure from civil unrest.

Priority: High
STAPLEE:
Hazards: Civil Unrest
Lead: Police Dept., Chief

Status/Completion: New / 2022
Implementation: EOP, Campus Security Plan
Est. Cost/Funding Source: TBD / Domestic
Preparedness Committee

9. Focus efforts for expansion and/or improvement of broadband across facilities and community.

Priority: Medium
STAPLEE:
Hazards: Cyber Attack, EOC functionality
Lead: IT Dept., Director

Status/Completion: New / Ongoing
Implementation: EOP/EOC updates
Est. Cost/Funding Source: TBD / CIP-General Fund

10. Provide Trunk Stormwater Discharge System.

Priority: Medium
STAPLEE:
Hazards: Flooding
Lead: Public Works, Director
Status/Completion: New / Ongoing

Implementation: Comprehensive Surface Water
Mgmt. Plan
Est. Cost/Funding Source: $10M - $15M /
Stormwater Trunk Fund, Development Fees,
Developer-constructed

*Reduces risk to buildings or infrastructure
** Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

Implementation Resources:

Table RS.10 identifies staff resources and roles in implementing its mitigation strategies.

Table RS.10: Rosemount Mitigation Implementation Resources

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
Building Inspections, City building inspector	Building inspections, regulation of new housing development.	Adoption and enforcement of State building code, revision of City Ordinance as necessary, evaluation and inspection of safety standards.
Planning and Zoning, Planning Director	Zoning, development siting and restrictions, Comprehensive Plans	Floodplain management and land use planning
Police, Police Chief	Public safety and law enforcement, emergency response	Emergency Operations Planning, public safety education, emergency response training and purchasing of necessary equipment.
Public Works, Public Works Director	Develop and operate public infrastructure (roads, utilities)	CIP; comprehensive plan execution; manage transportation infrastructure, storm and sanitary sewers, and the water production system.

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
Fire Department, Fire Chief	Public and fire safety enforcement, emergency response	Emergency response training, fire code enforcement, and public education.

Table RS.11 identifies process and ordinance resources.

Table RS.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	2021	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 regulations alarm systems, alcohol, animals, drugs, firearm discharge, graffiti and minors to discourage terroristic acts, property damage, and physical crimes.
Traffic and Motor Vehicle Code	2021	Controls 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	2020	Guides the future development of the City including an adequate roads, utilities, and emergency facilities.
Capital Improvement Plan	2020	Plans and budgets to ensure that roads, utilities, and emergency vehicles and facilities are purchased, constructed, and maintained; supports hazard mitigation

CITY OF SOUTH ST. PAUL

Table SS.1: South St. Paul Community Data

Population (2020):	20,769
Households:	8,432
Employment/Jobs:	5,863
Area:	6.2 Sq. Mi.
Major Land Uses:	43% Residential
	11% Industrial
	11% Park and Recreational
Community Type:	Urban Center
Undeveloped Area:	8%

Source: Metropolitan Council Community Profiles

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.

Figure SS.1: City of South St. Paul Location

Table SS.2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
Frequency	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
Warning Time	More than 12 hours	6-12 hours	3-6 hours	None-minimal
Extent	Localized	Community-wide	County-wide or greater	
Likely Impact	Negligible	Limited	Critical	Catastrophic

Table SS.3: South St. Paul Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Civil Unrest	2	3	3	3	**11**
Cyber Threats	4	4	1	2	**11**
Structural Fire	3	4	1	2	**10**
Water Supply Contamination	1	4	2	3	**10**
Wastewater Treatment Plant Failure	1	4	2	3	**10**
Violent Summer Storms (e.g., wind, hail)	4	2	1	2	**9**
Flash Flood	3	3	1	2	**9**
Extreme Heat or Cold	4	1	3	1	**9**
Hazardous Material Incidents	2	4	1	2	**9**
Infectious Disease Outbreak/Pandemic	3	1	3	2	**9**
Terrorism	1	4	1	3	**9**
Tornado	3	2	1	2	**8**
Violent Winter Storms	4	1	2	1	**8**
Overland Flood (spring snowmelt)	3	1	1	3	**8**
Drought	3	1	3	1	**8**
Landslide	1	1	1	2	**5**
Wildfire	1	1	1	1	**4**
Dam Failure	1	1	1	1	**4**

General Land Use

Figure SS.2 depicts general land use in South St. Paul, with residential (single- and multi-family) being the predominant land use.

Structural Inventory Value

Table SS.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 SS.2: South St. Paul Land Use 2020, Metropolitan Council

Table SS.4: Structural Inventory and Value, South St. Paul

Use Type	Land Value	Structural Value	Total Value	Number of Structures
Commercial	$31,170,900	$53,229,500	$84,400,400	183
Exempt	$52,047,100	$100,417,600	$152,464,700	296
Industrial	$46,154,000	$115,235,500	$161,389,500	177
Other	$96,700	$0	$96,700	2
Residential	$406,478,400	$1,270,476,700	$1,676,955,100	11,831
Utilities	$282,700	$1,760,800	$2,043,500	5
TOTAL	$536,229,800	$1,541,120,100	$2,077,349,900	12,494

Vulnerability

Vulnerable Populations

Table SS.5 provides current estimates of populations in South St. Paul considered by FEMA to be at potentially increased risk during hazard events.

Table SS.5: South St. Paul Potentially Vulnerable Populations, American Community Survey 2015-2019 Estimates

Potentially Vulnerable Population	Percentage (%)	U.S. (%)	South St. Paul, MN – U.S. Difference
Under Age 5	6.7%	6.1%	0.6%
Over Age 65	13.0%	13.7%	-0.7%
Below Federal Poverty Line	11.0%	13.4%	-2.4%
Living with a Disability	11.1%	15.6%	-4.5%

Vulnerability of Critical Assets to Hazards

South St. Paul staff evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table SS.6. Figure SS.3 provides general locations for selected critical assets in South St. Paul.

Table SS.6: South St. Paul Assessment of Critical Assets (Redacted in Public Version of Plan)

Critical Facilities	Summer Storms	Tornado	Structure Fire	Hazmat Incidents	Flash Flood	Winter Storms	Infectious Disease / Pandemic	Water Supply Contamination	Overland Flood	Terrorism	Civil Unrest	Wildfire	Drought	Extreme Temps	Dam Failure	Landslide	Cyber Threats

Changes since the 2016 Plan

City staff identified no significant land use changes and additions to critical facilities since the last plan update in 2016.

Figure SS.3: City of South St. Paul – Critical Facilities (Redacted in Public Version of Plan)

National Flood Insurance Program Participation and Compliance

Table SS.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 SS.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	17	$11,652,400

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.

Table SS.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 SS.8: Total Floodplain Structure and Value Inventory, South St. Paul

Structure Type	Estimated Land Value	Estimated Building Value	Total Value	Total Structures
Commercial	$642,500	$99,700	$742,200	19
Exempt	$843,800	$588,300	$1,432,100	6
Industrial	$5,831,800	$10,013,900	$15,845,700	22
Total	**$7,318,100**	**$10,701,900**	**$18,020,000**	**47**

Strategy Review and Development

In 2021, South St. Paul staff reviewed strategies from the 2016 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2022 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 SS.9 presents South St. Paul's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

Table SS.9: South St. Paul All-Hazard Mitigation Plan Strategies

SOUTH ST. PAUL MITIGATION STRATEGIES

1. Complete annual inspections on all high-risk properties and biennial inspections on all other businesses.*

Priority: High	*Status/Completion:* Existing / Ongoing
STAPLEE: High	*Implementation:* Fire Inspection Program
Hazards: Structural Fire	*Est. Cost/Funding Source:* $100,000 / Staff Time-
Lead: South Metro Fire Dept. (SMFD), Commercial	SMFD

2. Implement replacement plan for existing city outdoor weather sirens. Increase public awareness related to outdoor sirens.

Priority: High	*Status/Completion:* Existing / Ongoing
STAPLEE: High	*Implementation:* Project development
Hazards: Violent Storms, Tornado	*Est. Cost/Funding Source:* up to $125,000 / Police
Lead: Public Safety, Police Chief	Protection Budget

3. Continue updates of the City of South St. Paul Emergency Operations Plan.

Priority: High	*Status/Completion:* Existing / Ongoing
STAPLEE: High)	*Implementation:* Emergency Operations Plan
Hazards: All	*Est. Cost/Funding Source:* $26,000 / Police
Lead: Public Safety, Police Chief	Protection Budget
Status/Completion: Existing-New / TBD	*Est. Cost/Funding Source:* $4.8 Million / $2.4 M
Implementation: Project development	Grant, City Funds

4. Updates to firewalls with advanced intrusion detection/prevention capabilities.

Priority: Med	*Status/Completion:* Existing / ongoing
STAPLEE: High	*Implementation:* Project development
Hazards: Cyber Terrorism	*Est. Cost/Funding Source:* $100,000 / IT Budget
Lead: Information Technology, Director	

5. Complete $15 Million upgrade to Concord Street.

Priority: Low	*Status/Completion:* Existing / 2022
STAPLEE: High	*Implementation:* Project completion
Hazards: Flash Flood	*Est. Cost/Funding Source:* $1.5 Million / Federal
Lead: Engineering, City Engineer	Funding Anticipated

6. **Complete City Hall/Police Department Building Security Plan to include a barrier/fencing plan.**

Priority: TBD
STAPLEE: TBD
Hazards: Civil Unrest
Lead: Police Dept. Chief, City Engineer

Status/Completion: New / TBD
Implementation: Project development from Plan
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

Implementation Resources:

Table SS.10 identifies South St. Paul staff resources and their roles in mitigation. Table SS.11 identifies resources related to processes and ordinances.

Table SS.10: South St. Paul Mitigation Implementation Resources

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
Building Inspections, Building Official, Joe Heimkes	Building inspections, regulation of new housing development	Enforce safety restrictions including setbacks, building materials, spacing, and location to hydrants in new construction areas
Planning and Zoning, Planning Director, Peter Hellegers	Zoning, development siting and restrictions, Comprehensive Plans	Enforce floodplain ordinances and compliance, proper land use per ordinances
Police, Police Chief William 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
Public Works, Public Works Director, Patrick Dunn	Development and operations of public infrastructure (roads, utilities)	City well inspections and maintenance, partnership with all city departments, level improvement projects
Fire Department, South Metro Fire Chief, Mark Juelfs	Public and fire safety enforcement, emergency response	Inspect buildings for code compliance: annual inspection of high-risk buildings, biennial inspection of other businesses

Table SS.11: South St. Paul Additional Implementation Resources

Program/Ordinance/Study/ Technical Document	Adopted or Revised	Method of incorporation into the hazard mitigation plan
Comprehensive Storm water Management Plan	January 2018	Planning document for local drainage system
2022 - 2027 Capital Improvement Plan	December 2021	Infrastructure upgrades to support hazard mitigation
2022 Budget and Financial Plan	December 2021	Allocates annual operational funding for departments and staff implementing the City's mitigation strategies
Emergency Operations Plan	January 2021	Response, recovery, and mitigation plan; ongoing training
Special Zoning Ordinance, Floodplain map	Adopted: 11/7/2011 Revised Flood Map: 1/14/2013	Floodplain regulation
Comprehensive Plan	October 2020	Sets land use vision for community, provides existing and projected information

CITY OF SUNFISH LAKE

Table SF1: Sunfish Lake Community Data

Population (2020):	522
Households:	179
Employment/Jobs:	5
Area:	1.7 Sq. Mi.
Major Land Uses:	39% Ag. & Undevel. 37% Residential 3% Park and Recreation
Community Type:	Rural Residential
Undeveloped Area:	39%

Source: Metropolitan Council Community Profiles

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.
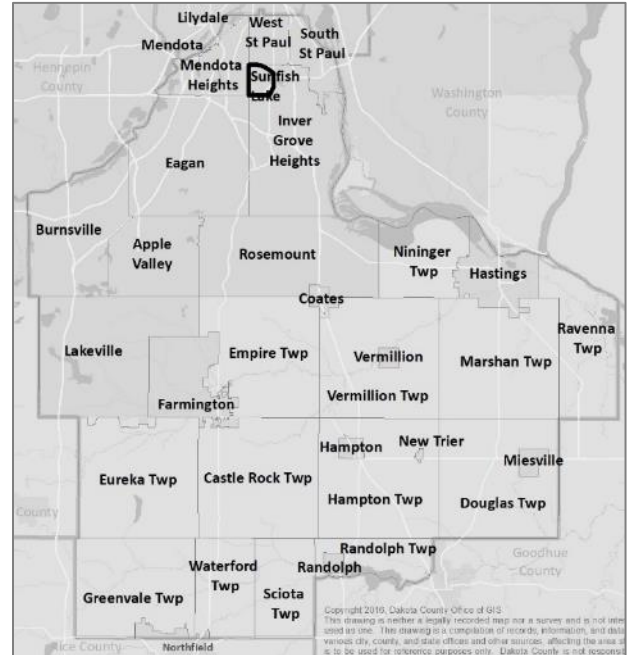

Figure SF.1: City of Sunfish Lake Location

Table SF.2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
Frequency	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
Warning Time	More than 12 hours	6-12 hours	3-6 hours	None-minimal
Extent	Localized	Community-wide	County-wide or greater	
Likely Impact	Negligible	Limited	Critical	Catastrophic

Table SF.3: Sunfish Lake Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Violent Summer Storms (e.g., wind, hail)	3	4	3	2	**12**
Tornado	2	4	3	3	**12**
Wildfire	3	4	1	3	**11**
Terrorism	1	4	2	4	**11**
Drought	4	1	3	2	**10**
Structural Fire	3	4	1	2	**10**
Infectious Disease Outbreak/Pandemic	3	1	3	3	**10**
Violent Winter Storms	3	1	3	2	**9**
Extreme Heat or Cold	3	1	3	2	**9**
Hazardous Material Incidents	2	4	1	2	**9**
Water Supply Contamination	2	4	1	2	**9**
Wastewater Treatment Plant Failure	2	4	1	2	**9**
Civil Unrest	3	3	1	2	**9**
Flash Flood	1	4	1	2	**8**
Landslide	1	4	1	1	**7**
Cyber Threats	1	4	1	1	**7**
Overland Flood (spring snowmelt)	1	1	1	2	**5**
Dam Failure	N/A	N/A	N/A	N/A	**N/A**

General Land Use

Figure SF.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 SF.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 SF.2: Sunfish Lake Land Use 2020, Metropolitan Council

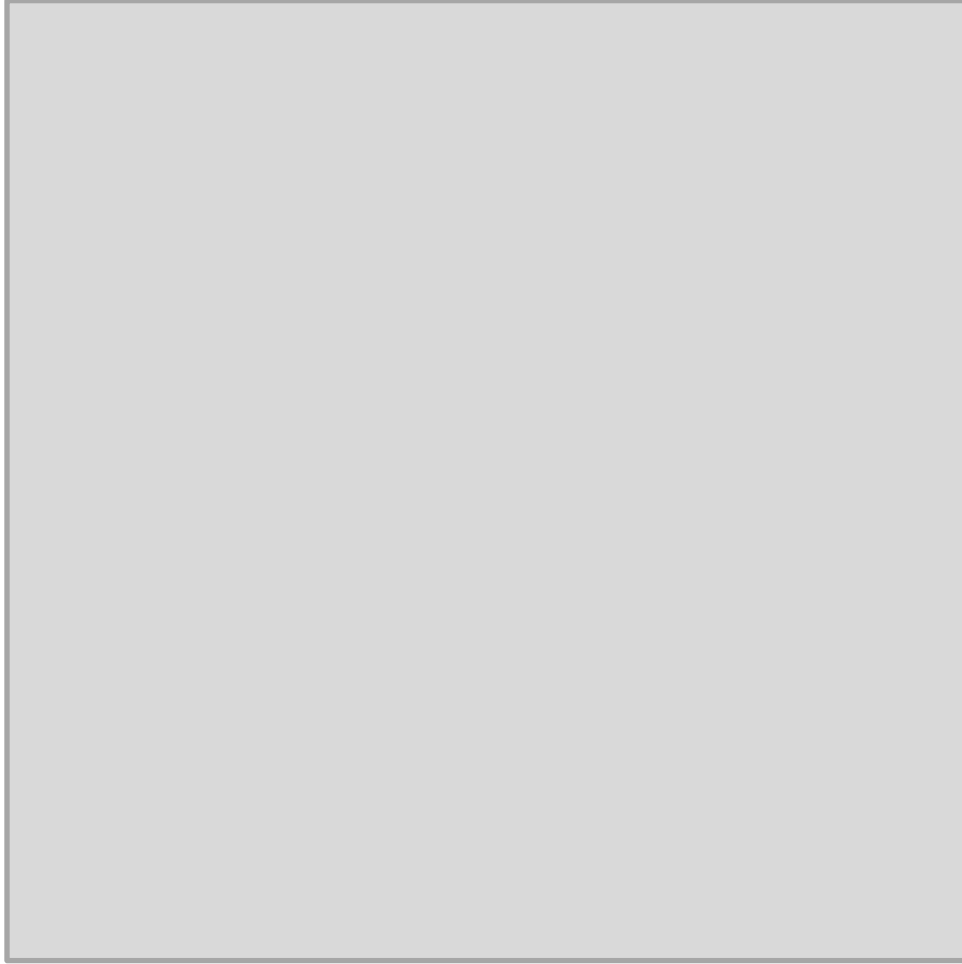**Table SF.4: Structural Inventory and Value, Sunfish Lake**

Use Type	Land Value	Structural Value	Total Value	Number of Structures
Exempt	$4,157,100	$3,989,900	$8,147,000	8
Residential	$98,504,100	$125,359,900	$223,864,000	297
TOTAL	**$102,661,200**	**$129,349,800**	**$232,011,000**	**305**

Vulnerability

Vulnerable Populations

Table SF.5 provides current estimates of populations in Sunfish Lake considered by FEMA to be at potentially increased risk during hazard events.

Table SF.5: Sunfish Lake Potentially Vulnerable Populations, American Community Survey 2015-2019 Estimates

Potentially Vulnerable Population	Percentage (%)	U.S. (%)	Sunfish Lake, MN – U.S. Difference
Under Age 5	4.2%	6.1%	-1.9%
Over Age 65	19.7%	13.7%	6.0%
Below Federal Poverty Line	3.7%	13.4%	-9.7%
Living with a Disability	5.2%	15.6%	-10.4%

Vulnerability of Critical Assets to Hazards

Sunfish Lake officials evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table SF.6. As a rural residential community with roads as the primary public infrastructure, nothing was identified as vulnerable to hazards or mapped in Figure 3.

Table SF.6: Sunfish Lake Assessment of Critical Assets (Redacted in Public Version of Plan)

Critical Facilities	Summer Storms	Tornado	Structure Fire	Hazmat Incidents	Flash Flood	Winter Storms	Infectious Disease / Pandemic	Water Supply Contamination	Overland Flood	Terrorism	Civil Unrest	Wildfire	Drought	Extreme Temps	Dam Failure	Landslide

Changes since the 2016 Plan

City staff identified no significant land use changes and additions to critical facilities since the last plan update in 2016.

Figure SF.3: City of Sunfish Lake – Critical Facilities (Redacted in Public Version of Plan)

National Flood Insurance Program Participation and Compliance

The City of Sunfish Lake does not participate in the National Flood Insurance Program. A review of data from the Dakota County Office of GIS and Assessor's Office found no structures located within floodplains.

Strategy Review and Development

In 2021, Sunfish Lake representatives reviewed strategies from the 2016 Dakota County All-Hazard Mitigation Plan for progress (See **Appendix III**) and to identify strategies to carry forward into the 2022 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 SF.7 presents Sunfish Lake's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

Table SF.7: Sunfish Lake All-Hazard Mitigation Plan Strategies

SUNFISH LAKE MITIGATION STRATEGIES	
1. Stormwater Ponding Expansion and Maintenance	
Priority:	*Status/Completion:* Existing / Ongoing
STAPLEE: Medium	*Implementation:* Stormwater Management Plan, Local Ordinance
Hazards: Flash Flood	
Lead: City Engineer	*Est. Cost/Funding Source:* Varies / General Fund
2. Culvert/Drainage Improvements	
Priority:	*Status/Completion:* Existing / Ongoing
STAPLEE: High	*Implementation:* Stormwater Management Plan, Local Ordinance
Hazards: Flash Flood	
Lead: City Engineer	*Est. Cost/Funding Source:* Varies / General Fund
3. Obtain Drainage Easements	
Priority:	*Status/Completion:* Existing / Ongoing
STAPLEE: Low	*Implementation:* Stormwater Management Plan, Local Ordinance
Hazards: Flash Flood	
Lead: City Engineer	*Est. Cost/Funding Source:* Varies / General Fund
4. Enforce Burning Permits*	
Priority:	*Status/Completion:* Existing / Ongoing
STAPLEE: High	*Implementation:* Local Ordinance
Hazards: Wildfire, Structural Fire	*Est. Cost/Funding Source:* Varies / General Fund
Lead: City Forester, Local Law Enforcement	
5. Well Management	
Priority:	*Status/Completion:* Existing / Ongoing
STAPLEE: Medium	*Implementation:* Local Ordinance
Hazards: Water Supply Contamination	*Est. Cost/Funding Source:* Varies / General Fund
Lead: Dakota County, MN Dept. of Health	
6. Subsurface Sewage treatment System Maintenance	
Priority:	*Status/Completion:* Existing / Ongoing
STAPLEE: Low	*Implementation:* Local Ordinance
Hazards: Flash Flood, Water Supply Contamination	*Est. Cost/Funding Source:* Varies / General Fund
Lead: City of Sunfish Lake	

*Reduces risk to buildings or infrastructure

** Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

Implementation Resources:

Table SF.8 identifies Sunfish Lake resources and their roles in mitigation.

Table SF.8: Sunfish Lake Mitigation Implementation Resources

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
Building inspections: Building Inspector/Mike Andrejka	Building inspections, regulation of new housing development	*Enforce safety restrictions: setbacks, building materials, and fire suppression*
Planning / Zoning: City Planner/Lori Johnson	Zoning, development siting and restrictions, Comprehensive Plans	*Floodplain ordinances and compliance*
Police: West St. Paul PD/Chief Brian Sturgeon	Public safety and law enforcement, emergency response	*Response training, public safety education*
Public Works: City Engineer/Jeff Sandberg	Development and operations of public infrastructure (roads, utilities)	*City well inspection and maintenance*
Fire Department: Mendota Heights FD/Dave Dreelan	Public and fire safety enforcement, emergency response	*Inspect commercial structures for fire hazards*
Forestry Department	Maintain healthy trees in city	

Table SF.9 identifies resources related to processes and ordinances.

Table SF.9: Sunfish Lake Additional Implementation Resources

Program/Ordinance/Study/ Technical Document	Adopted or Revised	Method of incorporation into the hazard mitigation plan
Comprehensive Plan	2020 - adopted	Assessing development trends and future vulnerabilities. Met council
Storm Water Management Plan 2018	2018 - 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
City Code, Article XII - Zoning Ordinance	2010 - revised	Used for assessing growth
City Code, Article XII, Section 1216.04 - Storm Water Management Ordinance	2018 - revised	References drainage, erosion control, and storm sewer system pollution prevention
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

CITY OF VERMILLION

Table V.1: Vermillion Community Data

Population (2020):	441
Households:	168
Employment/Jobs:	111
Area:	1.0 Sq. Mi.
Major Land Uses:	82% Ag. & Undevel. 13% Residential 2% Park and Rec.
Community Type:	Rural Center
Undeveloped Area:	82%

Source: Metropolitan Council Community Profiles

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.
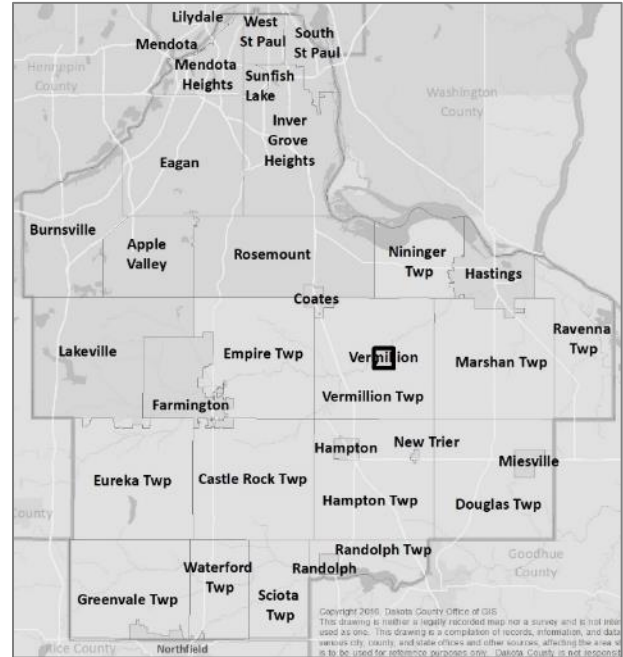

Figure V.1: City of Vermillion Location

Table V.2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
Frequency	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
Warning Time	More than 12 hours	6-12 hours	3-6 hours	None-minimal
Extent	Localized	Community-wide	County-wide or greater	
Likely Impact	Negligible	Limited	Critical	Catastrophic

Table V.3: Vermillion Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Violent Summer Storms (e.g., wind, hail)	2	3	2	3	**10**
Tornado	2	3	2	3	**10**
Violent Winter Storms	2	3	2	3	**10**
Infectious Disease Outbreak/Pandemic	3	2	2	2	**9**
Terrorism	1	4	3	1	**9**
Wildfire	1	1	3	3	**8**
Extreme Heat or Cold	2	1	3	2	**8**
Structural Fire	1	4	1	1	**7**
Drought	1	1	3	1	**6**
Water Supply Contamination	2	1	2	1	**6**
Wastewater Treatment Plant Failure	2	1	2	1	**6**
Flash Flood	1	1	2	1	**5**
Civil Unrest	1	1	2	1	**5**
Cyber Threats	1	1	2	1	**5**
Overland Flood (spring snowmelt)	1	1	1	1	**4**
Landslide	1	1	1	1	**4**
Hazardous Material Incidents	1	1	1	1	**4**
Dam Failure	1	1	1	1	**4**

General Land Use

Figure V.2 depicts general land use in Vermillion, with agriculture and open space being the predominant land use.

Structural Inventory Value

Table V.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.
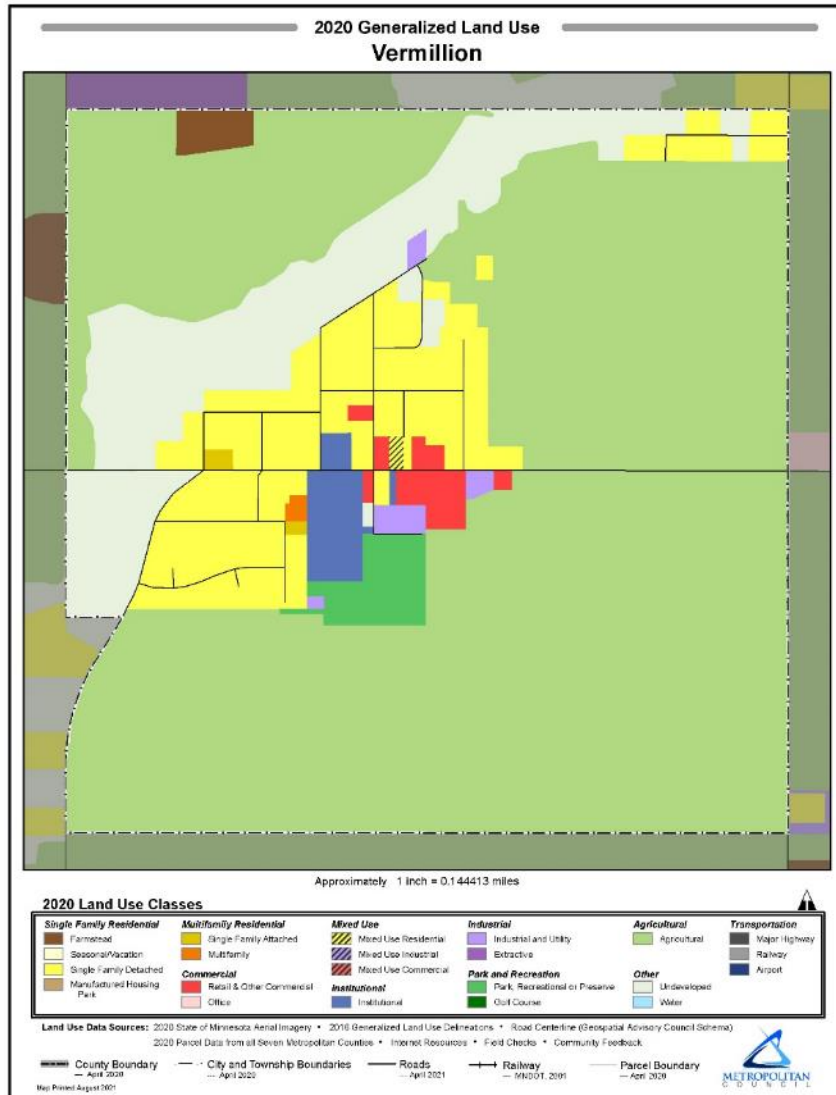

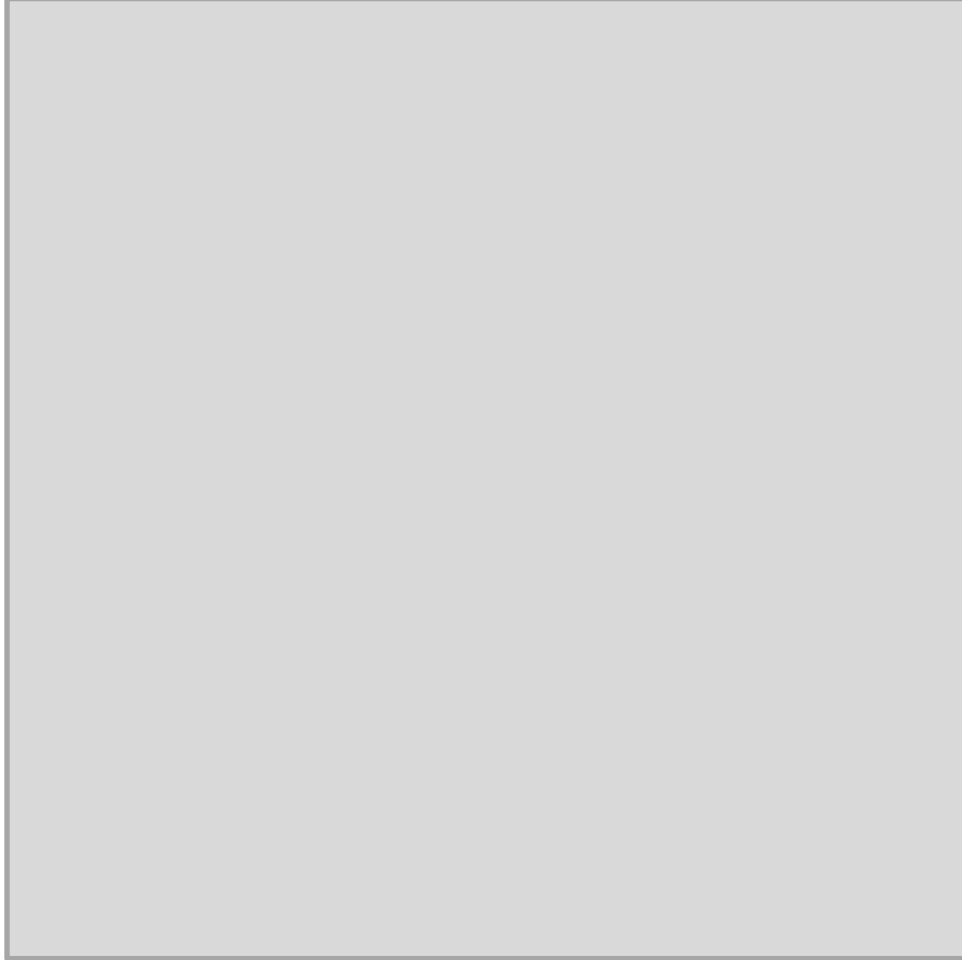Figure V.2: Vermillion Land Use 2020, Metropolitan Council

Table V.4: Structural Inventory and Value, Vermillion

Use Type	Land Value	Structural Value	Total Value	Number of Structures
Agricultural	$3,569,800	$663,600	$4,233,400	14
Commercial	$775,600	$1,762,300	$2,537,900	13
Exempt	$1,322,400	$2,456,800	$3,779,200	9
Industrial	$160,700	$42,700	$203,400	2
Residential	$10,214,500	$31,219,800	$41,434,300	208
TOTAL	**$16,043,000**	**$36,145,200**	**$52,188,200**	**246**

Vulnerability

Vulnerable Populations

Table V.5 provides current estimates of populations in the City of Vermillion considered by FEMA to be at potentially increased risk during hazard events.

Table V.5: Vermillion Potentially Vulnerable Populations, American Community Survey 2015-2019 Estimates

Potentially Vulnerable Population	Percentage (%)	U.S. (%)	Vermillion, MN – U.S. Difference
Under Age 5	4.0%	6.1%	-2.1%
Over Age 65	15.6%	13.7%	1.9%
Below Federal Poverty Line	2.6%	13.4%	-10.8%
Living with a Disability	12.8%	15.6%	-2.8%

Vulnerability of Critical Assets to Hazards

Vermillion officials evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table V.6. Figure V.3 provides general locations for selected critical assets in Vermillion.

Table V.6: Vermillion Assessment of Critical Assets (Redacted in Public Version of Plan)

Critical Facilities	Summer Storms	Tornado	Structure Fire	Hazmat Incidents	Flash Flood	Winter Storms	Infectious Disease / Pandemic	Water Supply Contamination	Overland Flood	Terrorism	Civil Unrest	Wildfire	Drought	Extreme Temps	Dam Failure	Landslide	Cyber Threats

Changes since the 2016 Plan

City staff identified no significant land use changes and additions to critical facilities since the last plan update in 2016.

Figure V.3: City of Vermillion – Critical Facilities (Redacted in Public Version of Plan)

National Flood Insurance Program Participation and Compliance

Table V.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 V.7: Vermillion NFIP Participation

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
Vermillion	270115	12/2/11	1	$350,000

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.

A review of data from the Dakota County Office of GIS and Assessor's Office shows that no structures are located within the floodplain in Vermillion.

Strategy Review and Development

In 2021, Vermillion officials reviewed strategies from the 2016 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2022 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 V.8 presents Vermillion's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

Table V.8: Vermillion All-Hazard Mitigation Plan Strategies

VERMILLION MITIGATION STRATEGIES	
1. Maintain road grading.	
Priority: First	*Status/Completion:* Existing / Ongoing
STAPLEE: High	*Implementation:* As needed
Hazards: Flash Flood	*Est. Cost/Funding Source:* Varies / City Budget
Lead: Street Department, Superintendent	
2. Maintain outdoor warning sirens.	
Priority: Second	*Status/Completion:* Existing / Ongoing, Yearly
STAPLEE: High	*Implementation:* Yearly inspections
Hazards: Violent Storm, Tornado	*Est. Cost/Funding Source:* Varies / City Budget
Lead: TBD	
3. Maintain outdoor burning restrictions.*	
Priority: Third	*Status/Completion:* Existing / Ongoing, Yearly
STAPLEE: High	*Implementation:* Quarterly Newsletter
Hazards: Wildfire	*Est. Cost/Funding Source:* Varies / City Budget
Lead: City Council	
4. Outfit well with generator outlet.	
Priority: Fourth	*Status/Completion:* Existing / TBD
STAPLEE: High	*Implementation:* TBD
Hazards: Water Supply (power outage)	*Est. Cost/Funding Source:* TBD / City Budget
Lead: Water Department, Superintendent	
5. Continue water tower inspection.	
Priority: Fifth	*Status/Completion:* Existing / Ongoing
STAPLEE: High	*Implementation:* As needed
Hazards: Water Supply, structural integrity	*Est. Cost/Funding Source:* / City Budget
Lead: Water Department, Superintendent	

*Reduces risk to buildings or infrastructure
** Evaluated a comprehensive range of specific mitigation actions; identified actions were selected for implementation

Implementation Resources:

Table V.9 identifies Vermillion resources and their roles in mitigation.

Table V.9: Vermillion Mitigation Implementation Resources

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
Building Inspection: Inspectron, Inc.	Building inspections, regulation of new housing development	Enforce safety restrictions including setbacks and building materials
Planning/Zoning: City Planning Commission	Zoning, development siting and restrictions, Comprehensive Plans	Enforce floodplain ordinances and compliance

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
Police: 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
Vermillion Public Works	Develop / operate public infrastructure (roads, utilities)	City well inspections and maintenance
Fire Department: 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 V.10 identifies resources related to processes and ordinances.

Table V.10: Vermillion Additional Implementation Resources

Program/Ordinance/Study/ Technical Document	Adopted or Revised	Method of incorporation into the hazard mitigation plan
Capital Improvement Program	2010	Infrastructure upgrades to support hazard mitigation
Annual Budget	annually	Allocates annual operational funding for departments and staff implementing the City's mitigation strategies
Special Zoning Ordinance, Floodplain map	2011	Floodplain regulation
Comprehensive Plan	2009	Sets land use vision for community, provides existing and projected information

CITY OF WEST ST. PAUL

Table WS.1: West St. Paul Community Data

Population (2020):	20,615
Households:	8,996
Employment/Jobs:	7,279
Area:	5.0 Sq. Mi.
Major Land Uses:	60% Residential
	14% Park and Rec.
	11% Commercial
Community Type:	Urban Center
Undeveloped Area:	2%

Source: Metropolitan Council Community Profiles

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.

Figure WS.1: City of West St. Paul Location

Table WS.2: Dakota County Hazard Rating Model

Parameter	Rating=1	Rating=2	Rating=3	Rating=4
Frequency	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
Warning Time	More than 12 hours	6-12 hours	3-6 hours	None-minimal
Extent	Localized	Community-wide	County-wide or greater	
Likely Impact	Negligible	Limited	Critical	Catastrophic

Table WS.3: West St. Paul Hazard Rating

Hazard	Frequency	Warning Time	Geographic Extent	Likely Impact	Total
Water Supply Contamination	3	4	2	3	**12**
Terrorism	2	4	2	4	**12**
Structural Fire	4	4	1	2	**11**
Cyber Threats	3	4	1	3	**11**
Violent Summer Storms (e.g., wind, hail)	3	3	2	2	**10**
Tornado	2	4	1	3	**10**
Extreme Heat or Cold	4	1	3	2	**10**
Hazardous Material Incidents	3	4	1	2	**10**
Infectious Disease Outbreak/Pandemic	3	1	3	3	**10**
Wastewater Treatment Plant Failure	2	4	1	3	**10**
Civil Unrest	3	4	1	2	**10**
Flash Flood	2	4	1	2	**9**
Violent Winter Storms	3	1	2	2	**8**
Wildfire	1	4	1	2	**8**
Landslide	1	4	1	2	**8**
Overland Flood (spring snowmelt)	1	1	3	2	**7**
Drought	2	1	3	1	**7**
Dam Failure	1	4	1	1	**7**

General Land Use

Figure WS.2 depicts general land use in West St. Paul, with residential (single- and multi-family) being the predominant land use.

Structural Inventory Value

Table WS.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.

Figure WS.2: West St. Paul Land Use 2020, Metropolitan Council

Table WS.4: Structural Inventory and Value, West St. Paul

Use Type	Land Value	Structural Value	Total Value	Number of Structures
Commercial	$115,502,600	$133,116,900	$248,619,500	236
Exempt	$62,141,600	$123,902,000	$186,043,600	186
Industrial	$14,285,600	$35,968,100	$50,253,700	39
Other	$600	$2,500	$3,100	1
Residential	$429,702,000	$1,445,368,300	$1,875,070,300	8,282
TOTAL	**$621,632,400**	**$1,738,357,800**	**$2,359,990,200**	**8,744**

Vulnerability

Vulnerable Populations

Table WS.5 provides current estimates of populations in West St. Paul considered by FEMA to be at potentially increased risk during hazard events.

Table WS.5: West St. Paul Potentially Vulnerable Populations, American Community Survey 2015-2019 Estimates

Potentially Vulnerable Population	Percentage (%)	U.S. (%)	West St. Paul, MN – U.S. Difference
Under Age 5	6.0%	6.1%	-0.1%
Over Age 65	17.4%	13.7%	3.7%
Below Federal Poverty Line	13.4%	13.4%	0.0%
Living with a Disability	14.1%	15.6%	-1.5%

Vulnerability of Critical Assets to Hazards

West St. Paul staff evaluated potential vulnerabilities of critical facilities to their hazards of concern, provided in Table WS.6. *Dam Failure* was found to be of no consequence to critical facilities. Figure WS.3 provides general locations for selected critical assets in West St. Paul.

Table WS.6: West St. Paul Assessment of Critical Assets (Redacted in Public Version of Plan)

Critical Facilities	Summer Storms	Tornado	Structure Fire	Hazmat Incidents	Flash Flood	Winter Storms	Infectious Disease	Water Supply Contamination	Overland Flood	Terrorism	Civil Unrest	Wildfire	Drought	Extreme Temps	Dam Failure	Landslide	Cyber-Attack

Changes since the 2016 Plan

City staff identified land use changes and additions to critical facilities since the last plan update in 2016:

- **Improved Roadways –** Improvements to main roadways (Robert Street) are ongoing.
- **Communications –** Enhanced communications with residents in various media platforms is ongoing.
- **Pumping/Lift Stations –** Ongoing station upgrades and technology improvements to ensure more consistent flow, especially during heavy rains, and improved monitoring of these pumping stations.
- **I/I Program –** The City and the residents continue participating in an inflow and infiltration program to reduce excess and unnecessary water flowage into the sanitary sewer system.
- **City Facilities and Parks –** plans to improve security and safety of public facilities.

Figure WS.3: City of West St. Paul – Critical Facilities (Redacted in Public Version of Plan)

National Flood Insurance Program Participation and Compliance

Table WS.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.

Table WS.7: West St. Paul NFIP Participation

Community	CID Number	Current Effective Map Date	Policies In-force	Insurance In-force
West St. Paul	270729	(NSFHA)	10	$2,560,000

Compliance:

Data from the County Office of GIS and Assessor's Office showed no structures within DFIRM boundaries.

Strategy Review and Development

In 2021, West St. Paul staff reviewed strategies from the 2016 Dakota County All-Hazard Mitigation Plan for implementation progress (See Appendix III) and to identify strategies to carry forward into the 2022 Plan update as ongoing efforts or projects 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 WS.8 presents West St. Paul's strategies, with additional information on hazards addressed by the strategy, priority, lead implementation agency, and estimated costs.

Table WS.8: West St. Paul All-Hazard Mitigation Plan Strategies

WEST ST. PAUL MITIGATION STRATEGIES	
1. Mutual aid interagency agreements.	
Priority: High	*Status/Completion*: NA / Ongoing
STAPLEE: High	*Implementation*: Emergency Preparedness Plan
Hazards: All	*Est. Cost/Funding Source*: Staff Time / General
Lead: Emergency Mgmt., Police & Fire, Chiefs	Budget
2. Continuity of Operations Planning.	
Priority: Medium	*Implementation*: Emergency Preparedness Plan,
STAPLEE: High	update with quarterly meeting
Hazards: All	*Est. Cost/Funding Source*: Staff Time / General
Lead: Emergency Management, Director	Budget
Status/Completion: Existing / 2019, Ongoing	
3. Site Emergency Plans (pre-planning).	
Priority: Medium	*Status/Completion*: Existing / Ongoing
STAPLEE: Medium	*Implementation*: All City Departments
Hazards: All	*Est. Cost/Funding Source*: Staff Time / General
Lead: City Departments, Managers	Budget
4. Stormwater pond expansion and maintenance.	
Priority: Medium	*Status/Completion*: Existing- / Ongoing
STAPLEE: Medium	*Implementation*: City Ordinance, State Law
Hazards: Flash Flood	*Est. Cost/Funding Source*: Staff Time / City,
Lead: Public Works, Director	owners, grants
5. Inflow and infiltration repair and replacement of infrastructure.	
Priority: Medium	*Status/Completion*: Existing-New / Ongoing
STAPLEE: Medium	*Implementation*: City Ordinance, State Law
Hazards: Flash Flood	*Est. Cost/Funding Source*: $200,000 yearly /
Lead: Public Works, Director	City, Property owners, grants
6. Familiarization and maintenance of personal protection equipment (PPE).	
Priority: High	*Status/Completion*: Existing / Ongoing
STAPLEE: High	*Implementation*: Department Policy
Hazards: Hazmat, Infectious Disease Incidents	*Est. Cost/Funding Source*: Staff Time / General
Lead: Police and Fire Departments, Chiefs	Budget
7. Mission critical and vulnerability assessment.	
Priority: Medium	*Status/Completion*: Existing / Ongoing
STAPLEE: Medium	*Implementation*: County-City Joint Powers
Hazards: Infectious Disease, Public Health	Agreements
Emergencies	*Est. Cost/Funding Source*: Staff Time / General
Lead: Public Works, Director	Budget

8. General maintenance and backup systems for lift stations.

Priority: Medium
STAPLEE: High
Hazards: WWTP Failure
Lead: Public Works, Director

Status/Completion: Existing / Ongoing
Implementation: Department Policy
Est. Cost/Funding Source: Staff Time / General Budget

9. Provide public education and awareness for emergencies.

Priority: Medium
STAPLEE: High
Hazards: All
Lead: Police and Fire Depts., Chiefs
Status/Completion: Existing- / Ongoing

Implementation: Emergency Preparedness Plans
Est. Cost/Funding Source: Staff Time / General Budget

10. Continue to use and enforce Land Use Planning for hazard avoidance.

Priority: Medium
STAPLEE: High
Hazards: All
Lead: Community Development, Director

Status/Completion: Existing- / Ongoing
Implementation: Zoning Ordinance
Est. Cost/Funding Source: Staff Time / General Budget

11. Educate the public on family disaster plans and supply kits.

Priority: Medium
STAPLEE: High
Hazards: All
Lead: Police and Fire Depts., Chiefs

Status/Completion: Existing / Ongoing
Implementation: Emergency Preparedness Plans
Est. Cost/Funding Source: Staff Time / NA

12. Burning restriction enforcement.

Priority: Medium
STAPLEE: High
Hazards: Structural Fire, Wildfire
Lead: Fire Dept., Chief

Status/Completion: Existing / Ongoing
Implementation: City Ordinances, Fire Code
Est. Cost/Funding Source: Staff Time / General Budget

13. Fireworks regulation enforcement.

Priority: Medium
STAPLEE: Medium
Hazards: Structural Fire, Wildfire
Lead: Fire Dept., Chief

Status/Completion: Existing / Ongoing
Implementation: City Ordinances, State Law
Est. Cost/Funding Source: Staff Time / General Budget

14. Waste disposal regulation enforcement.

Priority: Low
STAPLEE: Medium
Hazards: Structural Fire, Wildfire
Lead: Code Enforcement

Status/Completion: Existing / Ongoing
Implementation: City Ordinances
Est. Cost/Funding Source: Staff Time / General Budget

15. Establish a process to increase monitoring of identified MANPADS sites.

Priority: Medium
STAPLEE: Medium
Hazards: Terrorism
Lead: Police Dept., Chief

Status/Completion: Existing / Ongoing
Implementation: CIKR Planning
Est. Cost/Funding Source: Staff Time / General Budget, possible TSA grants

16. Driver safety education for winter storms.

Priority: Medium
STAPLEE: Medium
Hazards: Winter Storms
Lead: Police Dept., Chief

Status/Completion: Existing / Ongoing
Implementation:
Est. Cost/Funding Source: Staff Time / General Budget

17. Develop a common operating resource database through local deployment of WebEOC.

Priority: Low
STAPLEE: Low
Hazards: All
Lead: Police and Fire Depts., Public Works

Status/Completion: New / Ongoing
Implementation: Emergency Preparedness Plan
Est. Cost/Funding Source: Staff Time / Civil Defense Budget

18. Enforce city ordinance restricting open grills on apartment balconies.

Priority: Medium
STAPLEE: Medium
Hazards: Structural Fire
Lead: Fire Depts., Chief
Status/Completion: Existing / Ongoing

Implementation: City Ordinance, Fire Code enforcement
Est. Cost/Funding Source: Staff Time / General Budget

19. Annual outdoor siren maintenance program.

Priority: Medium
STAPLEE: Medium
Hazards: Summer Storms, Tornado, Hazmat Incidents
Lead: Police Dept., Chief

Status/Completion: Existing / Ongoing
Implementation: Emergency Preparedness Plan
Est. Cost/Funding Source: $1,000 yearly / General Budget

20. Emergency response personnel specialized abilities and training (SOT).

Priority: Low
STAPLEE: Low
Hazards: Haz Mat, Terrorism, Civil unrest, Structural Collapse
Lead: Various City Departments, Managers

Status/Completion: Existing / Ongoing
Implementation: Police, Fire Departments
Est. Cost/Funding Source: TBD / Grants, City Training Budgets

21. Inspect business and multifamily occupancies.

Priority: Medium
STAPLEE: High
Hazards: Structural Fire, Hazmat Incidents
Lead: Community Development, Fire Department

Status/Completion: Existing / Ongoing
Implementation: Department Policy, City Code
Est. Cost/Funding Source: Staff Time / General Budget

22. Building construction and code enforcement.

Priority: High
STAPLEE: High
Hazards: Summer Storms, Tornado
Lead: Community Development

Status/Completion: Existing-additional / Ongoing
Implementation: Code enforcement
Est. Cost/Funding Source: Staff Time / General Budget

23. Adopt IPMC code (simpler, increased compliance).*

Priority: Medium STAPLEE: High
Hazards: Structural Fire, Hazmat Incidents
Lead: Building Official
Status/Completion: Existing-New / 2018, Ongoing

Implementation: Building Code
Est. Cost/Funding Source: Staff Time / General Budget

24. Conduct business and rental inspections.*

Priority: Low
STAPLEE: Low
Hazards: Structural Fire, Hazmat Incidents
Lead: Community Development, Director

Status/Completion: Existing-New / Ongoing
Implementation: City Resolution
Est. Cost/Funding Source: Staff Time / General Budget

25. Evaluate and reduce cyber threat potential.*

Priority: Low
STAPLEE: Medium
Hazards: Cyber-Attack
Lead: Information Technology Manager

Status/Completion: Existing / Ongoing
Implementation: Department Policy
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

Implementation Resources:

Table WS.9 identifies West St. Paul staff resources and their roles in mitigation. Table WS.10 identifies resources related to processes and ordinances that will assist the implementation of mitigation strategies.

Table WS.9: West St. Paul Mitigation Implementation Resources

Department, Responsible Position	General Role	Processes and Tool for Implementing Mitigation Strategies
Building Inspections, Building Official (D. Schilling)	Building inspections, regulation of new housing development	Enforce safety restrictions including setbacks, building materials, and fire suppression systems
Planning and Zoning, City Planner (M. Sonnek)	Zoning, development siting and restrictions, Comp. Plans	Floodplain ordinances and compliance
Police, Police Chief (B. Sturgeon)	Public safety, emergency response , law enforcement	Response training, public safety education
Public Works, Public Works Director (R. Beckwith)	Development and operations of public infrastructure	Infrastructure maintenance
Fire Department, South Metro Fire Chief (M. Juelfs)	Public and fire safety enforcement, emergency response	Inspect commercial structures for fire hazards
Communications, Specialist (D. Nowicki)	General and emergency public communications	Develop communication networks, dissemination, and advance emergency notifications
Emergency Management, Director (B. Sturgeon)	Emergency response preparedness	Develop, communicate, and practice response plans and strategies

Table WS.10: 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	2020	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. Updated
West St. Paul 2040 Comprehensive Plan	2020	Provides overall direction for future land use, transportation, housing, and infrastructure
Zoning Ordinance	1996-2016	Building standards, setbacks, development plan review
Comprehensive Sewer Plan	2009-2020	Infrastructure improvement information
Building and Fire Codes	2018, 2020	Standards for new construction and remodeling; MN Version IBC and IFC
City Code: Construction Licensing, Permits and Regulations (Code 150).	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	Annual Review	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
Surface Water Management Plan	2018	Flood management reference

Program/Ordinance/Study/ Technical Document	Adopted or Revised	Method of incorporation into the hazard mitigation plan
Water Supply Distribution Report and Water Supply Plan (St. Paul Regional Water Dist.)		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	2020	Manage the City's storm water facilities
Cyber-Audit, BCA Audit, Vulnerability Assessment		Vulnerability of systems

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:

DAKOTA COUNTY 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	*Implementation:* City code evaluation and improvement
Hazards: Structural Fire	
Lead: Dakota County Fire Chiefs Association	*Est. Cost/Funding Source:* Staff Time / General Budget
Status/Completion: Existing / Ongoing	
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	*Implementation:* Needs evaluation, project identification; capital planning, engineering, and implementation
Hazards: Structural Fire	
Lead: Dakota County Fire Chiefs Association	
Status/Completion: Existing / Ongoing	*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	*Implementation:* Outreach campaigns, shared informational materials.
Hazards: Structural Fire	
Lead: Dakota County Fire Chiefs Association	*Est. Cost/Funding Source:* Staff Time / General Budget
Status/Completion: Existing / Ongoing	

Cooperating Partners: Dakota County Emergency Management personnel, school systems, county news media, and non-profit organizations

APPENDIX I: RESOLUTIONS OF PARTICIPATION AND ADOPTION

To be added at plan completion.

APPENDIX II. COMMUNITY ENGAGEMENT FINDINGS

The public was engaged throughout the plan update process. Because of the SARS-CoV-2 pandemic, virtual methods to seek public comments and the online survey became primary engagement tools. The pandemic also provided engagement opportunities, such as distribution of hazard mitigation fact sheets with the survey link at county-operated vaccination clinics. Before the delta variant-related surge, staff provided information on the plan and home preparedness at the Dakota County Fair (August).

Online Survey

More than 1,000 people who live or work in Dakota County completed the ADA-accessible online survey through mid-September 2021.

Question 1: Do you have a safe place to be on your property/residence during a natural disaster, such as severe storms or a tornado?

Response	Percent
Yes	95%
No	2%
I'm not sure	3%

Question 2: If evacuation was necessary, I or someone else in my family would need physical assistance to leave my home.

Response	Percent
Yes	5%
No	92%
Not Sure	3%

Question 3: How concerned are you that the following hazards could happen in your community? The following chart weighted the total number of responses as follows: very concerned=3, moderately concerned=2, and not concerned =1.
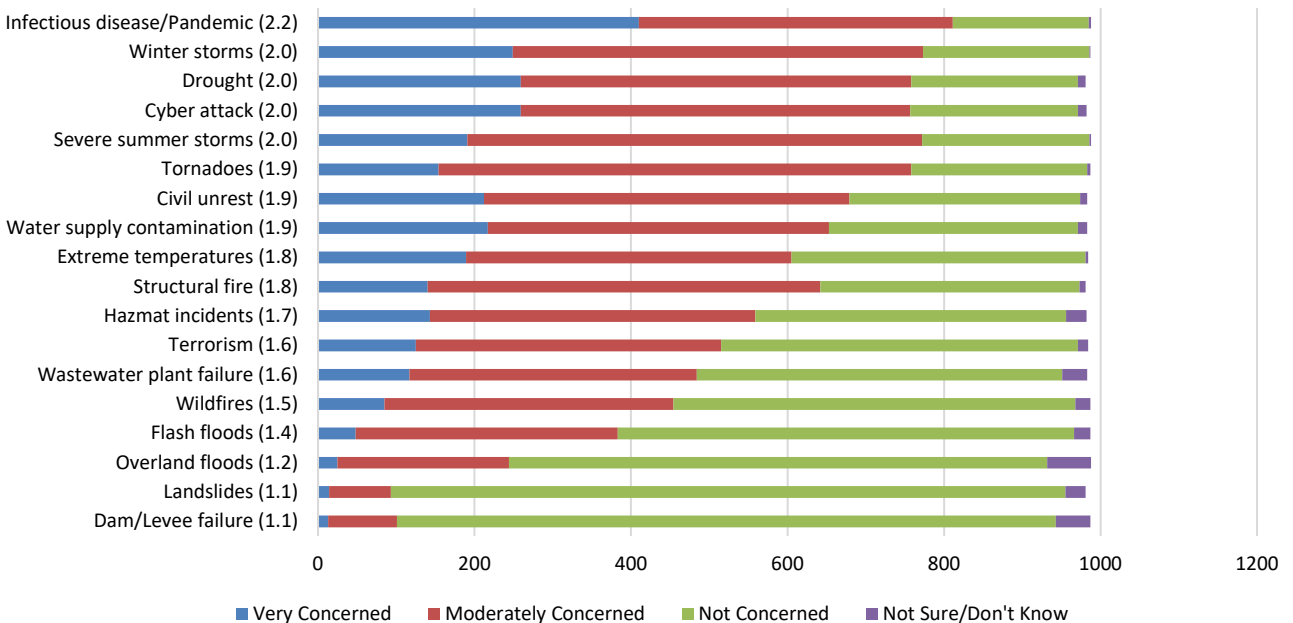

Figure A2.1: Question 3 Graph

Question 4: You may need to survive on your own after a disaster. Emergency management experts recommend having enough food, water, and other supplies to last until help arrives. How prepared is your immediate family for an emergency?

Response	Percent
Less than 3-day supply	19%
3-day supply	35%
More than a 3-day supply	46%

Question 5: Which hazard preparation measures has your household taken? Check all that apply.

Hazard Preparation Measures	Percent
Installed smoke detectors on every floor	94%
Installed carbon monoxide detectors on every floor	79%
Replace batteries in detectors annually	76%
Keep a First Aid kit in home or car	74%
Fire extinguisher(s) are onsite	72%
Signed up for countywide notification system through 911 dispatch center	44%
Bought hazard insurance (renter's, enhanced homeowner's, or flood)	36%
Bought a National Weather Service weather radio or battery-operated radio	30%
Completed First Aid/CPR training in the last year	29%
Prepared a Disaster Supply Kit for sheltering in place if necessary	12%
Prepared a Household Emergency Plan	10%
Assembled a family "Go Kit" in case of evacuation for several days	9%
Attended community meetings or events	7%

Additional measures added by respondents include:
- Staying current with events, politics, weather
- Purchased weapons and ammunition
- Survival training
- Bought a generator
- Emergency phone numbers on refrigerator, emergency binder, and in phones
- Determined who goes to be with whom and a meet-up place

Question 6: I cannot afford to buy detectors, fire extinguishers, radios, first aid kits, or other items mentioned in the last question.

Response	Percent
Yes	6%
No	94%

Question 7: During an emergency, where do you get information on what to do? Check all that apply.

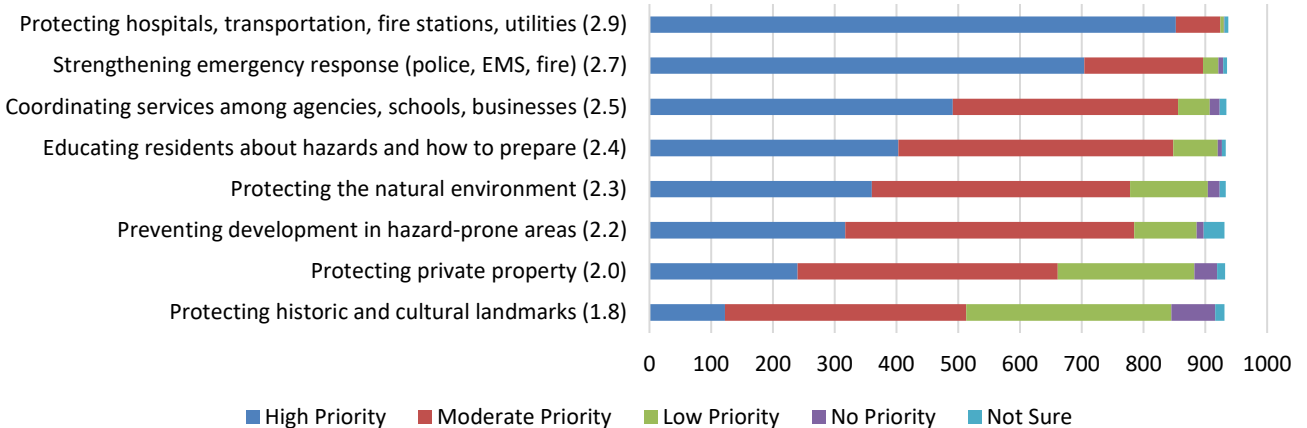| Response	Percent
Local media	23%
Friends, family, or neighbors	17%
Employer (when in the workplace)	17%
Smart phone app	16%
Social media	14%
Government website	12%

Additional sources added by respondents include:
- Radio
- SMS notification
- Reliable social media outlets only
- American Red Cross and University of Minnesota
- City-sponsored neighborhood association
- Amateur radio
- Boy Scouts

Question 8: Before disasters, where do you get information about how to prepare? Check all that apply.

Response	Percent
Local media (TV, radio, newspaper)	25%
Emergency preparedness websites (FEMA, NWS, Red Cross, MN Health Department)	15%
Social media	15%
Dakota County or City website	14%
Email notice	12%
Brochure or fact sheet sent in the mail	5%
Information sent home from school with my child	5%
Information sent with a utility bill	5%
Public meetings/events	3%

Question 9: What level of priority should Hazard Mitigation Plans assign to each of these actions?

Figure A2.2: Question 9 Graph

Question 10: Except for monthly siren tests, when you hear a severe weather warning siren in your community, do you: (please check all that apply)

Response	Percent
Check cellphone for more information	35%
Turn on the TV or radio to find out what's going on	33%
Go outside and look at the sky	16%
Immediately take shelter if outside	13%
Do nothing	2%

Question 11: In which city or township do you live?

Response	Percent
Any township in Dakota County	4%
Apple Valley	7%
Burnsville	6%
Eagan	7%
Farmington	5%
Hastings	13%
I live outside of Dakota County	29%
Inver Grove Heights	4%
Lakeville	12%
Lilydale, Mendota, or Mendota Heights	1%
Not sure	<1%
Rosemount	6%
Rural cities (Coates, Hampton, Miesville, New Trier, Randolph, Vermillion)	1%
South St. Paul	2%
West St. Paul or Sunfish Lake	2%

Question 12: What is your gender?

Response	Percent
Female	62%
Male	33%
Non-binary / another gender	<1%
I prefer not to say	5%

Question 13: Are you Spanish, Hispanic, or Latino?

Answer	%
Yes	3%
No	97%

Question 14: Please mark one or more races to indicate what race(s) you consider yourself to be.

Answer	%
American Indian or Alaskan Native	1%
Asian, Asian Indian or Pacific Islander	2%
Black or African American	2%
White	91%
Other	4%

Question 15: Which category includes your age?

Answer	%
Under 30	6%
30-44	32%
45-59	43%
60 or older	16%
I choose not to respond	3%

Intercepts

Library Displays

Interactive displays were posted for several weeks during 2021 at six branches of the Dakota County Library System, with branches selected to provide geographic and demographic representation. The boards consisted of an exercise for people to place a sticky dot next to no more than six hazards of greatest concern to them.

The libraries included:
Burnhaven, Burnsville
Farmington, Farmington
Galaxie, Apple Valley
Pleasant Hill, Hastings
Wentworth, West St. Paul
Wescott, Eagan

An estimated 331 library visitors participated in the exercise. The following table includes results from each branch, and a combined total. Water supply contamination emerged as the top concern for participants, followed by severe storms, extreme temperatures, cyber-attack, pandemic, and civil unrest, all identified as a major concern by at least half of participants. Water supply contamination was not identified as the top concern by participants in the online survey, although the remaining results are mostly consistent between the two public opinion pieces.
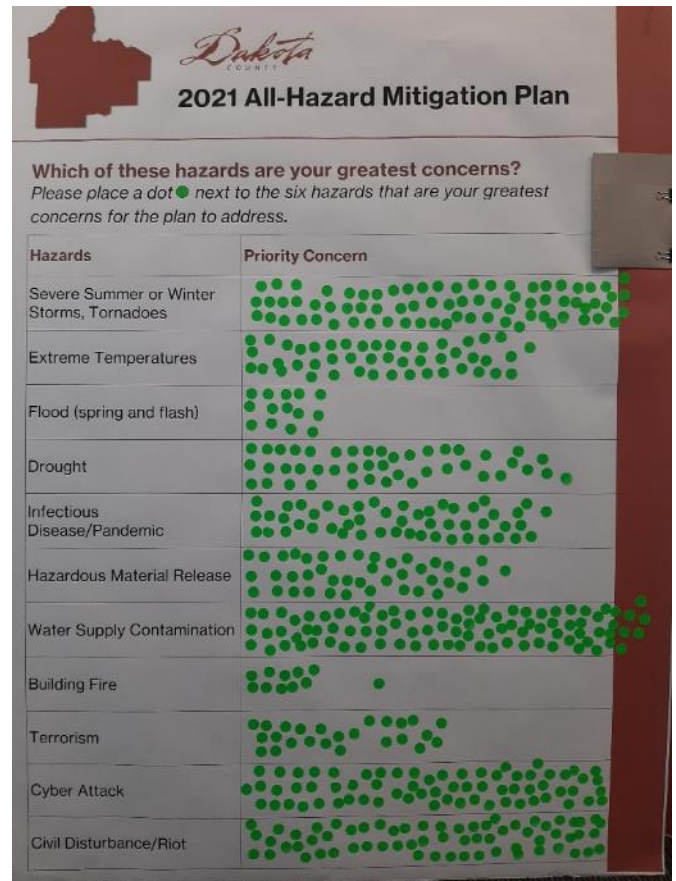

Figure A2.3: Burnhaven Library Intercept, 2021

Intercept Board Summary

Hazard	Burnhaven	Farmington	Galaxie	Hastings	Wentworth	Wescott	Total
Water Contamination	92	47	63	44	58	26	330
Severe Storms, Tornadoes	75	33	64	31	41	25	269
Extreme Temperatures	47	21	62	28	45	17	220
Cyber Attack	68	23	49	20	38	19	217
Pandemic/Infectious Disease	51	23	43	23	32	16	188
Civil Disturbance	65	19	37	23	35	6	185
Hazmat Release	42	14	33	19	36	13	157
Drought	44	24	39	20		14	141
Terrorism	25	22	26	7	7	5	92
Flood (spring or flash)	14	22	22	6	9	9	82
Building Fire	11	4	22	5	4	4	50
Maximum	**92**	**47**	**64**	**44**	**58**	**26**	**331**

Vaccination Clinic Flyers

A flyer was distributed at County COVID-19 vaccination clinics in the spring, as people entered the 15-minute post-vaccination observation area. The flyer included a web link and Q-R code to the County's online survey.
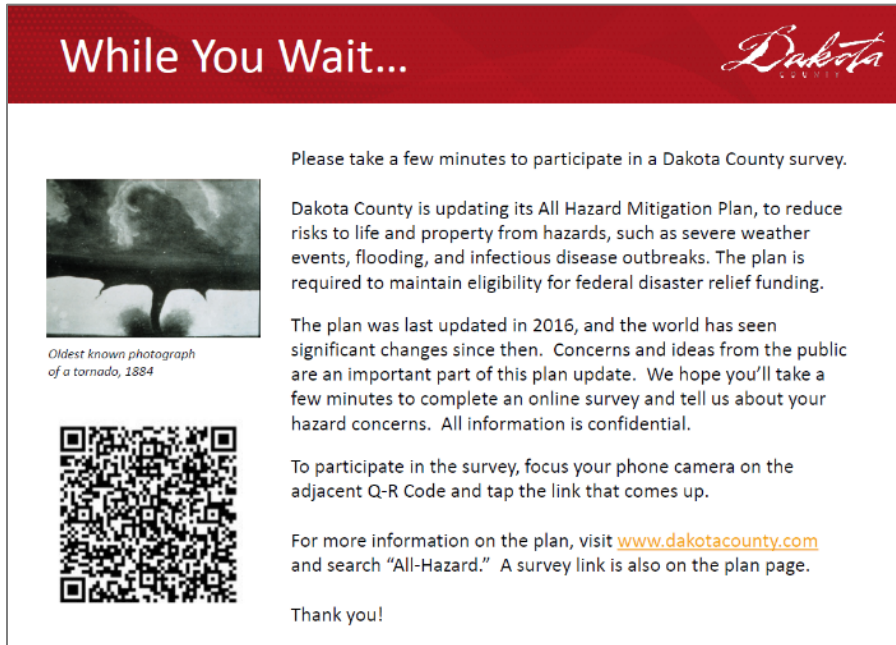

Figure A2.4: Vaccination Clinic Flyer, 2021

County Fair Displays

The Dakota County Fair was held in the second week of August 2021, after a one-year hiatus due to the pandemic. Visitors to the County Law Enforcement display area were asked to indicate which preparedness measures their household had taken. Among 30 or more participants, more than half had acquired smoke detectors, first aid kits, fire extinguishers, and first aid or CPR training.

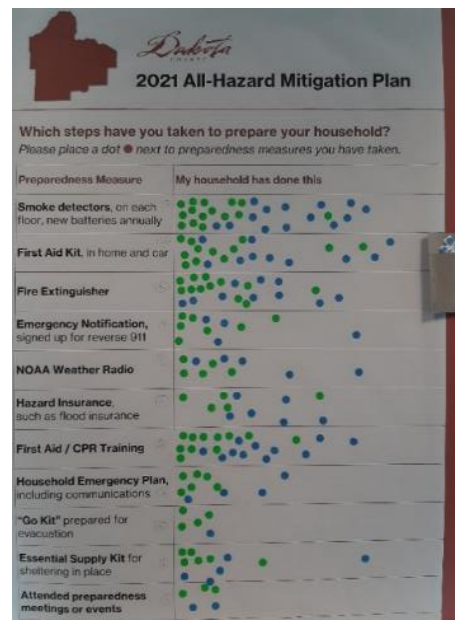| Preparedness Measure	My household has done this
Smoke detectors, each floor, new batteries annually	29
First Aid Kit, in home and car	22
Fire Extinguisher	22
First Aid / CPR Training	22
Hazard Insurance	11
Essential Supply Kit	11
Signed up for reverse 911	10
NOAA Weather Radio	10
Household Emergency Plan	10
Attended preparedness meetings or events	7
"Go Kit" for evacuation	5

Figure A2.5: County Fair Intercept, 2021

APPENDIX III - 2021 PROGRESS ON 2016 PLAN STRATEGIES

Dakota County

PUBLIC COMMUNICATION AND EDUCATION Goal 1: Increase awareness of hazard mitigation and preparedness	Status 2021
4. 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	Ongoing
5. 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.	Ongoing
6. Routinely include questions on household emergency preparedness in scientific residential surveys, to estimate the level of preparedness in Dakota County over time.	Ongoing
Goal 2: Continue to communicate and coordinate with other agencies on hazard mitigation and preparedness	Status 2021
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).	Ongoing
2. Annually review status of City and County All-Hazard Mitigation Plan strategies with the DPC.**	Ongoing
VIOLENT STORMS/EXTREME TEMPERATURES Goal 1: Ensure safe and accessible shelter from violent storms	Status 2021
1. Develop a safe shelter plan for County-owned facilities including shelters, shelter capacity, and exit routes.	Ongoing
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.	Ongoing
3. Construct storm shelter safe rooms at manufactured home parks/communities, County campgrounds, and publicly owned athletic fields or golf courses.	Ongoing
VIOLENT STORMS/EXTREME TEMPERATURES Goal 2: Improve severe storm warning system for all residents	Status 2021
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).	Ongoing
2. Coordinate with DCC and local emergency managers to implement IPAWS emergency notifications from the DCC.	Ongoing
3. Develop a communications plan to notify vulnerable populations to take steps to protect themselves.	Ongoing
4. Continue participation with ARES group for severe storm spotters and communications network volunteers.	Ongoing
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.	Delete strategy
VIOLENT STORMS/EXTREME TEMPERATURES Goal 3: Protect People and Public Infrastructure	Status 2021
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.	Ongoing
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.	Ongoing

3.	Evaluate installation of lightning indicator and alert systems for outdoor public venues, such as the Dakota County Fairgrounds or Dakota County Park System.	Ongoing
4.	Complete storm debris management guidelines.	Ongoing
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.*	Ongoing
6.	Reconstruct roads that have become vulnerable to repetitive flooding and washouts.*	Ongoing
7.	Maintain river flow by clearing debris from under bridges during storm-flooding events.*	Ongoing
8.	Install power back-up systems to maintain operation of traffic signals at high-volume intersections during outages.	Not complete
FLOOD Goal 1: Address 100-year Flood Risk in all county jurisdictions through land use planning and management.		**Status 2021**
1.	Review current floodplain zoning ordinances for noncompliance with state and federal regulations with respect to nonconforming structures.	Ongoing
2.	Encourage city and county participation in FEMA Community Rating System program. Townships coordinate with County Floodplain Manager on floodplain permit review.	Ongoing
FLOOD Goal 2: Pursue Acquisition of Repetitive Loss Structures		**Status 2021**
1.	Coordinate with MN HSEM and MN DNR Flood Damage Reduction Program to secure funding to acquire repetitive loss structures from willing sellers.*	Ongoing
DROUGHT Goal 1: Continue to work toward adequate Wellhead Protection in Dakota County		**Status 2021**
1.	Encourage and assist municipal well owners in developing wellhead protection plans.	Ongoing
DROUGHT Goal 2: Monitor Ground Water Quantity, Supply, Demand		**Status 2021**
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
WILDFIRE Goal 1: Reduce Wildfire Risk		**Status 2021**
1.	Annually evaluate prescribed burning on all county lands and parks with Minnesota DNR and local jurisdictions.	Ongoing
2.	Provide an education program for property owners in identified risk areas on practices for reducing or minimizing wildfire risk.*	Ongoing, as needed
INFECTIOUS DISEASE Goal 1: Effective / Coordinated Prevention and Control		**Status 2021**
1.	Work with state and federal agencies to identify infectious diseases with 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
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.	Ongoing
7.	On an annual basis, review and update the public health emergency response operations plan that outlines procedures for dealing with infectious diseases.	Ongoing
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.	Ongoing
12.	Work closely with the MDH and regional public health partners to refine the region's all-hazard response plan.	Ongoing
INFECTIOUS DISEASE Goal 2: Provide Public Information on Infectious Disease Threats		**Status 2021**
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
PANDEMIC INFLUENZA Goal 1: Maintain public health influenza response preparedness.		**Status 2021**
1.	Develop and exercise Public Health pandemic flu preparedness plans.	Ongoing
LANDSLIDE Goal 1: Reduce vulnerability of infrastructure to landsides in Dakota County.*		**Status 2021**
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.*	Ongoing
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.*	Ongoing
STRUCTURAL FIRE Goal 1: Protect structures from fire		**Status 2021**
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.*	Ongoing
2.	Work with cities and townships to identify roadways of insufficient width to handle fire trucks and establish priorities and approaches for addressing deficiencies.*	Ongoing
STRUCTURAL FIRE Goal 2: Public Education		**Status 2021**
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.*	Ongoing
HAZMAT 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.		**Status 2021**
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.	Ongoing
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.	Ongoing
3.	Provide training/education for hazardous waste generators on proper storage/disposal of hazardous waste.	Ongoing
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.	Ongoing
5.	Conduct hazardous waste compliance inspections to ensure proper management, storage, and training at hazardous waste generator locations.	Ongoing
HAZMAT Goal 2: Improve the effectiveness of policies and planning efforts addressing hazardous materials/waste.		**Status 2021**
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

4.	Design and implement hazardous material scenarios for practice exercise and to create community awareness. (consistent with National Planning Scenarios).	Ongoing
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).	Ongoing
6.	Continue to expand use of mutual aid agreements and memoranda of understanding to improve response coordination between local, state, and federal agencies and appropriate private sectors.	Ongoing
7.	Conduct evacuation planning for townships and County facilities for hazardous material incidents.	Periodic
8.	Evaluate how to improve safety of rail intersections with major highways, through deeper/wider intersections or grade separated crossings.	Periodic
DAM FAILURE Goal 1: Maintain continued structural integrity of dams and bridges.		**Status 2021**
1.	Continue implementation of Federal Energy Regulatory Commission (FERC) dam safety requirements at the County-owned Byllesby Dam.	Ongoing
2.	Regularly inspect and maintain bridges and update the bridge replacement list to ensure that potential deficiencies are addressed.	Ongoing
DAM FAILURE Goal 2: Protect residents' safety downstream of Lake Byllesby Dam.		**Status 2021**
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.*	Ongoing
2.	Continue to monitor reservoir elevations and effectively communicate conditions to downstream interests as warranted.	Ongoing
3.	Enforce the Byllesby Dam security plan elements and public safety rules, per FERC requirements.*	Ongoing
WATER SUPPLY CONTAMINATION Goal 1: Protect the Quality of the County's Groundwater		**Status 2016**
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.	Ongoing
2.	Continue providing a well-testing service for private well owners.	Ongoing
3.	Continue to review well disclosure documents for the purpose of sealing wells at property sale.	Ongoing
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.	Ongoing
5.	Continue to enforce private well water quality standards at the time of property sale.	Ongoing
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.	Ongoing
7.	Continue to administer a septic system maintenance program that requires that every system is pumped or inspected every three years.	Ongoing
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.	Ongoing
9.	Explore ways to reduce impacts of non-point source contaminants on groundwater and surface waters through targeted monitoring for nitrates, pesticides, and herbicides.	Ongoing
10.	Educate floodplain well owners about protecting drinking water wells from flooding.	Ongoing
WATER SUPPLY CONTAMINATION Goal 2: Protect Residents from Contaminated Ground Water		**Status 2021**
1.	Identify sources for obtaining bottled water, including bottled water distributors and local grocery stores for unincorporated areas of the county.	Ongoing
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.	Provide well disinfection brochures to impacted well owners.	Ongoing

5.	Provide education materials on monitoring private wells.	Ongoing
WATER SUPPLY CONTAMINATION Goal 3: Protect Drinking Water Supplies		**Status 2021**
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.	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.*	Ongoing
TERRORISM Goal 1: Reduce Risk to Public Facilities and Infrastructure		**Status 2021**
1.	Enhance public employee training on facility security awareness and incident reporting via "See Something – Say Something" Campaign.	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.	Continue to explore different methods to share public building specifications and plans with police and fire.	Ongoing
4.	Continue countywide exercise program to include threats presented by terrorism (e.g., active shooter, bomb threats, anthrax).	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.		**Status 2021**
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.		Ongoing
CYBER-ATTACK Goal 1: Reduce Cyber Security Risk to County Network Infrastructure and Software Applications.		**Status 2021**
7.	Communicate with cities regarding strategies for infrastructure protection and cyber-security.	Ongoing

Cities in Dakota County

City of Apple Valley	**Status 2021**
1. Provide NIMS and Hazmat training to all police department employees	Ongoing
2. Complete and update emergency medication dispensing planning for City of Apple Valley	Complete, compare to COOP
3. Identify emerging and local terrorism risks/concerns through regular involvement with the FBI Joint Terrorism Executive Task Force Executive Board	Ongoing
4. Install sprinkling system into the Hayes Community Center building*	Complete, strategy deleted
5. Continue 2020 Flood Mitigation: Galaxie Ave. and Garden View Dr.**	Strategy expanded, ongoing
6. Continue annual infrastructure inspection/maintenance program	Ongoing
7. Update and implement the City of Apple Valley Emergency Operations Plan (EOP)	Ongoing
8. Regularly train with Apple Valley Fire Dept. relating to coordinated response (3-Echo) including hands on scenario-based training	Ongoing, strategy modified
City of Burnsville	**Status 2021**
1. Enhance Information Technology/Fiber Optic Security	Completed in 2018, ongoing updates
2. Replace aging sewer lines*	Ongoing
3. Establish a process to increase monitoring-patrol of identified MANPADS sites	Ongoing
4. Continue Emergency Siren Maintenance Plan	Ongoing
5. Maintain Active List of All 302 Facilities	Ongoing
6. Conduct EOC Drill Annually	Ongoing

7.	Continue NIMS Training for City Staff	Ongoing
8.	Complete Sunset Dam EAP Update	Complete, passed annual inspection
9.	Continue Fire Prevention Programs	Ongoing
City of Coates		**Status 2021**
1.	Maintain warning sirens*	
2.	Grade roads to repair damage from flash floods*	
City of Eagan		**Status 2021**
1.	Complete implementation of the "Top Ten" items to address as identified from the preliminary security assessment.	Ongoing
2.	Install an emergency generator at South Water Treatment Plant.	Completed
3.	Continue storm water pond expansion and maintenance.	Ongoing
4.	Adopt the 2015 Minnesota Fire Code.*	Ongoing, as State Code is updated
5.	Conduct Internal and/or External Network Information Security Assessments and Penetration Tests.	Ongoing
6.	Update Building Code.	Ongoing, as State Code is updated
7.	Conduct special event and emergency planning activities with the local NFL franchise that will be moving headquarters and training facilities into the City.	Ongoing, strategy modified
8.	Train staff from multiple departments in the proper reporting and response to illicit discharges to storm sewers and surface waters.	Ongoing for new staff
9.	Research lightning detection equipment / services for city venues, particularly for the water park.**	Ongoing
10.	Research sheltering options for large outdoor gatherings (festival grounds, athletic complexes).**	Ongoing
City of Farmington		**Status 2021**
1.	Identify 302 Facilities, Debris Management and Staging Plans.**	Ongoing
2.	Continue Water Tower Inspection*	Ongoing
3.	Replace water and sewer lines identified as insufficient*	Ongoing
4.	Wellhead Protection Maintenance*	Ongoing
5.	Fire Truck Replacement or Refurbishment*	Ongoing
6.	Police Car Replacement*	Ongoing
7.	Continue NIMS training	Ongoing
8.	Examine solutions for Vermillion River Flooding	Ongoing
City of Hampton		**Status 2021**
1.	Replace clay sewer lines.	Nearly complete
2.	Erect new water tower.*	Ongoing
3.	Continue to document City critical infrastructure in GIS.	Ongoing
4.	Continue to participate in NIMS training.	Ongoing
City of Hastings		**Status 2021**
1.	Update Emergency Operations Plan (EOP)	Ongoing
2.	Replace water/sewer/storm sewer lines (new and existing)*	Ongoing
3.	Continue wellhead protection	Ongoing
4.	Continue stormwater management (replacing undersized storm sewers and improving water quality)*	Ongoing
5.	Continue with drainage and erosion control plans	Ongoing
6.	Continue to enforce zoning and permits regulations in floodplains**	Ongoing
7.	Monitor construction, improvements, alterations, and development in floodplains	Ongoing
8.	Ensure Building Code compliance*	Ongoing

9. Continue to enforce mixed occupancy fire alarm ordinance	Ongoing
10. Continue to enforce burning bans	Ongoing
11. Conduct Emergency Operations Center Drills	Ongoing
12. Educate and train staff on Illicit Discharge Detection Elimination (IDDE) to eliminate discharge to storm sewers	Ongoing
13. Evaluate need for additional storm sirens related to community growth	Ongoing
14. Conduct water main leak detection survey	Ongoing
City of Inver Grove Heights	**Status 2021**
1. Address wellhead protection needs.	Ongoing
2. Complete water supply planning.	Delete strategy
3. Conduct maintenance on water storage facilities.	Ongoing
4. Inspect Wells.	Ongoing
5. Sanitary Sewer Lining for Infiltration and Inflow Management.	Ongoing
6. Lift Station Maintenance.	Ongoing
7. Risk Management for Water Treatment Plant.	Ongoing
8. Storm Water Management/MS4/Maintenance.	Ongoing
9. Mississippi River Dike Opening Management/Flood Mitigation.	Ongoing
10. Mass Dispensing Compliance.	Ongoing
11. Outdoor Warning Siren Maintenance.	Ongoing
12. Debris Management.	Ongoing
13. Rail/Pipeline Safety.	Ongoing
14. Build storm shelter/safe rooms at manufactured home parks.	Delete Strategy
City of Lakeville	**Status 2021**
1. Develop the Citywide Street Reconstruction Plan.*	Ongoing
2. Conduct Three Echo / Active / Hostile Event Trainings.**	Ongoing
3. Exercise and drill EOC and supervisory staff on storm or transportation accident.	Ongoing
4. Storm watershed maintenance.	Ongoing
5. Shelter planning with local partners.	
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.*	Ongoing
7. Provide school programs to youth, focusing on stoves, smoke detectors, fire safety, and evacuation.	Ongoing
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.	Ongoing
9. Storm Siren Maintenance.	Ongoing
10. Work towards a shared services system with Eureka Township.	TBD
City of Lilydale	**Status 2021**
1. Implement and maintain Stormwater Management Plan.*	Complete, ongoing implementation
2. Promote recycling of household hazardous waste at the County Recycling Zone.	Complete, Ongoing
3. Educate the public on enrolling in reverse 911 services.	Complete, Ongoing
4. Evaluate cyber vulnerabilities of city resources.	Ongoing
5. Implement storm sewer management project to increase capacity and direct flow.	Drop shaft project complete, ongoing

City of Mendota	Status 2021
1. Complete de-slope project.* **	
2. Enforce-maintain stormwater management ordinances.	
3. Continue sanitary sewer management.	
4. Continue stormwater pond maintenance.	
City of Mendota Heights	**Status 2021**
1. Remodel / build Fire and Police Department spaces to develop a useable Emergency Operations Center.*	Fire Station complete, Police-City Hall in progress
2. Conduct GENSET Emergency Generator Test.*	Complete, generator upgraded
3. Enhance computer security and data recovery.*	Complete
4. Conduct a comprehensive review of All Hazard Mitigation Plan every five years.**	Ongoing
5. Monitor MANPADS sites.*	Ongoing
6. Line sanitary sewers for infiltration and inflow management.	Ongoing
7. Continue NIMS training for EOP staff.	Ongoing
8. Replace outdoor warning sirens.	Ongoing
9. Clean and expand storm water ponds.	Ongoing
10. Create a shared database of §302 facilities.	TBD
11. Expand wildfire education and mitigation.	Ongoing
12. Provide landslide prevention and education.	Ongoing
13. Provide public education on reverse 911 service registration.	Ongoing
14. Provide Knowledge Center training for all staff.	Complete, delete strategy
City of Miesville	**Status 2021**
1. Maintain city warning sirens.*	Ongoing
2. Stormwater management and coulee maintenance	Ongoing
3. Conduct hazmat training	Ongoing
4. Participate in full-scale exercise with County**	Ongoing, as available
City of New Trier	**Status 2021**
1. Install backup power at water tower.	Ongoing
2. Update Building Ordinance.	Ongoing
3. Complete parking upgrades.	Ongoing
City of Randolph	**Status 2021**
1. Water Tower Inspection.*	Reconditioning completed 2020
2. Anhydrous Ammonia Training.	Ongoing
3. Building Code Updates.*	Periodic, ongoing
4. New Sirens.*	Ongoing
5. Additional Water Tower.	Ongoing
City of Rosemount	**Status 2021**
1. Maintain a rental property license and inspection program.	Ongoing
2. Emergency siren replacement and updates.	Ongoing
3. Fire truck replacement or refurbishment.	Ongoing
4. Police car replacement.	Ongoing
5. Increase water storage and redundancy.*	Ongoing
6. Implement North Central Sanitary Sewer Plan.**	Ongoing
7. Code review and revision.	Ongoing

City of South St. Paul	Status 2021
1. Develop debris management plan/strategies.**	Complete
2. Complete annual inspections on all high-risk properties and biennial inspections on all other businesses.*	Ongoing
3. Assess and upgrade city outdoor weather sirens - narrow banding. Increase public awareness related to outdoor sirens.	Ongoing
4. Continue updates of the City of South St. Paul Emergency Operations Plan.	Ongoing
5. Re-certification of the levee with FEMA and revamping of the entire operation, maintenance, and preparation manual for the levee and floods.	Complete, strategy deleted
6. Updates to firewalls with advanced intrusion detection/prevention capabilities.	Ongoing
7. Evaluate $15 Million upgrade to Concord Street.	Project underway, complete in 2022
City of Sunfish Lake	**Status 2021**
1. Stormwater Ponding Expansion and Maintenance	Ongoing
2. Culvert/Drainage Improvements	Ongoing
3. Obtain Drainage Easements	Ongoing
4. Enforcement of Burning Permits	Ongoing
5. Well Management	Ongoing
6. Subsurface Sewage treatment System Maintenance	Ongoing
City of Vermillion	**Status 2021**
1. Maintain road grading.	Ongoing
2. Maintain outdoor warning sirens.	Ongoing
3. Maintain outdoor burning restrictions.*	Ongoing
4. Outfit well with generator outlet.	Ongoing
5. Continue water tower inspection.	Ongoing
City of West St. Paul	**Status 2021**
1. Mutual aid interagency agreements.	Ongoing
2. Continuity of Operations Planning.	Updated 2019
3. Site Emergency Plans (pre-planning).	Ongoing
4. Stormwater Pond Expansion and Maintenance.	Ongoing
5. Inflow and Infiltration Repair and replacement of infrastructure.	Ongoing
6. Familiarization and Maintenance of Personal Protection Equipment (PPE).	Ongoing
7. Mission Critical and Vulnerability Assessment.	Ongoing
8. General maintenance and backup systems for lift stations.	Ongoing
9. Provide public education and awareness for emergencies.	Ongoing
10. Continue to use and enforce Land Use Planning for hazard avoidance.	Ongoing
11. Education the public on family disaster plans and supply kits.	Ongoing
12. Burning restriction enforcement.	Ongoing
13. Fireworks regulation enforcement.	Ongoing
14. Waste disposal regulation enforcement.	Ongoing
15. Establish a process to increase monitoring of identified MANPADS sites.	Ongoing
16. Driver safety education for winter storms.	Ongoing
17. Develop a common operating resource database through local deployment of the Knowledge Center System.	Ongoing
18. Enforce City Ordinance restricting open grills on apartment balconies.	Ongoing
19. Annual outdoor siren maintenance program.	Ongoing
20. Emergency Response Personnel, Specialized Abilities and Training (SOT).	Ongoing

21. Inspect business and multifamily occupancies.	Ongoing
22. Provide NOAA weather radios.	Delete strategy
23. Building construction and code enforcement.	Ongoing
24. Robert Street Redevelopment (including safety improvements).	Complete
25. Adopt IPMC code (simpler, increased compliance).*	Complete 2018, ongoing updates
26. Conduct rental inspections.*	Ongoing
27. Evaluate and reduce cyber threat potential.*	TBD