

PART SIX: SECONDARY UNNATURAL HAZARDS

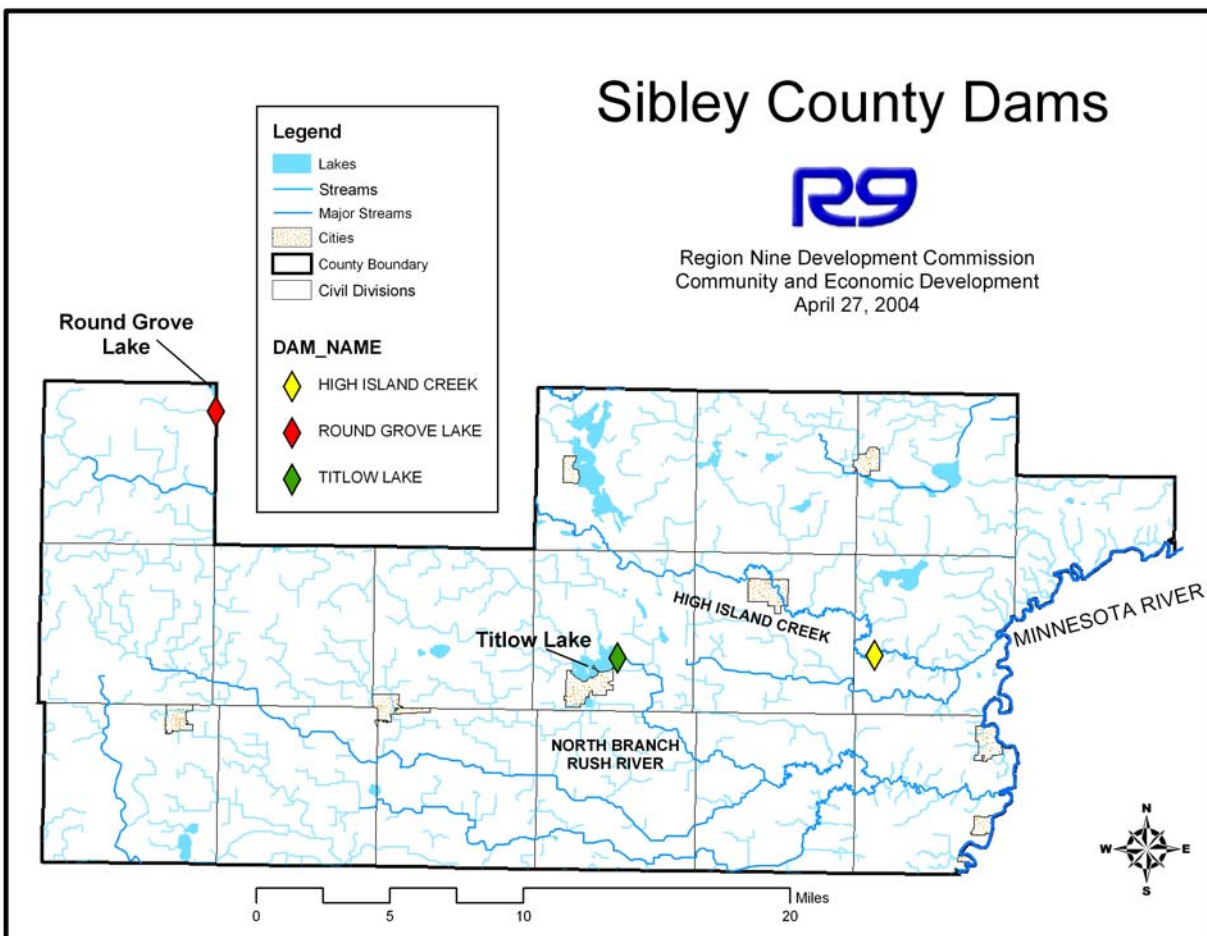
The following human-created or technological hazards are possible, but are not considered top priority in Sibley County by the jurisdictions within. They are summarized accordingly.

DAM FAILURE

Dams are manmade structures built to impound water. Dams are built for many purposes including water storage for potable water supply, livestock water supply, irrigation, or fire suppression. Other dams are built for flood control, recreation, navigation, hydroelectric power or to contain mine tailings. Dams may also be multifunction, serving two or more of these purposes.

Dam failures can occur at any time in a dam's life. However, failures are most common when water storage for the dam is at or near design capacity. At high water levels, the water force on the dam is higher and several of the most common failure modes are more likely to occur. Correspondingly, for any dam, the probability of failure is much lower when water levels are substantially below the design capacity for the reservoir.

Sibley County Dam Location Map



Vulnerability to Dam Failure

The National Inventory of Dams (NID) lists all three dams in Sibley County as a hazard category of “low”, meaning failure would like result in no loss of life and physical/ economic damage only to the dam owner. The table below lists their locations, names, and category rating.

County	Dam Name	River	MCD	Hazard Category
Sibley	Round Grove Lake	High Island Creek	Grafton Twp.	Low
Sibley	Titlow Lake	North Branch Rush River	Dryden Twp.	Low
Sibley	High Island Creek	Highland Creek	Jessenland Twp.	Low

Probability: High – Annually to 2yrs, Medium - 5yrs, Low – 10yrs

Impact: High – Loss of life and \$500,000 plus property damage, Medium – bodily injuries and \$250,000 property damage, and Low – bodily discomfort and less than \$100,000 in property damage

Sibley County Dam Failure Risk Assessment

Hazard:	Dam Failure
Location	Any of the three identified dams located throughout the county (High Island Creek, Round Grove Lake, Titlow Lake)
Historic Events	None on record
Likely to happen now?	No
How often?	Very infrequently
Where would event occur?	Any of the four identified dams located throughout the county
Severity of event?	Low
When would hazard likely occur?	Any time of year
What other hazards could occur at the same time?	Flooding
Economic impacts	Costs incurred to repair/rebuild dam, property damages
Loss of life impacts	Very minimal
Risk Level VH – Very High H – High L – Limited M – Minimal	Citizens/People: M Animals/Livestock: M Housing: M Critical Structures: M Infrastructure: L Total: L
<u>Risk Assessment</u>	
Unlikely – 1 Occasional – 2 Likely – 3 Highly Likely – 4	<u>Frequency of Occurrence</u> 1
More than 12 hours – 1 6-12 hours – 2 3-6 hours – 3 Minimal-None – 4	<u>Warning Time</u> 1
Limited – 1 Minor – 2 Major – 3 Substantial – 4	<u>Potential Severity</u> 3
Minimal – 1 Limited – 2 High – 3	<u>Risk Level</u> 2

Very High – 4	
(Total divided by 4)	<u>Overall Priority</u>
Very Low – 1	
Low – 2	1.75
Moderate – 3	
High – 4	Low

Potential Impacts and Cascading Effects

The potential impacts of dam failure include the loss of life and possible injuries, secondary impacts such as flooding and damage to or loss buildings and infrastructure, increased demand on emergency services and equipment, loss and/or reduction in available water reserves, and economic impacts such as the costs associated with repair/replacement of dam facilities. Most of the effects due to a dam failure in Sibley County would be minimal and are not likely to have the aforementioned effects.

Dam Failure Gaps and Deficiencies

There have been no program gaps or deficiencies regarding the possibility of a dam failure hazard event identified within Sibley County.

ACTIONABLE MITIGATION STEP:

Actionable Mitigation Steps are more elaborately explained with project, timeframe, responsible jurisdictions/staff, possible funding sources, and priority level in the Action Plan section of this document.

Dam Inspection (All Three Sibley County Dams) – The Minnesota DNR regulates nearly 900 of the numerous dams in the state. The DNR and the US Army Corps of Engineers routinely inspect the dams and reservoir capabilities for flooding and dam failure. Their reports indicate whether the sizes of the dams are adequate for any major floods and spring runoff. These inspections should be performed for all Sibley County dams on a regular basis to ensure their safety and proper functioning.

TERRORISM

Human-caused hazards are intentional, criminal, malicious uses of force and violence to perpetrate disasters against people or property. They can be the result of terrorism – actions intended to intimidate or coerce a government or the civilian population to further political or social objectives – which can be either domestic or international, depending on the origin, base and objectives of the terrorist organization. They may be perpetrated by individuals for personal reasons. Hazards can result from the use of weapons of mass destruction (WMD). Examples of WMD that could be used include biological, chemical, nuclear and radiological weapons; arson, incendiary, explosive and armed attacks. In addition, industrial sabotage and intentional hazardous materials releases and cyber terrorism (an attack on electronic mediums such as communications) may be used.

Sibley County Terrorism Hazard Risk Assessment

Hazard:	Terrorism
Location	Countywide, particularly public buildings, dams, transportation facilities, and water systems
Historic Events	None
Likely to happen now?	Unlikely
How often?	Extremely rarely/Never
Where would event occur?	Anywhere in County
Severity of event?	Could be very severe in an extreme event
When would hazard likely occur?	Any time of year
What other hazards could occur at the same time?	Infectious diseases, flooding, dam failure, water supply contamination, exposure to hazardous materials, fire
Economic impacts	Potentially devastating if event is severe enough
Loss of life impacts	Potential for significant loss of life
Risk Level VH – Very High H – High L – Limited M – Minimal	Citizens/People: H Animals/Livestock: M Housing: M Critical Structures: H Infrastructure: H Total: L
<u>Risk Assessment</u>	
Unlikely – 1 Occasional – 2 Likely – 3 Highly Likely – 4	<u>Frequency of Occurrence</u> 1
More than 12 hours – 1 6-12 hours – 2 3-6 hours – 3 Minimal-None – 4	<u>Warning Time</u> 4
Limited – 1 Minor – 2 Major – 3 Substantial – 4	<u>Potential Severity</u> 3
Minimal – 1 Limited – 2 High – 3 Very High – 4	<u>Risk Level</u> 2
(Total divided by 4) Very Low – 1	<u>Overall Priority</u>

Low – 2 Moderate – 3 High – 4	2.5 Low/Moderate
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Vulnerability to Terrorism and Specific Areas of Concern

Cascading effects and risk of an intentional human-caused disaster are highly dependent on the specific mode of attack used and asset targeted. Many of these have been detailed in the technological hazards portion of the plan covering dam failure and hazardous materials incidents. Fires and secondary explosions are possible with explosive attacks and fires from arson attacks can extend beyond the intended target. Targets could also include any building or facility that is owned, operated, or utilized by any level of government, including local, county, state, and federal. Most of the concern regarding the possibility of terrorism events in Sibley County is connected with the municipal water supplies of cities throughout the county, as has been indicated in city surveys by the City of Green Isle and the City of Winthrop. Additionally, due to the agricultural nature of Sibley County areas, there are also agricultural chemical use/storage sites that may possibly be targeted in an attack, and several communities have grain elevators, which could be targeted in a terror event. School violence is also a concern for two Sibley County communities. The City of Gibbon has noted concern with terrorism or violence at local schools, particularly in the form of a school shooting incident. Likewise, the City of Winthrop has indicated concern with the possibility of violence related to the community high school.

Potential Impacts and Cascading Effects

The potential impacts of acts of terrorism include the loss of life and injuries sustained due either to the event itself or the aftermath, possible secondary hazards such as fires or outbreaks of infectious diseases, the loss or reduction of necessary supplies such as water, widespread panic among residents, increased demand on emergency services, and impacts on buildings and infrastructure that may be either damaged or destroyed in such an event, which can lead to economic losses for the area as well.

Gaps and Deficiencies

- Green Isle reports that their water facilities may not be secure enough and, because of the bulk storage of chlorine, it may be important to improve security.
- Winthrop reports unprotected city wells exist in the community, creating the possibility of contamination by vandals or by accident.
- New Auburn and Henderson report a limited number of firefighters, many of who work outside the town. Should a fire break out, considerable damage could be done before enough firefighters are able to arrive. This is true of wildfires also.
- Many cities have also reported grain elevators that are aging to the point they become risks for fire and explosion. This is a main concern in the City of Gaylord and the City of Arlington.

- The City of Winthrop has expressed concern regarding the possibility of a fire event affecting the local ethanol plant.
- The City of Gibbon and the City of Winthrop have expressed concern regarding the possibility of violence or attack at the schools in the communities.

ACTIONABLE MITIGATION STEPS:

Actionable Mitigation Steps are more elaborately explained with project, timeframe, responsible jurisdictions/staff, possible funding sources, and priority level in the Action Plan section of this document.

1. School Security Measures (Gibbon, Winthrop) – City officials may want to consider working with school administration at these school facilities to evaluate the possibility of an attack on school grounds, and if deemed necessary undertake increased security actions to reduce the risks of any form of terror event at these schools.
2. Security Measures at Grain Elevators (Gaylord, Arlington) – Staff at grain elevators in these two communities should consider methods to increase security, ranging from keeping close watch on facilities, to possible fencing, lighting, enhanced locking, and other security devices as needed.
3. Increased Security Measures at Ethanol Plant (Winthrop) – Operators of the ethanol plant at Winthrop should evaluate their current security measures at the facility, and if necessary undertake means to reduce the possibility of a fire or other terrorism or accidental event.
4. Increased Well Protection (Green Isle, Winthrop) – City public works director will work with the police department to ensure external safety at wells by using means such as lighting, fencing, and locking mechanisms around well houses. This acts as a form of public safety by preventing access by unauthorized persons (particularly children), as well as terrorism prevention to the water system.
5. Coordination/Cooperation with State and Federal Officials (Countywide) – Sibley County officials should continue to work with state and federal officials and agencies on domestic preparedness efforts to mitigate impacts from a terrorism event.
6. Limit Pedestrian Access to Government Buildings and Schools (Gibbon, Winthrop, Countywide) – Government buildings and schools may wish to restrict pedestrian access to all facilities, or specified areas within the buildings. This could be enforced at specified times as deemed necessary.
7. Design New Facilities with Terrorism in Mind (Countywide, Particularly Government Buildings Such as Sibley County Courthouse) – Facilities that may face an increased threat from terrorism should utilize design and building elements to minimize threats from terrorist attacks, such as blast-resistant materials and fire suppression systems. If it has been determined that there is an increased risk of a terrorism event targeting a government building, structural improvements/upgrades that lead to increased security and resistance may be considered as well.