



City of Hutchinson
Public Works Department
Operations & Maintenance
1400 Adams St SE
Hutchinson, MN 55350

Phone (320) 234-4287 Fax (320) 234-6971

Flood Planning

General Flood Information

While the primary flood season in Hutchinson is March through June, there can be flooding events at other times of the year. In the spring, flood events can be caused by rapid snowmelt and/or significant rains that occur along with or prior to snow melt. Severe rain events are generally the cause of flooding at other times of the year. Rapid snowmelt and/or severe rain events can also generate localized flooding where storm sewers may be obstructed or take some time to drain.

The velocity of flowing water during a flood event is often dangerous to life and property. Velocity in the river channel may reach as much as 8 feet per second. Three feet per second at a 3-foot depth is generally considered dangerous to life and property.

Significant hazards may accompany flooding, including lack of heat and exposed utilities in flooded buildings, sewer systems backing up into buildings, untreated sewage overflows, erosion and deposition of material on banks and surrounding properties, exposure of gas and electrical facilities, and dangers to people and property due to the velocity and depth of floodwaters.

Flood History

Over the decades, the City of Hutchinson has experienced a number of significant flooding events, with the highest flow recorded on April 13, 1965. During the 1965 flood, water overtopped the riverbanks, caused damage to a large portion of the dam, and flooded areas downstream of the dam. There was flood damage to a number of homes, businesses, as well as to bridges and bridge approaches. In the 1965 flood, 86% of the damage was below the dam, and 14% above the dam. Following the 1965 flood, some downstream channel improvements were made and dikes were constructed.

After the 1997 flood, a significant property buyout began. A number of structures in the floodplain were removed. While it is reasonable to anticipate significant damage in a flood event the size of the 1965 flood, it would likely be less severe due to proactive measures taken following the 1997 flood.

In 2007, the concrete overflow dam was replaced with a rock spillway, eliminating the mechanical dam that had been in place since 1965.

The rock spillway eliminated mechanical dam structures and the need to operate dam gates to manage water flow. The flow channel was significantly expanded in conjunction with reconstruction of the Highway 15 (Main St N) bridge and adjacent downstream riverbanks were stabilized.

Many flood responses over the years have been unrelated to properties abutting the river. Localized flooding caused by rapid snowmelt and/or significant rain events has had negative impacts on properties other than those abutting the river. Examples include, but are not limited to: backed up sanitary and storm sewers, basement flooding, significant street intersection flooding, obstructed storm sewers, and related property damage.

Over the decades, the City of Hutchinson has experienced a number of significant flooding events:

03/30/1897	unk	05/28/1906	unk
03/31/1916	unk	April 1917	unk
Spring 1936	unk	Spring 1938	unk
03/30/1943	1275	06/04/1943	1180
05/08/1944	1400	06/19/1944	1300
Spring 1947	unk	03/27/1948	1520
04/12/1951	1620	04/10/1952	3150
06/30/1953	1340	04/23/1957	2900
04/03/1960	1300	04/07/1962	1160
06/12/1963	1360	04/13/1965	4700*
04/11/1969	2950		
06/19/1990	1720	06/26/1993	3000
05/10/1993	2270	05/02/1997	3400
07/04/1997	2700		
04/09/2001	2580	04/11 to 04/25/2001	2900
06/27/2002	1730		
2007	Rock spillway built to replaced concrete overflow dam w/ tainter gates		
03/17/2010	3000 (elev 1041.05)	09/28/2010	2810
08/14/2016	1960	10/06/2017	2750
06/13/2018	2860		

**Most severe flooding recorded*

Data from the 1970's and 1980's is not available.

As you can see from these records, the main flood season is March through June. A number of flood events in March or early April have been affected by rapid snowmelt and/or significant early spring rains that occurred along with or prior to snow melt. Severe rain events and saturated soils have primarily contributed to flooding at other times of the year. The velocity of water in the river channel during a flood event is expected to be dangerous to life and property, with velocity in the channel reaching up to 8 feet per second.

Past Flood Responses:

In 1968, 3M completed channel improvements along with some construction improvements related to the railway serving the plant. These improvements were not considered adequate for addressing floods at 1965 levels or above.

In 1969, the City of Hutchinson constructed temporary dikes to address fears of a rapid snowmelt. These temporary dikes were built in 1969 and remain today.

Following the 1997 flood, the City partnered with state and federal agencies to acquire and remove a number of structures in the floodplain, including some commercial property and a number of residential properties. Removing these structures has significantly reduced exposure to potential flood damage. The floods of 06/27/2002 and 03/17/2010, for example, resulted in very little damage downstream of the dam, as the most vulnerable structures had been removed.

In 2007, the concrete dam was replaced with a rock spillway, eliminating the mechanical dam that had been in place since 1965. The rock spillway eliminated the overflow dam, and particularly the need to operate tainter gates to manage water flow.

2010 was the first recordable event that occurred after the rock spillway was constructed in 2007. Although there was some minor scouring on the right bank in the center 1/3 of the riffles, the rock spillway performed well.

Flood Planning:

The existing 100-year and 500-year flood plain map is derived from a National Flood Insurance Program – Flood Insurance Rate Map prepared by the Federal Emergency Management Administration (FEMA).

In addition to mapping the floodplain, it is also beneficial to use available computer modeling systems to determine the effect that heavy rain events would have on the remainder of the City's storm water system. This exercise helps to corroborate experiences in the field and may assist in identifying areas most affected by localized flooding resulting from storm sewer system capacity issues, along with potential improvements to help alleviate localized flooding.

Two stream gauges are the most useful for monitoring river conditions. One gauge is located near Cosmos and at the other at the Adams St SE (CSAH 25) bridge near the 3M plant.

The monitor at the Adams St SE bridge was proactively sought by the City, and installed in cooperation with the Minnesota DNR.

To assist in flood planning, maps have been generated to identify industrial, commercial, municipal and residential properties within the 100-year and 500-year floodplains, and those abutting floodplains which may experience potential damage.

Proactive Measures to Protect Against Flooding

There are steps property owners can take to protect their property during a flood event. Property owners are encouraged to establish their own flooding disaster plan.

A good resource for preparing disaster plans for floods or other natural disasters is:
<https://www.ready.gov/floods>.

Property owners' insurance companies will likely also have good information available to help prepare for a flood, what to do in case of a flood, and tips on restoring property after a flood.

Insurance Programs

Property owners are encouraged to consider acquiring flood insurance through the National Flood Insurance Program (NFIP). Flood insurance is a separate policy from the typical insurance policy. Flooding is not usually covered by typical policies protecting homes and other property. There is normally a 30-day waiting period for flood insurance coverage.

Insurance agents will have information about flood insurance. Most insurance agents can either provide information about the program or direct property owners to a qualified agent.

A good resource for information about flood insurance is www.floodsmart.gov. This site is the official site for the National Flood Insurance Program (NFIP) and contains information about preparing for floods, surviving floods, and restoring property after a flood.

The City has copies of the Federal Emergency Management Agency Flood Insurance study maps available and can provide guidance in obtaining on-line flood maps for specific areas of the City. The maps can be accessed at:

<https://msc.fema.gov/portal/search?AddressQuery=hutchinson%20mn%2055350#searchresultsanchor>

Property owners may also consider inquiring about sewer backup insurance. Insurance agents can provide information about any available sewer backup insurance coverage and review the costs and benefits of sewer backup insurance policies that may be available.

Tenants of rental property are also encouraged to contact their insurance agent to determine what coverage options are available to them.

Sandbagging

The City Council has previously authorized acquisition of sandbags. If needed, sand/soils and sandbags may be distributed to sites around the City or sandbagging may be processed at a single site, depending upon the need and directions received from emergency management personnel.

Sandbagging sites will generally be self-service sites, where property owners and/or volunteers will need to fill sandbags and transport the bags to where they are needed. The attached document, prepared by North Dakota State University, contains helpful information about sandbagging:

www.ag.ndsu.edu/pubs/ageng/safety/ae626.pdf.

Sandbags are available from a variety of sources. Sandbags, in limited quantity, are available from Public Works. There are several private companies that sell sandbags. Sand is available from various businesses in the area. Please consult the yellow pages directory under the heading "Sand & Gravel".

Generally, City staff and equipment will not be available at sandbagging sites, so property owners and volunteers are encouraged to work together to get sandbags to where they may be needed.

Property owners are encouraged to coordinate efforts with adjoining properties as they address flooding issues specific to their own property in order to make the most effective use of available sandbags.

Prior to a flood event, property owners may request the City Engineering Department to provide on-site elevation information that may be helpful for flood preparation guidance. City staff will respond to requests on a first come, first served basis as time allows.

Monitoring River Conditions

The City routinely reviews river conditions by:

- Compiling maps to identify potential floodplains
- Monitoring stream gauges located near:
 - Adams St SE (CSAH 25) bridge near the 3M plant
https://www.dnr.state.mn.us/waters/csg/site_report.html?mode=get_site_report&site=19049002
 - Cosmos
https://www.dnr.state.mn.us/waters/csg/site_report.html?mode=get_site_report&site=19024001
- Monitoring National Weather Service flood forecasts.
- Conducting regular inspections of river conditions.

During flood events, nearly all City resources are deployed to address issues pertaining to publicly owned infrastructure such as the dam/spillway, wastewater treatment facility, sewer systems, roadways, bridges, trails and parks. Therefore, City resources would not generally be available to protect privately owned properties.

Flood Response:

Considering descriptions of the 1965 flood and more recent flooding experiences, the City continually reviews their Emergency Management Plan, implementing portions the plan, as necessary, for flood events. Emergency management plans generally address at least the following issues:

- 1) Evacuation, shelter, and food for displaced citizens
- 2) Transportation priorities
- 3) Use of and control of volunteer labor
- 4) Mobilization of heavy equipment and labor
- 5) Sanitary sewer issues
- 6) Tree and debris removal
- 7) Water service interruptions
- 8) Localized flooding caused by storm sewer system capacity issues
- 9) Priority of service issues

Materials typically employed during flood responses include sandbags and sand, clay or mixed soils for sandbags. The City has an open account with Jacobs Trading Company of Hopkins and Appleton, MN. This company has millions of sandbags in stock and can ship them quickly in an emergency. Orders for 10,000 or fewer sandbags can be processed online. Orders of more than 10,000 sandbags may be made by calling the company directly. Sand, while available locally, may only be available in limited quantities during periods of freezing weather.

It is the City's intent, whenever possible, to be proactive and avoid the use of sandbagging. The City is neither staffed nor equipped to rapidly fill, transport or distribute sandbags. The City is not staffed to remove and cleanup areas where sandbags have been used. Upon receiving orders from the emergency management team, the Public Works Department would arrange for sandbags and establish sandbagging site(s). Due to resource constraints, the City is not in a position to accept responsibility for the lack of available sandbags, sand or soil materials, nor for the filling of, placement of, disposal of, related cleanup of, or any damages caused while sandbags are employed.

There are currently stockpiles of clay/mixed soils at the HATS Facility. The stockpiles, estimated at 3,500 cubic yards, are currently maintained as part of a berm on the southeast side of the property. Use of this material could potentially be beneficial for site-specific flood response work, but would only be used under direction of the Emergency Management Team.

Typical equipment used by the City during flood responses includes pumps, dump trucks, wheel loaders, excavation equipment and traffic control devices. These assets are needed engage in flood control work that is municipal in nature.

This equipment would not be available to address needs at privately owned properties. When engaged in flood control work, equipment is exempt from standard size and weight restrictions.

The following pumps are available from Public Works:

1. 2006 Godwin 6" trash pump (Wastewater)
2. 1966 Peabody-Barnes 6" trash pump (Wastewater)
3. 1962 Kohler Command 25 4" trash pump (Wastewater)
4. 1966 Gorman-Rupp 4" trash pump (Wastewater)
5. 3 ea. 3" trash pumps (Operations & Maintenance)
6. 1 ea. 3" diaphragm pump (Operations & Maintenance)
7. 2004 Pacer 2" trash pump (Wastewater)

Two tandem-axle dump trucks, seven single-axle dump trucks, and two wheel loaders are available from Public Works. Additional equipment may be available from the PRCE department and CreekSide Soils. Traffic control devices are available from both the Police Department and Public Works.

Service Priorities:

Prioritization of services provided by Public Works typically falls into the following categories:

1. **Mobility.** This includes ensuring evacuation routes and other critical roadways are accessible.
2. **Utilities.** This includes ensuring water, wastewater and storm water services are functioning as designed. Assistance, if necessary, is given to the Hutchinson Utilities Commission to make electricity and natural gas services safe.
3. **Sanitary.** This includes ensuring issues with a significant potential for being detrimental to public health/safety are addressed, for example, debris removal and disposal.
4. **Tranquility.** This includes operations undertaken to restore 'normal' life once other significant issues have been resolved.

Anticipated Flood Response Procedures

A) Closure of 2nd Ave SE

1. Road Closed - No Through Traffic signs: 2nd Ave SE / Adams St SE / Michigan St SE
2. Road Closed: 2nd Ave SE / Erie St SE / Arch St SE

B) Closure of Luce Line Trail

1. Trail Closed - Adams St SE bridge, Main St bridge, other spot closures, as determined by inspections

C) Closure of Parks & Public Facilities

1. Veterans Memorial Field – Check backflow preventer & sump pump regularly
1. Facilities closed – Other spot closures of parks and public facilities, as determined by inspections

D) Consultation with Commercial/Industrial property owners

1. Engineering provides consultations, as indicated by flood forecasts, with commercial/industrial property owners requesting assistance.

E) Monitoring Bridges for Potential Structural Damage

1. Adams St NE bridge
2. 2nd Ave SE bridge
3. 5th Ave SE bridge
4. School Rd SW bridge
5. South Grade Rd SW bridge
6. Main St bridge (coordinate with MnDOT staff)
7. Adams St SE bridge (coordinate with McLeod County staff)

F) Wastewater System (respond as determined by Public Works)

1. Monitor collection system for overflows and infiltration; monitor influent flow at Wastewater Treatment Plant

G) Storm Water System

1. Monitor collection system for backups and impediments