



# 2023 Drought Response Plan

Ord 23-27

Saint Paul City Council  
July 17, 2023



# 2023 Drought Response Plan

## DNR Drought Matrix

### Summary:

- SPRWS is required to comply with the Minnesota State Wide Drought Plan
- This plan provides a framework for preparing for and responding to droughts to minimize conflicts and negative impacts on MN natural resources and economy.

Drought phases are based on the flow rate within the Mississippi River

STATEWIDE DROUGHT PLAN MATRIX

Drought Phase/Triggers	State and Federal Actions	Water Users and Suppliers Actions
<p><b>NON-DROUGHT PHASE</b> A significant portion of the watershed (<a href="#">see map</a>) is not under drought conditions according to the U.S. Drought Monitor.</p> <p>The U.S. Drought Monitor is a weekly index depicting the location and intensity of drought conditions using a blend of quantitative and qualitative indicators. Drought conditions referenced in this plan are keyed to the U.S. Drought Monitor. <a href="http://drought.unl.edu/dm/monitor.html">http://drought.unl.edu/dm/monitor.html</a></p>	<ul style="list-style-type: none"> <li>➤ Develop/maintain precipitation, stream flow, ground water and water quality monitoring programs.</li> <li>➤ Conduct state and regional water studies and coordinate actions.</li> <li>➤ Assist water suppliers and other users in developing conservation measures.</li> <li>➤ Continue and improve water conservation education.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Develop/update/implement water supply plans (including drought preparedness and response and water conservation programs).</li> <li>➤ Adopt conservation rate structures and ordinances.</li> <li>➤ Establish mutual aid agreements, interconnections, conservation education, redundant/alternative supplies, etc.</li> <li>➤ Minimize water supply system losses and improve water use efficiency.</li> </ul>
<p><b>DROUGHT WATCH PHASE</b> A significant portion of the watershed (<a href="#">see map</a>) is “<b>Abnormally Dry</b>” or in a “<b>Moderate Drought</b>”.</p>	<ul style="list-style-type: none"> <li>➤ Inform Drought Task Force of conditions.</li> <li>➤ Intensify selected monitoring activities.</li> <li>➤ Initiate public awareness.</li> <li>➤ <b>Notify water suppliers of moderate drought conditions.</b></li> <li>➤ Monitor Mississippi River flows and coordinate with the U.S. Army Corps of Engineers (USACE) and hydropower facility owners.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Monitor potential conflicts and problems and notify DNR of source conflicts.</li> <li>➤ <b>Public water suppliers provide conservation information and request customers to implement voluntary measures to reduce water use.</b></li> </ul>
<p><b>DROUGHT WARNING PHASE</b> A significant portion of the watershed (<a href="#">see map</a>) is in a “<b>Severe Drought</b>”, or for public water suppliers using the Mississippi River, the average daily flow at the USGS gage near Anoka is at or below 2000 cfs for five consecutive days.</p>	<ul style="list-style-type: none"> <li>➤ Convene Drought Task Force.</li> <li>➤ Increase public drought awareness.</li> <li>➤ <b>Notify water suppliers of severe drought conditions.</b></li> <li>➤ Monitor implementation of the Mississippi River System-Wide Low-Flow Management Plan.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Public water suppliers implement appropriate water use restrictions contained in their water supply plans.</li> <li>➤ Other water users implement appropriate conservation measures.</li> <li>➤ <b>Public water suppliers implement water use reduction actions with a goal of reducing water use to 50% above January levels.</b></li> <li>➤ Dam operators implement the Mississippi river System-Wide Low-Flow Management Plan.</li> </ul>
<p><b>RESTRICTIVE PHASE</b> A significant portion of the watershed (<a href="#">see map</a>) is in an “<b>Extreme Drought</b>”, or for public water suppliers using the Mississippi River, the average daily flow at the USGS gage near Anoka is at or below 1500 cfs for five consecutive days.</p>	<ul style="list-style-type: none"> <li>➤ <b>Notify water suppliers of extreme drought conditions.</b></li> <li>➤ Closely monitor river flows.</li> <li>➤ Continue drought awareness efforts to encourage conservation.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Follow MDNR allocation restrictions.</li> <li>➤ <b>Public water suppliers implement water use reduction actions with a goal of reducing water use to 25% above January levels.</b></li> <li>➤ All appropriators conserve water and minimize non-essential water uses.</li> </ul>
<p><b>EMERGENCY PHASE</b> A significant portion of the watershed (<a href="#">see map</a>) is in an “<b>Exceptional Drought</b>”, or highest priority water supply needs are not being met, or there are threatened or actual electricity shortages due to cooling water supply shortages, or for public water suppliers in the Twin Cities, the average daily flow of the Mississippi River USGS gage near Anoka is at or below 1000 cfs for five consecutive days.</p>	<ul style="list-style-type: none"> <li>➤ <b>Advise Governor on need for emergency declaration.</b></li> <li>➤ Minnesota Division of Homeland Security and Emergency Management implements MN Emergency Operations Plan (MEOP).</li> <li>➤ Consider request to the USACE for the release of water from the Mississippi River Headwaters Reservoirs.</li> </ul>	<ul style="list-style-type: none"> <li>➤ <b>Public water suppliers implement mandatory water use reduction actions with a goal of reducing water use to January levels.</b></li> <li>➤ Limit water used based on highest priorities defined in <b>Minnesota Statutes 103G.261</b>.</li> <li>➤ Implement measures consistent with an emergency declaration.</li> <li>➤ Provide bottled water, hauled water, and sanitations supplies to users, as needed.</li> </ul>

# Mississippi River Flow Rate

Used to Determine  
Drought Phase

Under 2,000 for 5 Consecutive Days  
to enter Drought Warning Phase

Under 1,500 for 5 Consecutive Days  
to enter Restrictive Phase

Date	Daily Discharge Cubic Feet Per Second	Drought Phase/Trigger
June 19, 2023	4,810	Drought Watch Phase
June 20, 2023	4,780	Drought Watch Phase
June 21, 2023	4,750	Drought Watch Phase
June 22, 2023	4,560	Drought Watch Phase
June 23, 2023	4,470	Drought Watch Phase
June 24, 2023	4,450	Drought Watch Phase
June 25, 2023	4,430	Drought Watch Phase
June 26, 2023	4,730	Drought Watch Phase
June 27, 2023	4,990	Drought Watch Phase
June 28, 2023	4,780	Drought Watch Phase
June 29, 2023	4,570	Drought Watch Phase
June 30, 2023	4,280	Drought Watch Phase
July 1, 2023	4,330	Drought Watch Phase
July 2, 2023	4,400	Drought Watch Phase
July 3, 2023	4,350	Drought Watch Phase
July 4, 2023	4,310	Drought Watch Phase
July 5, 2023	4,190	Drought Watch Phase
July 6, 2023	4,100	Drought Watch Phase
July 7, 2023	3,930	Drought Watch Phase
July 8, 2023	3,670	Drought Watch Phase
July 9, 2023	3,470	Drought Watch Phase
July 10, 2023	3,340	Drought Watch Phase
July 11, 2023	3,410	Drought Watch Phase
July 12, 2023	3,520	Drought Watch Phase
July 13, 2023	3,360	Drought Watch Phase
July 14, 2023	3,230	Drought Watch Phase
July 15, 2023	2,920	Drought Watch Phase
July 16, 2023	2,860	Drought Watch Phase
July 17, 2023	2,840	Drought Watch Phase
July 18, 2023	2,820	Drought Watch Phase
July 19, 2023	2,750	Drought Watch Phase

## Mississippi River at Hwy 610 IN Brooklyn Park, MN - 05288500

June 19, 2023 - July 19, 2023

Streamflow, ft<sup>3</sup>/s

2880 ft<sup>3</sup>/s - Jul 15, 2023 08:30:00 PM CDT



River rates are low, yet  
higher than in 2021.

# Information on SPRWS Production

Used to Monitor Progress  
Towards Reduction Targets

Date	Total Water Pumped from Mississippi (MGD)	Total Water Pumped Out of McCarron's (MGD)	Rolling 5 Day Average Out of McCarron's (MGD)	% Above January Levels (35.60 MGD)
June 19, 2023	63.4	61.4	64.5	81%
June 20, 2023	63.1	67.1	64.8	82%
June 21, 2023	63.2	77.0	66.7	87%
June 22, 2023	63.7	75.3	68.5	92%
June 23, 2023	63.3	65.0	69.2	94%
June 24, 2023	62.8	49.7	66.8	88%
June 25, 2023	33.1	53.2	64.0	80%
June 26, 2023	64.2	47.7	58.2	63%
June 27, 2023	62.1	53.7	53.9	51%
June 28, 2023	63.4	51.6	51.2	44%
June 29, 2023	63.4	60.1	53.3	50%
June 30, 2023	62.2	71.0	56.8	60%
July 1, 2023	69.3	69.3	61.1	72%
July 2, 2023	63.5	66.6	63.7	79%
July 3, 2023	63.5	55.6	64.5	81%
July 4, 2023	63.6	50.5	62.6	76%
July 5, 2023	63.7	51.4	58.7	65%
July 6, 2023	63.7	52.9	55.4	56%
July 7, 2023	50.5	59.4	54.0	52%
July 8, 2023	39.0	54.9	53.8	51%
July 9, 2023	38.9	61.4	56.0	57%
July 10, 2023	38.7	56.7	57.1	60%
July 11, 2023	39.3	54.2	57.3	61%
July 12, 2023	38.8	47.3	54.9	54%
July 13, 2023	38.7	63.4	56.6	59%
July 14, 2023	39.2	66.4	57.6	61%
July 15, 2023	38.8	48.7	56.0	58%
July 16, 2023	37.7	56.1	56.4	59%
July 17, 2023	38.6	51.2	57.2	60%
July 18, 2023	38.5	61.1	56.7	59%
July 19, 2023	TBD	TBD	TBD	TBD
Drought Warning Phase Goal: 53.4 MGD (50% above 35.6 MGD)				Goal: 50%

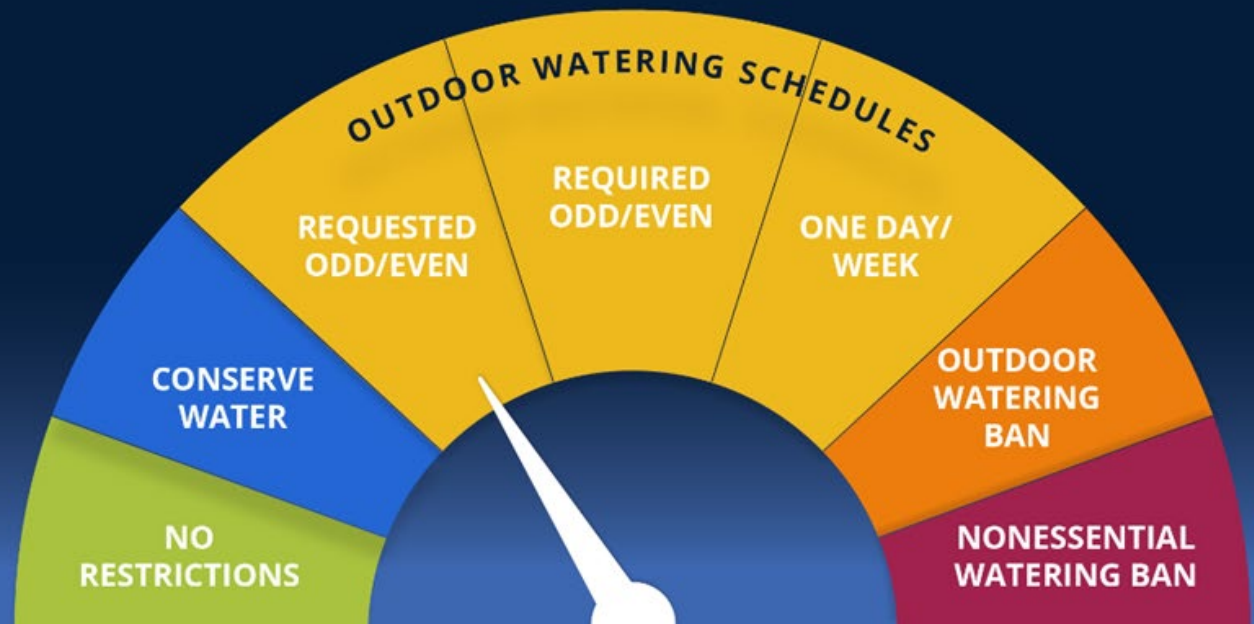
Water use only slightly higher than required in Drought Warning Phase

Potential  
Next  
Steps



# DROUGHT RESPONSE

WATER CONSERVATION EFFORTS | [STPAUL.GOV/WATER](http://STPAUL.GOV/WATER)



# Requested Actions

Approving an emergency ordinance schedule of penalties for non-compliance of outdoor watering restrictions.

## Penalties:

- a) First violation - Educational notice
- b) Second violation - Written warning
- c) Third violation - \$50.00
- d) Fourth violation - \$100.00
- e) Fifth and all additional violations - \$150.00 plus water shut off to the property

## Drought Watch (Voluntary Conservation)

- Effective upon entering Drought Watch Phase
  - Watershed is classified in a Moderate Drought
- Educational response only

## Drought Warning (Odd/Even Outside Watering)

- Reduction Goal: 50% above January Levels (53.4 MGD)
  - River under 2,000 CFS for 5 consecutive days
- Voluntary then Required

## Restrictive Phase (Outside Watering 1 Day/Week)

- Reduction Goal: 25% above January Levels (44.5)
  - River under 1,500 CFS for 5 consecutive days
- Subject to Penalties

## Emergency Phase (Total Outside Watering Ban)

- Reduction Goal: January Levels (35.6 MGD)
  - River under 1,000 CFS for 5 consecutive days
- Subject to Penalties



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*Questions/Comments/Concerns*

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