

Business Item: 2019-67
**Environmental Services Flood
Preparations and Ratification of
Emergency Declaration for Flood
Mitigation**

Mike Mereness, Assistant General Manager, Operations

Environment Committee: March 26, 2019

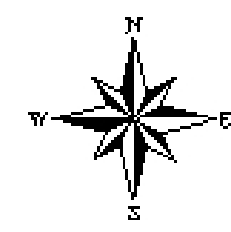


Outline

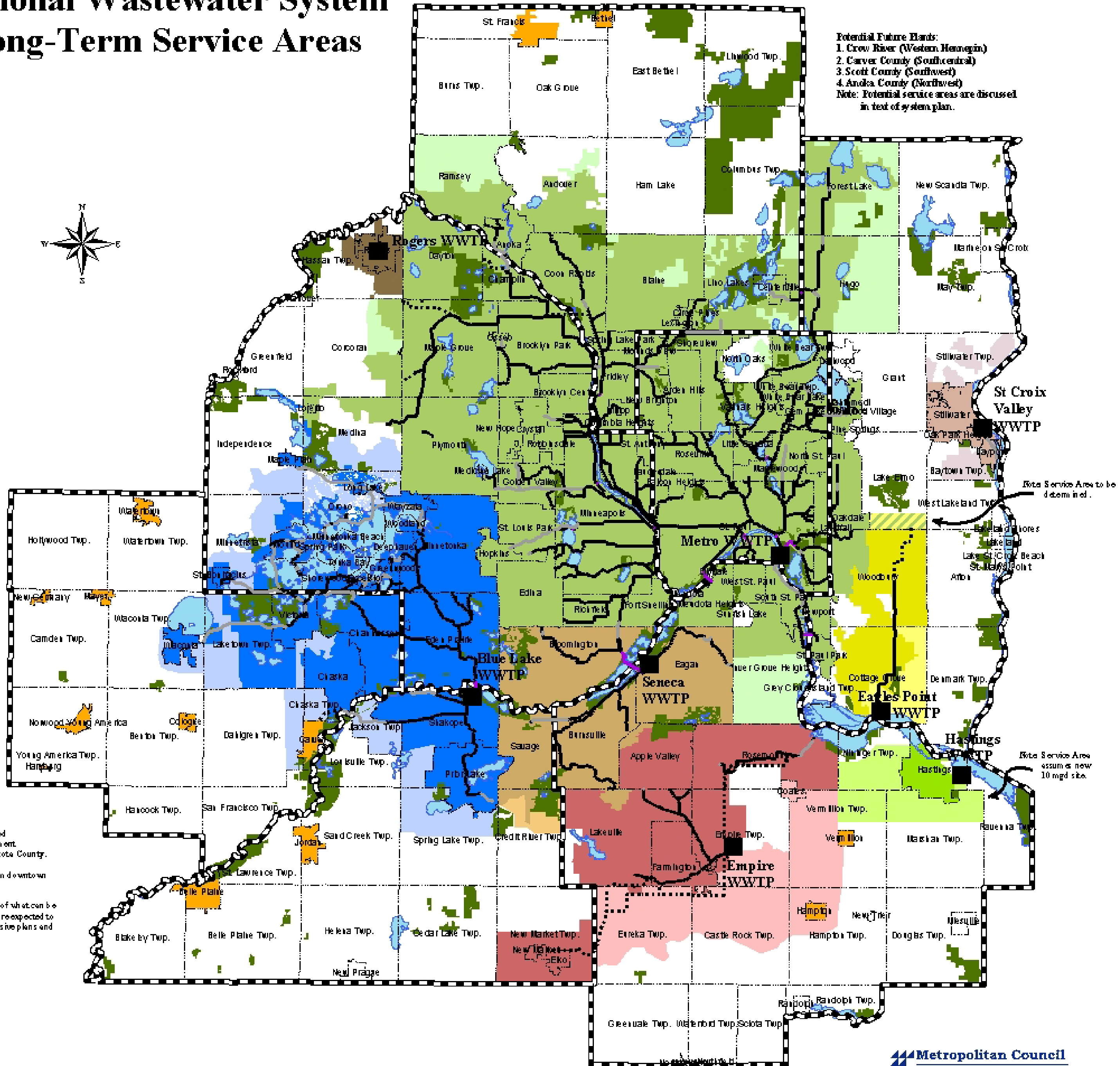
- Location & service areas of Environmental Services Wastewater Treatment Plants
- Flood forecast
- Metro Plant preparation activities
- Metro past flood views
- Regional plants forecast & preparation
- Ratification of Emergency Declaration

Regional Wastewater System Long-Term Service Areas

- MCES Treatment Plant
- Lakes and Rivers
- Regional Parks
- Rural Center
- Metro
- Blue Lake
- Seneca
- Empire
- Eagles Point
- St Croix Valley
- Hastings
- Rogers (if acquired)
- Potential Metro
- Potential Blue Lake
- Potential Seneca
- Potential Empire
- Potential Eagles Point
- Potential St. Croix Valley
- Potential Hastings
- Gravity
- Forcemain
- Siphon
- Proposed Interceptor
- County Boundary
- Community Boundary



Potential Future Plants:
 1. Crow River (Western Hennepin)
 2. Carver County (Southcentral)
 3. Scott County (Southwest)
 4. Anoka County (Northwest)
 Note: Potential service areas are discussed in text of system plan.



Note: Rosemount WWTP site will be retained for potential future WWTP to supplement Empire WWTP in serving central Dakota County.

Hastings WWTP will be relocated from downtown to east edge of city.

Potential service areas are illustrative of what can be served. Significant natural resources are expected to be protected through local comprehensive plans and federal, state and local regulations.

A map of Minnesota and Wisconsin is shown in the background. The map is light-colored with blue lines representing rivers and lakes. The text is overlaid on the map. The text is as follows:

2019 Spring Flood Outlook

March 18 Update

Covering Central/Southern
Minnesota and Western Wisconsin

March 18, 2019



National Weather Service
Twin Cities/Chanhassen, MN

Weather-Ready Nation

National Oceanic and Atmospheric Administration

Typical Spring Flood Factors

Quick Review

- **Soil Moisture**

- Wet autumn of 2018 left soil moisture above normal before freeze up, especially over southern MN

- **Frost Depth**

- 2 to 4 foot frost depth over the entire region...fairly deep frost, thaw has not started

- **Snowpack/Snow Water**

- Well above normal, at 2.5 to 4.5 inches over a widespread area, with some 5-6 inch reports in the Minnesota headwater areas and western/northern Wisconsin. This ranks near historical high levels for early March:

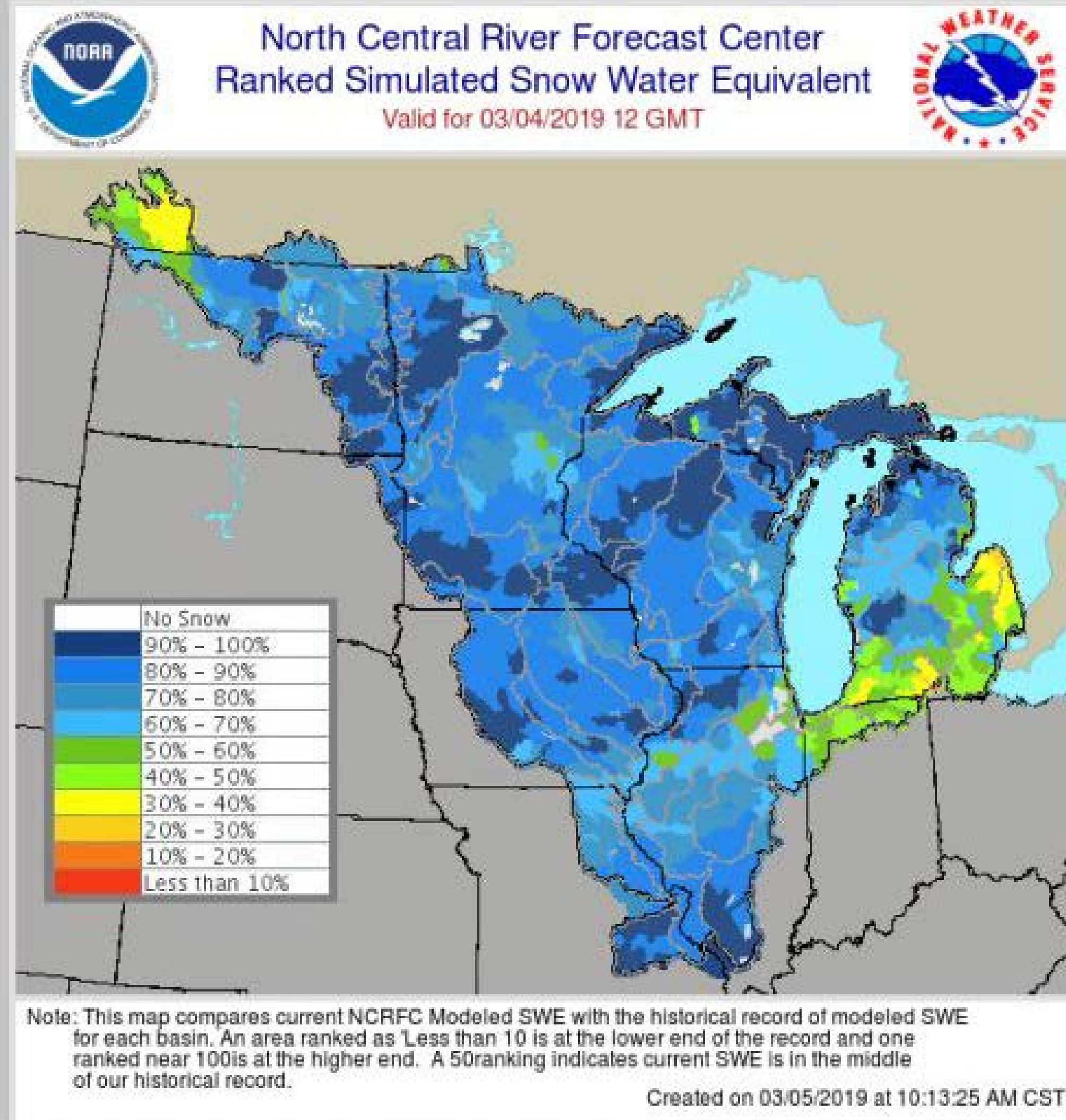


Snow Water Equivalent Ranks

The snow water equivalent is in the top 20 percent of historical record for MN and WI. Many in the top 10 percent.

The snowpack is also present over a very vast area...not just over a few basins or portions of states.

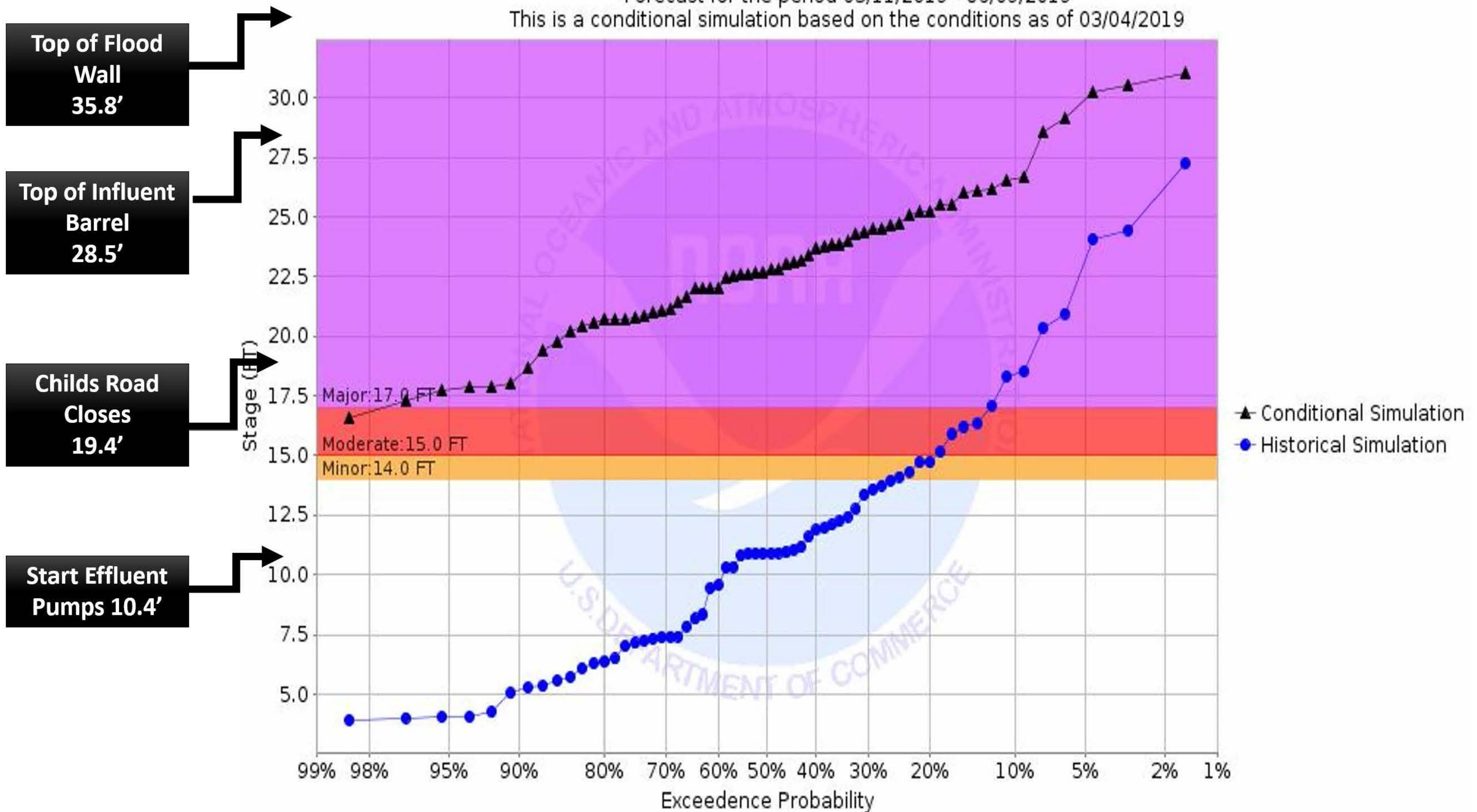
In short...we have the "fuel" present to drive a major snowmelt this spring.



▲_{CS} = **Conditional Simulation**

●_{HS} = **Historical Simulation**

Chance of Exceeding River Stage at Mississippi River at St Paul - Roberts St Brdg (STPM5)
Forecast for the period 03/11/2019 - 06/09/2019
This is a conditional simulation based on the conditions as of 03/04/2019



Top of Flood Wall
35.8'

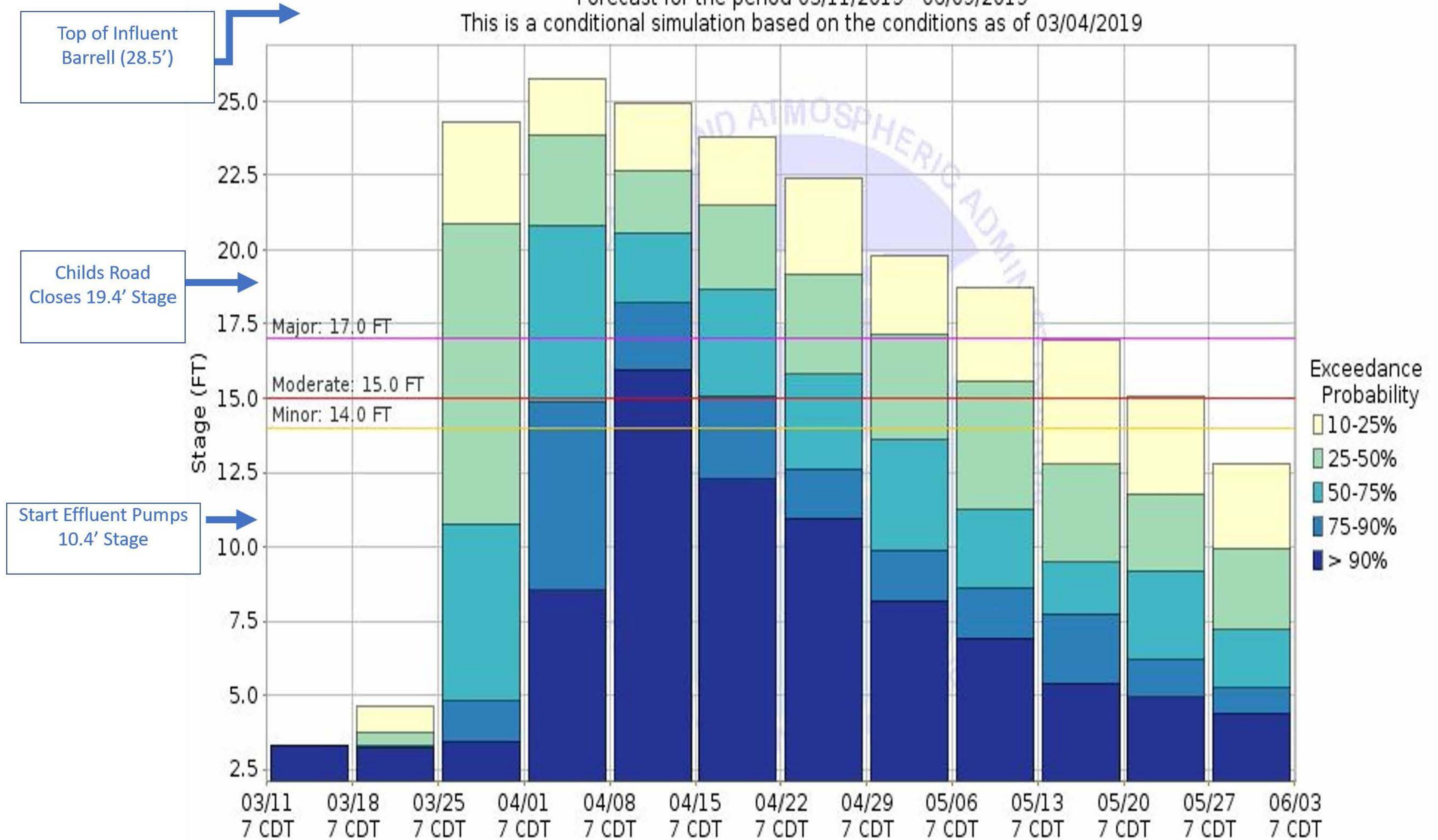
Top of Influent Barrel
28.5'

Childs Road Closes
19.4'

Start Effluent Pumps
10.4'

Weekly Forecast

Weekly Chance of Exceeding River Stage at Mississippi River at St Paul - Roberts St Brdg (STPM5)
 Forecast for the period 03/11/2019 - 06/09/2019
 This is a conditional simulation based on the conditions as of 03/04/2019



Metro Plant Flood Preparations

- Emergency generators
- Childs Road ramp (if needed)
- Sand bags & stop logs
- Meetings with neighboring businesses
- Coordination with City/County emergency offices
- Increase critical process chemicals inventory
- Provide 24/7 electrician coverage



The 2001 flood at the Metro Plant



concord ave.

Holman Airfield

Metro WWT Plant

MISSISSIPPI RIVER

Mounds Park

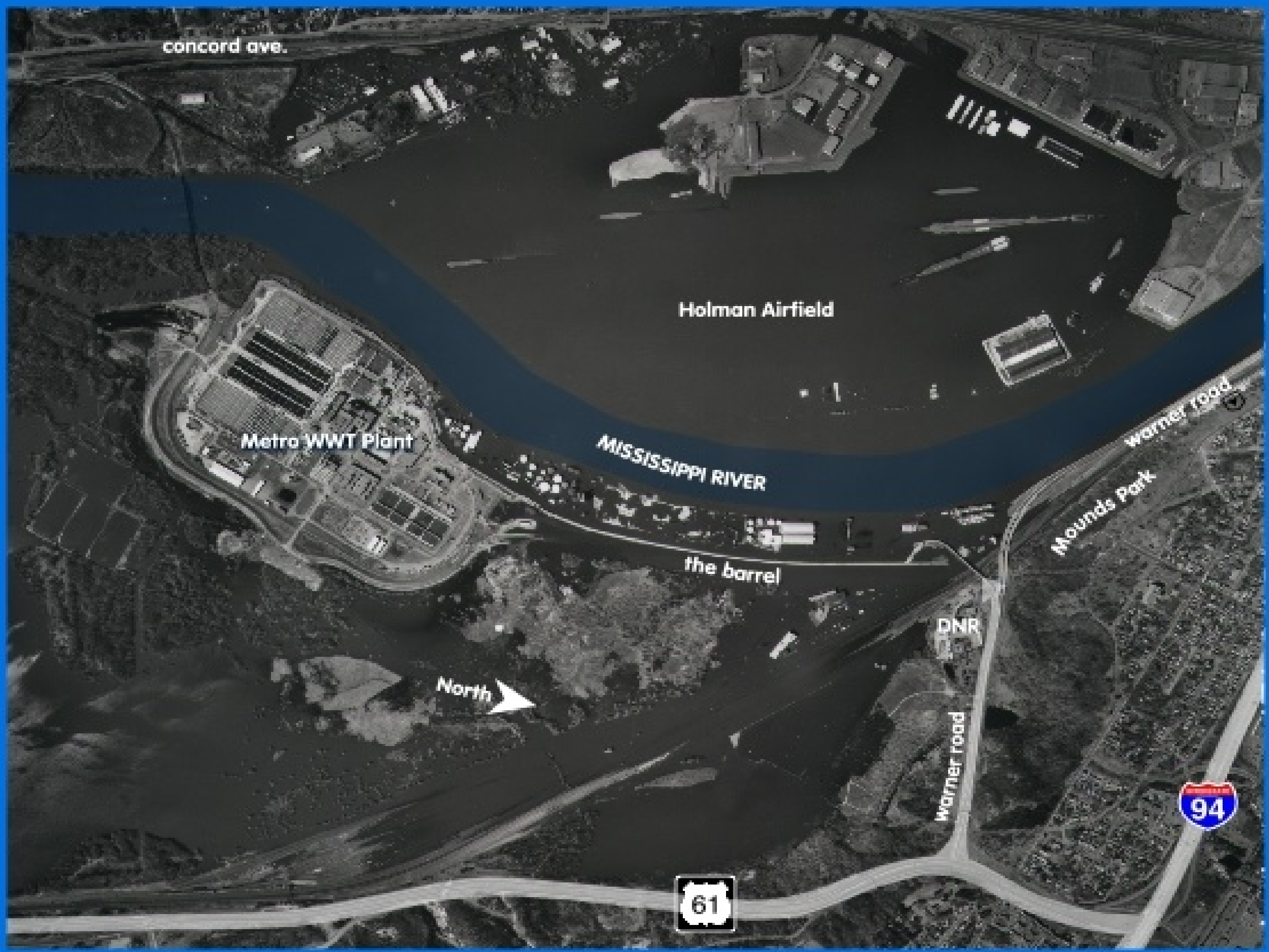
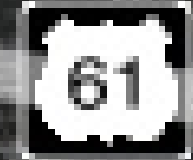
the barrel

DNR

North

warner road

warner road



Building a Temporary Road Over Childs Road, to the Barrel





Metropolitan Council
Environmental Services

Temporary Gravel Road to the Barrel





Metropolitan Council
Environmental Services

Metropolitan
WASTEWATER
TREATMENT
PLANT

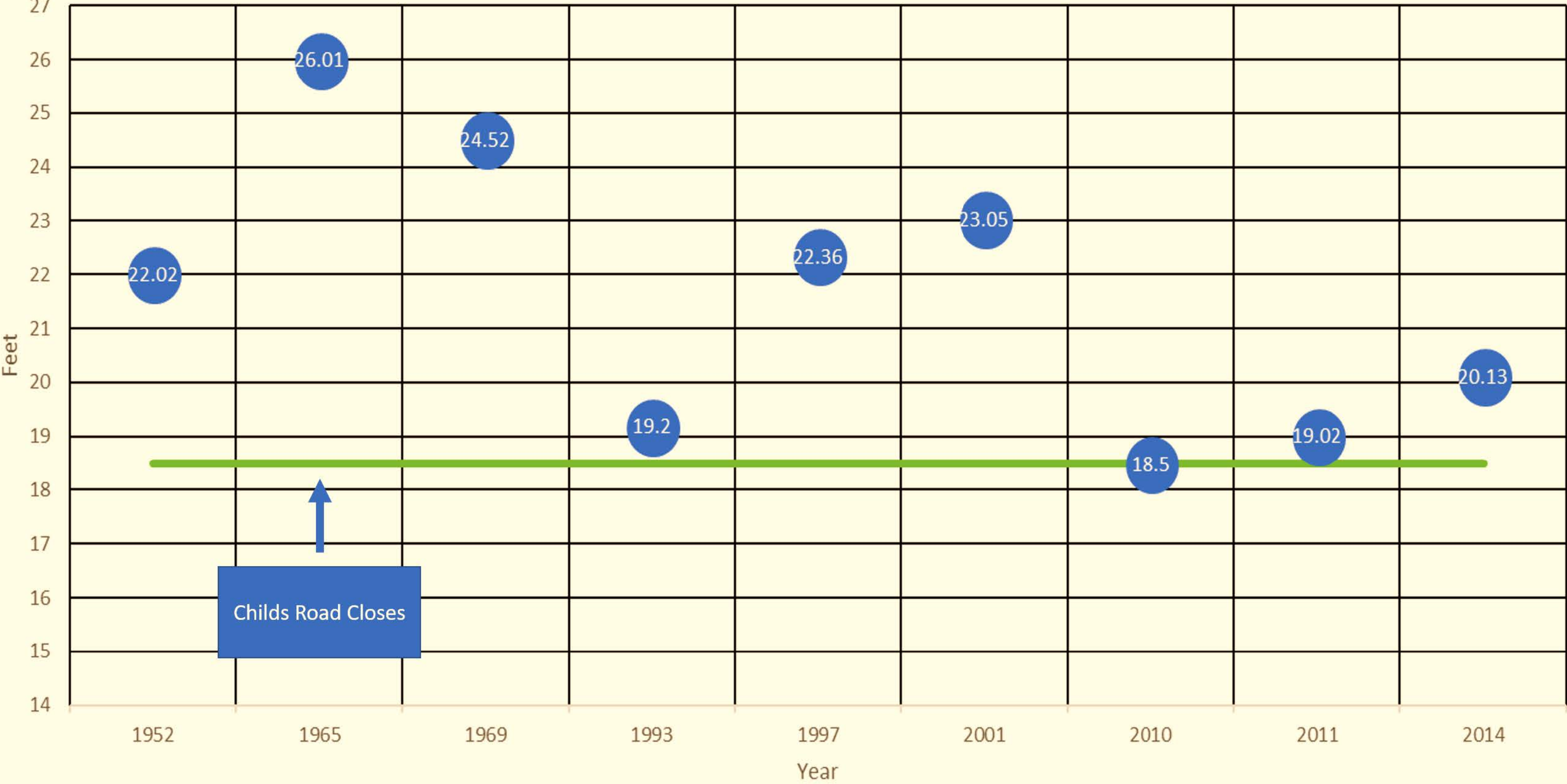
1 MILE →



Flood Wall that Keeps the Metro Plant Dry



Historic River Levels at St. Paul





Metro WWT Plant

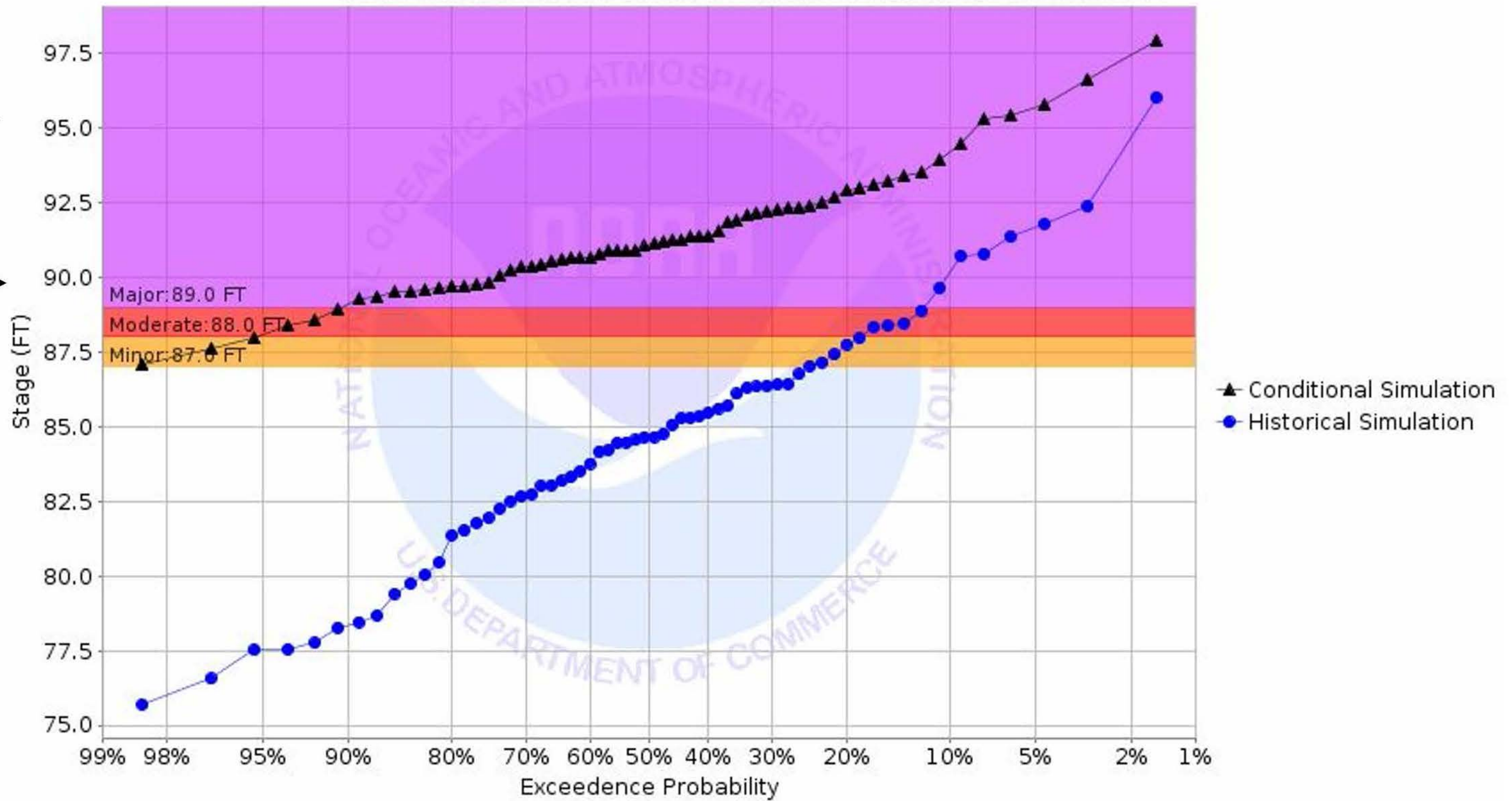
the barrel

1965, "The flood of the century"
26.01 feet, 12 feet above flood stage.

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●_{HS} = **Historical Simulation**

Chance of Exceeding River Stage at St Croix River at Stillwater (STLMS)
Forecast for the period 03/11/2019 - 06/09/2019
This is a conditional simulation based on the conditions as of 03/04/2019



**24/7 Staffing
695.0'
(95.0' Stage)**

**Night Time
Inspections
690.0'
(90.0' Stage)**

**St. Croix River
At Stillwater
St. Croix Valley
Wastewater
Treatment Plant**

▲_{CS} = **Conditional Simulation**

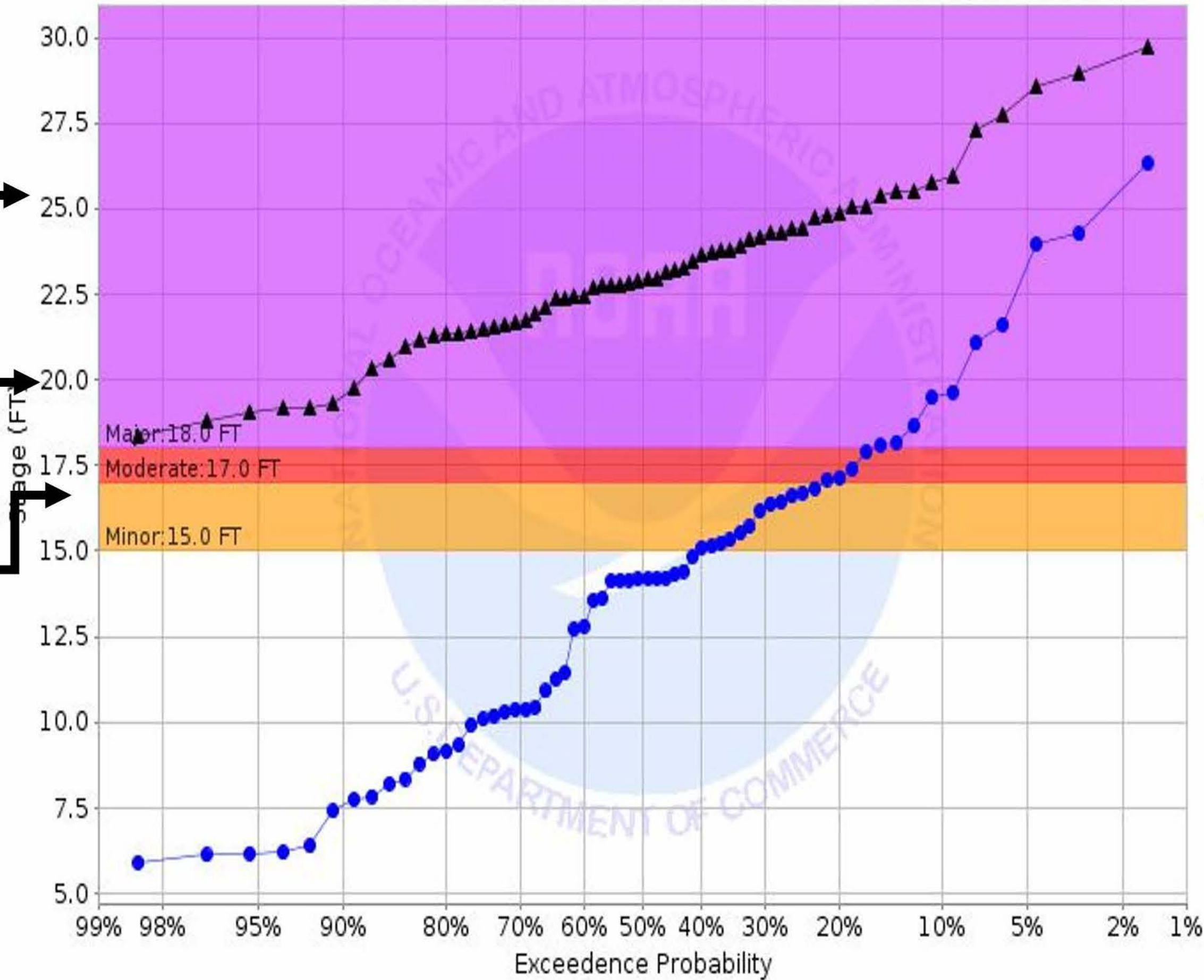
●_{HS} = **Historical Simulation**

Chance of Exceeding River Stage at Mississippi River at Hastings L&D 2 (HSTM5)
Forecast for the period 03/11/2019 - 06/09/2019
This is a conditional simulation based on the conditions as of 03/04/2019

**Top of Levee
Add Sand Bags
695.0'**

**24/7 Staffing
690.0'
(20.0' Stage)**

**Fill Empty
Tanks
687.0'
(17.0' Stage)**



▲ Conditional Simulation
● Historical Simulation

**Mississippi River
At Hastings
Hastings Wastewater
Treatment Plant**

▲_{CS} = **Conditional Simulation**

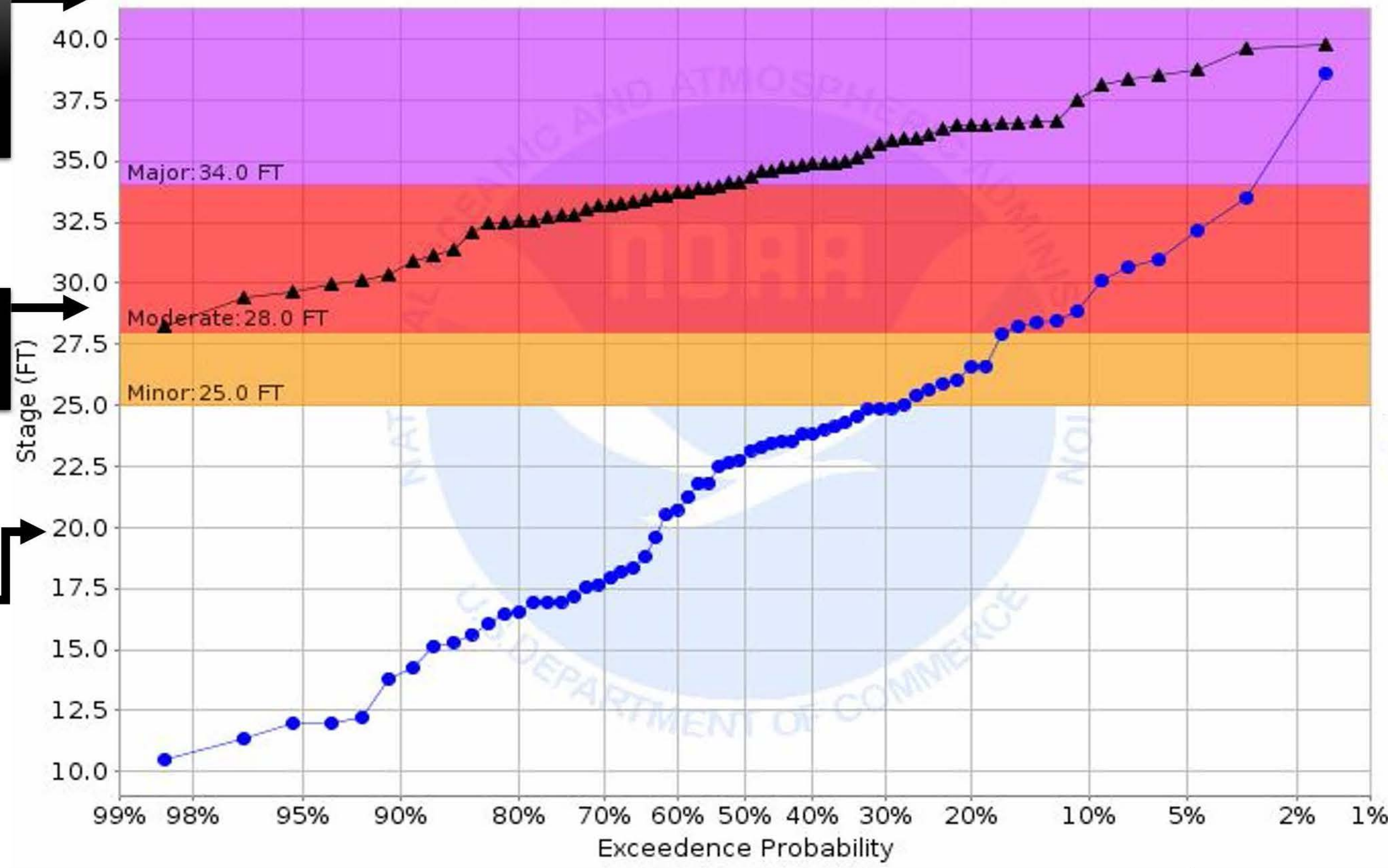
●_{HS} = **Historical Simulation**

Chance of Exceeding River Stage at Minnesota River at Jordan (JDNM5)
Forecast for the period 03/11/2019 - 06/09/2019
This is a conditional simulation based on the conditions as of 03/04/2019

Top of Level
Add Sand
Bags
41 ft

Start Screw
Pumps
28 ft

Fill Empty
Tanks
20ft



▲ Conditional Simulation
● Historical Simulation

**Minnesota River
At Jordan
Blue Lake Wastewater
Treatment Plant**

Ratification of Declaration of Emergency for Flood Mitigation at Environmental Services Wastewater Treatment Plants

Proposed Action

- That the Metropolitan Council ratifies the Emergency Declaration attached to the business item for flood mitigation at Environmental Services Wastewater Treatment Plants.

Questions

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