

***System Wide Low Flow Management Plan  
Mississippi River  
above St. Paul, MN***



# Established to minimize fluctuation along the Mississippi River during flow conditions

Provide protections, minimizes impact to:

- Public Water Supplies
- Power Generation
- Navigation
- Natural Resources

(instream flows)



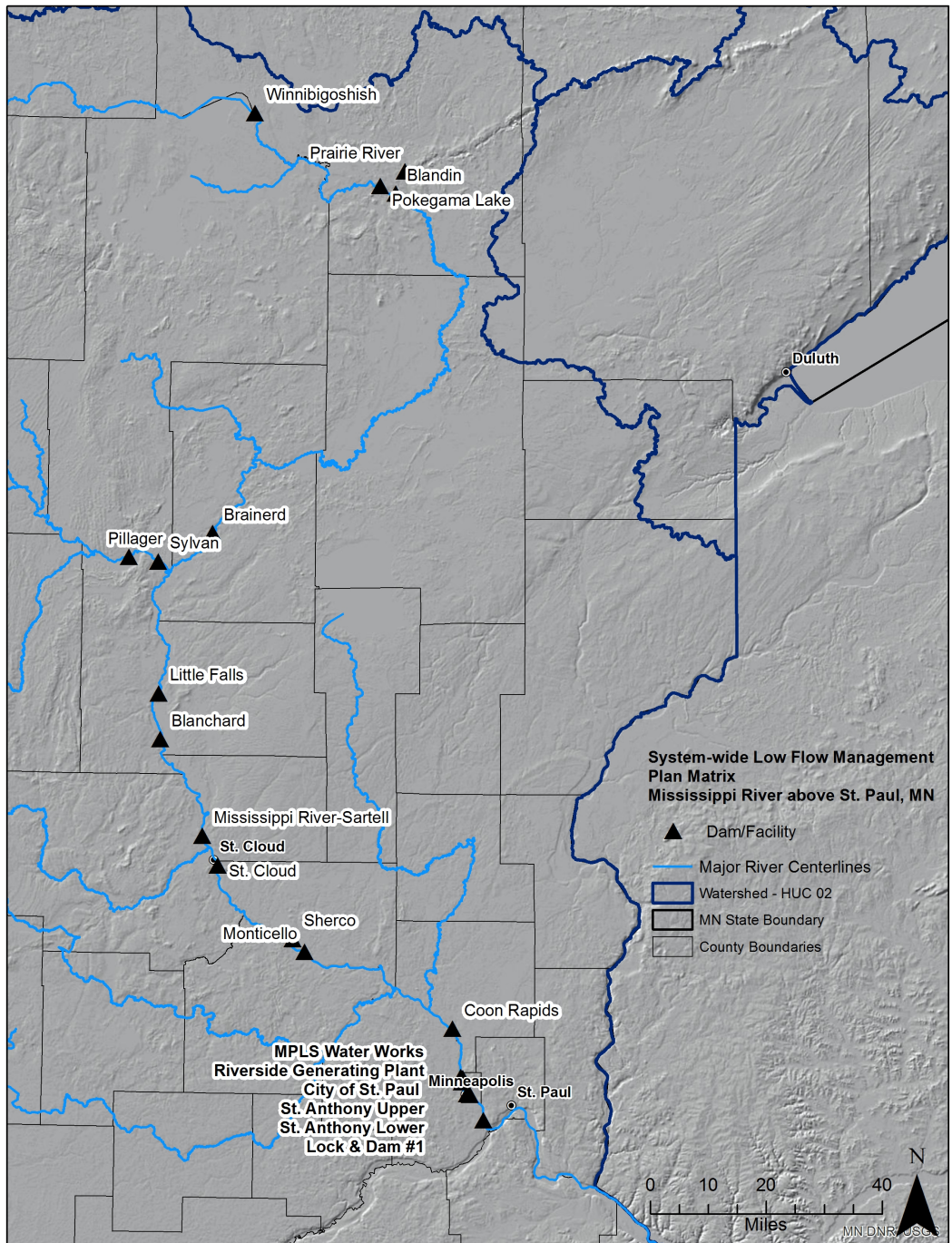
# History and Origin

Developed in 1995  
Cooperative Agreement  
20 facilities

Hydropower and Reservoirs  
Operators, Power Companies,  
Cities, USACE, MNDNR

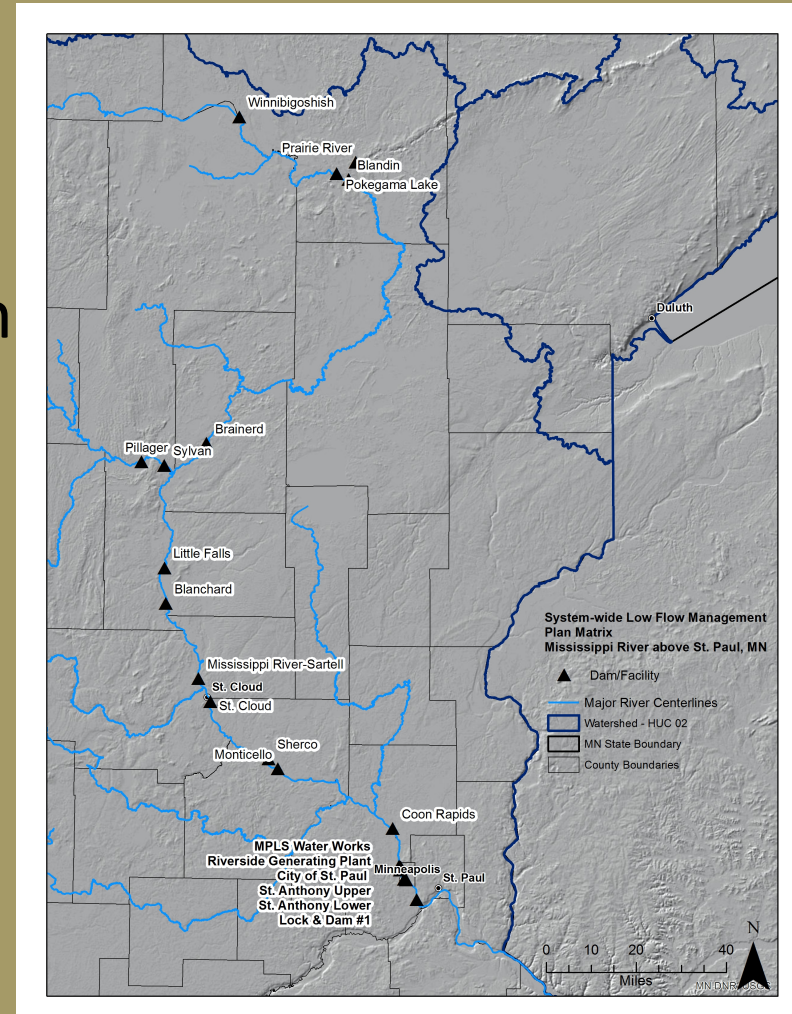
1988-90 Drought





# Drought 1988 – 1990

- Significant fluctuations – propagated wave/trough
- Power supply impacts to Twin Cities Metro Area
- Environmental impacts to instream resources
- Public water supply risks



# 1990's FERC License Requirements

## Run of River Hydropower Operations

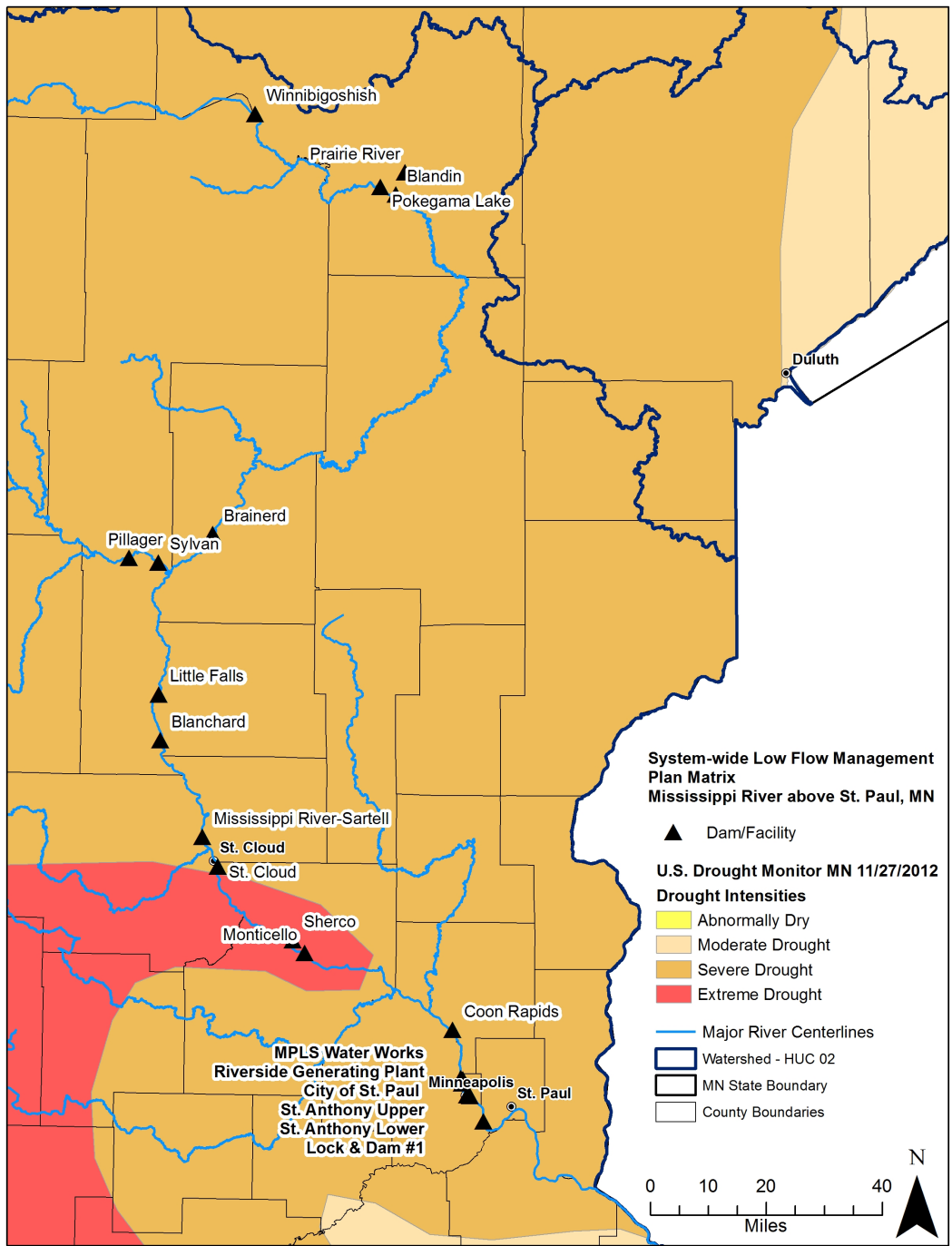
- Limited reservoir fluctuations +/- 0.25 ft, 0.5ft
- Normal operation flow ramping rates
- Monitoring and reporting requirements



# Plan includes

- Communication protocol
- Ramping rates and pool operating ranges
- Trigger flows
- Data availability and reporting

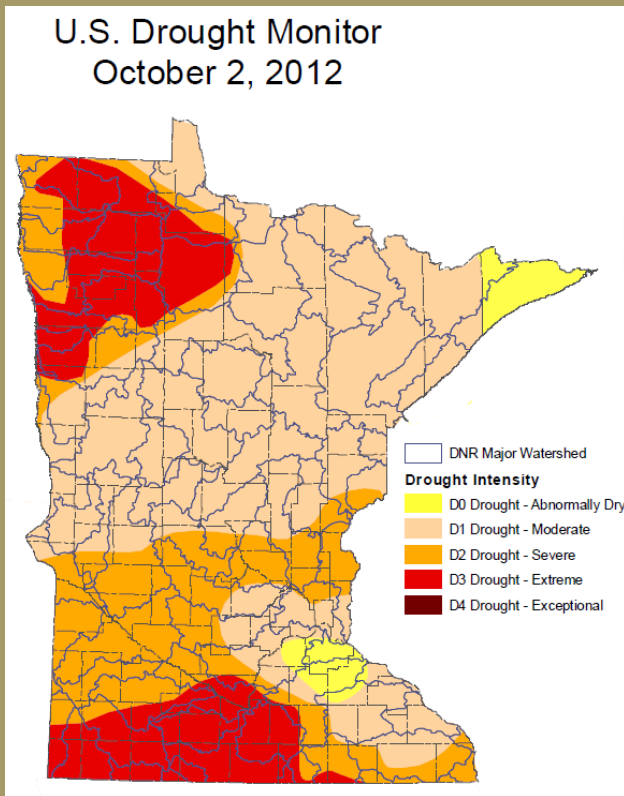






# Minnesota Statewide Drought Plan

## STATEWIDE DROUGHT PLAN MATRIX



**DROUGHT WATCH PHASE**

**“Abnormally Dry”**

**DROUGHT WARNING PHASE**

**“Severe Drought”**

**RESTRICTIVE PHASE**

**“Extreme Drought”**

**EMERGENCY PHASE**

**“Exceptional Drought”**

