



# MnDOT District 6 Flood Events

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# Flood History District 6

## Presentation Overview:

1. Precipitation trends
2. District flood history
3. Frequency and severity of outcomes
4. Current MnDOT risk-based assessment tools
5. Method to determine appropriate response plans for flood events



# Precipitation Trends

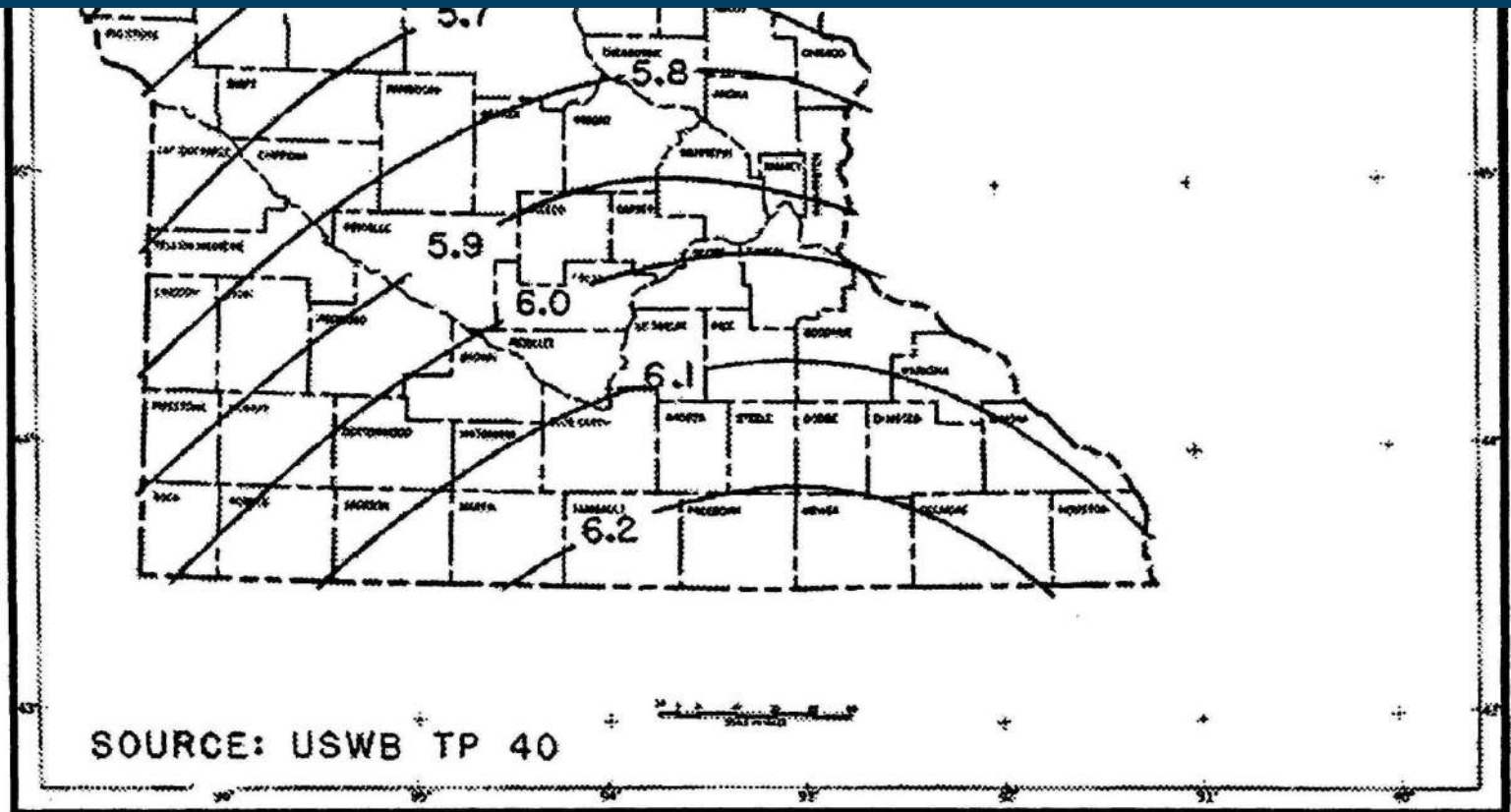
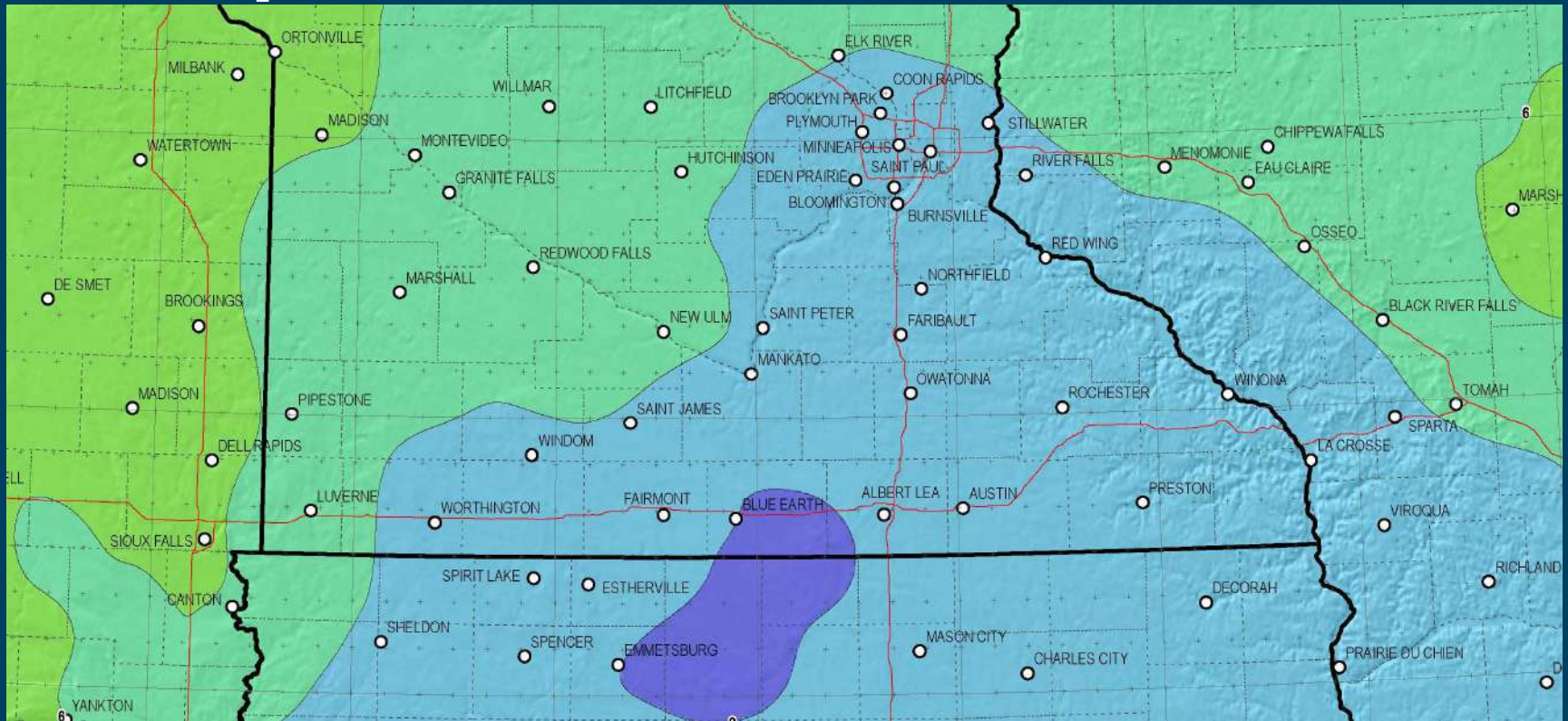


Figure B.6 TP-40 Rainfall Curves for 100-year 24-hour



# Precipitation Trends



NOAA Atlas 14, Volume 8, Version 2  
Midwestern States

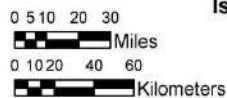
## MINNESOTA

Isopleths of 100-year 24-hour precipitation in inches

SCALE 1:2,250,000



Prepared by U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL WEATHER SERVICE  
OFFICE OF HYDROLOGIC DEVELOPMENT  
HYDROMETEOROLOGICAL DESIGN STUDIES CENTER  
April 2013



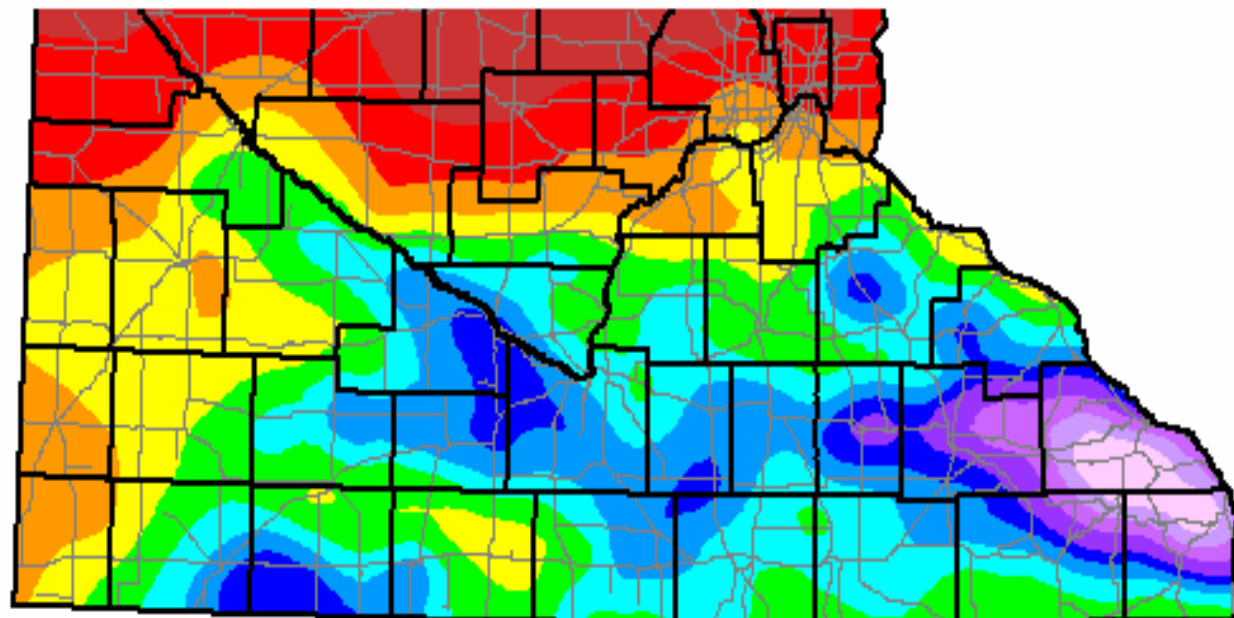
Projection: Lambert Conformal Conic; Datum: NAD83; Standard Parallels: 44°N and 48°N; Central Meridian: 94°5'W



Legend based on online Volume 8 project area.



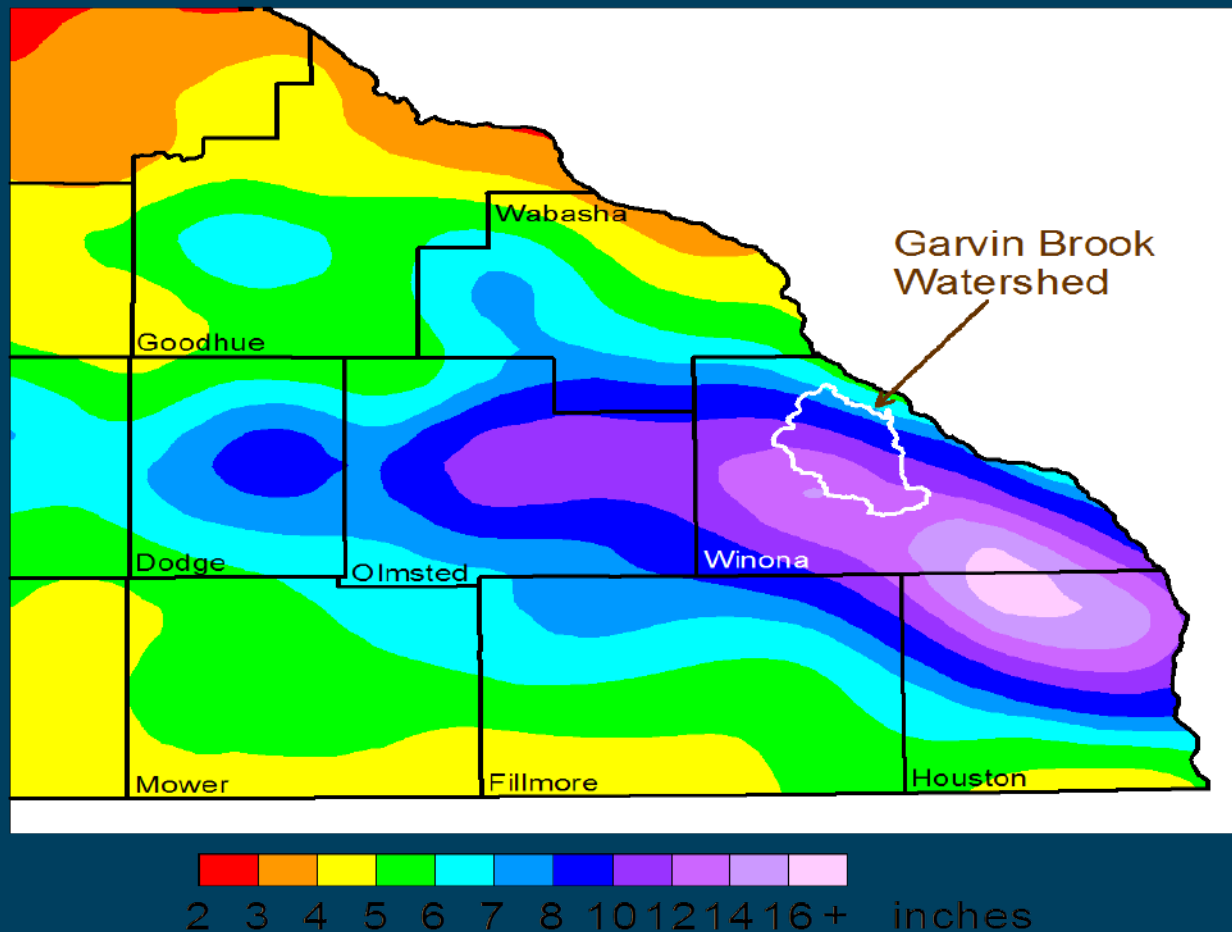
# Rainfall Totals for Southern Minnesota August 18 through August 20 (8:00 AM CDT), 2007



State Climatology Office - DNR Waters



# Rainfall Totals for Southeastern Minnesota August 18-20, 2007



State Climatology Office - DNR Waters

created 10/26/07



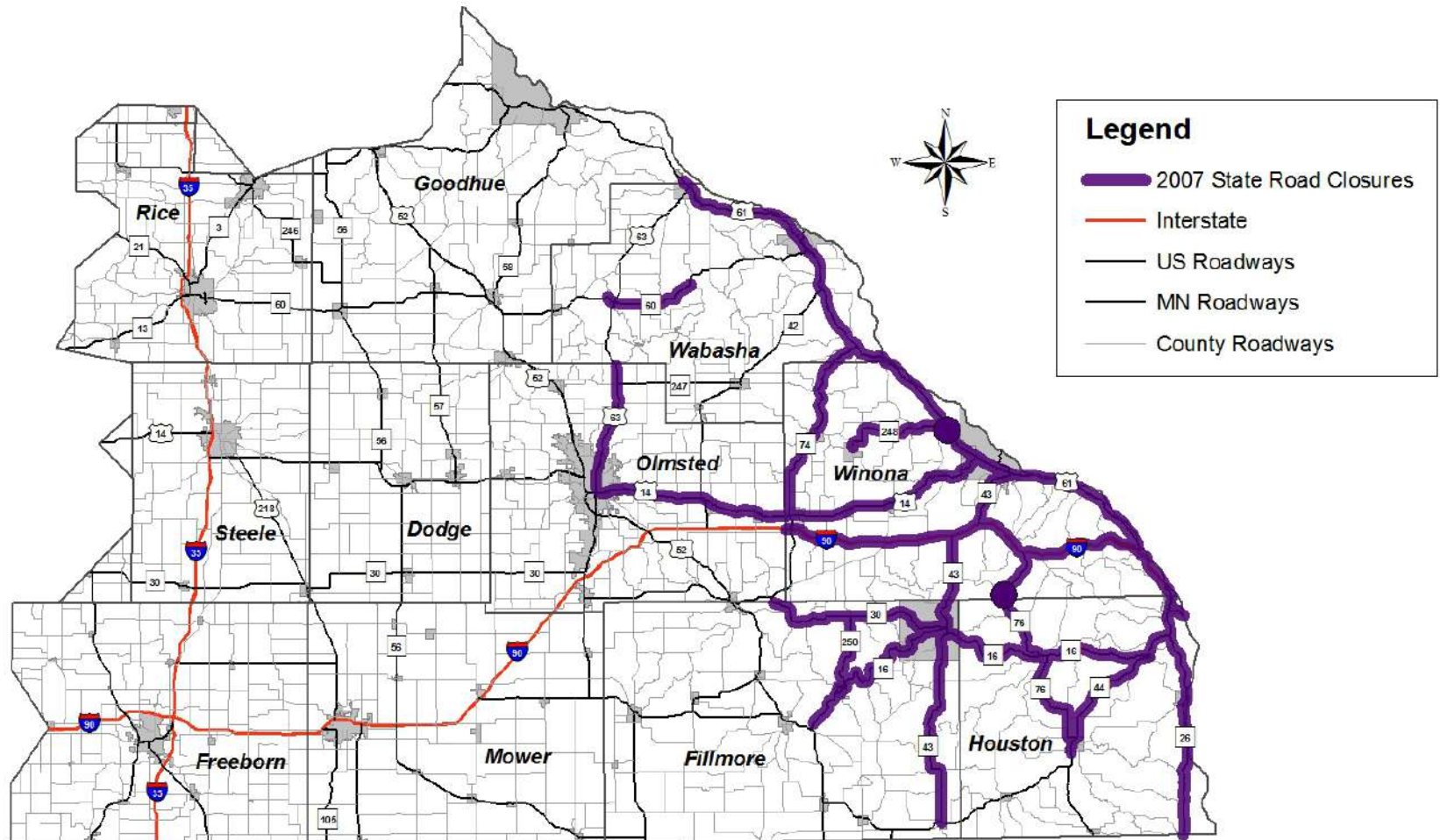








## District 6 State Road Closures Due to August 2007 Flooding



September 2010

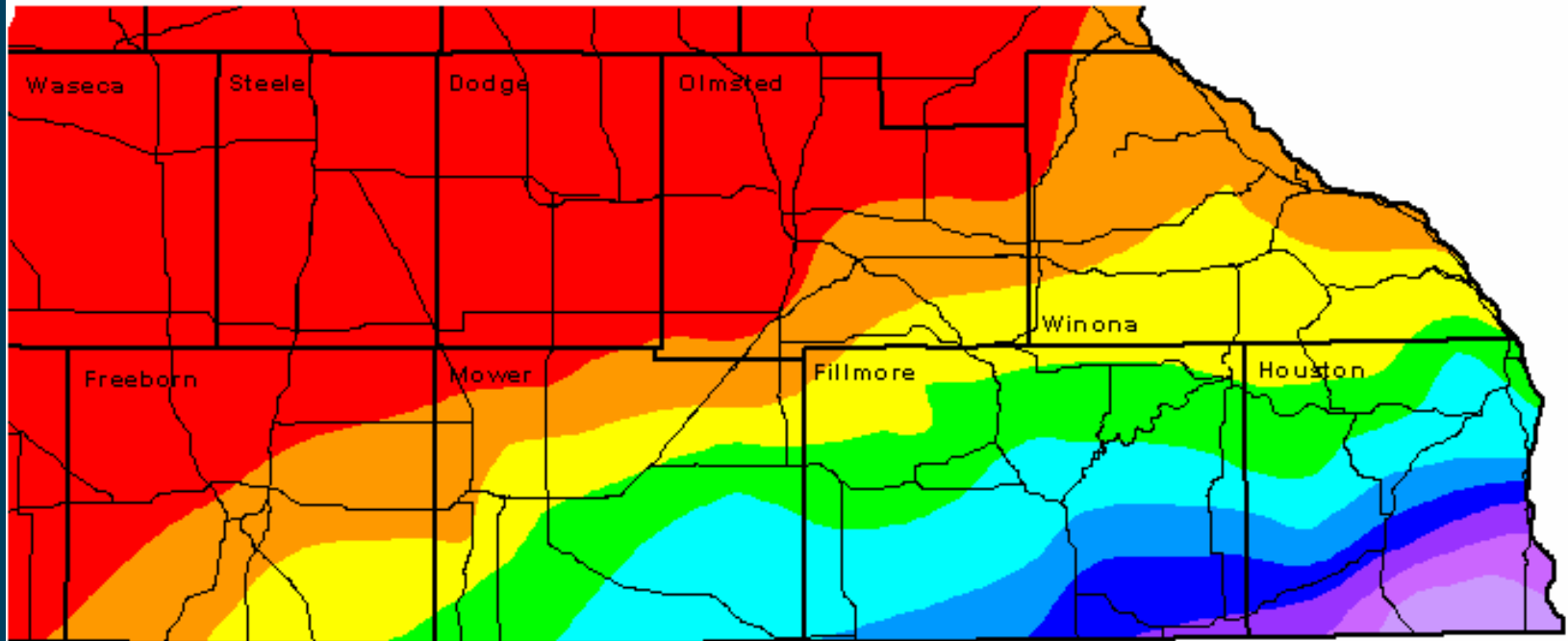


# 2007 Flood Damage Summary

- ▶ Affected 16 State Highways
- ▶ Submitted 91 Detailed Damage Inspection Reports (DDIR) for Federal Reimbursement
- ▶ \$12.5 Million in Emergency and Contract Repairs



# Rainfall Totals for Southeastern Minnesota June 7 and 8, 2008

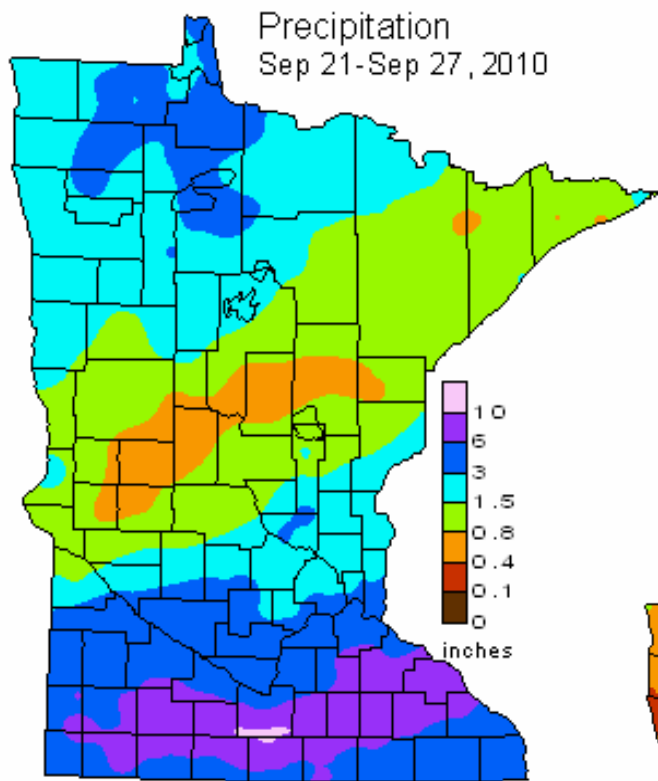


1 2 3 4 5 6 7 8 9 10 inches

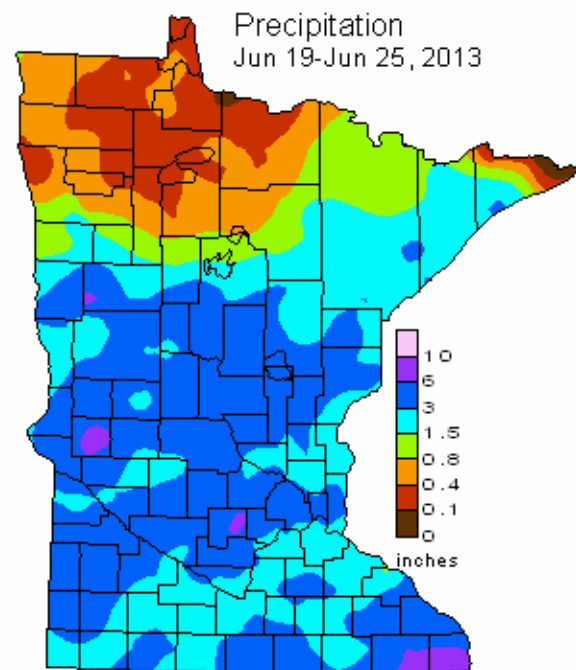
State Climatology Office - DNR Waters



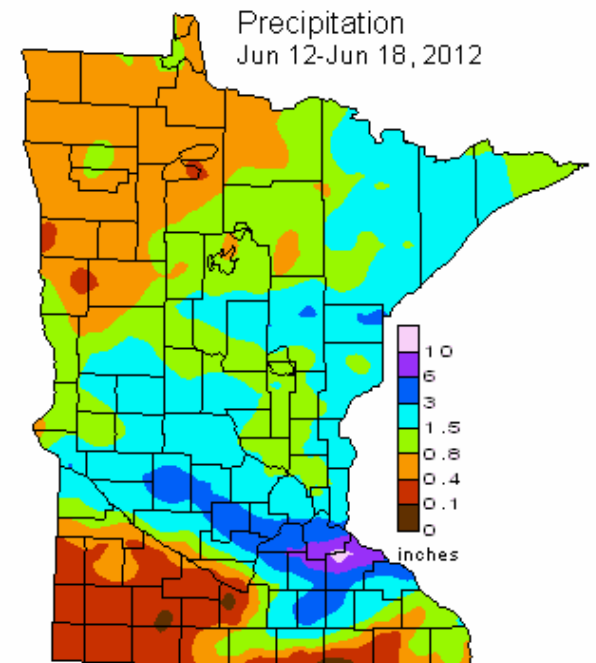




DNR Waters - State Climatology Office, 09-27-2010



DNR Eco Wat - State Climatology Office, 06-25-2013



DNR Eco Wat - State Climatology Office, 06-18-2012



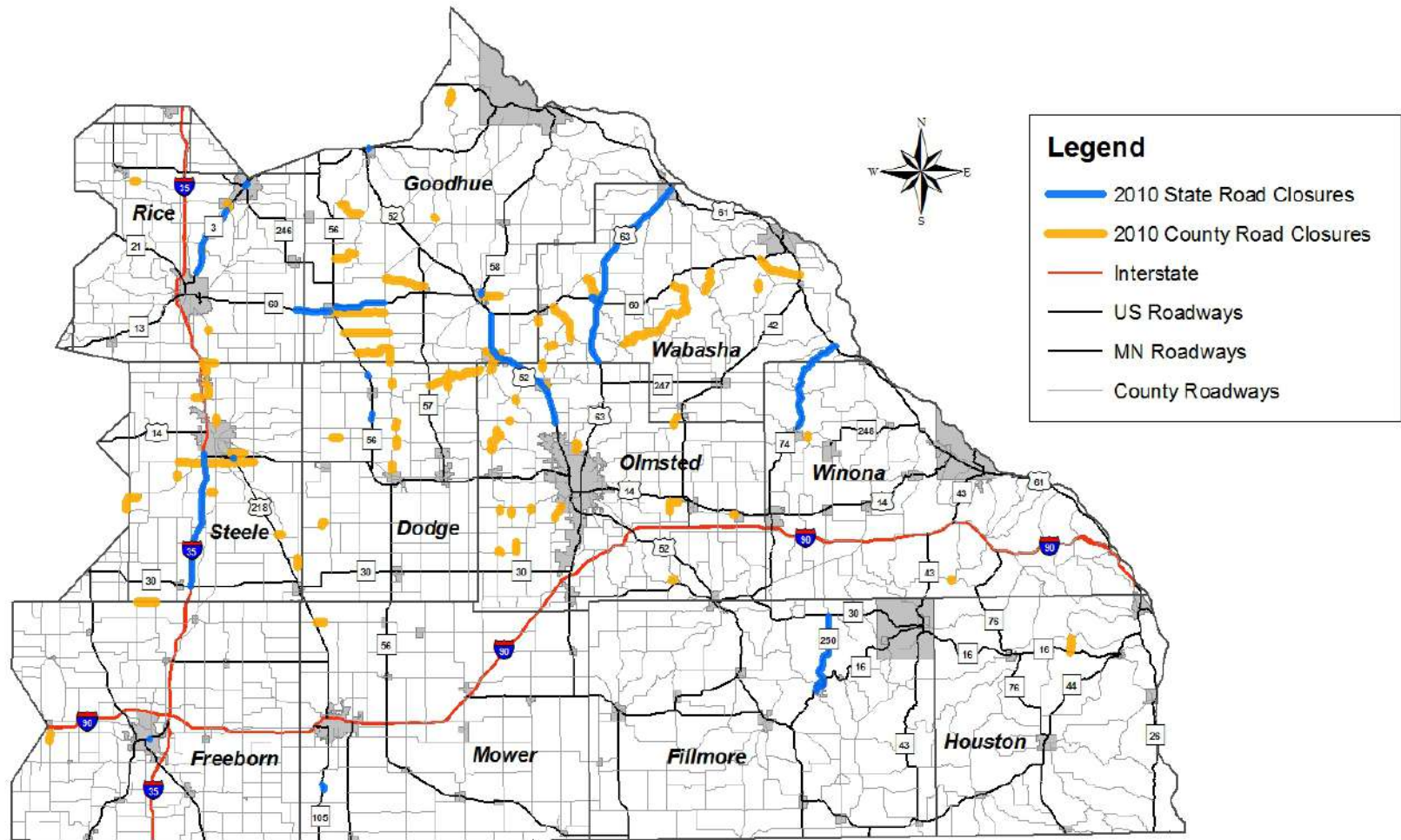








# District 6 State and County Road Closures Due to September 2010 Flooding



# 2010 Flood Damage Summary

- ▶ Affected 22 State Highways
- ▶ Submitted 38 Detailed Damage Inspection Reports (DDIR) for Federal Reimbursement
- ▶ \$1.9 Million in Emergency and Contract Repairs









# Current Risk Based Assessment

- ▶ No Formal Process to identify Risk
- ▶ Rely on Field Experience/History to know where potential issues could arise



# Response Plan Methods

- ▶ No formal Standard Operating Procedure (SOP)
- ▶ District staff meeting to develop a flood response SOP
- ▶ When an event happens – State Patrol and/or District Maintenance assess the Situation
  - Minor Event and Risk Response is Maintenance Action
  - Major Event and Risk; Multi-Jurisdictional/Emergency Operations Center
- ▶ All Instances; Public Affairs issues press releases

