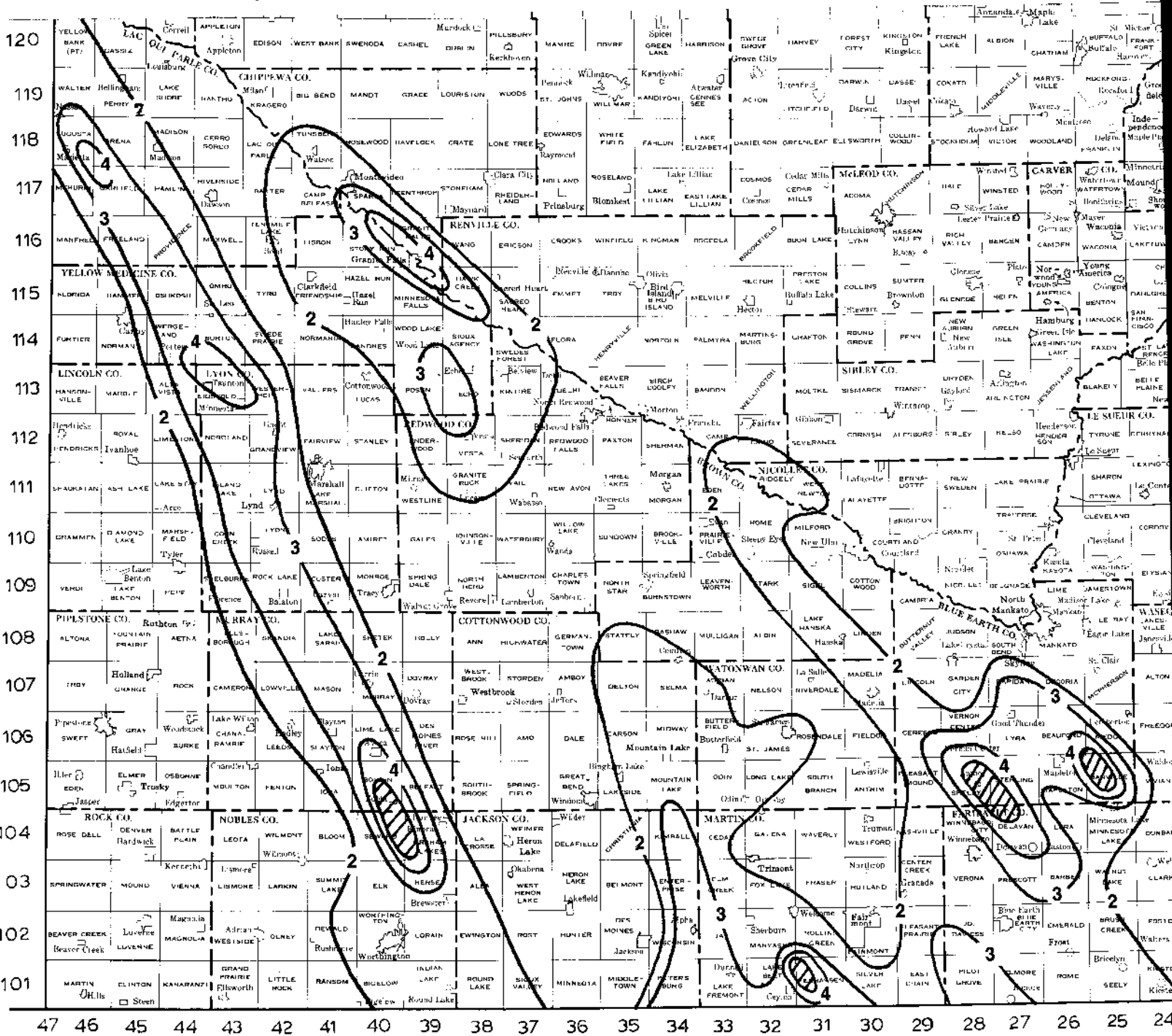


# Flash Floods in Southwest and South Central Minnesota, June 3-4, 1991.

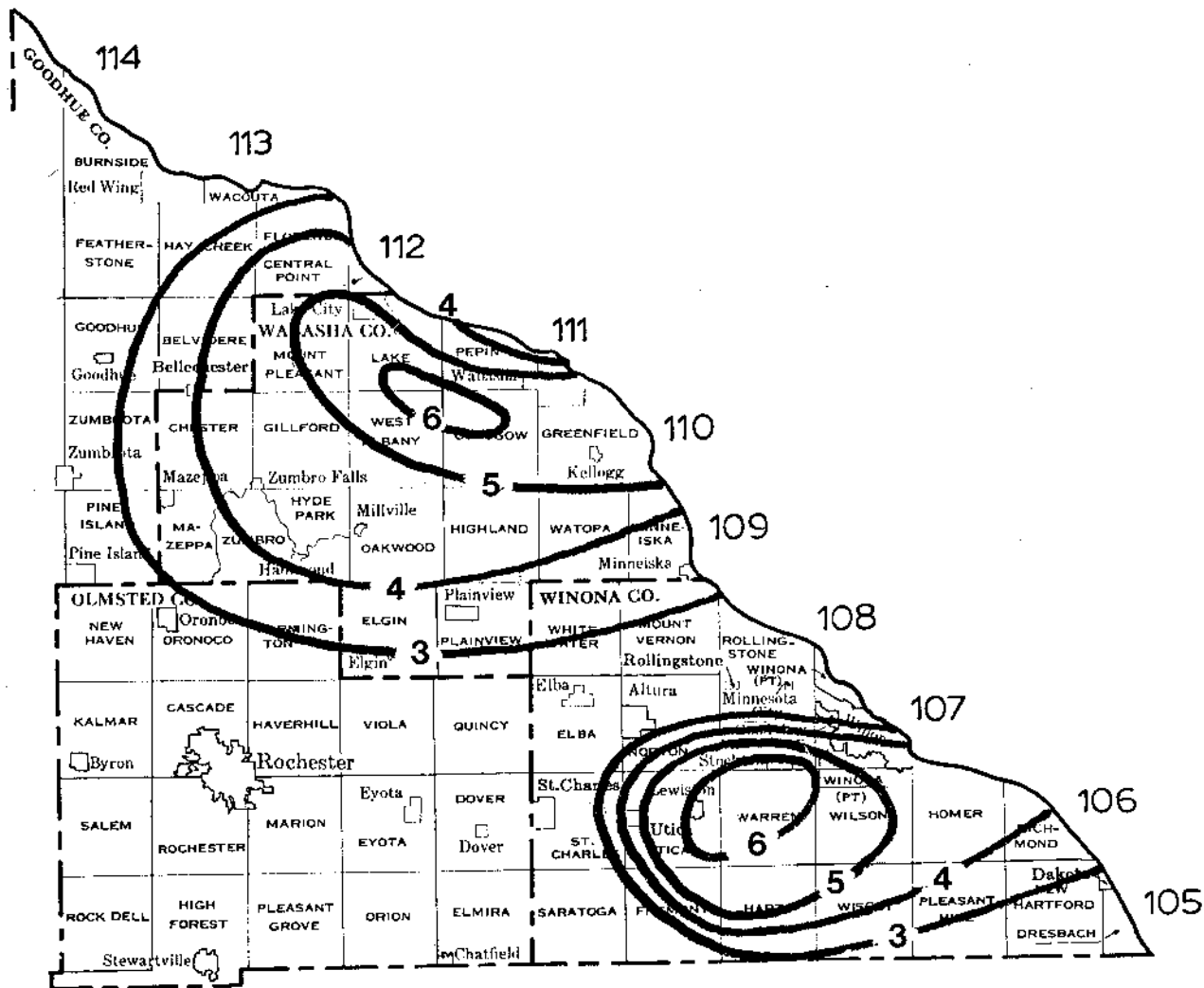


(All values are in inches. Cross hatched areas represent amounts greater than 6 inches.)

Heavy bands of rain commenced largely during mid-day on June 3, persisted, and generally drifted slowly north during the evening of June 3-4. The values of the attached analysis represent totals received as of the morning of June 4. Some locations were still reporting rain falling at mid-morning on June 4, but by mid-day much of the rain activity had drifted north of the Minnesota River. Five areas in southern Blue Earth, southern Lyon, southern Martin, southern Murray, and northern Nobles counties all experienced rainfalls greater than six inches. The highest confirmed value occurred at Amboy where 9.85 inches fell. In the southwest portion of Minnesota, 6 inches in 24 hours is regarded as a 'one-hundred year event'.

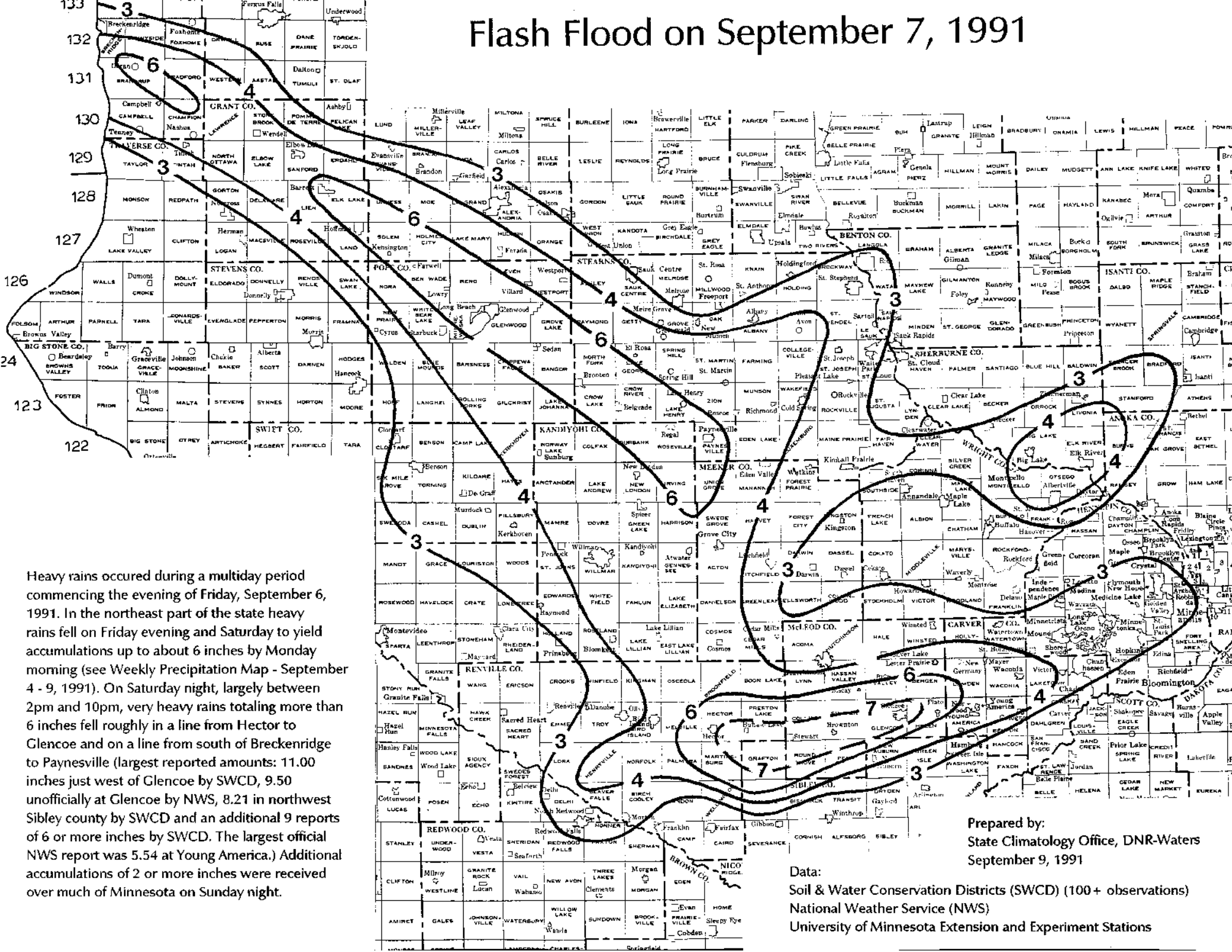
Precipitation data was gathered from the National Weather Service (approx. 24 observations) and the Soil and Water Conservation Districts (approx. 125 observations). The map analysis was done by the State Climatology Office, DNR - Waters.

# Flash Floods in Southeastern Minnesota July 21, 1991



Thunderstorms developed in many areas of southern Minnesota throughout the daytime hours of July 21, 1991. The late afternoon period witnessed the development of some heavy rain producing thunderstorm cells in both the west central and southeast portions of the state. Those cells dropped much rain throughout the evening hours as they progressed generally eastward. All 4 reports of 6 inches or more of precipitation were from the southeast: 3 locations between Lewiston and Winona and one about 6 miles west of Wabasha. The greatest amount reported was 6.95 in Warren township. About 50 reports, primarily from the Soil and Water Conservation Districts and the National Weather Service, were used in this analysis. Prepared by the State Climatology Office, DNR-Waters.

# Flash Flood on September 7, 1991



Heavy rains occurred during a multiday period commencing the evening of Friday, September 6, 1991. In the northeast part of the state heavy rains fell on Friday evening and Saturday to yield accumulations up to about 6 inches by Monday morning (see Weekly Precipitation Map - September 4 - 9, 1991). On Saturday night, largely between 2pm and 10pm, very heavy rains totaling more than 6 inches fell roughly in a line from Hector to Glencoe and on a line from south of Breckenridge to Paynesville (largest reported amounts: 11.00 inches just west of Glencoe by SWCD, 9.50 unofficially at Glencoe by NWS, 8.21 in northwest Sibley county by SWCD and an additional 9 reports of 6 or more inches by SWCD. The largest official NWS report was 5.54 at Young America.) Additional accumulations of 2 or more inches were received over much of Minnesota on Sunday night.

Prepared by:  
State Climatology Office, DNR-Waters  
September 9, 1991

Data:  
Soil & Water Conservation Districts (SWCD) (100+ observations)  
National Weather Service (NWS)  
University of Minnesota Extension and Experiment Stations