June 2008 Flooding Summary



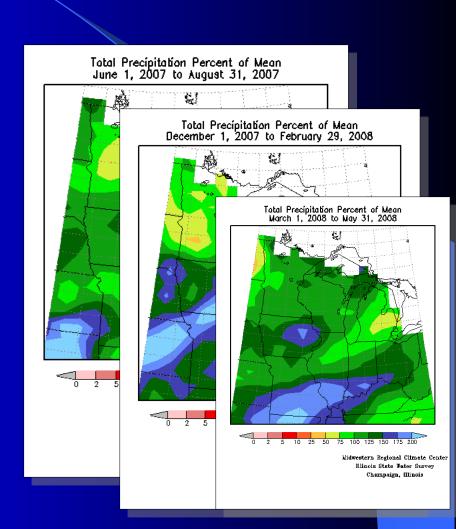


Todd Matheson, P.E.
SW Region Madison
Maintenance Supervisor

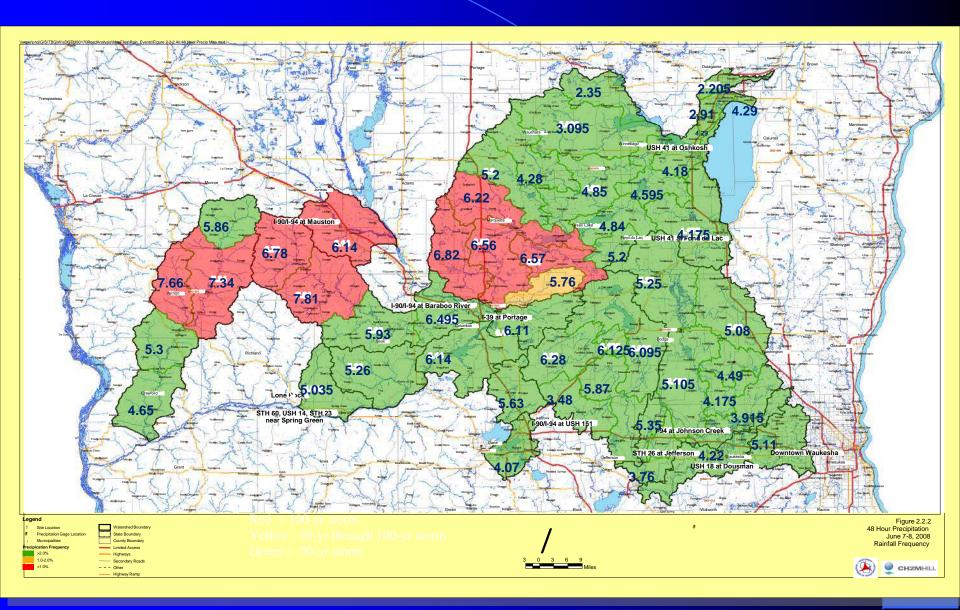


Pre-Flood Conditions

- Summer 2007
 - Heavy Rains
 (125 175% of mean)
- Winter 2007
 - Record Snowfall(175 200% of mean)
- Spring 2008
 - Normal to slightly above normal rainfall
- High Groundwater Table
 - Diminished or no soil capacity to absorb rainfall
 - Higher than normal stream levels

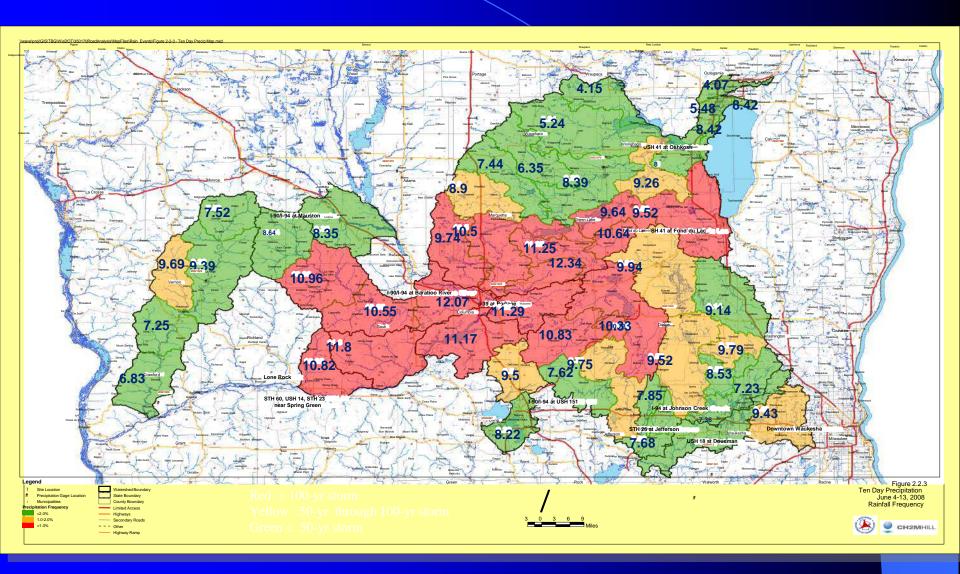


June 7 – 8 Rainfall



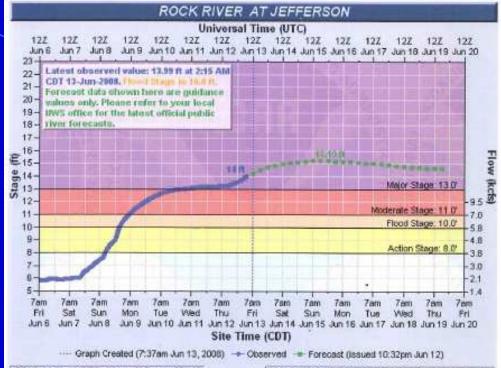


June 4 – 13th Rainfall





National Weather Service (Advanced Hydrologic Prediction Service)



JFFW3 (plotting HGRP) "Gage 0" Deturn: 774.97" | Observations courtesy of the NWS and City of Jefferson NOTE: River forecasts for this location take into account past precipitation and the precipitation amounts expected approximately 24 hours into the future from the forecast issuance time.

Reliability of the Forecast: Based on current and forecast river, weather and reservoir conditions

NOTE: Forecasts for the Rock River at Jefferson are issued as needed during times of high water, but are not routinely available.

Flood Categories (in fe	13	Historical Crests (1) 12.84 ft on 04/02/1979
Moderate Flood Stage:	11	(2) 12.29 ft on 04/22/1993
lood Stage:	10	(3) 11.51 ft on 06/02/2004
Action Stage:	8	(4) 11.35 ft on 04/14/2008
17 14 2000 A TO 17 (A TO A T		(5) 10.81 ft on 06/05/2000
		(6) 10.38 ft on 04/02/2008
		(7) 10.27 ft on 04/05/2007
		(8) 9.27 ft on 04/27/1999
		(9) 8.57 ft on 03/17/1994
		(10) 7.80 ft on 04/16/1991

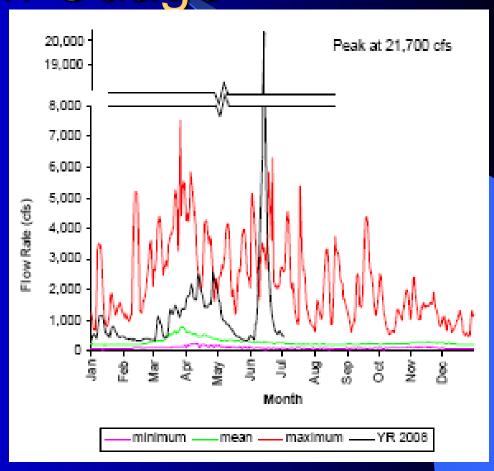


Stream Gauge Analysis Baraboo River Stream Guage

Flood Frequency Table for the Baraboo Rive	er
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Tibod Frequency Table for the Daraboo River				
Recurrence Interval (Years)	Discharge (cfs)			
2	2,832			
5	4,345			
10	5,355			
25	6,619			
50	7,546			
100	8,457			
200	9,358			
500	10,540			

Note: Estimated flows represent the systematic record obtained using PeakFQ for the period of record: 1915-2007.





Flood History of Baraboo River

Flood Categories (in feet)

Major Flood Stage: 23.1 Moderate Flood Stage: 22 Flood Stage: 16 Action Stage:14

Historical Crests

- (1) 27.48 ft on 06/13/2008
- (2) 25.10 ft on 03/26/1917
- (3) 22.78 ft on 07/18/1993
- (4) 22.68 ft on 02/13/1966
- (5) 22.04 ft on 06/02/2000
- (0) 22.04 It 011 00/02/200(
- (6) 21.35 ft on 04/05/1959
- (7) 21.16 ft on 03/29/1950
- (8) 20.96 ft on 07/06/1978
- (9) 20.66 ft on 09/20/1992
- (10) 20.63 ft on 03/21/1948



STH 33

(Portage – Baraboo)



SW Region Interstate Closures

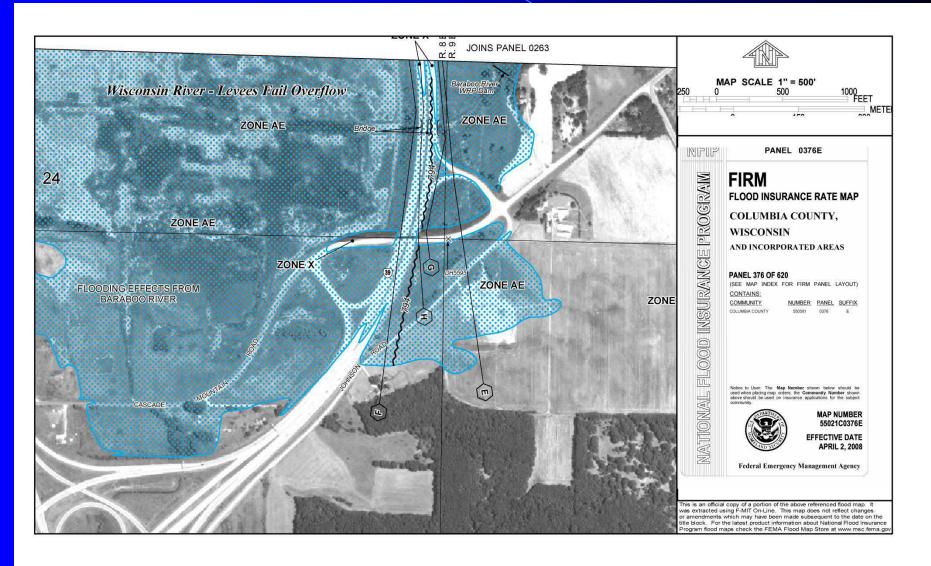
- IH 94 between Milwaukee and Madison
 - Westbound Lanes at Crawfish & Rock River in Jefferson County
- IH 90/94 north of Madison
 - STH 33 Interchange in Columbia County
- IH 39 north of Madison
 - Cascade Mtn. Road Interchange
 - STH 33 Interchange + 1000' North

IH 39/STH 33



Aerial View of Extent of Flooding for IH39 at STH 33

IH 39 & Cascade Mtn. Road



IH 39 & Cascade Mtn. Road



139 North of Portage



STH 90/94 at Petro Interchange



IH 90/94 & STH 33 Interchange





1H 90/94 at STH 33



IH 94 (between Madison and Milwaukee)



STH 104

SW Region Interstate & State Highways Closed

<u>SAUK</u>	<u>VERNON</u>	<u>DODGE</u>	COLUMBIA	CRAWFORD
USH 12	USH 14	USH 151	STH 33	STH 60
STH 23	STH 33	STH 73	STH 16	STH 131
STH 33	STH 56	STH 16		
STH 58	STH 80	STH 60	STH 44	STH 171
STH 60	STH 82	STH 49	STH 73	STH 179
STH 113		311147		
STH 136	STH 162	IOWA		<u>JEFFERSON</u>
STH 154	RICHLAND			IH 94
		STH 23	<u>JUNEAU</u>	STH 19
STH 159	STH 56	STH 80	USH 12	STH 106
	STH 58	STH 130	STH 33	STH 18
<u>GRANT</u>	STH 80	STH 133	STH 80	
STH 61	STH 130			GREEN
STH 81	STH 133		STH 82	STH 59
		<u>MONROE</u>		
DANE	ROCK	STH 33	<u>LAFAYETTE</u>	STH 92
USH 14	STH 140		STH 23	STH 104
USII 14	5111 140			

Typical Shoulder Damage





STH 67 Neosho June 9th



STH 33 Reedsburg – June 9th





STH 58 LaValle



USH 14 Spring Green –



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USH 14 Brooklyn (Southern Dane County)





STH 60 Dodge County



STH 73





STH 133 Avoca









STH 33 Near IH 39 Portage





STH 33 Near IH90/94



Damage Totals State & Interstate Highways

- 150 Individual Sites
- Damage Recovery Costs\$12 million
- Betterment Costs TBD
 - Based on Improvements to the Interstate System

What's DOT Going to Do Next?

- Initial Flood Assessment Completed
- Conduct a risk assessment of the Interstate Highway System.
- Create Hydraulic Model of Flooded areas Impacting the Interstate.

Organizational Improvements for Future Events

- Emergency Transportation Operations Plan (ETO Plan) October 2008
- Adverse Weather Plan November 2008
- Additional Training for Regional Incident Management Coordinators (RIMCs)
- Implementation of On Call Duty Officers
- 511 System / STOC

Keys to Success

- Teamwork
- Communication
- Pre-planning & Training