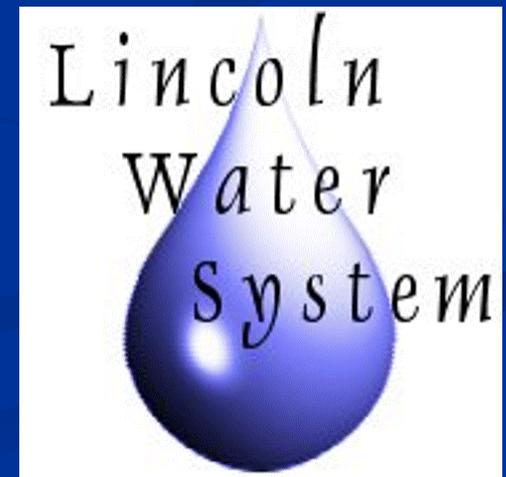


LWS & THE DROUGHT



LWS MISSION

- Lincoln Water System's mission is to
- produce and distribute
- an adequate supply of
- high-quality water to
- meet the needs of customers
- efficiently and at the least cost.

Agenda

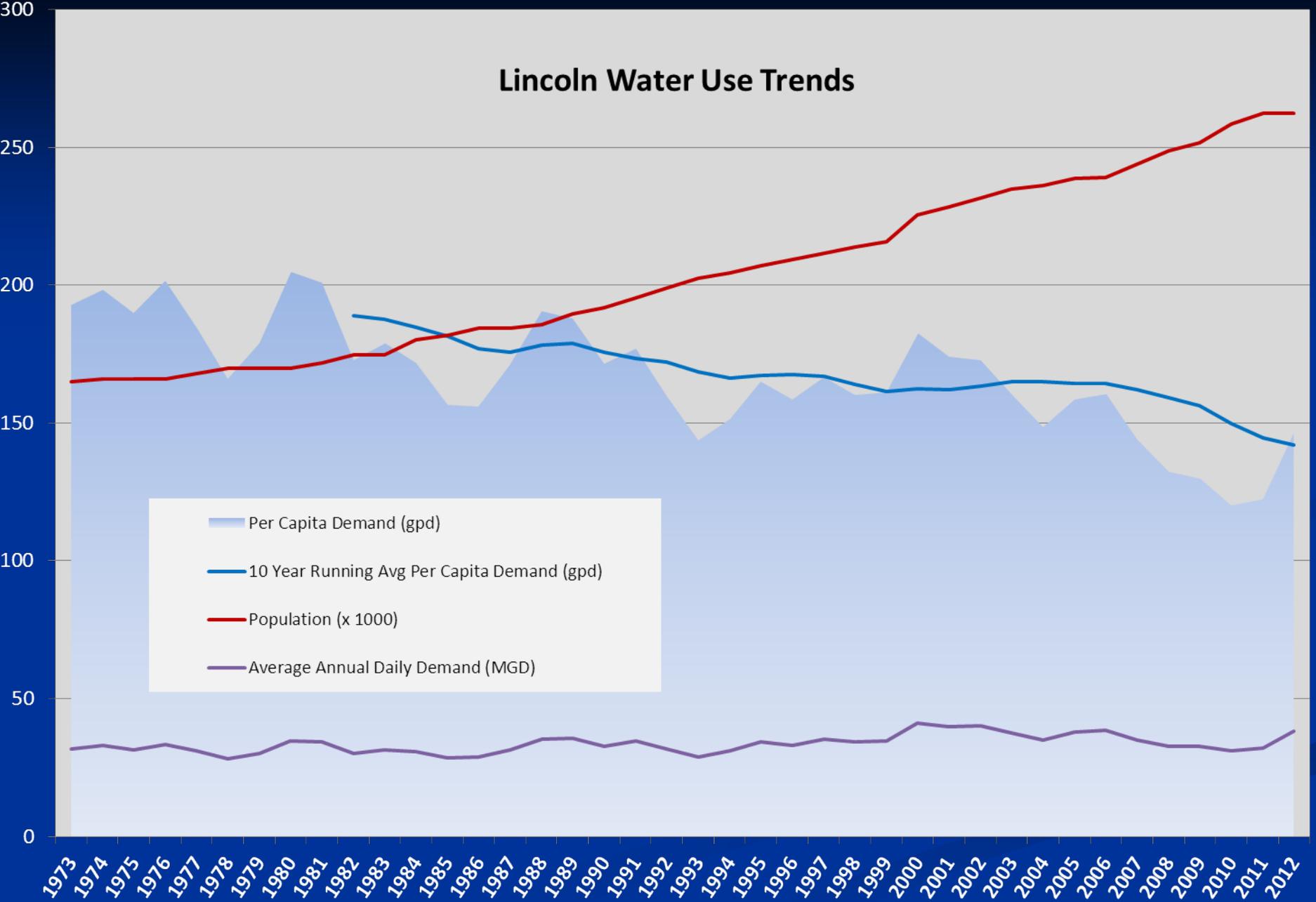
- How did the Drought affect Lincoln's Water Supply?
- Why did the City issue Mandatory Water Restrictions?
- What are we doing?
- What else can we do?
- What are Lincoln's plans for the future?

Observed Trends in Water Use

- Shift in Peak Hour Usage from PM to AM
- Reduction in Peak Hour
- Conservation of Water – Less Wasted
- Residential Per Capita Consumption Down from 110 gpd (gal/person/day) to 95 gpd
- Summer peak demands are from outdoor use

Note – these factors led to delaying building new wells to meet peak demands

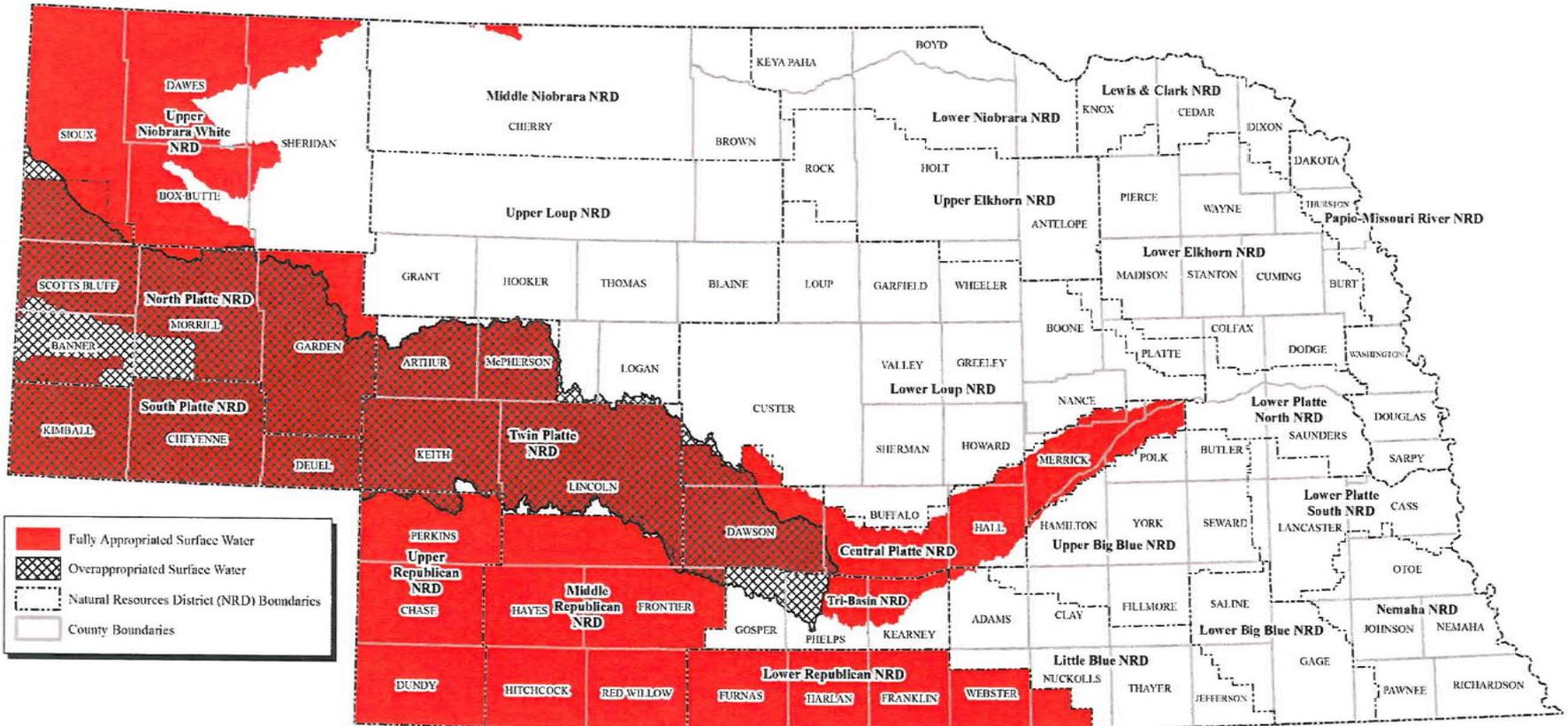
Lincoln Water Use Trends





Fully Appropriated and Overappropriated Surface Water in Nebraska

Determinations made by the Department of Natural Resources as of September 09, 2011

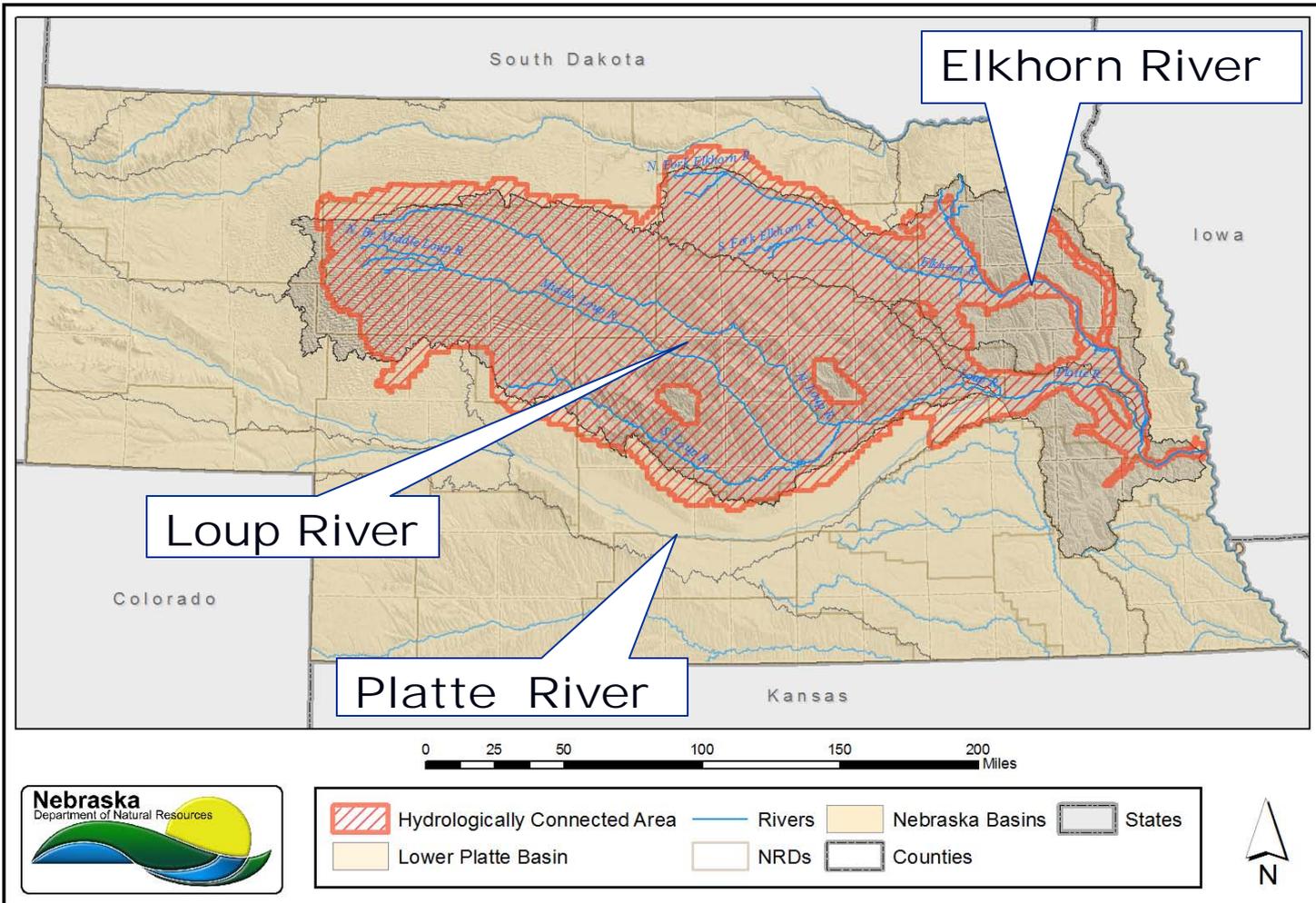


This map represents all areas in Nebraska where the surface water resources have been determined to be fully appropriated or overappropriated by The Department of Natural Resources (DNR) as of September 09, 2011. Detailed information regarding these determinations can be found in the individual Notices and Orders issued by DNR.



Map produced by Daniel Kloch - September 2011

LOWER PLATTE RIVER BASIN



So What Happened Last Summer?

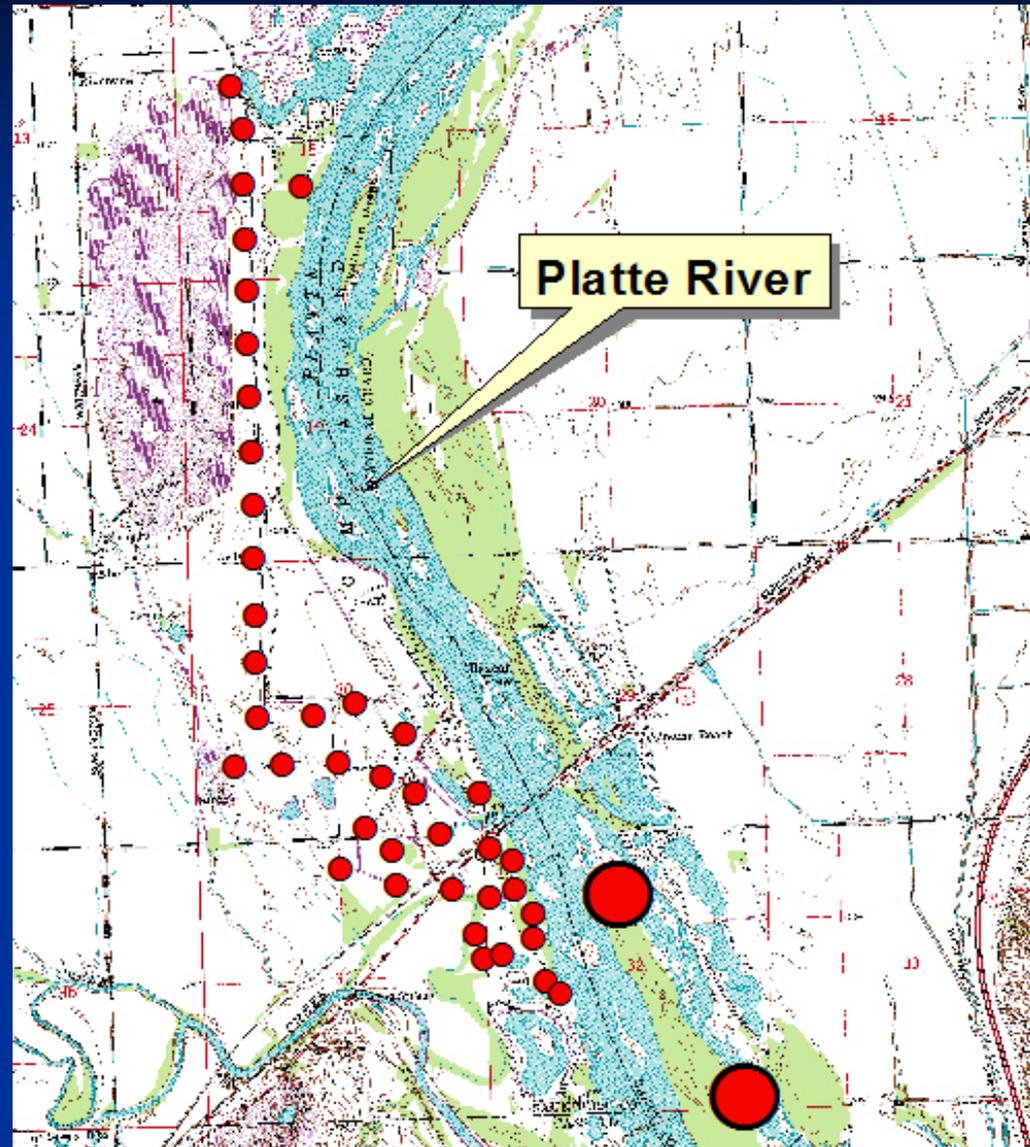
	<u>Average Rain</u>	<u>2012</u>
June	4.8	3.6
July	3.9	0.3
August	3.9	0.3
September	<u>3.0</u>	<u>1.7</u>
TOTALS	15.6	5.9

Ranking of Lowest Recorded Precipitation – Lincoln, NE 1887 - 2012

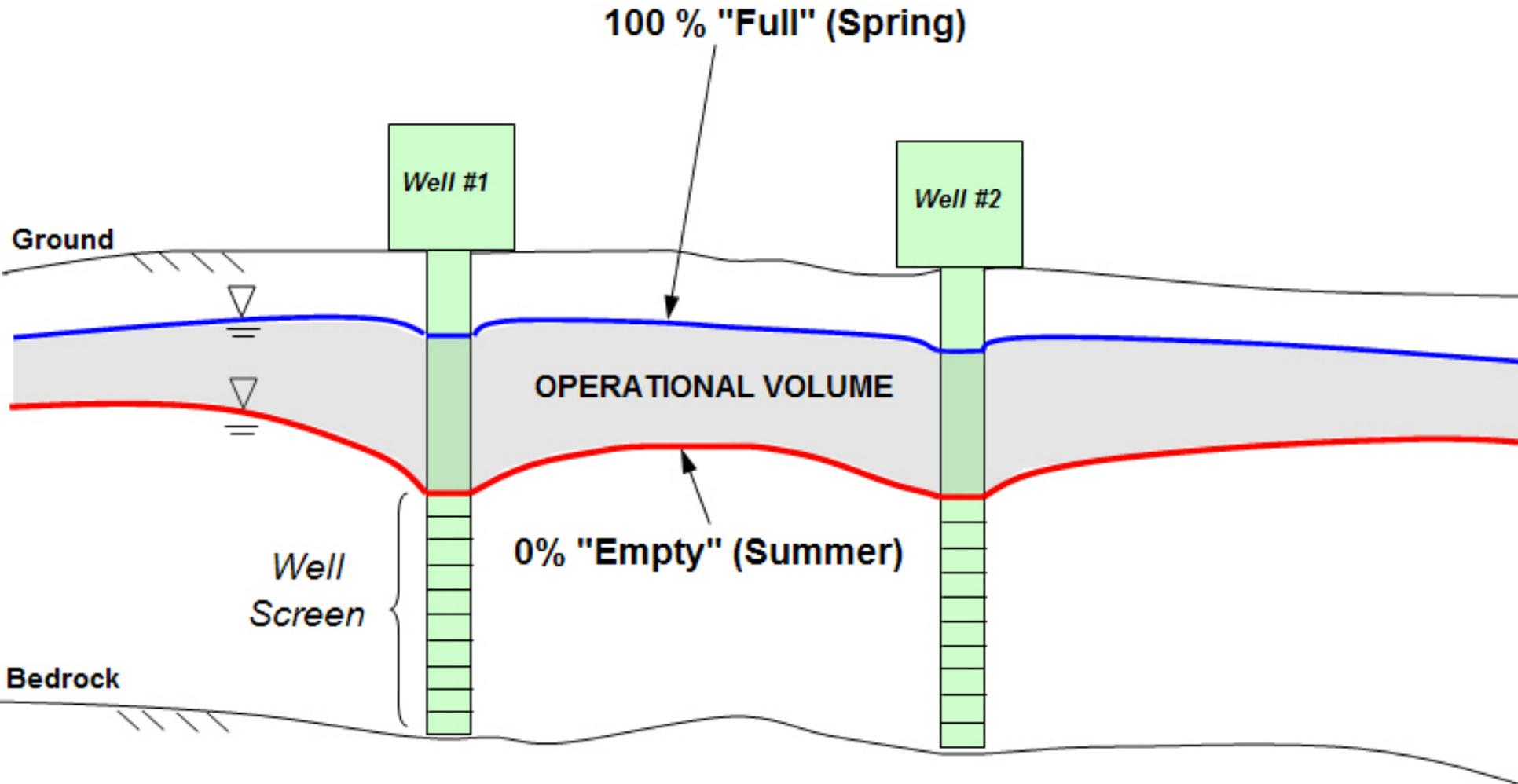
RANK	YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1	1936	1.64	0.68	0.18	2.29	1.95	1.13	0.08	1.63	3.38	0.19	0.06	0.88	14.09
2	1890	0.86	0.06	0.72	0.33	3.43	3.14	1.72	1.84	0.98	1.12	0.61	0.00	14.81
3	1895	0.20	0.71	0.50	2.51	1.09	4.35	1.05	4.00	0.64	0.05	0.79	0.05	15.94
4	1894	0.39	1.80	1.13	1.60	0.74	6.99	1.11	0.45	0.00	1.57	0.00	0.36	16.14
5	1934	0.25	0.78	0.80	0.35	0.49	2.47	0.40	2.59	4.47	1.93	2.26	0.44	17.23
6	1953	0.44	0.50	0.74	3.07	1.80	1.90	0.92	2.09	1.47	0.38	3.21	1.03	17.55
7	1976	0.36	1.15	2.59	3.60	3.03	0.63	2.99	0.07	3.09	0.32	0.03	0.04	17.90
8	1955	1.31	0.64	0.59	2.21	1.23	4.97	0.61	0.55	4.81	0.57	0.26	0.42	18.17
9	1988	0.47	0.14	0.13	2.43	3.25	0.65	1.16	2.27	6.18	0.03	1.09	0.57	18.37
10	1887	0.30	1.27	0.52	0.98	3.79	2.87	0.69	2.59	2.70	0.85	1.16	0.80	18.52
11	2012	0.16	2.10	0.89	3.49	3.00	3.57	0.33	0.30	1.73	1.92	0.15	1.50	19.14
65	2002	0.64	0.36	1.35	2.42	5.20	0.17	1.57	8.29	1.47	4.90	0.24	0.01	26.62

Wellfield Overview

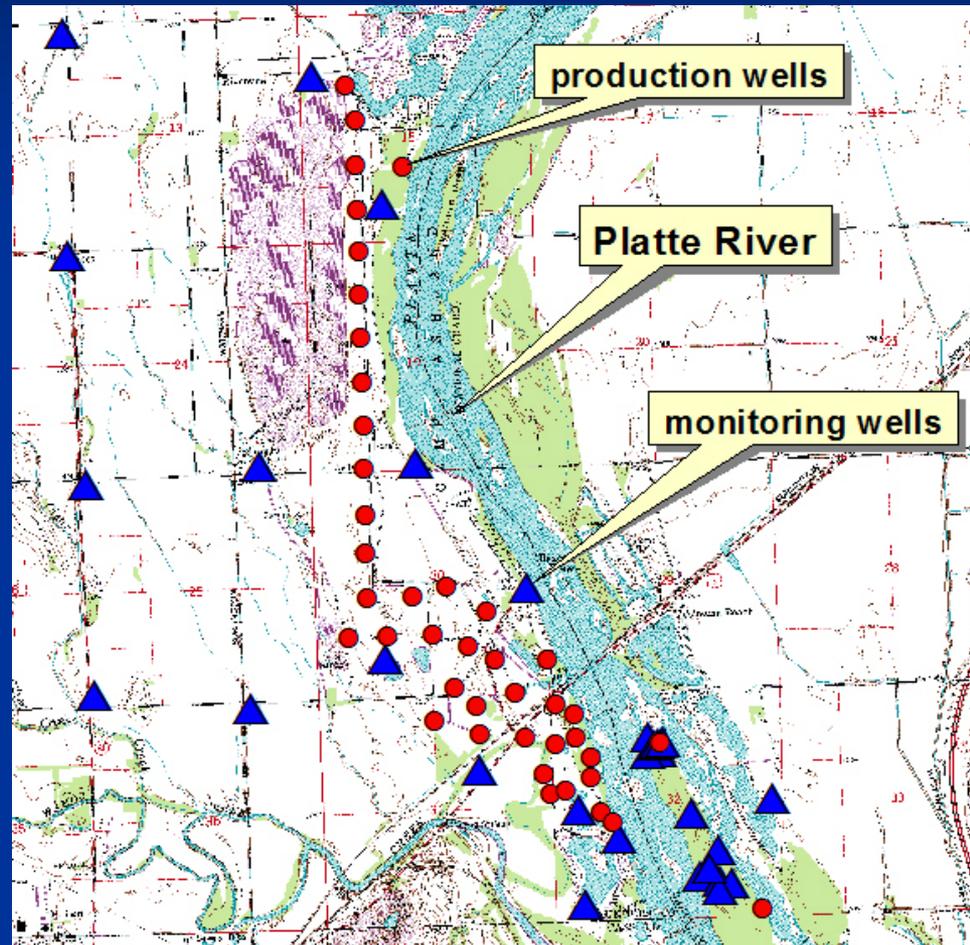
- 40 vertical wells
- 2 collector wells
 - Yield of 60 to over 100 mgd, depending on conditions
- VERY DEPENDENT ON RIVER FLOW



“Operational Volume”



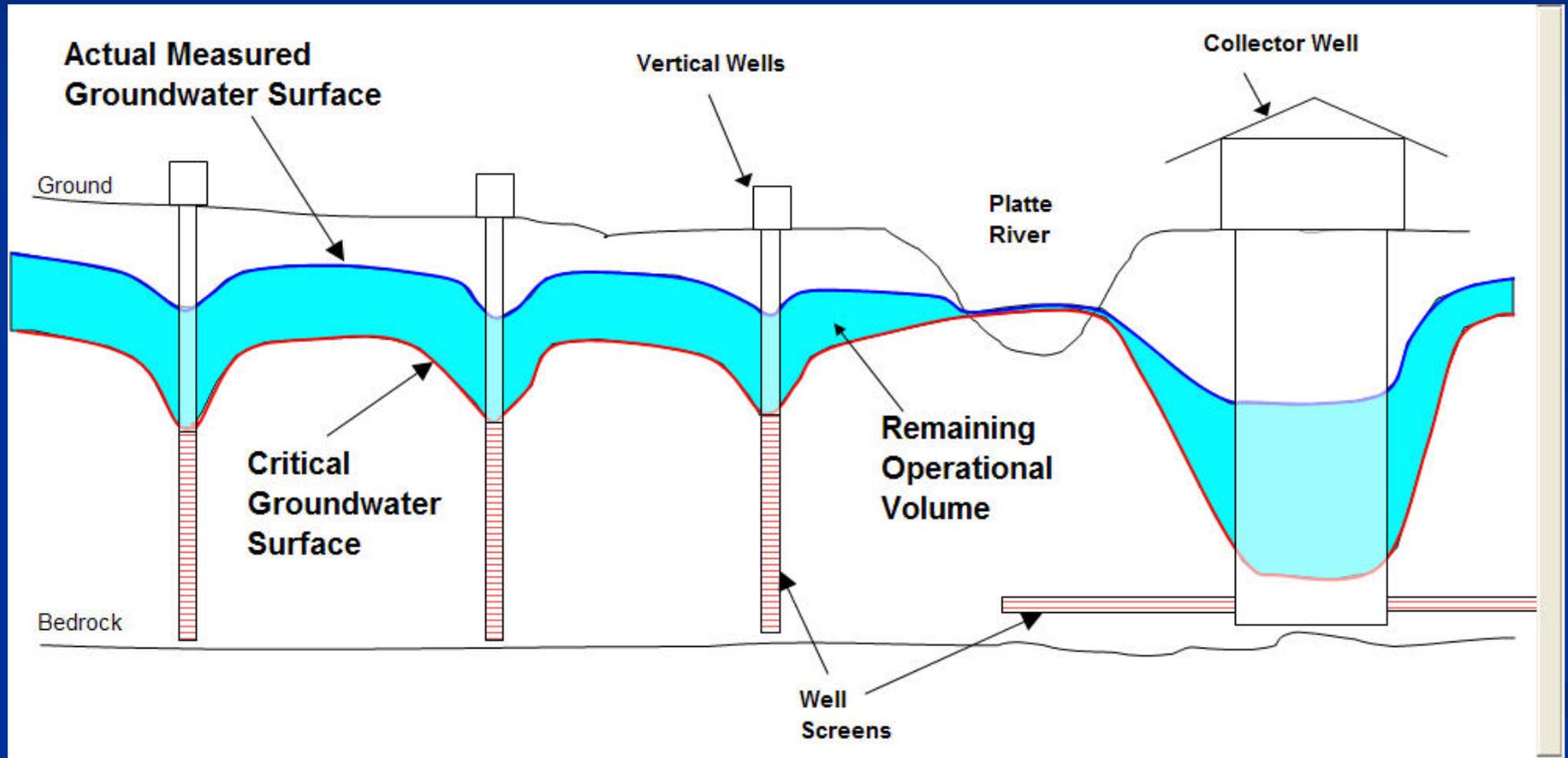
Monitoring Well Network



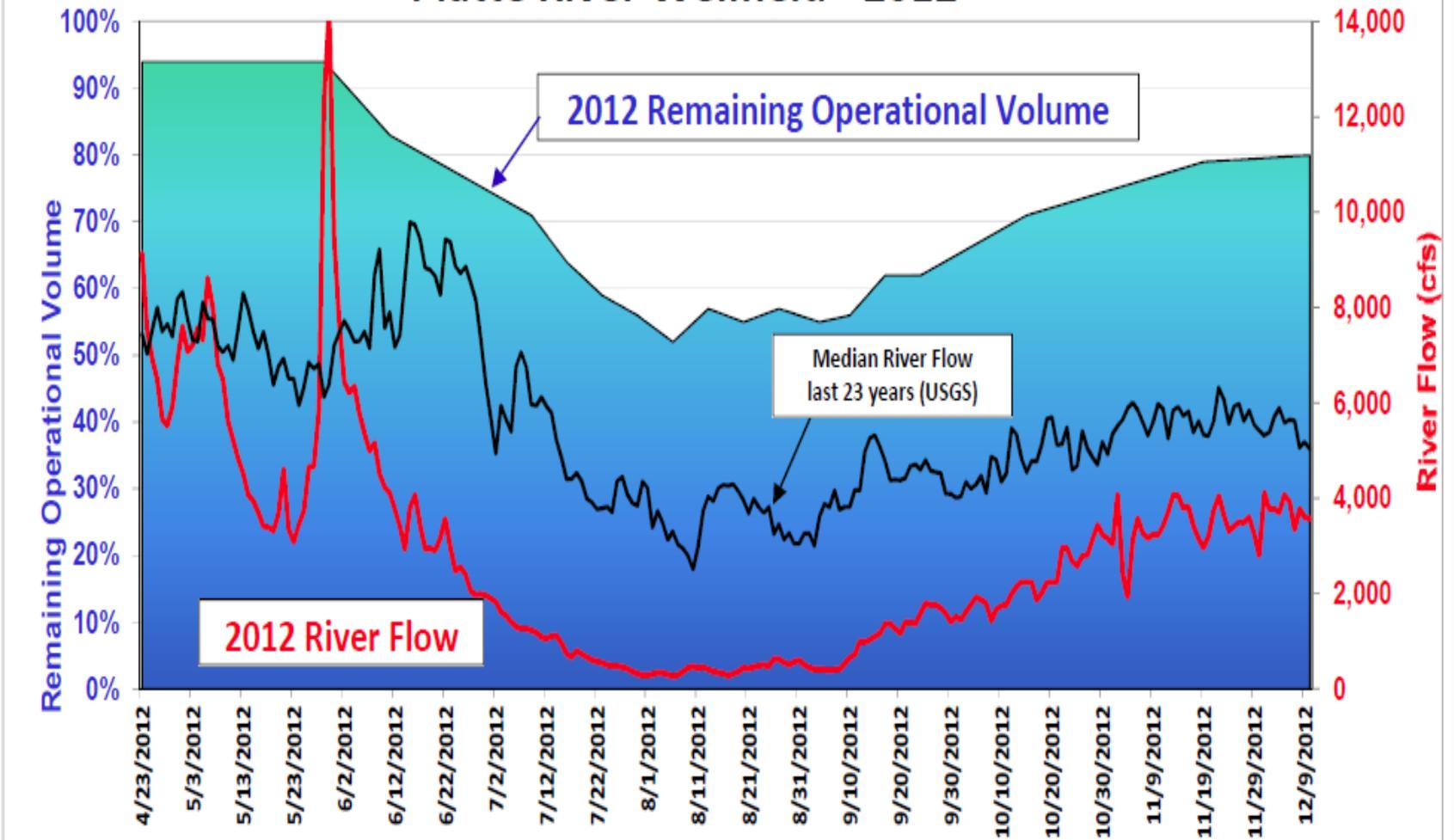
East Channel looking North 7/27/12



Well Field Drawdown



Platte River Wellfield - 2012



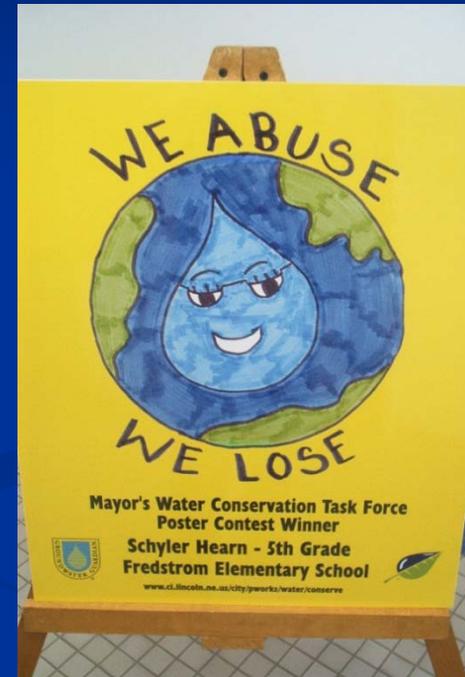
River Flow

Maximum Sustainable Usage

>3,000 cfs	80 MGD or greater
< 3,000 cfs	80 MGD
< 1,500 cfs	70 MGD
< 1,000 cfs	65 MGD
< 700 cfs	60 MGD
< 200 cfs	55 MGD
< 100 cfs	50 MGD
0 cfs	30 MGD or less

Water Conservation Efforts

- Public Education
- Encourage Indoor & Outdoor Conservation
- Trade Shows
- Printed Material
- 5th Grade Coloring Contest
- Water Management Plan



Water User Fees

- Water Utility Fee based on Water Meter Size and Water Usage
- Increasing Block Rate Structure – Encourages Conservation
- Competitive Rates with Local and Regional Cities
- Ten Top Water Users of System account for 15% of Usage
- Affordability Index – Less than 0.5% of MHI

New Source of Supply

- Add new well for additional capacity under low flow
- Existing Ashland Area Resources should be adequate until 2040 or beyond
- Approx. 210 MGD = half a million population
- Preliminary Evaluation of Locations
- Reliability with Increasing Drought Conditions
- Redundancy for catastrophic events
- Expensive Compared to Adding Increments on Existing System

Water is Essential for Life!

Use it Wisely.....

