

VOLUNTARY INTEGRATED MANAGEMENT PLAN 2016 ANNUAL REPORT



July 13, 2017

Public Meeting

 **Nebraska**
Department of Natural Resources



Board and NDNR Approved IMP in August 2014

1



WATER POLICIES:

Develop and Implement water use policies and practices that contribute to the protection of existing surface and groundwater uses while allowing for future water development.

OBJECTIVES:

- Utilize existing policies and authorities of P-MRNRD and the Nebraska Department of Natural Resources (DNR) to address water quantity issues.
- Minimize invasive vegetation encroachment in the river channels.
- Identify and evaluate potential conjunctive management projects and activities within the V-IMP area.

2



WATER INVENTORY:

Develop and maintain a water supply and use inventory based on the best available data and analysis.

OBJECTIVES:

- Develop and implement a data gathering and monitoring plan that provides relevant scientific information to support DNR's annual evaluation.
- Monitor and track precipitation, consumption, inflows, and outflows.
- Coordinate with public water suppliers and other water users to understand and project future water demands.

3



WATER EDUCATION:

Develop and implement water use educational programs that encourage conservation and effective water use.

OBJECTIVES:

- Promote water use education that addresses both rural and urban water conservation efforts.
- Work with other entities on education and conservation programs.
- Explore opportunities to reuse water, where feasible.

4



BASIN-WIDE WATER SUSTAINABILITY:

Work with upstream NRDs and other relevant organizations to collectively develop a water management plan for the Platte River Basin that maintains a balance between current and future water supplies and demands.

GOAL 4 OBJECTIVES:

- Actively participate in Lower Platte Basin water management planning activities.
- Identify and evaluate potential conjunctive management projects and activities within the Lower Platte Basin.
- Identify and evaluate additional water resource supplies.
- Coordinate with other entities in the entire Platte River Basin on water management planning and activities.
- Work with the appropriate agencies to identify streamflow necessary to protect and maintain public water supply, fish and wildlife, and public recreation.

Papio-Missouri River NRD Integrated Management Plan Area

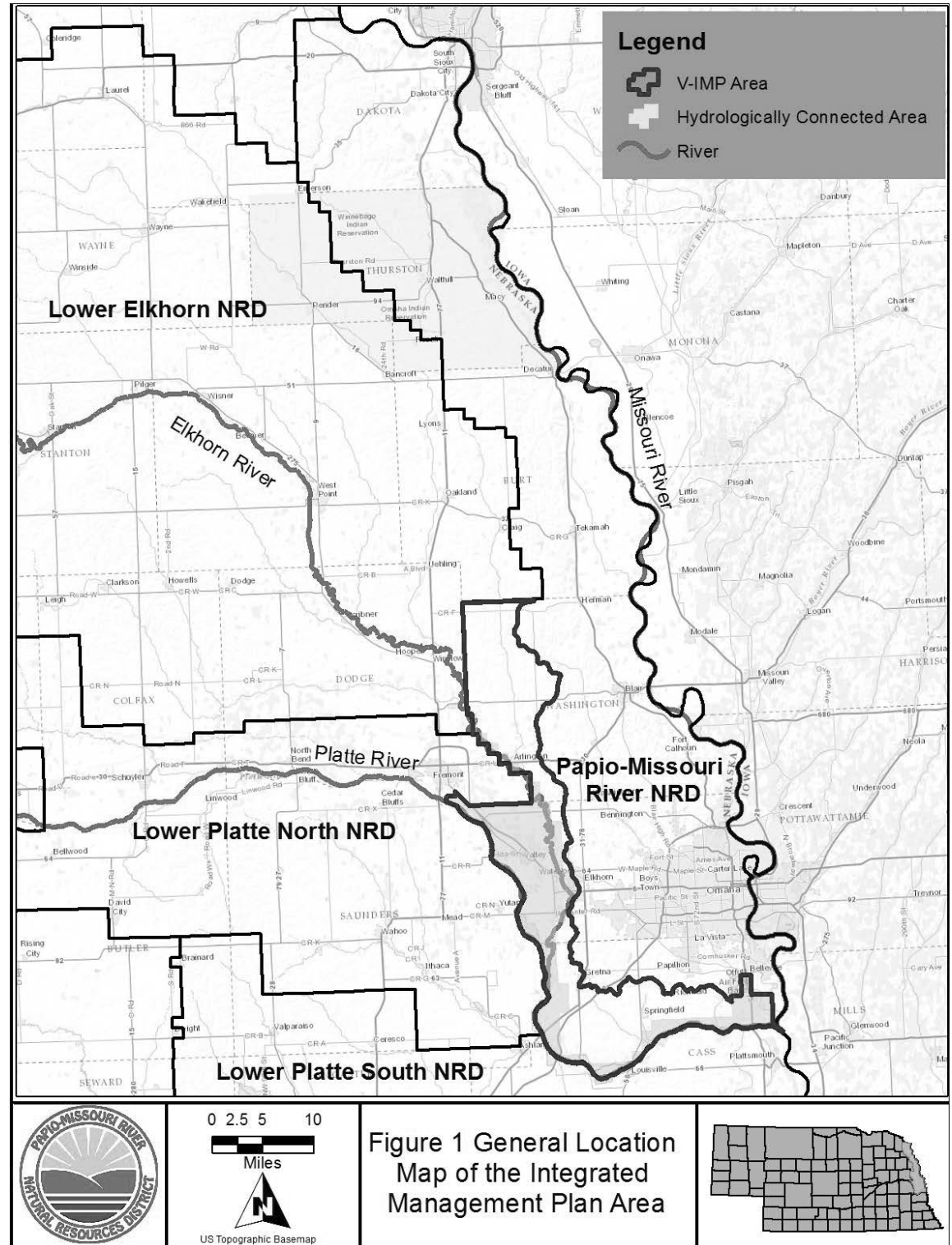
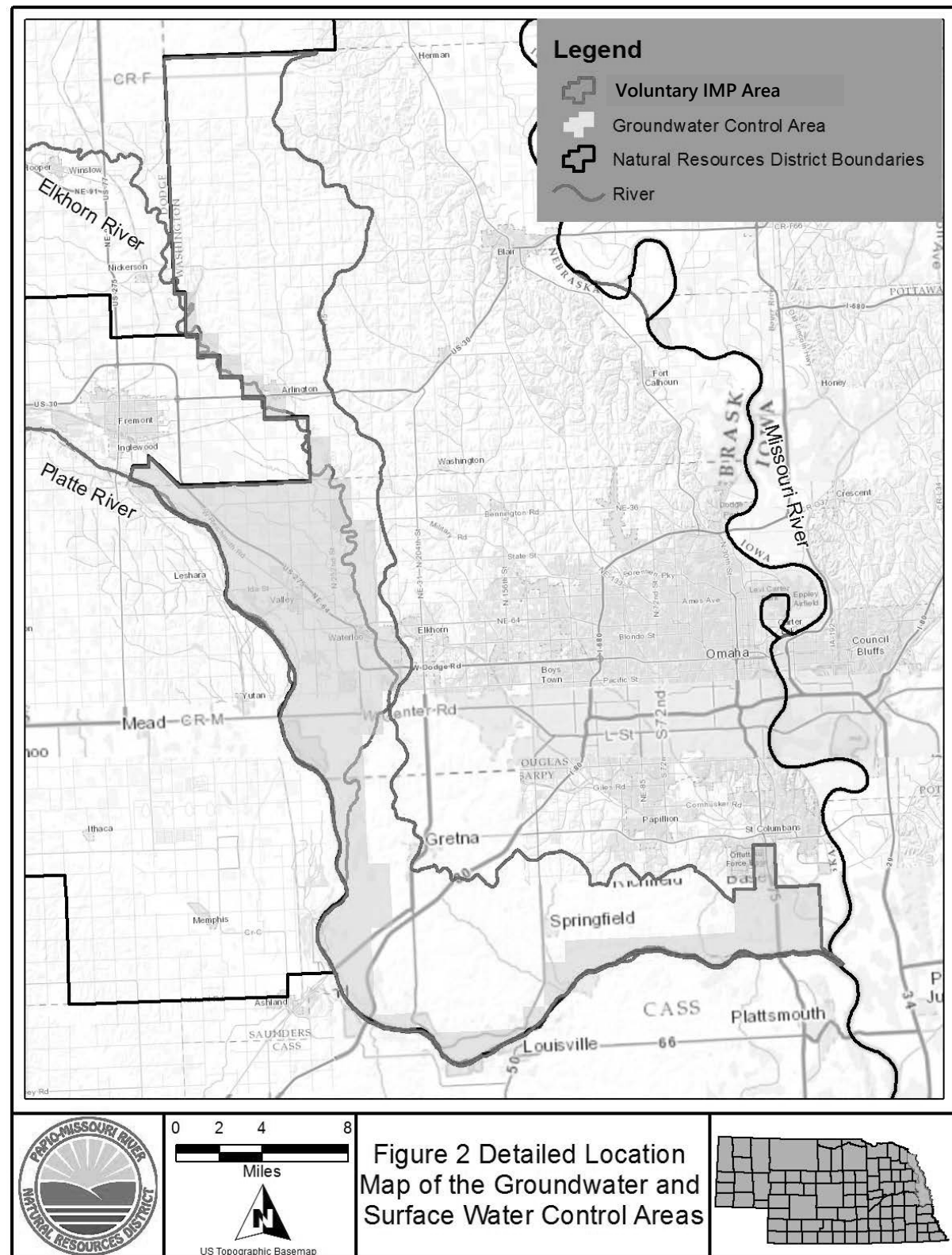


Figure 1 General Location
Map of the Integrated
Management Plan Area

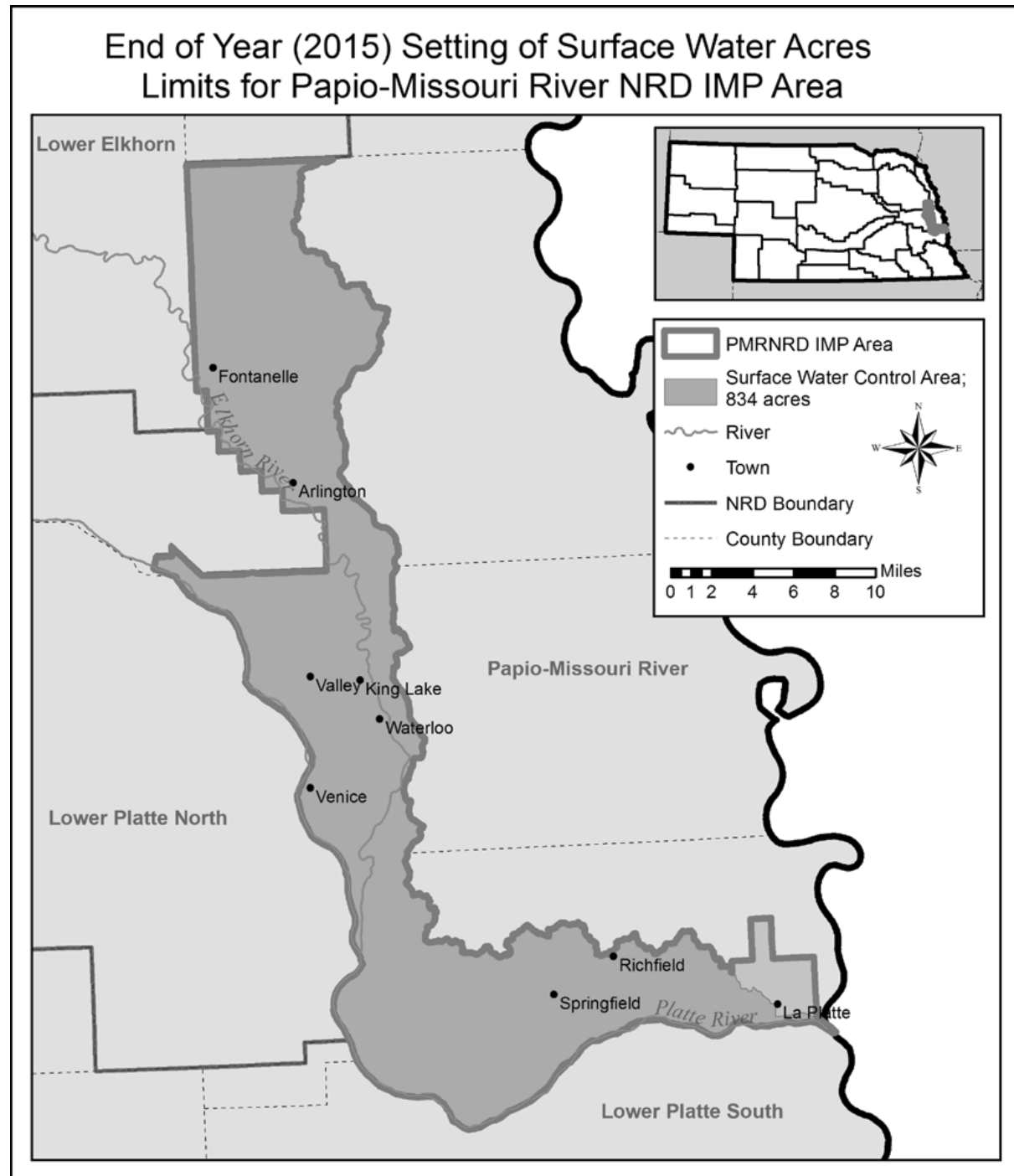
Groundwater Control Area

- NRD Board established a limit of 2,500 acres on the annual expansion of groundwater irrigation.



Surface Water Control Area

- Is the surface water basin of hydrologically connected area
- Since 2015, the limit on new surface water acres development has been 834 surface water irrigated acres per year (1/3 of 2,500)



IMP Requires Data Collection and Monitoring

NRD Monitoring includes:

- Expansion of Groundwater Irrigated Acres
- Groundwater Level Measurements
- Municipal Water Use

NeDNR Monitoring includes:

- Surface Water Permitting Activities
- NeDNR Stream Gage Measurements
- Surface Water Irrigation Use
- Annually reported municipal water use (Lincoln Water Supply, MUD)

NRD Data Collection and Monitoring

- **NRD Expansion of Irrigated Acres**

Application Number	Year	Acres	Status	Registered Well
V-0050	2016	124	Complete	G-169286
V-0051	2016	70	Complete	G-177878

- **NRD Groundwater Level Measurements – See Maps**

NRD Data Collection and Monitoring

- Municipal Water Use

Municipal Well Field	2016 Total Pumped (Ac-ft)	Notes
Papillion	4,326.2	
Lincoln	20,451.2	Include only wells in P-MRNRD
MUD South	38,030.4	
MUD West	8,976.2	Includes only wells in P-MRNRD
Fremont	4,971.5	Includes only wells in P-MRNRD
Valley	334.4	
Springfield	170.8	
Gretna	1,052.0	
Arlington	217.4	

TOTAL

83,501.6

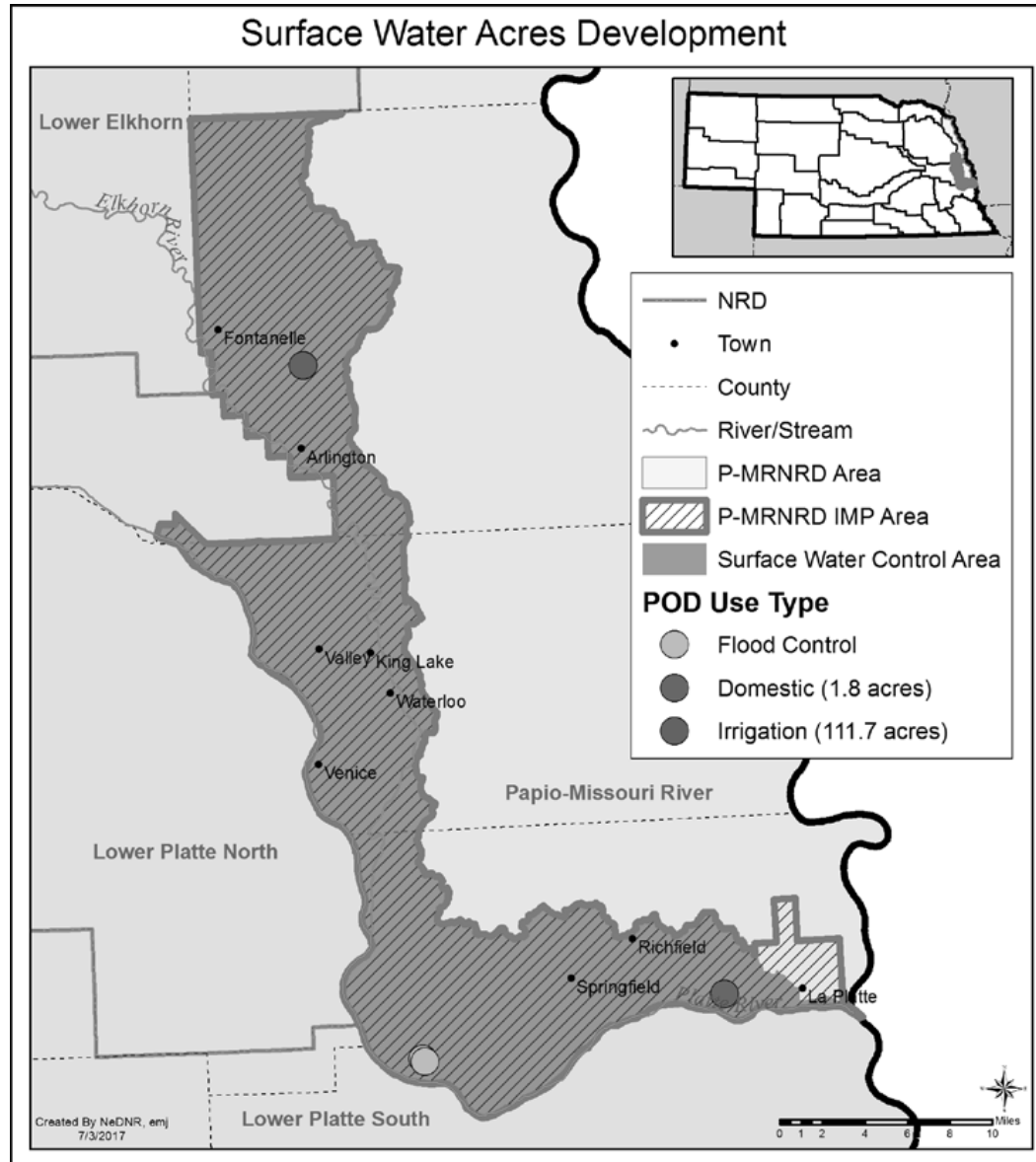
NeDNR Data Collection and Monitoring

- NeDNR Surface Water Permitting Activities
 - Approved permits

Applications for surface water appropriations within the surface water control area approved in 2016					
Permit Number	Use	Location of diversion	Source	Date approved	Acres permitted
A-18588	Domestic	S30-T13-R13E	Zwiebel Creek	9/16/2016	1.8
A-18613	Irrigation	S24-T8-R9E	Bell Creek	5/12/2016	111.7
A-19412	Flood Control	S2-T12-R10E	Tributary to Platte River	6/23/2016	NA
A-19418	Flood Control	S2-T12-R10E	Tributary to Platte River	6/23/2016	NA

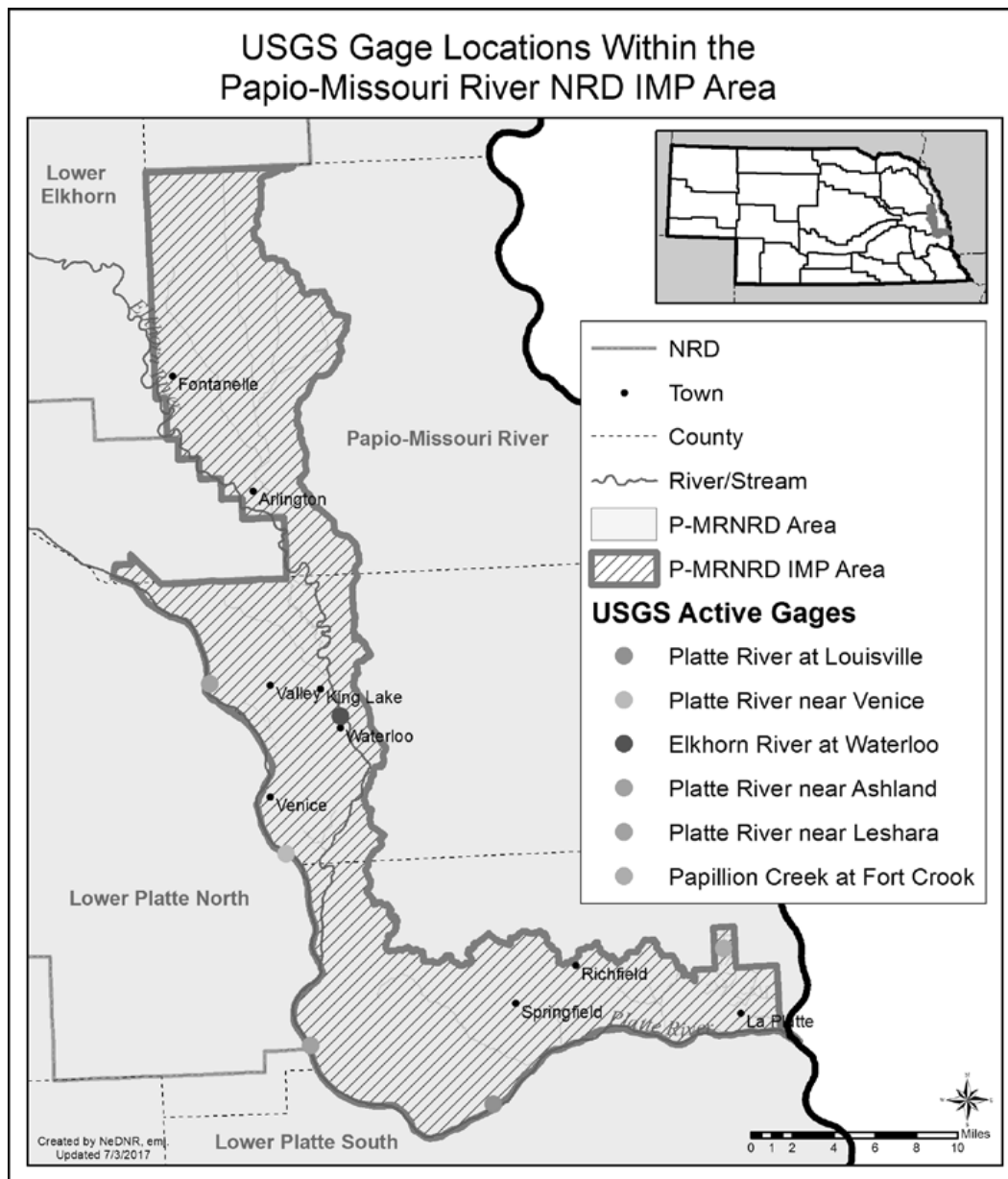
- Two pending applications were dismissed
- No applications were denied
- No transfers were approved

NeDNR Data Collection and Monitoring



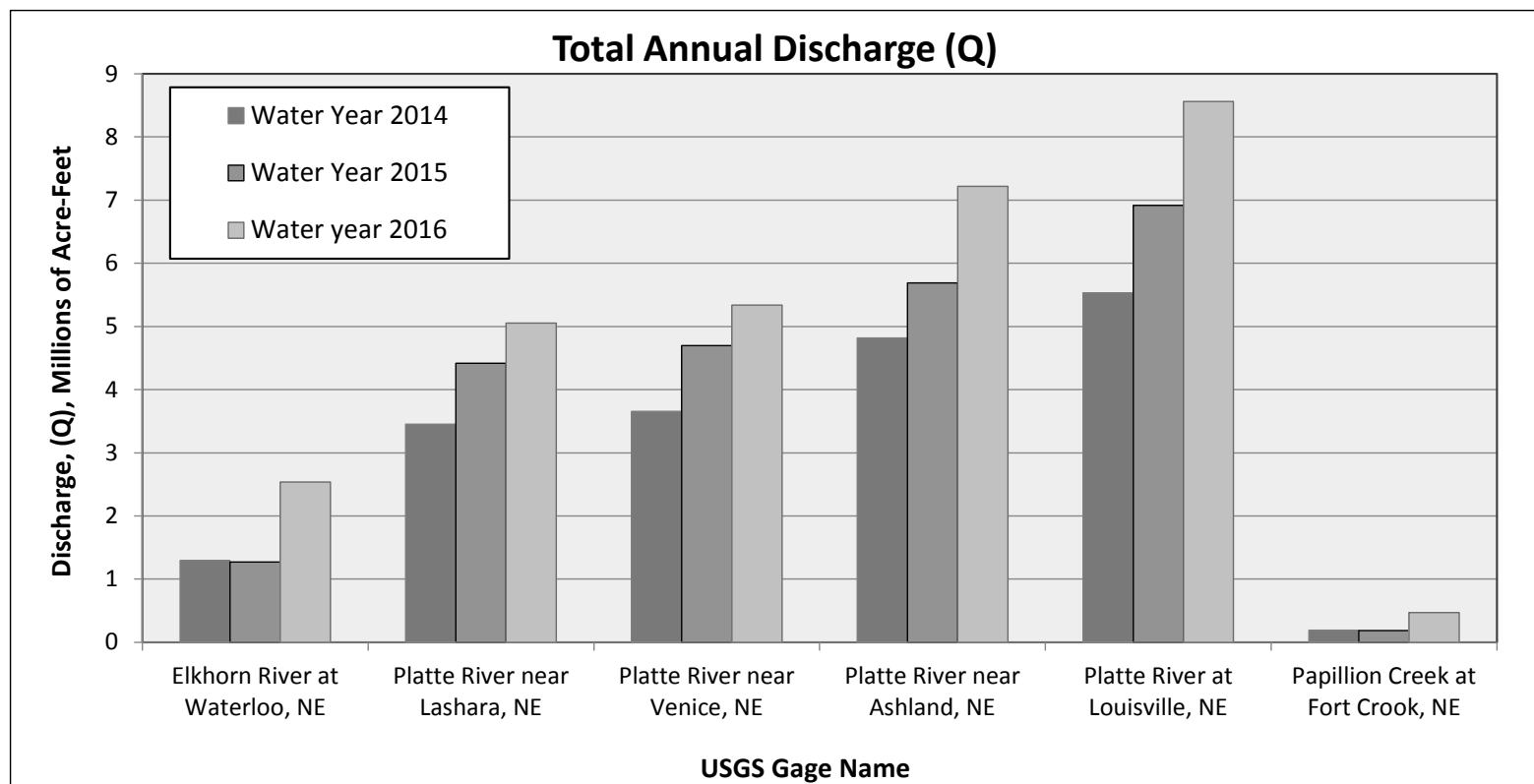
NeDNR Data Collection and Monitoring

- Stream gage measurements
- Currently no NeDNR gages in IMP area
- Six USGS gages
 - 4 Platte
 - 1 Elkhorn
 - 1 Papillion Creek



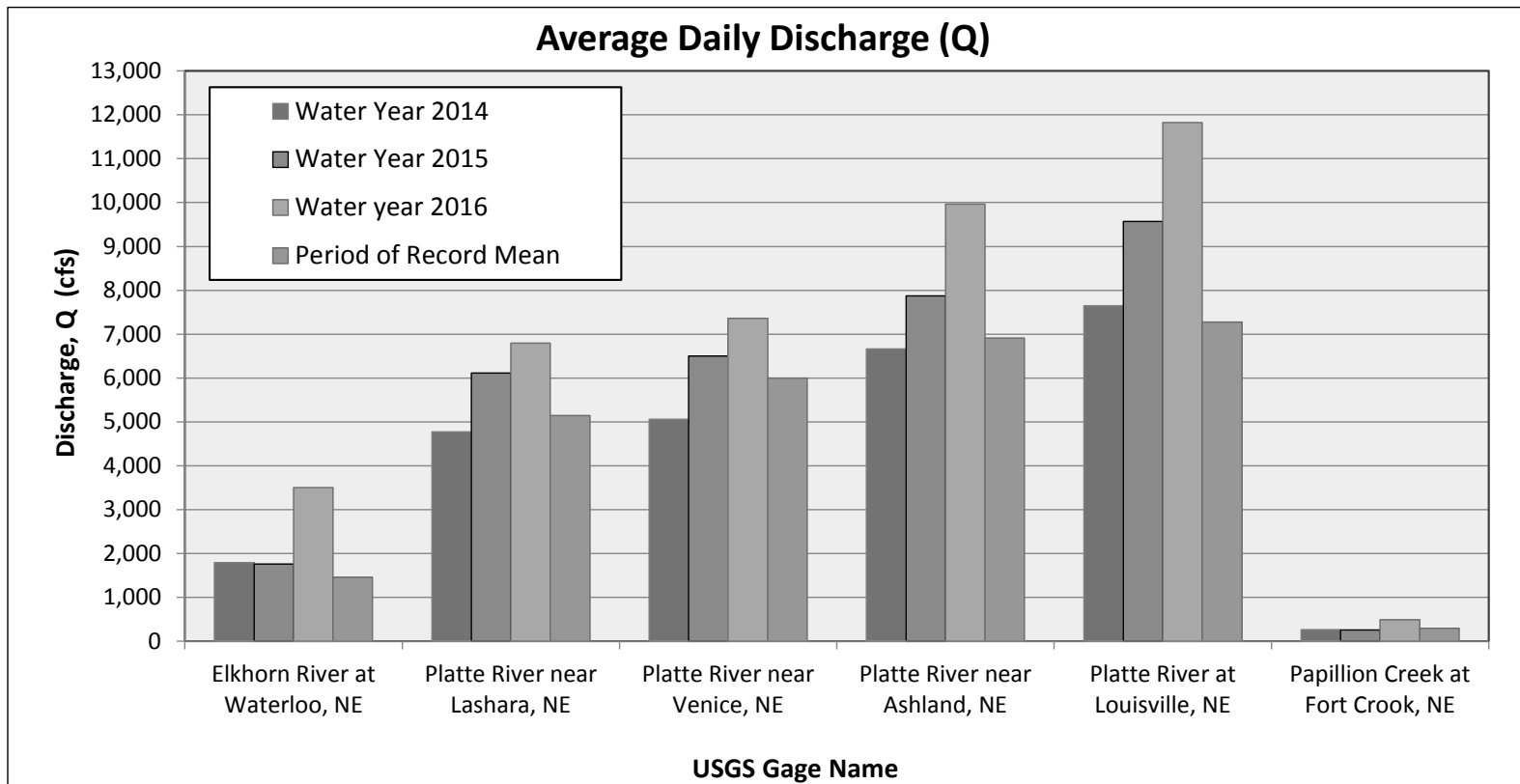
NeDNR Data Collection and Monitoring

- Stream gage measurements



NeDNR Data Collection and Monitoring

- Stream gage measurements



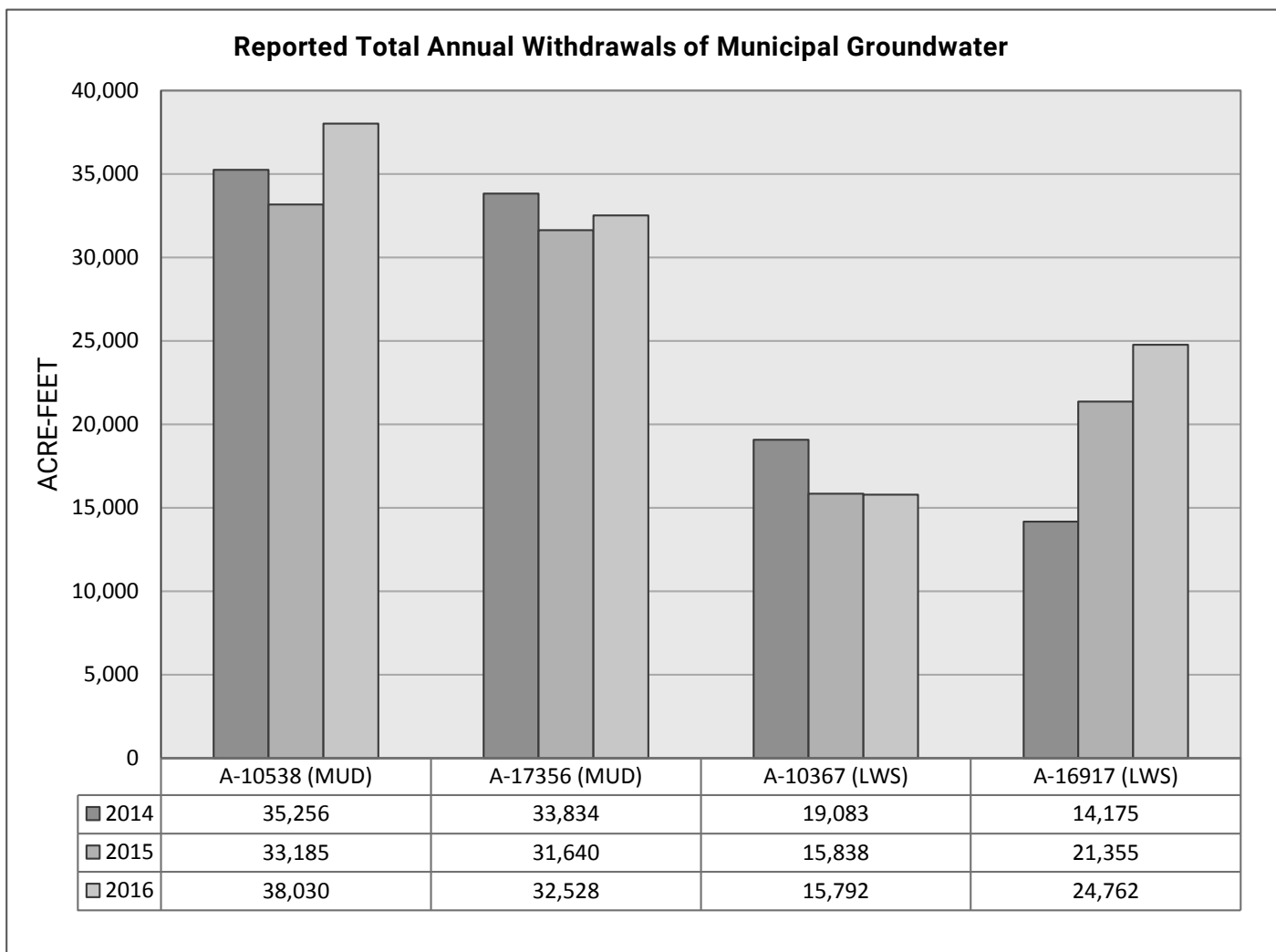
NeDNR Data Collection and Monitoring

Surface Water Irrigation Use

- Voluntary reporting system via form (web or paper)
 - Irrigated and non-irrigated acres
 - Crop types
 - Tillage system
- In 2016, sent out 52 invitations and received 22 responses
 - 91 percent of permit holders (20) employed tillage conservation practices (minimum or no till).
 - 17 percent of acres were reported as irrigated
 - 84 percent of acres were reported as non-irrigated
 - The reported crop types were 58% corn, 23% soybeans, 16% dry edible beans

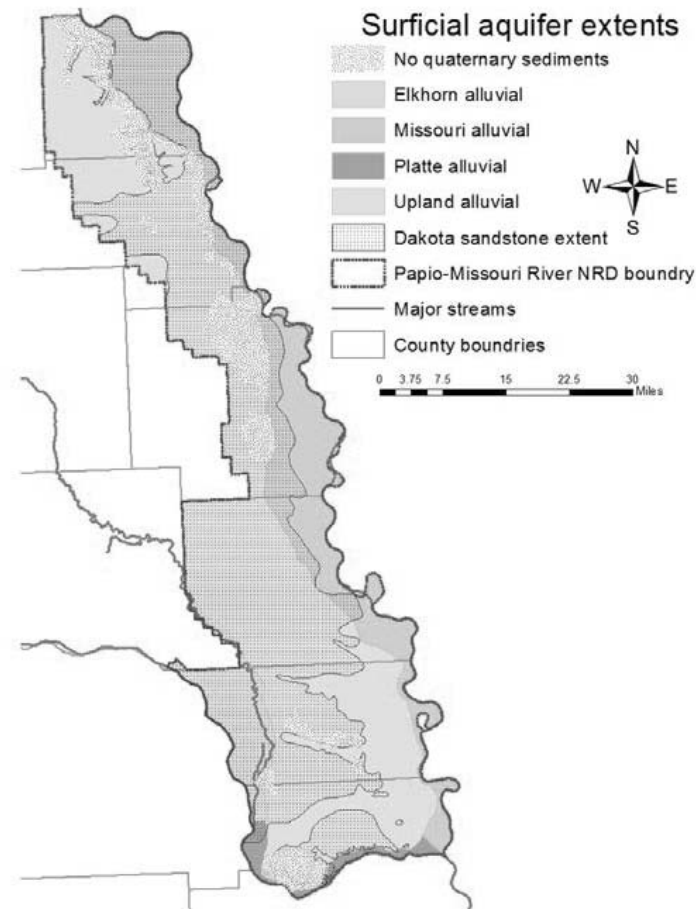
NeDNR Data Collection and Monitoring

Municipal water use (groundwater transfer permits)



2016 Goal 1 Actions

- GOAL 1 - Develop and implement water use policies and practices to protect existing uses while allowing for future water development.
 - Groundwater Management Plan Update
 - ENWRA and USGS Aquifer Studies
 - Continued Lower Platte Weed Management
 - Lower Platte River Drought Mitigation Study (Consortium)



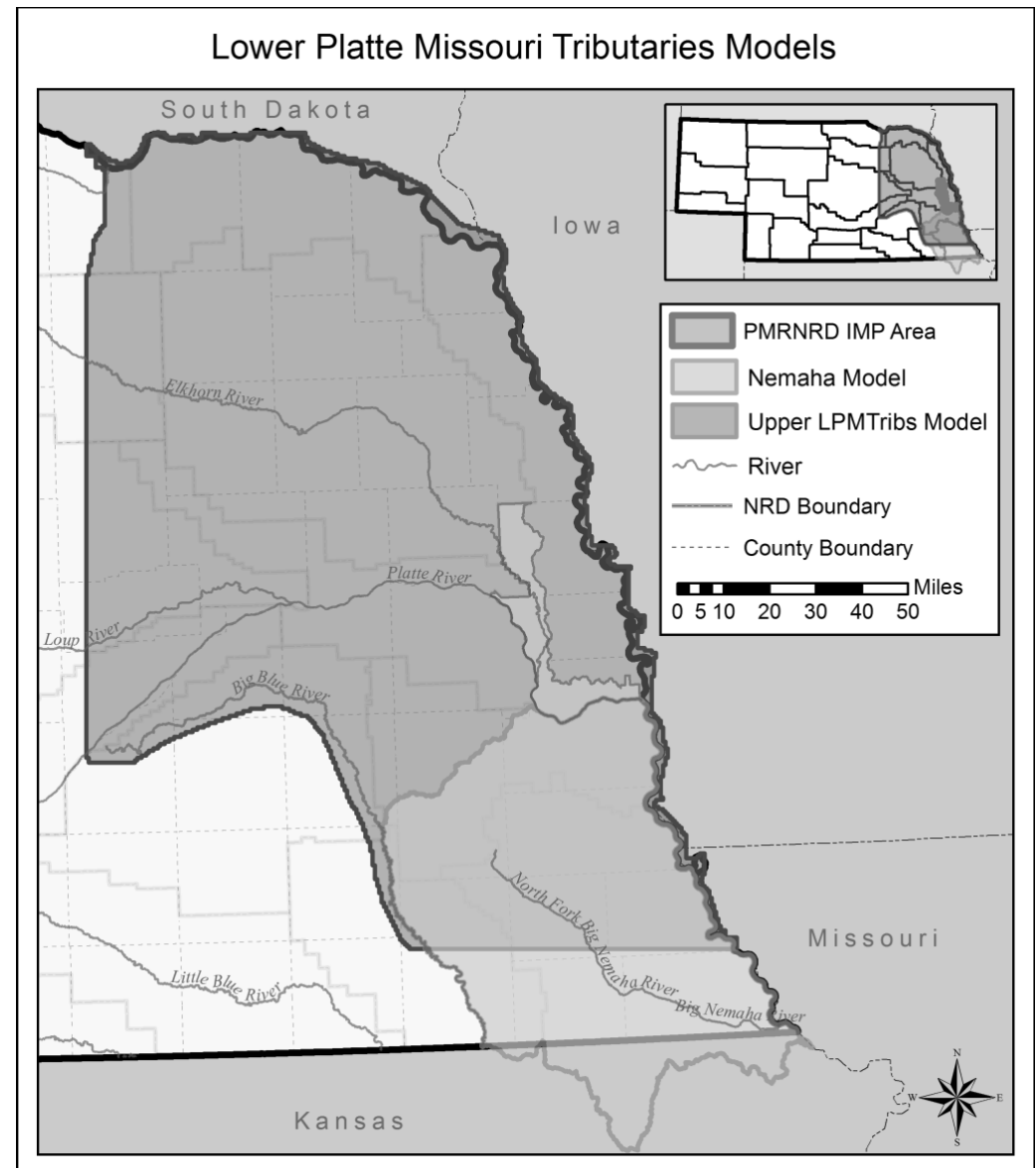
2016 Goal 2 Actions

- GOAL 2 - Develop and maintain a water supply and use inventory based on the best available data and analysis.
 - Draft irrigated acres layer for certification
 - GW level maps
 - ENWRA Report
 - Water Balance Data
 - Contract with Brown and Caldwell for new update
 - Collected Municipal Water Use data



2016 Goal 2-Data inventory and analysis

- NeDNR continued development of Eastern Nebraska groundwater models
 - Northern model expected completion: end of 2017
 - Southern model expected completion: 2018



2016 Goal 3 Actions

GOAL 3 - Develop and implement water use educational programs that encourage conservation and effective water use.

- **NRD public outreach**

- Updates in Spectrum newsletter and website
- World O' Water public event
- Water Works Festival School or other public venue
- Urban Stormwater education

- **NeDNR public outreach**

- State events-Husker Harvest Days, State Fair, UNL's Women in Agriculture Conference, Governor's Ag Conference
- Improvements to INSIGHT Website for water supply and use information
- First time at World O' Water!



2016 Goal 4 Actions

- GOAL 4 – Work with upstream NRDs and others to collectively develop a water management plan for the Platte River Basin.
 - Lower Platte River Basin Coalition Meetings
 - Participate in Lower Platte River Consortium (new)
 - Funding opportunities evaluation and successful grants

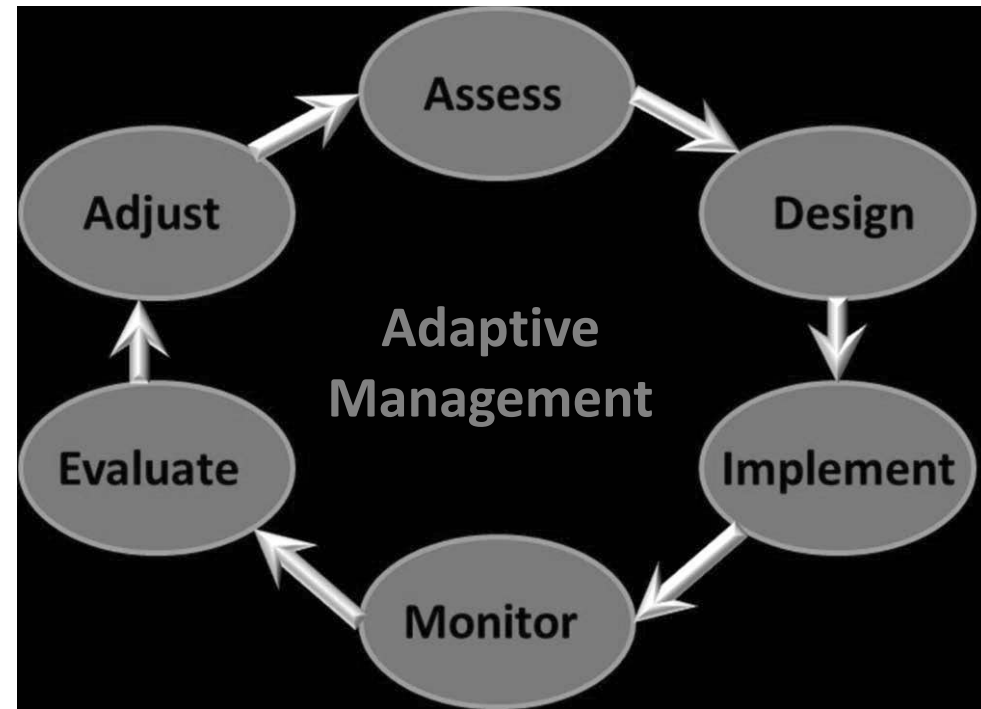


PMRNRD has applied for and received over \$375,000 in grants for additional studies!

INTEGRATED MANAGEMENT PLANNING

Why Annual Reviews?

- Address new opportunities & issues
- Adapt to new surface and groundwater data
- Jointly implemented by NRD(local) and NeDNR (state)
- Convey progress/gather input from stakeholders and the public
- Basin-wide, systematic approach
- Prioritize goals, objectives and actions each year.



Source: Nebraska Department of Natural Resources

Joint Actions for Next Two Years

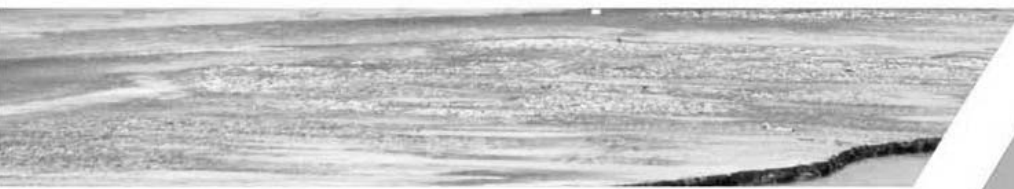
NRD and NDNR:

- The P-MRNRD will continue to work to adopt a revised GWMP and associated rules and regulations; NeDNR will continue to provide feedback on the content, consulting with additional agencies as necessary.
- Both parties will review data from the Platte and Elkhorn River Valley Integrated Water Monitoring study with USGS, as available.
- Both parties will participate at the World O' Water public outreach event to be held on September 10, 2017
- Both parties will be coordinated on a potential municipal & industrial water use clearinghouse project
- NeDNR will further develop INSIGHT, and will incorporate NRD data whenever possible.
- Both parties will continue to participate in basin-wide and regional planning efforts such as ENWRA, the Lower Platte River Consortium (drought planning), and Lower Platte River Basin Coalition (LPRBC).
- NeDNR will coordinate with the LPRBC to further develop the stream depletion/accretion calculator and interface.

QUESTIONS?



Voluntary Integrated Management Plan



 **Nebraska**
Department of Natural Resources

