

# 2016 ANNUAL INTEGRATED MANAGEMENT PLAN REPORT



**LOWER PLATTE SOUTH**  
natural resources district

**David Potter, Assistant General Manager**

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**Integrated Water Management Coordinator**

**LPSNRD Board Meeting, August 16, 2017**



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# Voluntary IMP

- LPSNRD and NeDNR jointly adopted a voluntary IMP which became effective May 15, 2014
- Plan consists in Goals, Objectives and Actions
- The IMP shall be reviewed annually by the District's Board of Directors and the Department to ensure that the plan continues to meet the needs of the District and Department and to identify Action steps for the next two years.



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# IMP VISION

“Water uses and water supplies are in a managed balance, supporting economic viability, environmental sustainability and safe living conditions.”

The plan will be instrumental in identifying available water supplies and managing water quantity to meet the future water needs in the District.



## Water Inventory

Water Inventory includes the inflow, precipitation, and water storage available to the District along with the water use and outflows from the District.

**Goal:** Ensure the District has sufficient data to enable the achievement of a water supply that is in balance with current and future water demands in the District.

## Water Supply Management

Water Supply Management is the management of water supply, both in and out of the District, through human efforts.

**Goal:** Ensure a sustainable water supply is available in the amounts and location of the demands through management actions to meet the District's short and long term needs.

## Water Use Management

Water Use Management is the management of how water is used and consumed while meeting current and future demands.

**Goal:** Encourage all water users to minimize water use while optimizing benefits.



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# IMP Annual Report/Review

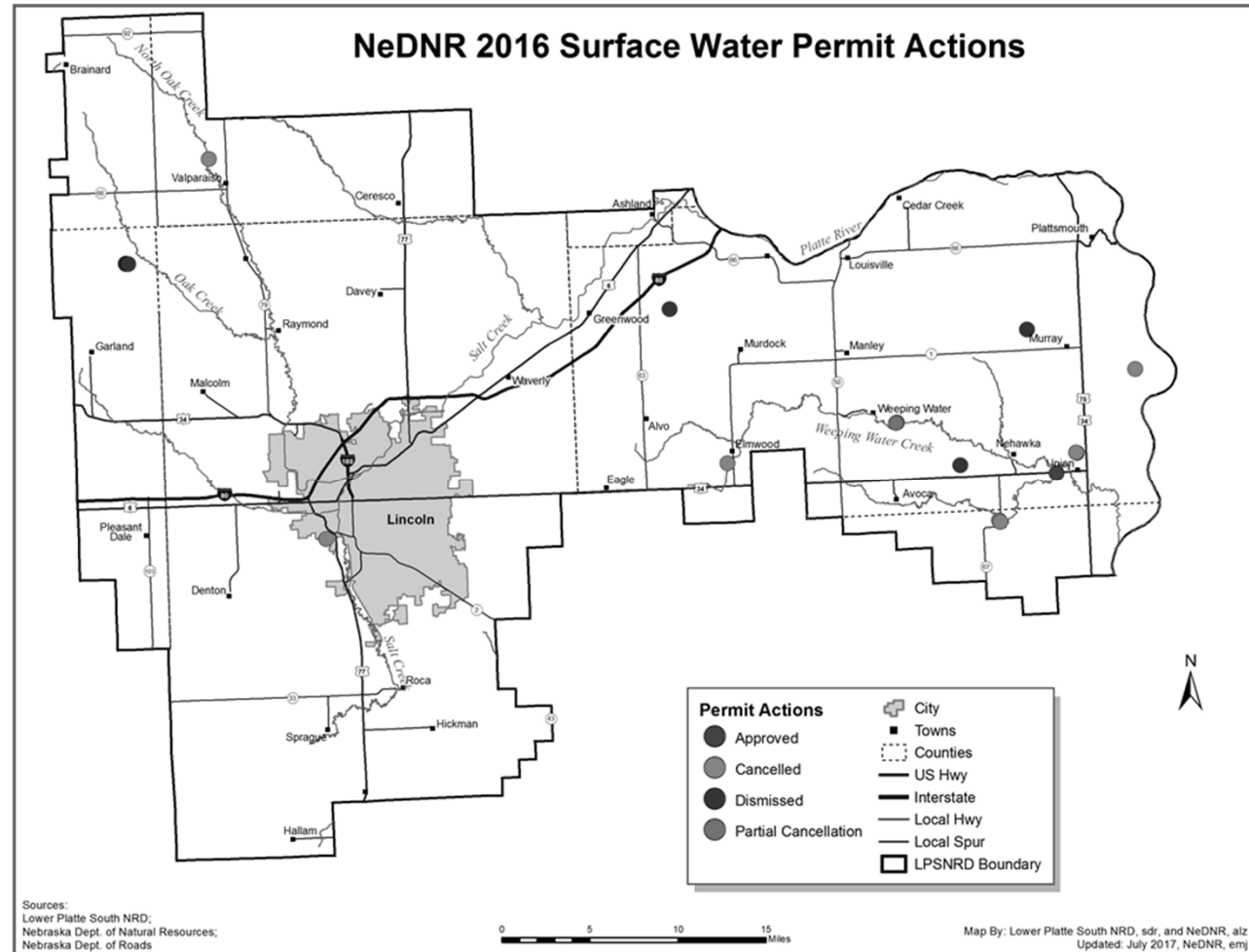
- Annual Report covers progress made towards IMP action items for both the LPSNRD and NeDNR in 2016
- LPSNRD and NeDNR jointly decided that no modifications to the IMP are needed at the time of the 2016 annual review

# NeDNR's IMP Activities

- Surface Water Monitoring
  - Appropriations
  - Stream gaging
  - Pump site visits
- Surface Water Regulations
- Studies and Planning
- Education and Outreach
- Collaboration

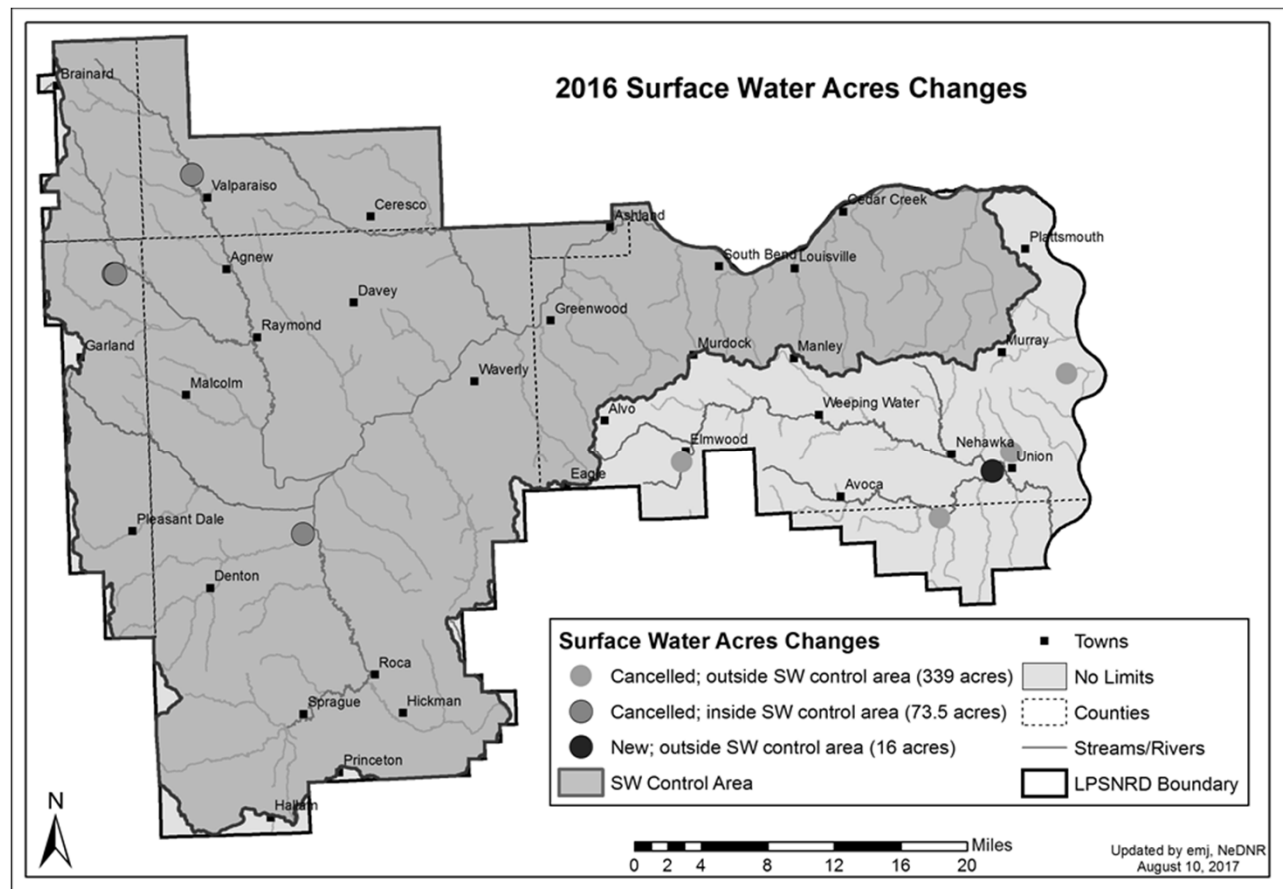
# Surface Water Appropriations Monitoring

- Approved 1 permit
  - 16 new SW irrigated acres
- Cancelled 9 permits
  - -461 SW acres
- Dismissed 5 permits
- No Transfers



# 2016 Surface Water Regulations

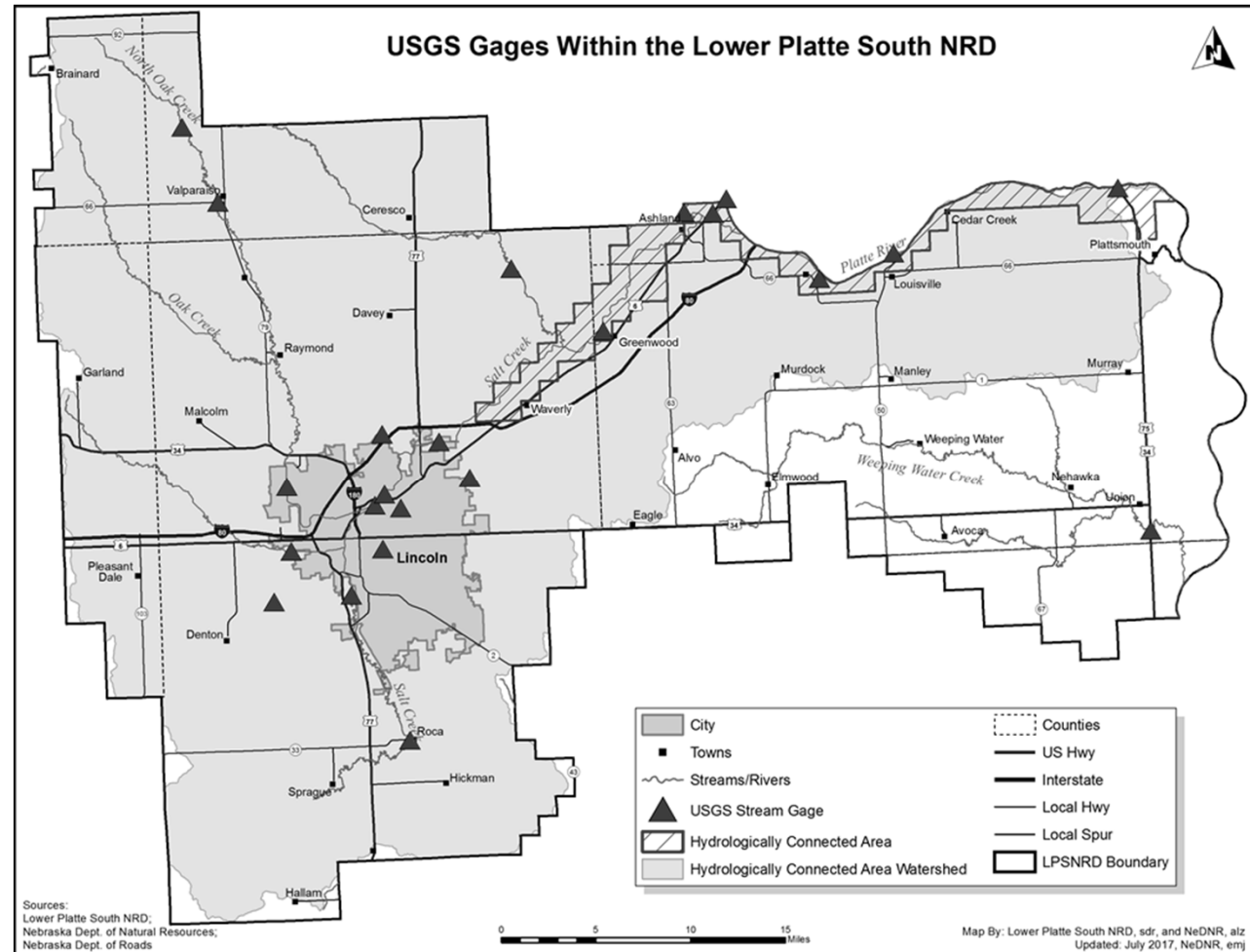
- 198 acres limit in surface water control area
- No new acres added to SW control area in 2016
- 16 new acres outside control area



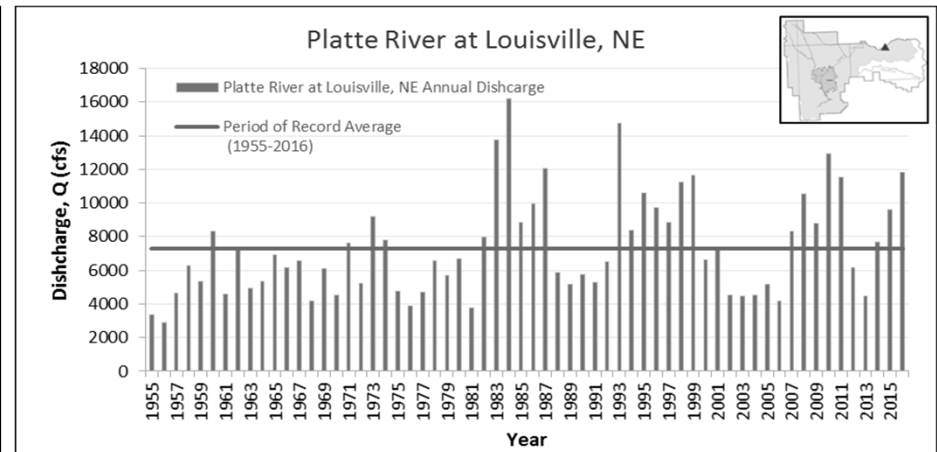
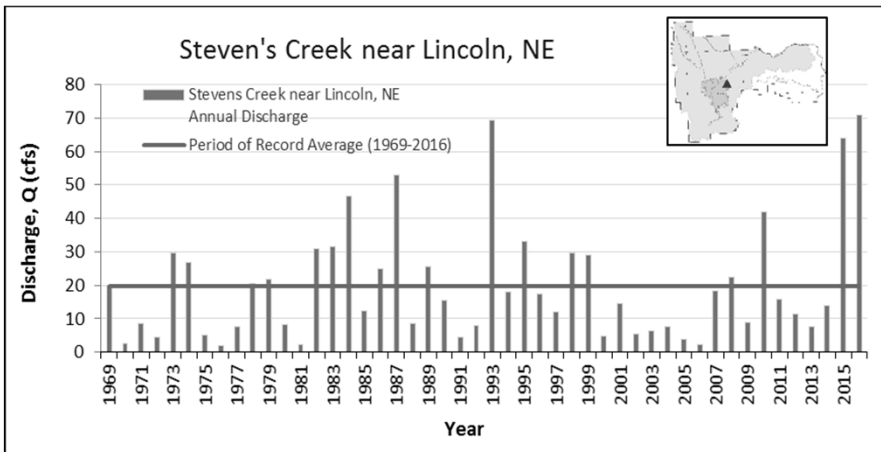
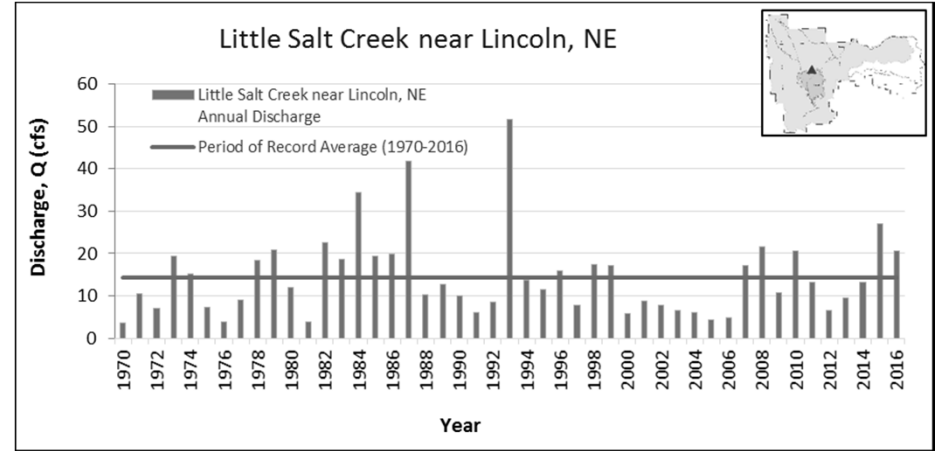
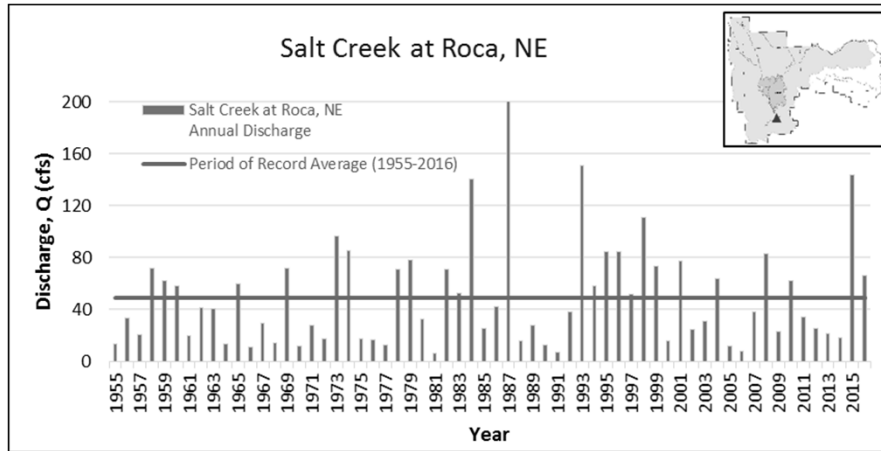


# Surface Water Monitoring

- NeDNR doesn't operate any stream gages within LPSNRD
- USGS currently owns and operates 21 stream gages in the area



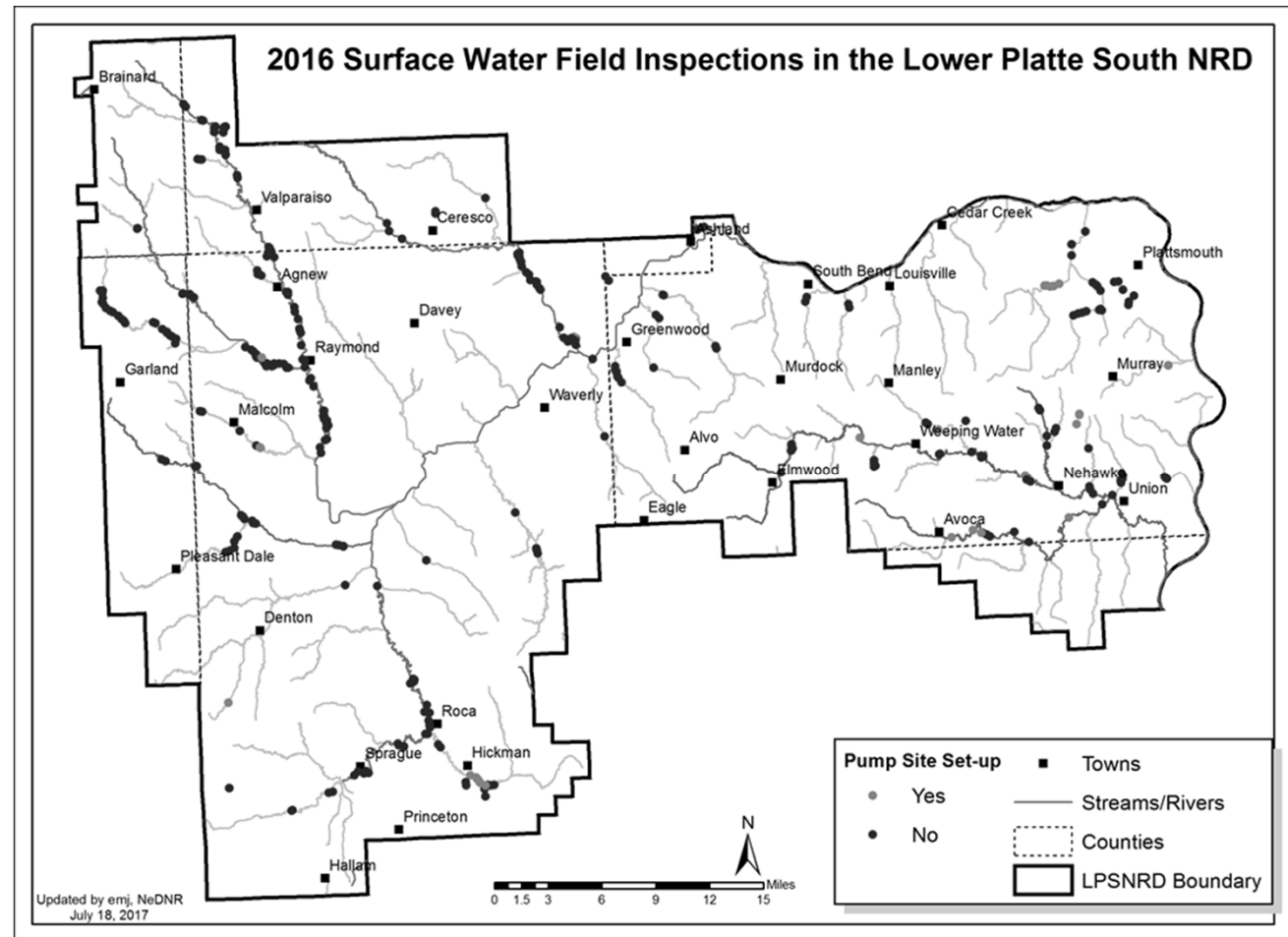
# Surface Water Monitoring



# Surface Water Data Collection

## 2016 Pump Site Inspections

- 172 inspections
- 16 sites were set up to irrigate (3 running)



# Surface Water Data Collection

## Voluntary Water Use Reporting Program

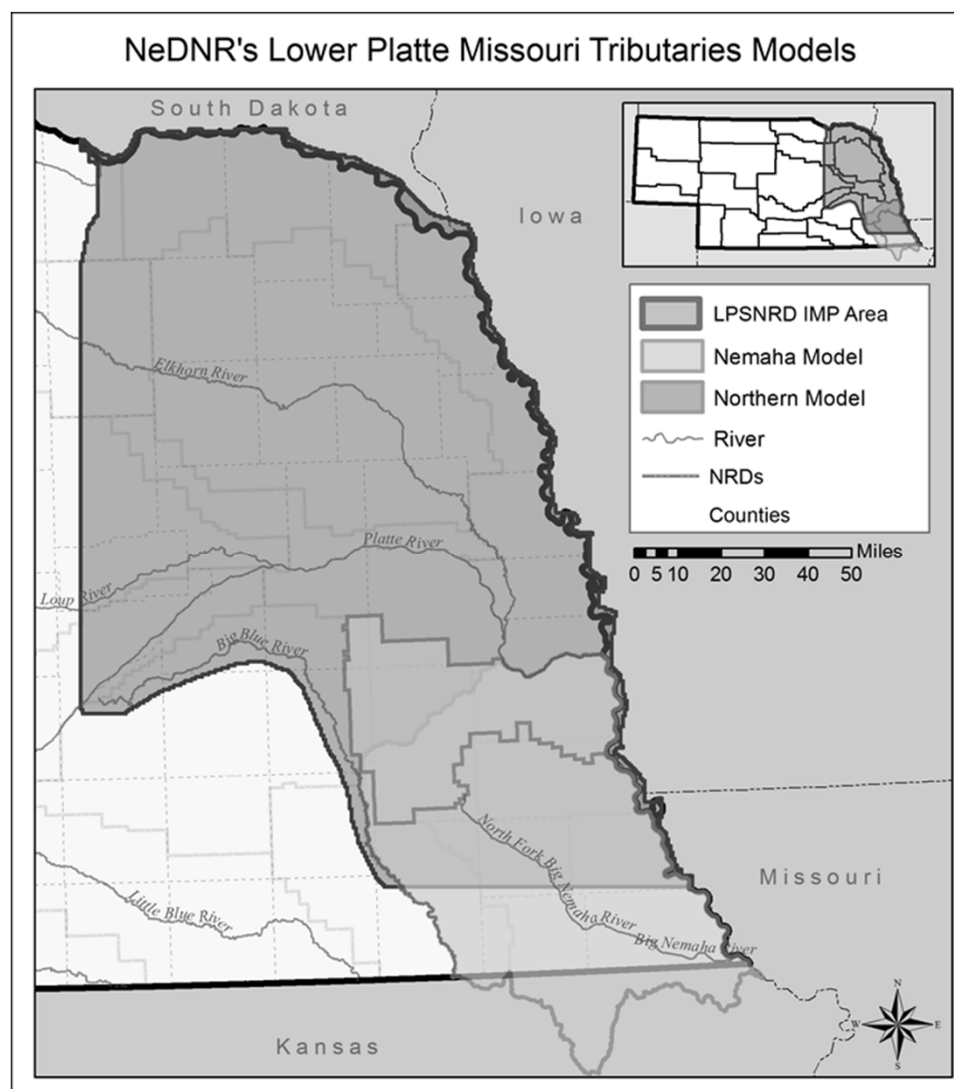
- NeDNR's third year of program implementation
  - Sent letters to 208 surface water diverters
  - 47 responses , 23% response rate
    - ~3,000 surface water acres reported on
  - In 2015, 53 responses, 25% response rate
  - Info received: irrigation, crop type, and type of tillage.
    - 77% used conservation tillage
    - Predominant crops were corn (32%), soybeans (33%)
    - About half the fields/acres were irrigated in 2016



# Lower Platte/Missouri Tributaries Modeling

## Development Progress

- Northern model
  - Undergoing calibration
  - Expected to be completed by the end of 2017
- Nemaha model
  - Development began in spring 2016
  - Expected completion in 2018





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# 2016 ACTIONS & PROGRESS

- **Ground Water monitoring and data collection**
  - 7 well permits/2 completed
  - Water level monitoring in 141 wells, spring & fall, with average static water increases of 2.01 feet
  - Meters and water use reporting from 392 wells
  - 3.7 billion gallons pumped from 385 wells





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# 2016 ACTIONS & PROGRESS

- **Ground Water monitoring and data collection (cont.)**
  - Certified irrigated acres-approved
    - HCA +22.1 to 3,206.42 acres
    - Remainder +205.83 to 26,794.57 acres
  - Ground water rules variances (2 received – acres in HCA and salt water well; both approved)
  - Water Banking / Transfers (no activity)



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# 2016 ACTIONS & PROGRESS

## ■ **Ground Water Moratoriums**

- HCA limitation on increasing irrigated acres
- DVB Special Management Area
  - Allocations
  - Moratorium on increasing irrigated acres
  - Area boundary northeast of Valparaiso changed

## ■ **Ground Water Allocations**

- DVB SMA
  - Sprinkler Irrigation
    - » 21 inches/3 years/acre, not to exceed 9 inches/year
  - Gravity Irrigation
    - » 30 inches/3 years/acre, not to exceed 12 inches/year



# 2016 Actions/Progress: Collaboration

Both LPSNRD and NeDNR participated in regional planning activities:

- Eastern Nebraska Water Resources Assessment
  - Aquifer mapping via electromagnetic imaging
- Lower Platte Corridor Alliance
  - Local protection and management of River's Resources
- Lower Platte River Basin Consortium
  - Water supply resiliency, drought planning
- Lower Platte River Basin Coalition
  - Basin-wide planning and accounting



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# LPSNRD Education/Outreach

## 2016 Activities

- Ground Water Mgt Plan
- AEM data posted online
- 3 Test Your Well nights
- School activities
- Irrigation certification
- BMP promotion
- Media, Social Media, Web
- Publications



# NeDNR Education & Outreach

- 2016 Activities

- Earth Day
- NE State Fair
- INSIGHT web portal
- Husker Harvest Days
- Keep Cass County Beautiful
- The Governor's Ag Conference
- Nebraska Women in Agriculture Conference booth





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# 2017 & 2018 ACTIONS

## Jointly Identified Actions for Succeeding Two Years

### NeDNR Actions

- Improvements to/expansion of INSIGHT web portal
- Monitoring of surface water permits & water use
- Evaluate need for more stream gages
- Continue voluntary surface water use reporting
- Continued development of Lower Platte River/Missouri Tributaries models
  - Will prepare a presentation for LPSNRD Board when complete



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# 2017 & 2018 ACTIONS

## Jointly Identified Actions for Succeeding Two Years

### LPSNRD Actions

- Monitoring of ground water levels
- Meter wells & require water use reports
- Continue to track changes in water use, land use, population and climate
- Complete HDR project for IMP components
  - Drought Emergency Response Plan
  - Water Conservation
  - Analyze unmeasured water uses
  - implement revisions to GIS database
- Recommendations for Areas with limited aquifer areas
- Discuss coordination of regional water systems and water shortage action plans



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# 2017 & 2018 ACTIONS

## Jointly Identified Actions for Succeeding Two Years

### Joint LPSNRD/NeDNR Actions

- Complete Drought Contingency Study
- Continued participation in regional planning groups (such as ENWRA, LPR Coalition, and Lower Platte Consortium)
- Jointly participate in one public outreach event—2017 Earth Wellness Festival
- Review, with the Advisory Committee, the need to update IMP Goals and Objectives
- Continue working to move LPSNRD data to central repository.



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## QUESTIONS OR COMMENTS?

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