

# 2017 ANNUAL INTEGRATED MANAGEMENT PLAN REPORT



LOWER PLATTE SOUTH  
natural resources district

**David Potter, Assistant General Manager**



**Amy Zoller, Integrated Water Management Coordinator**

**LPSNRD Board Meeting, August 15, 2018**



# 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.



# IMP Annual Report/Review

- Annual Report covers progress made towards IMP action items for both the LPSNRD and NeDNR in 2017
- LPSNRD and NeDNR jointly decided that no modifications to the IMP are needed at the time of the 2017 annual review

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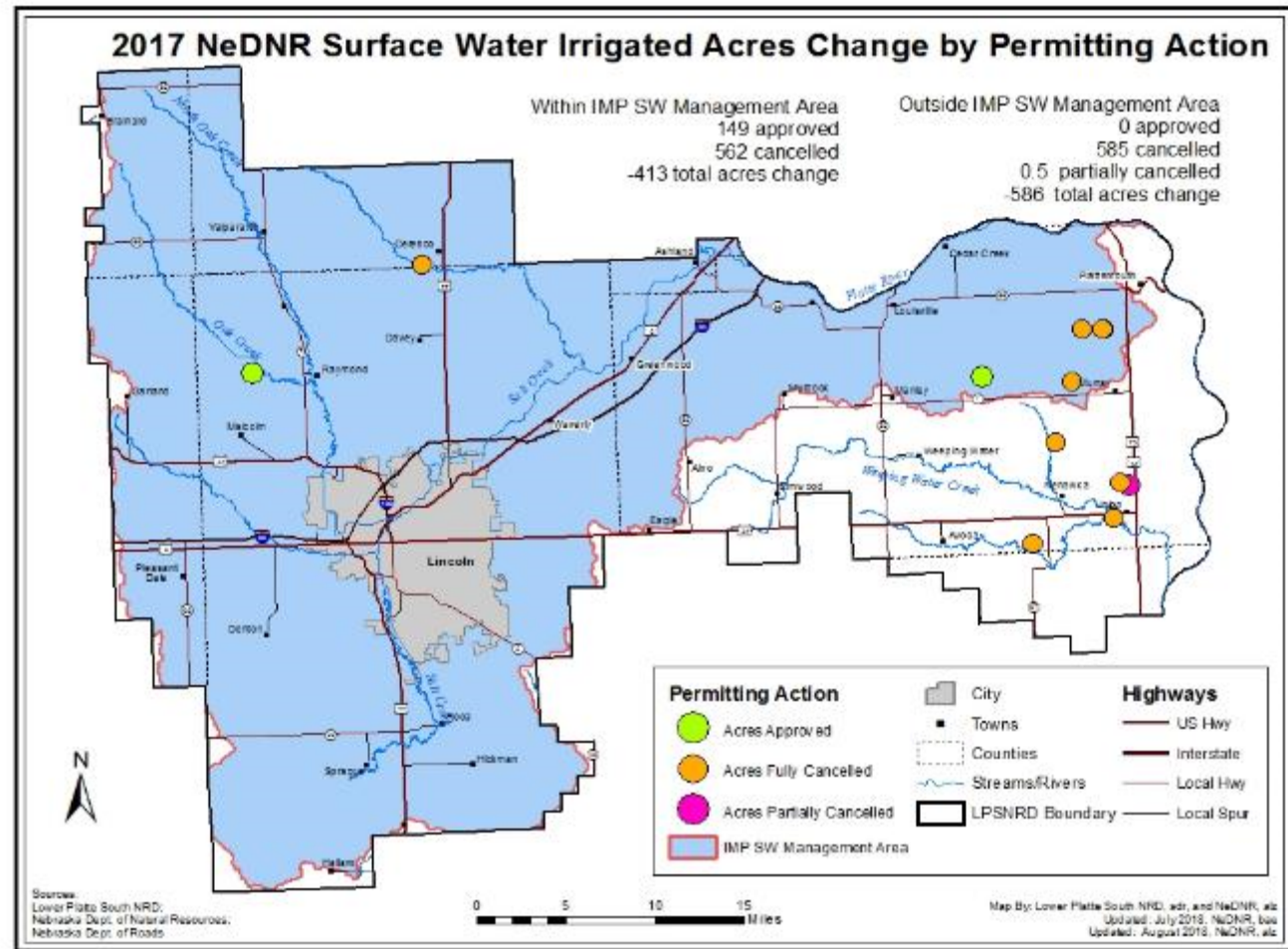
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## NeDNR's Activities

- Surface water monitoring
- Studies and planning
- Education and outreach
- Collaboration

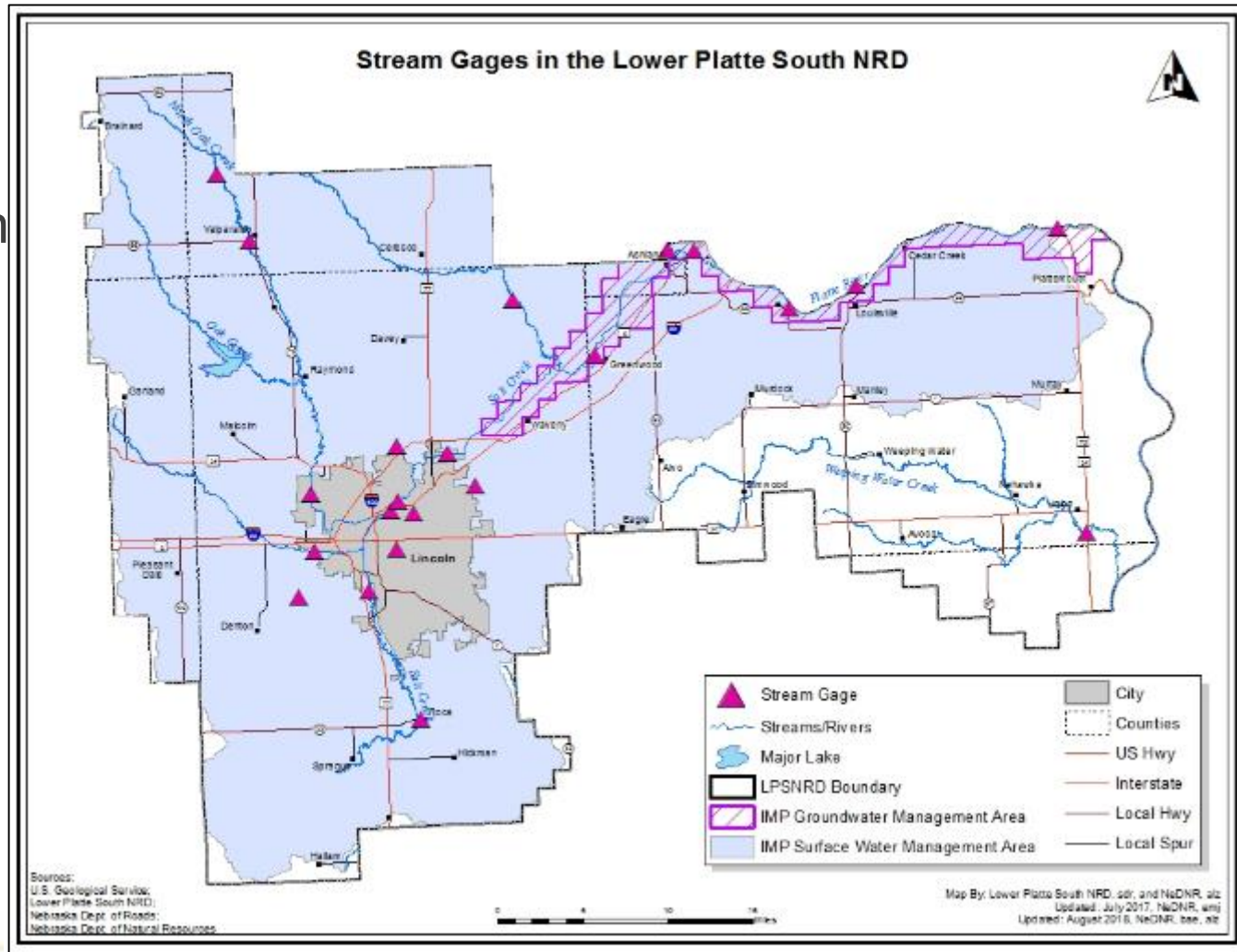
# Surface Water Monitoring-Permitting activities

- Approved two permits  
– 149 acres
- Cancelled 15 permits  
– 1,148 acres



# Surface Water Monitoring-stream gaging

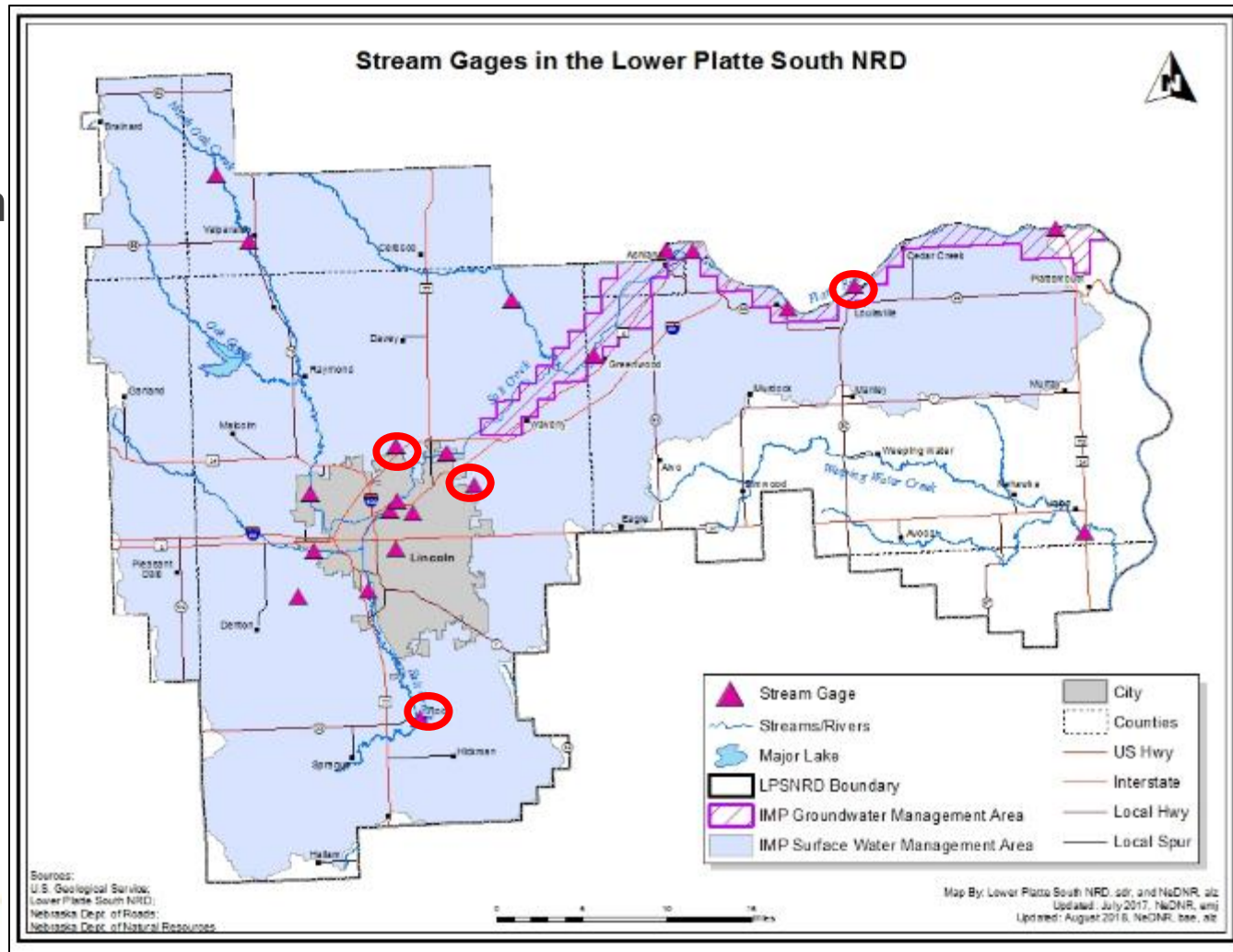
- 21 Stream gages within LPSNRD
  - USGS operated
  - gages installed between 1928 and 2016



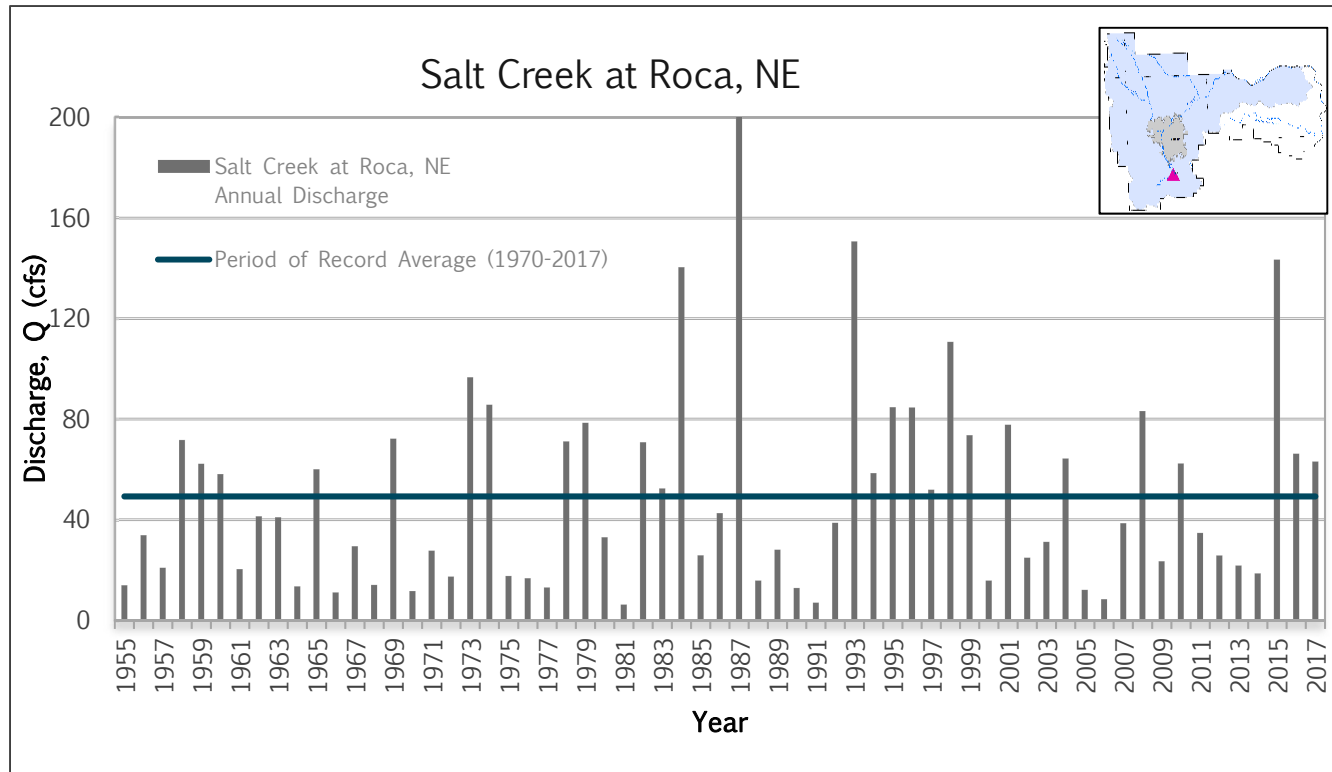


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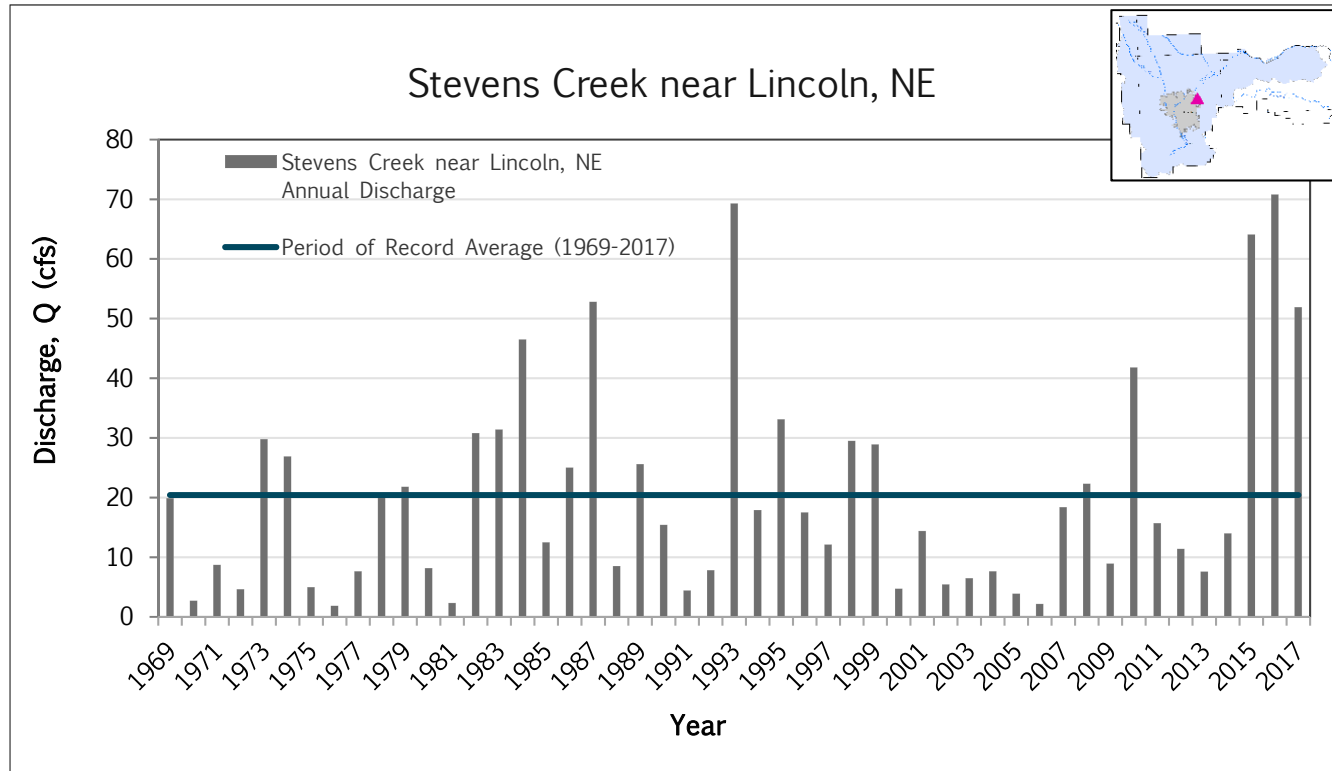
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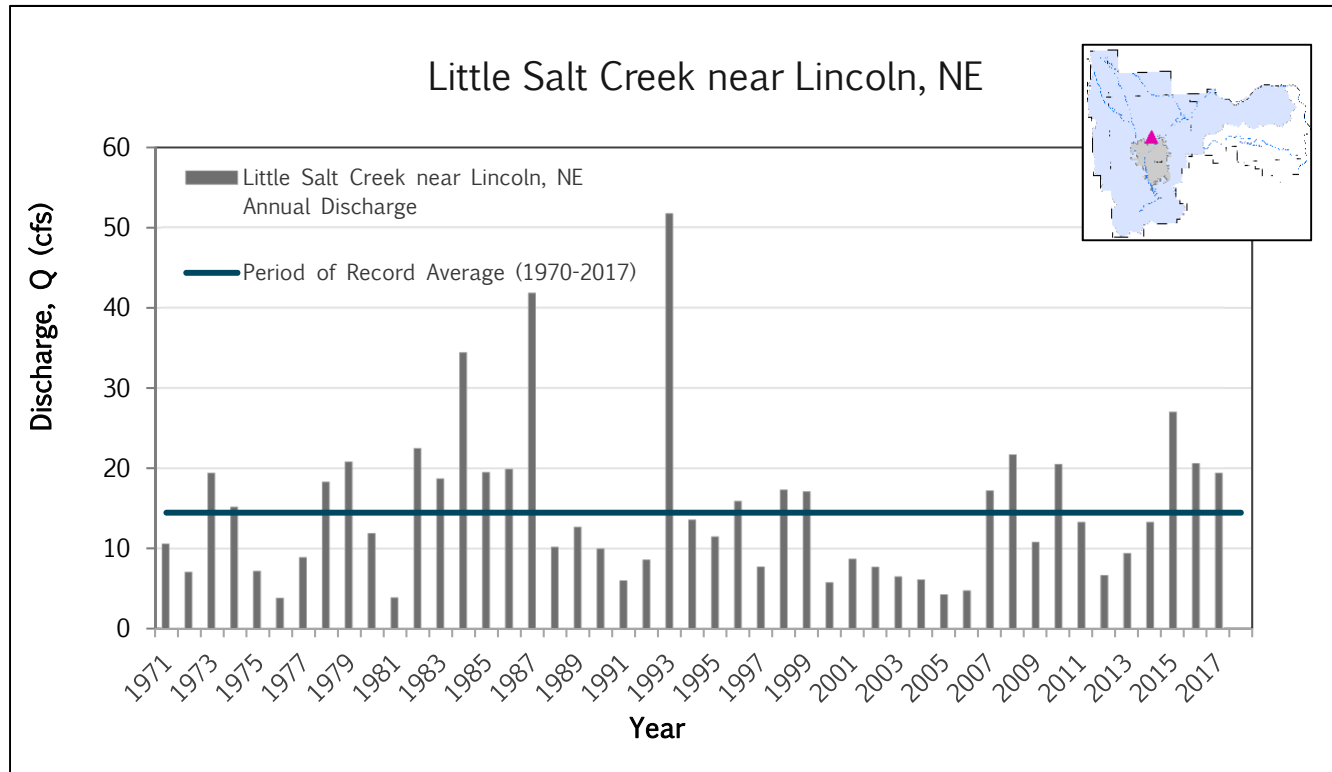
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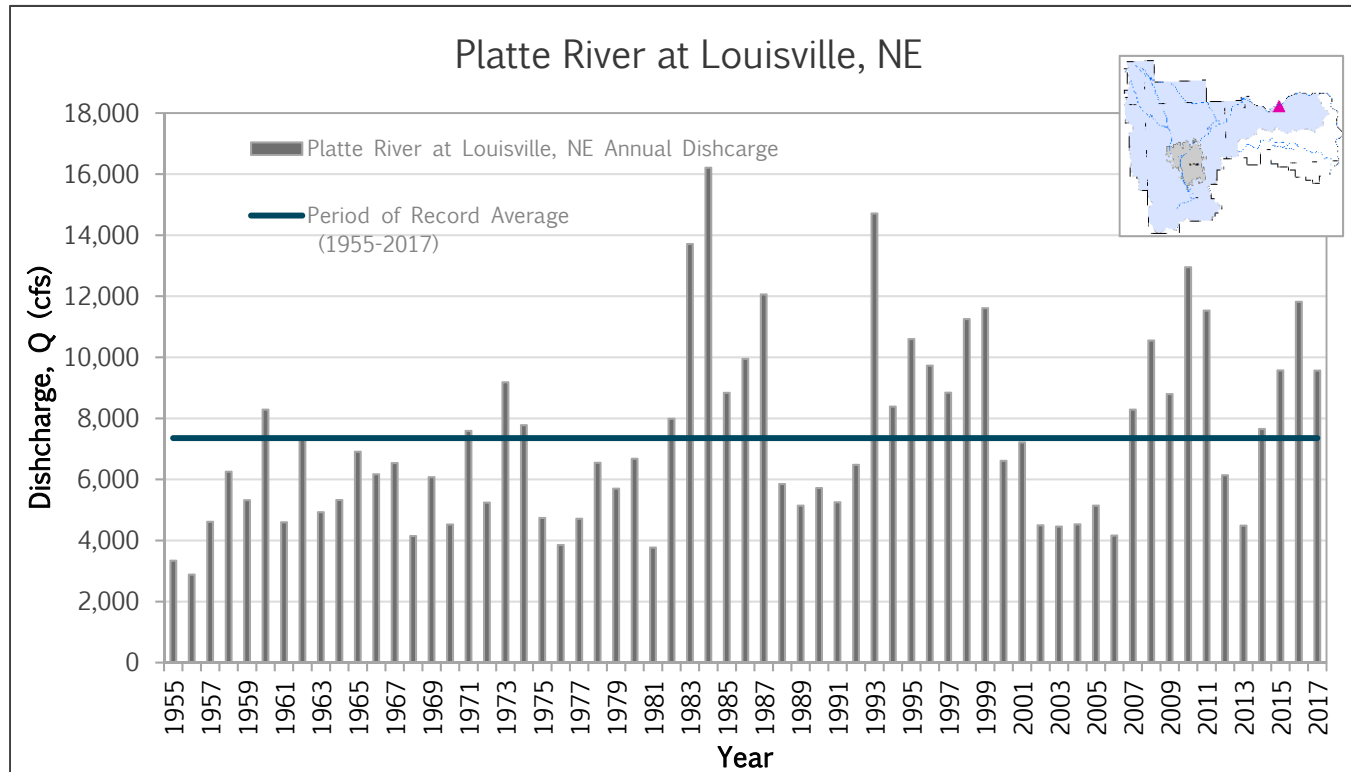
# Surface Water Monitoring-stream gaging



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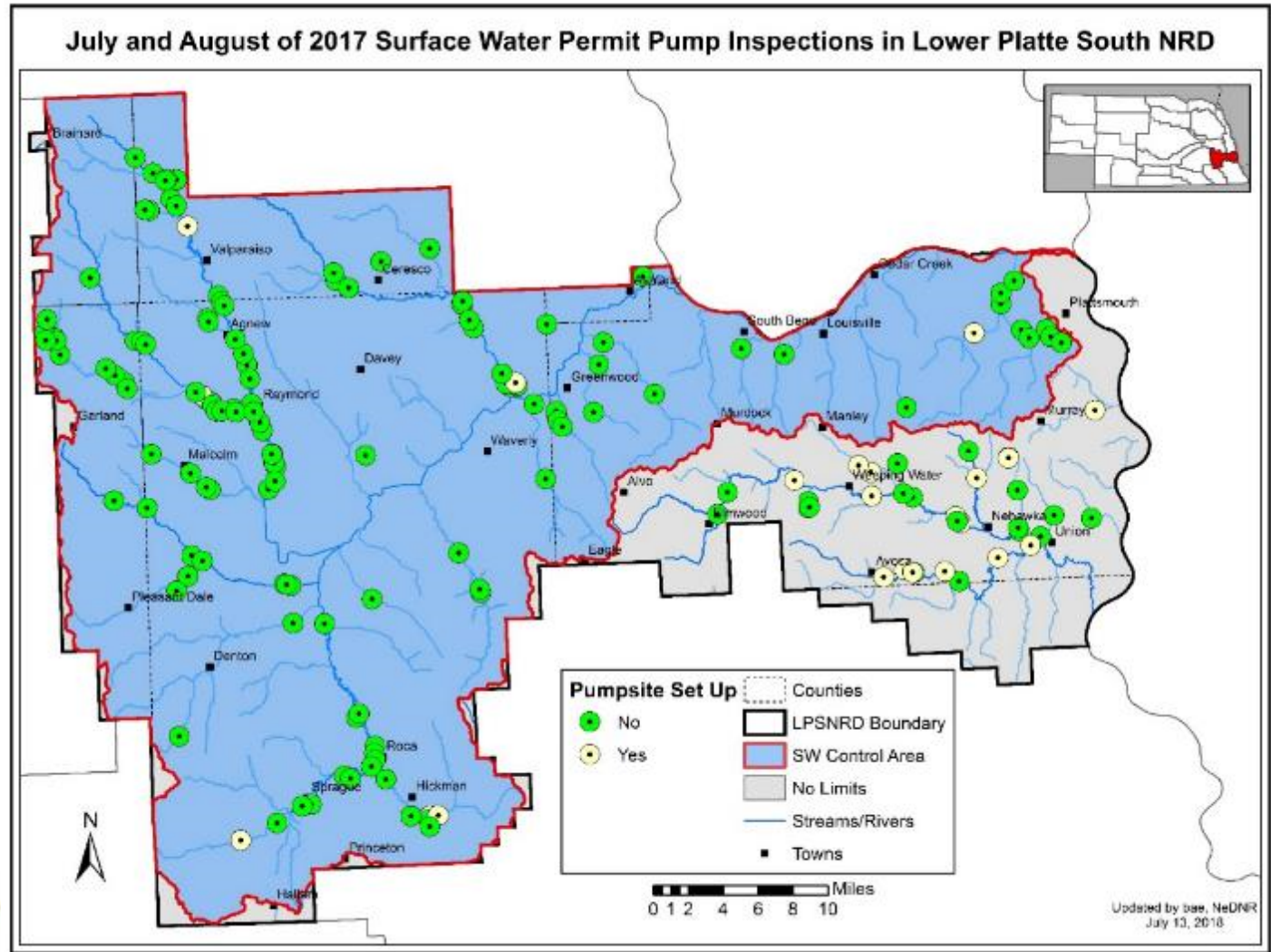


# Surface Water Monitoring-stream gaging



# Surface Water Monitoring-pump inspections

- 186 out of 219 (85%) surface water pump sites were inspected
  - Only 28 were set up to irrigate with surface water



# Surface Water Monitoring-Voluntary water use reports

- NeDNR's fourth year of implementation; now all online
- Increase in 2017 responses (29%) from last year (22%)
- Simplified questions
  - reduced “started but not completed” flagged reports
  - In LPSNRD, was reduced from 7.5% (2016) to 1% (2017)



Did you irrigate with this surface water appropriation for the above year?

Yes, irrigated acres are

Primary irrigation delivery system:

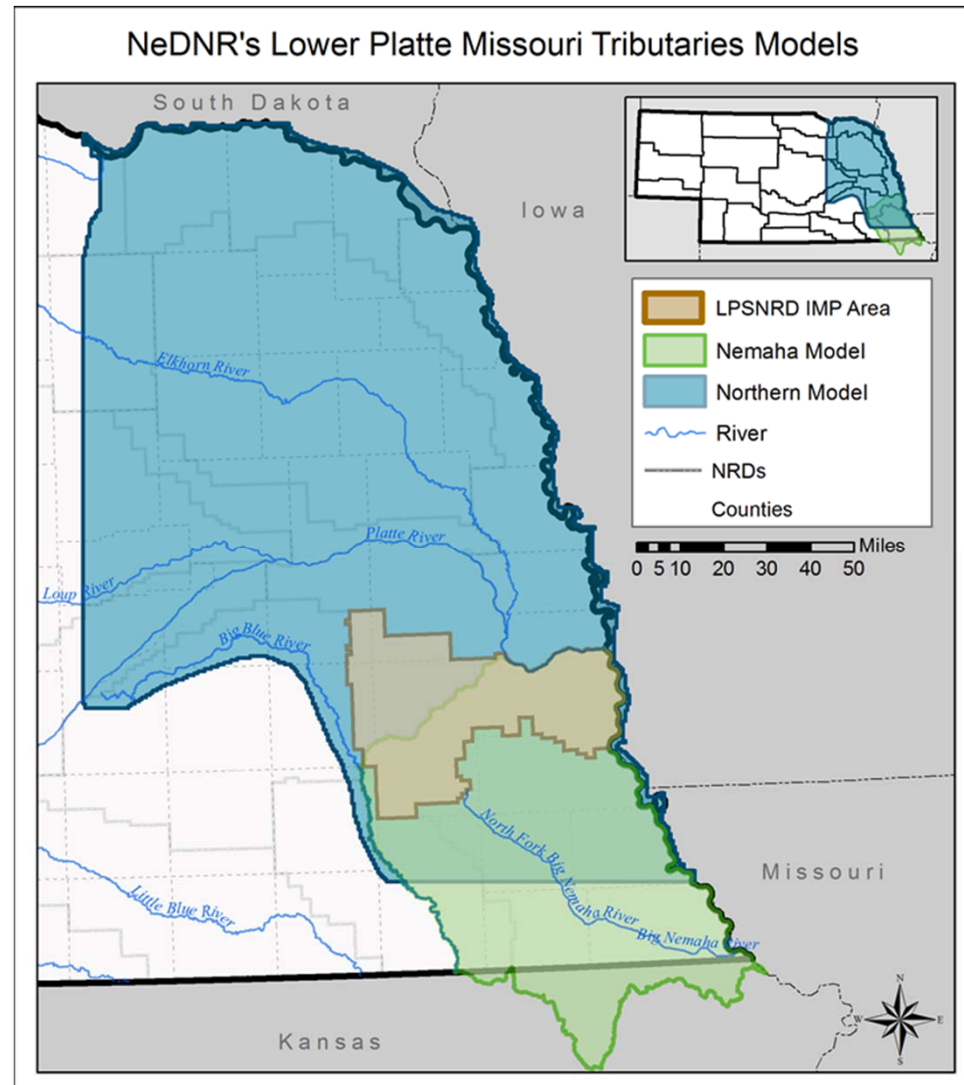
Estimated water usage

Number of Inches per Acre:

Acre-Foot Used:

# Lower Platte-Missouri Tributaries (LPMT) Models

- Regional numeric groundwater model (two parts)
  - LPMT is nearing completion (in calibration)
  - Nemaha underway; completion in 2019
  - Results will be used to update
    - hydrologically connected area
    - INSIGHT analysis







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# 2017 ACTIONS & PROGRESS

- **Ground Water monitoring and data collection**
  - 5 well permits/0 completed in 2017
  - 3 wells completed from 2016 permits
  - Water level monitoring in 138 wells, spring & fall, with average static water increases of 0.48 feet
  - Meters and water use reporting from 406 wells
  - 3.9 billion gallons pumped from 406 metered wells, with 316 irrigation wells





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# 2017 ACTIONS & PROGRESS

- **Ground Water monitoring and data collection (cont.)**
  - Certified irrigated acres-approved in 2017
    - HCA +61.78 to 3,268 acres
    - Remainder +211.12 to 27,059.1 acres
  - Ground water rules variances (no variances requested)
  - Water Banking / Transfers (no activity)



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# 2017 ACTIONS & PROGRESS

- **Ground Water Moratoriums**
  - HCA limitation on increasing irrigated acres
  - DVB Special Management Area
    - Allocations
    - Moratorium on new or increasing irrigated acres
    - Area boundary northeast of Valparaiso changed in 2016
- **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

# Regional and Basin collaboration

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Both LPSNRD and NeDNR participated in...

- Eastern Nebraska Water Resources Assessment
  - Aquifer mapping via airborne electromagnetic (AEM) 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 Plan approved October 2017
  - First data exchange in April 2018



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# Education/Outreach

## 2017 Activities

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

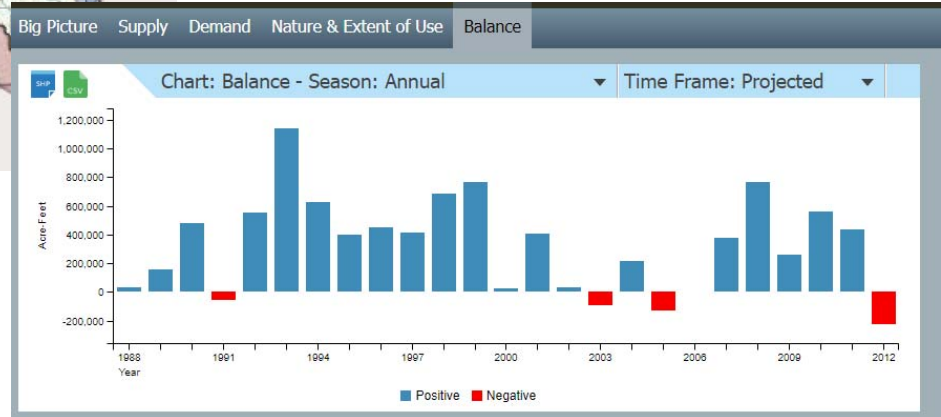
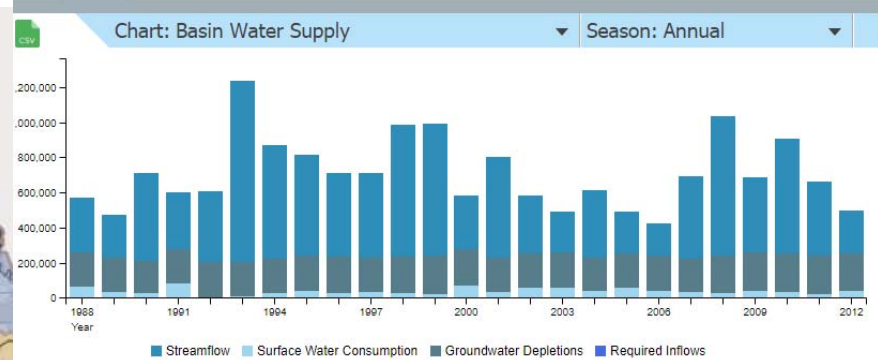
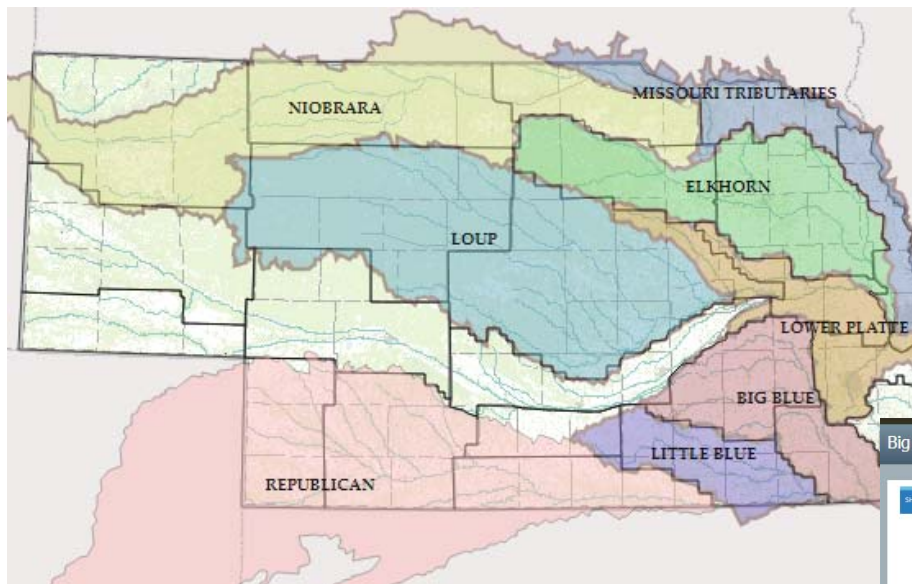
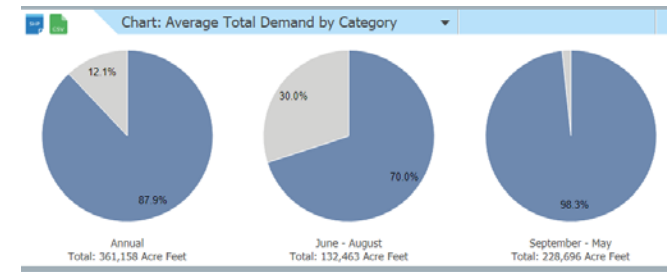
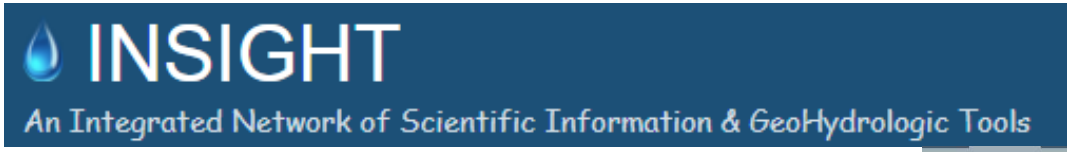


# Education/Outreach

- Events (set up booths)
  - Nebraska State Fair
  - Husker Harvest Days
  - The Governor's Ag conference
  - Nebraska Women in Agriculture
- Internet-based
  - INSIGHT Improvements
  - Interactive education applications



# Education/Outreach



<https://nednr.nebraska.gov/INSIGHT/>





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# 2018 & 2019 ACTIONS

## Jointly Identified Actions for Succeeding Two Years

### NeDNR Actions

- Monitoring of surface water permits & water use
  - Mapping and tracking of acres
  - Pump-site inspections
  - Voluntary water use reporting program
- Continue education and outreach
  - State and local events
  - INSIGHT web portal
  - Interactive educational applications
- Continued development of Lower Platte River/Missouri Tributaries models





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# 2018 & 2019 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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# 2018 & 2019 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—2019 Earth Wellness Festival
- Review, with the Advisory Committee, the need to update the IMP (consistent with Basin Plan)
- Implementation of Lower Platte Basin Water Management Plan (data exchanges, etc.)



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## QUESTIONS OR COMMENTS?

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Nebraska Department of Natural Resources

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Lower Platte South Natural Resources District