

2018 ANNUAL INTEGRATED MANAGEMENT PLAN REPORT



LOWER PLATTE SOUTH
natural resources district

David Potter, Assistant General Manager



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LPSNRD Board Meeting, August 21, 2019



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 2018
- LPSNRD and NeDNR jointly decided that no modifications to the IMP are needed at the time of the 2018 annual review



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IMP Annual Report/Review

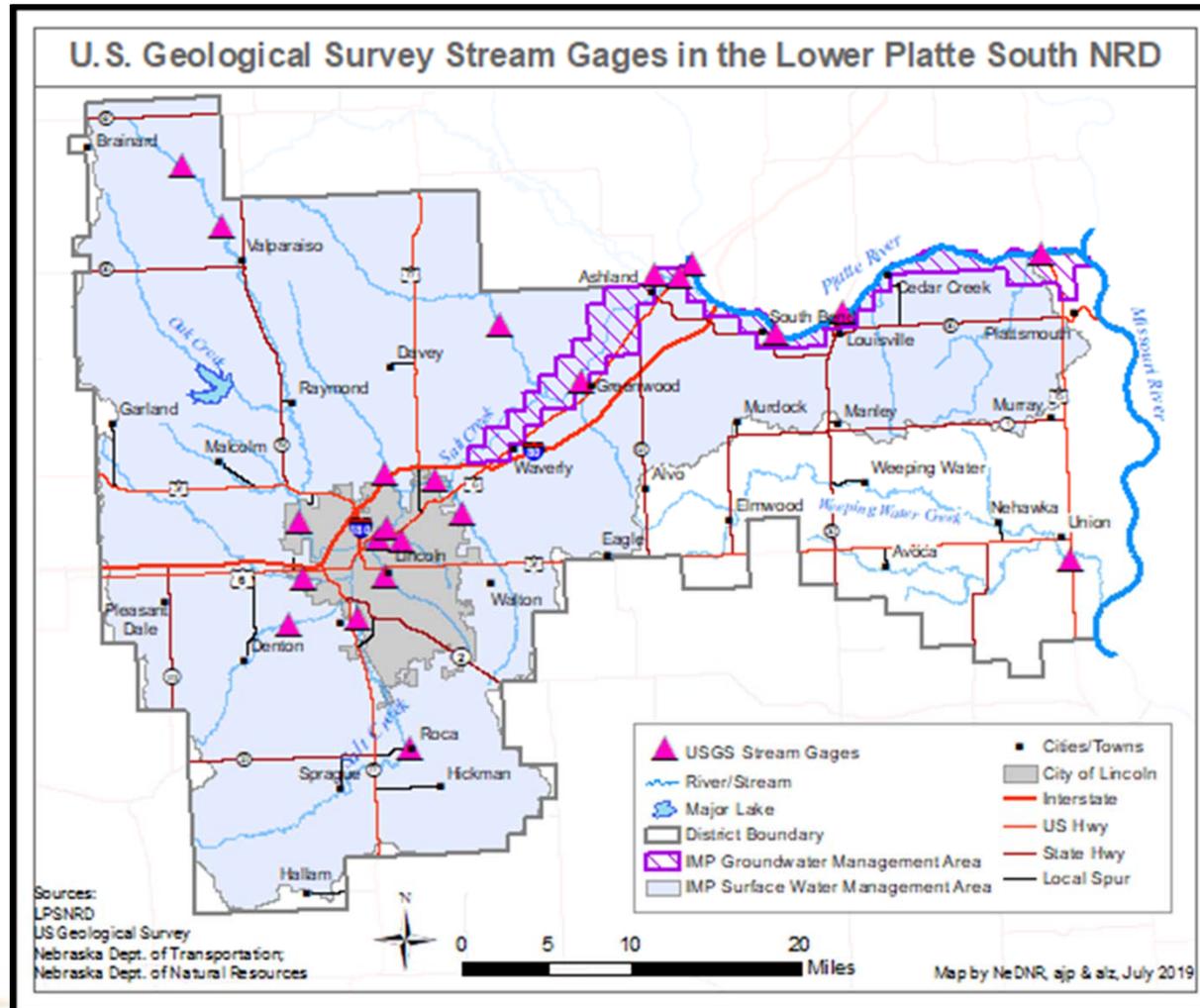
- Monitoring and data collection (groundwater and surface water)
- Studies and planning
- Education/Outreach
- Collaboration (Lower Platte Basin, ENWRA, etc.)

NeDNR's Surface Water Monitoring

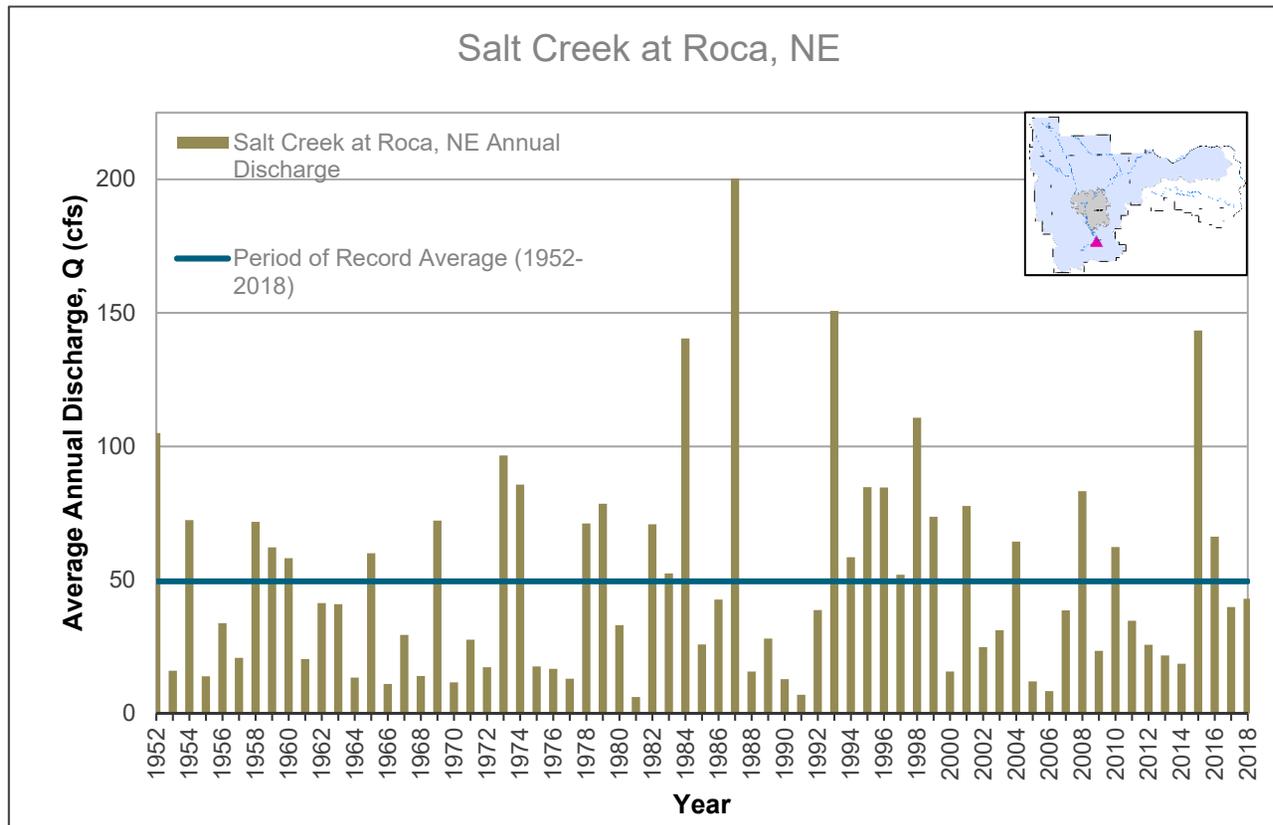
- Stream gaging
- Surface water permitting activities
- Voluntary surface water use reporting

Surface water monitoring: stream gaging

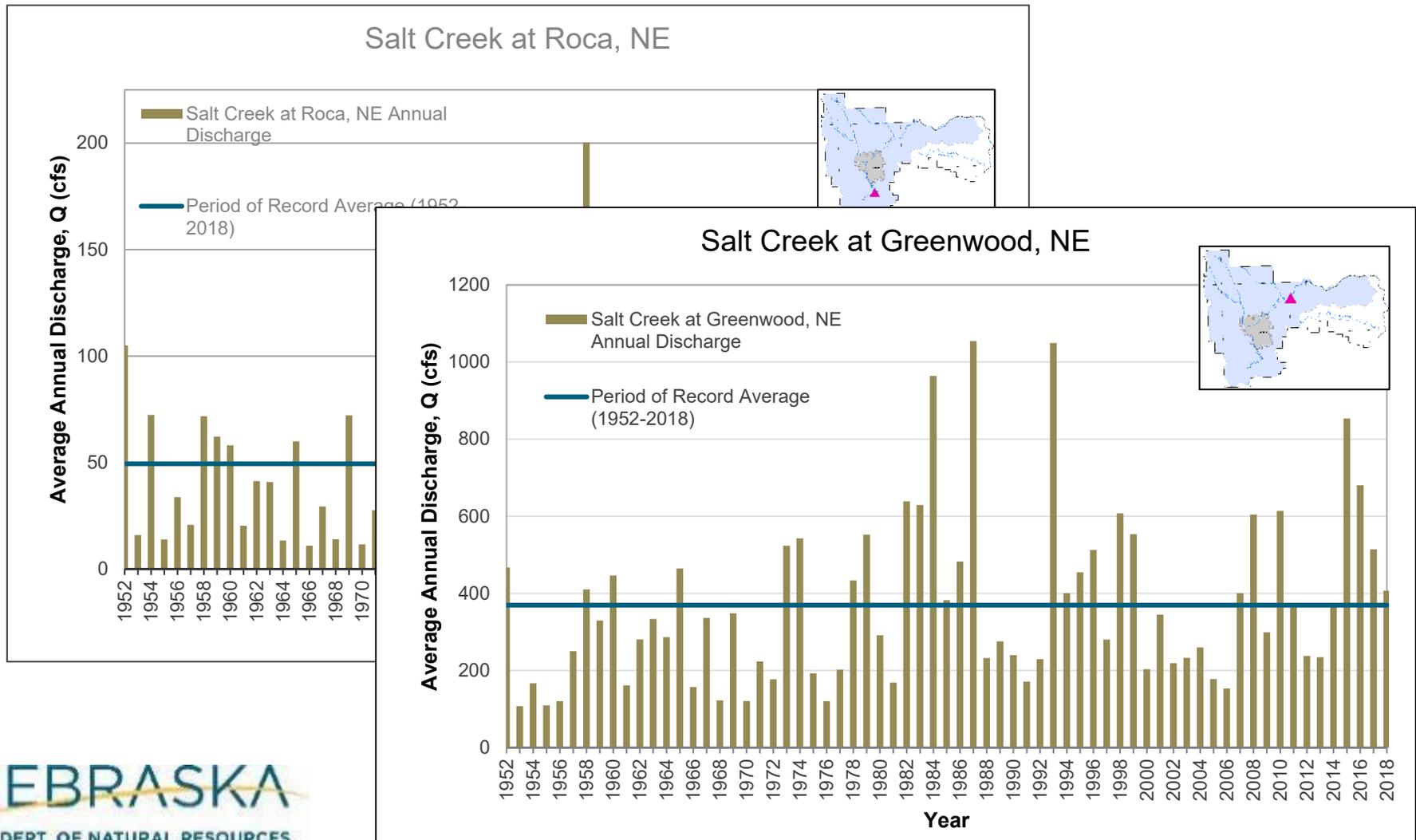
- 21 USGS stream gages
- Installed 1950's to 2016
- NRD assists in funding of 16 gages



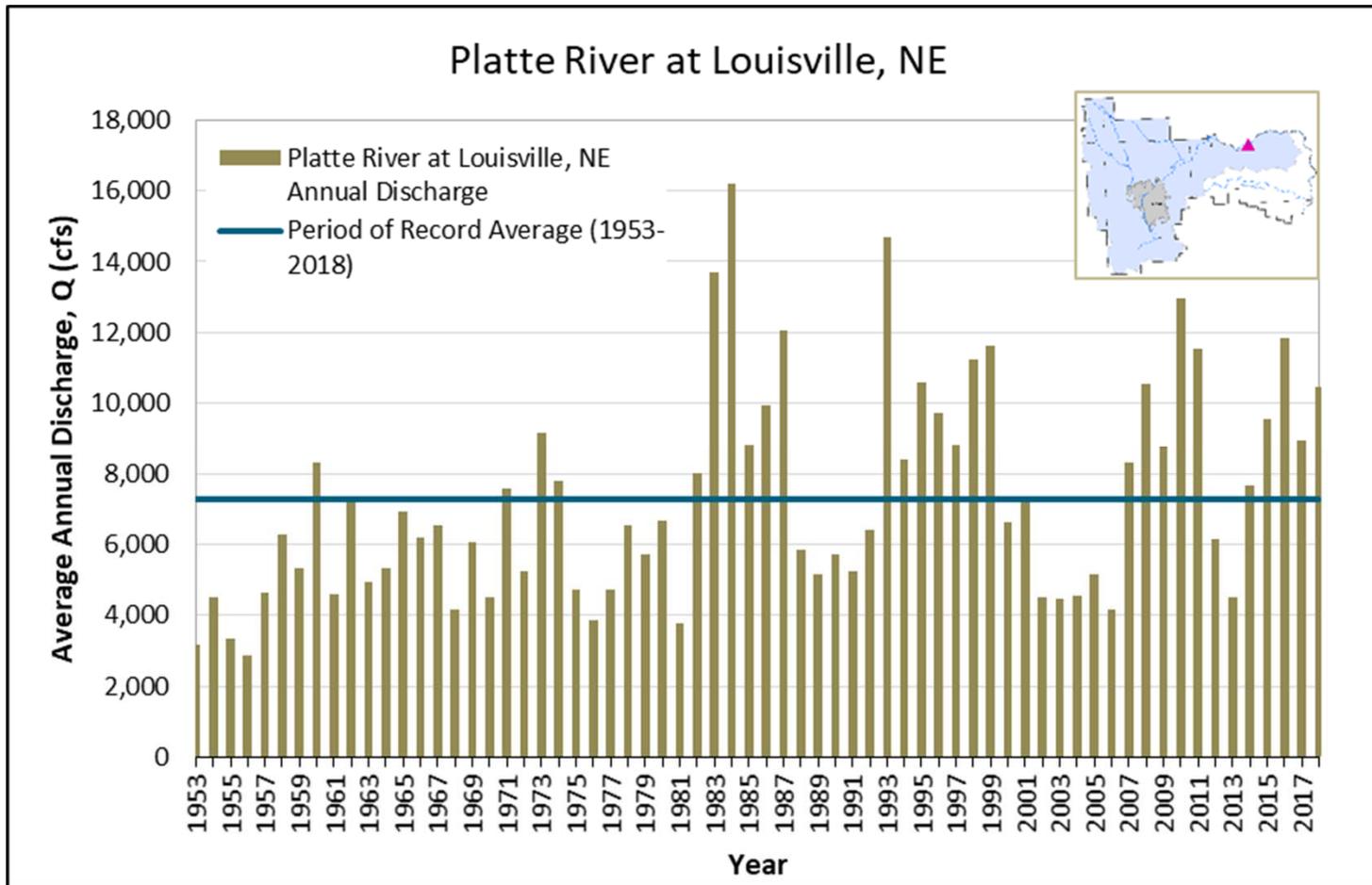
Surface water monitoring: stream gaging



Surface water monitoring: stream gaging

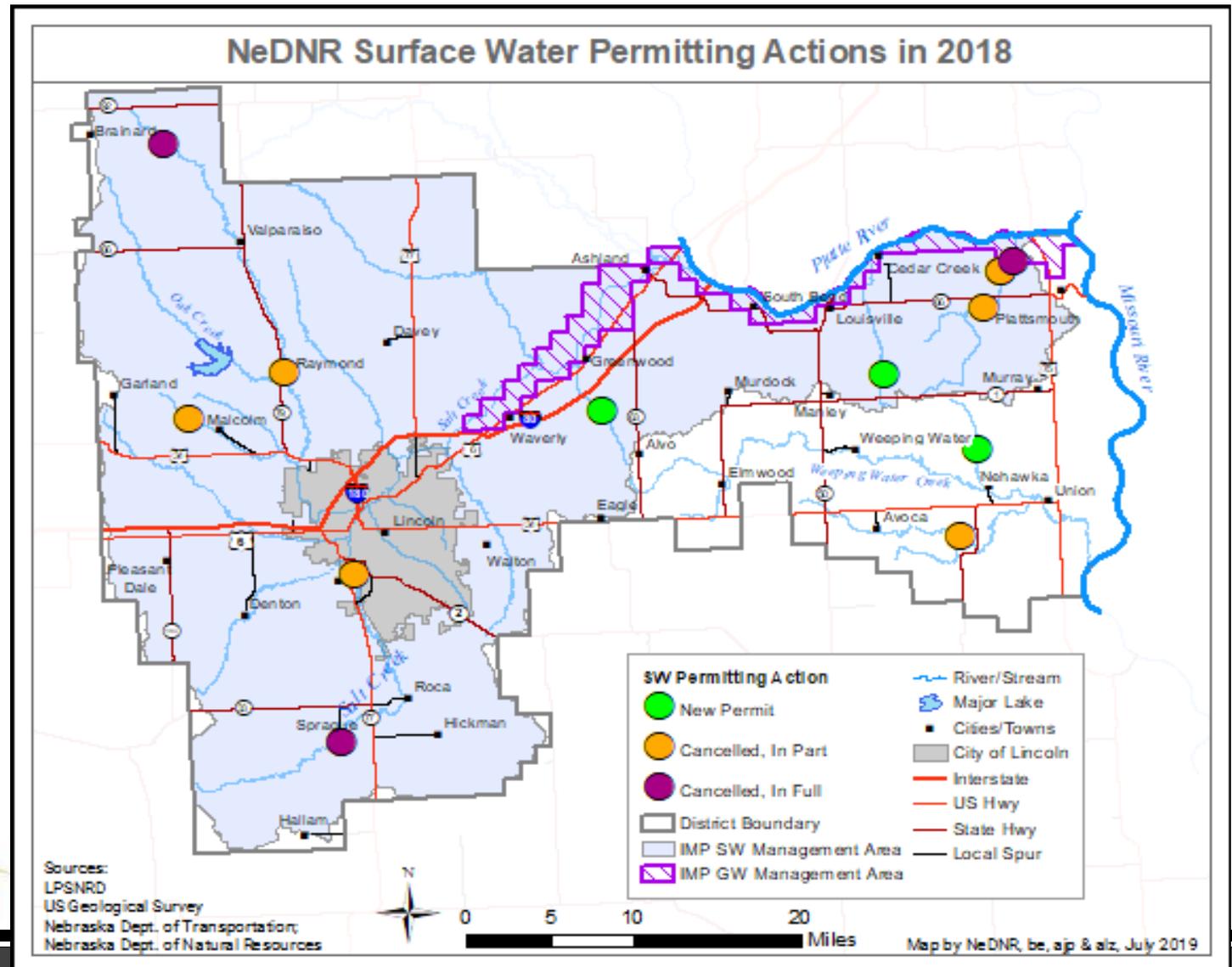


Surface water monitoring: stream gaging



Surface water monitoring: permitting activities

- 3 new permits
- 7 partially canceled permits
- 3 fully cancelled permits



Surface water monitoring: permitting activities

Surface Water Irrigated Acres* Changes in 2018				
Geographic Area	3 new permits (acres)	3 fully canceled permits (acres)	7 partially canceled permits (acres)	Total canceled permits (acres)
Lower Platte River Basin	113	336	219	556
Missouri River Tribs Basin	75	0	125	125
Whole NRD	187	336	345	681

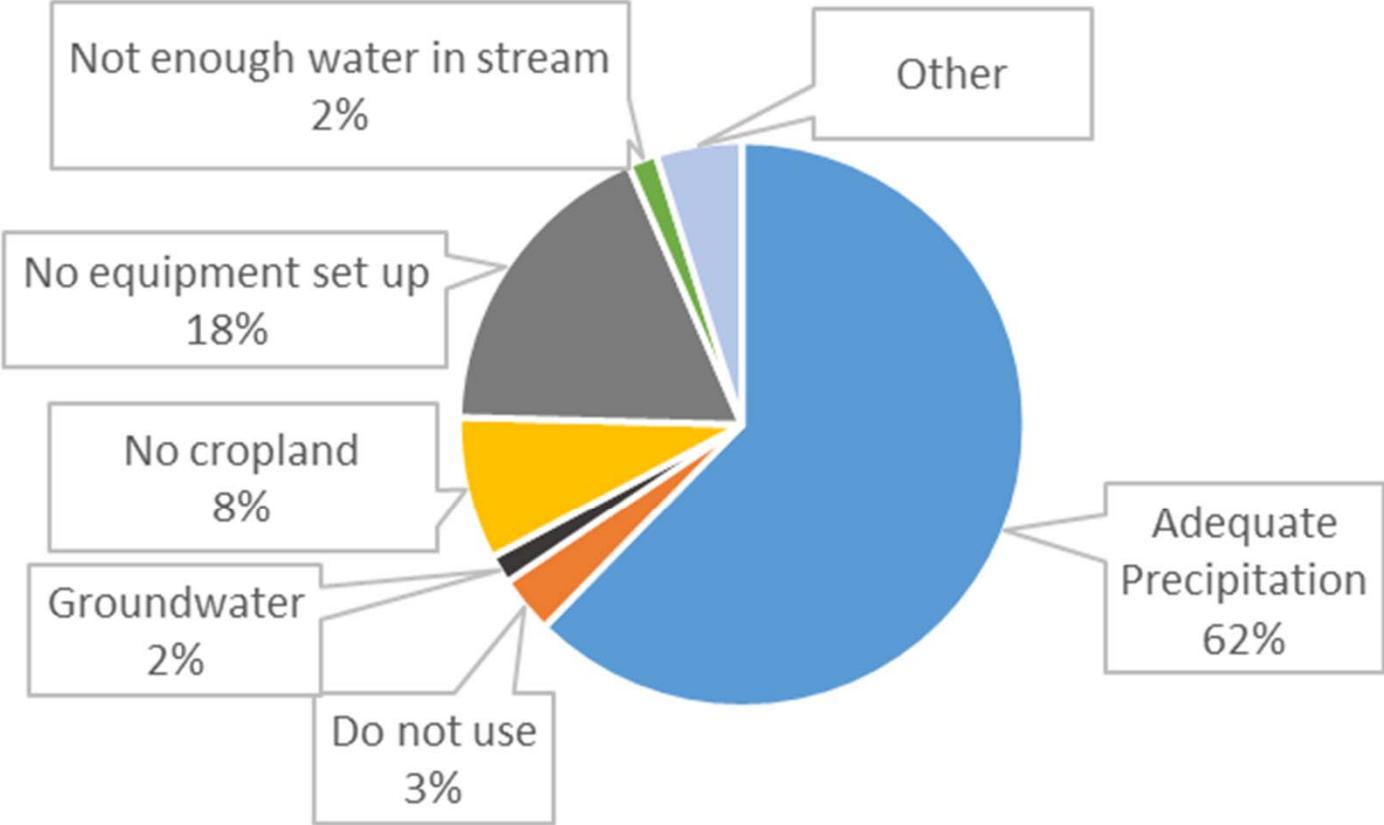
Surface water voluntary water use reporting

- NeDNR's fifth year of implementation
- Sent out postcards/letters for 206 surface water rights
- 28% response rate for 2018 effort
 - 2017 (29%)
 - 2016 (22%)
 - 2015 (30%)
- Information collected includes:
 - Water use
 - Types of crops
 - Reasons for not irrigating

Surface water voluntary water use reporting

Reasons for Not Irrigating with Surface Water

n = 62



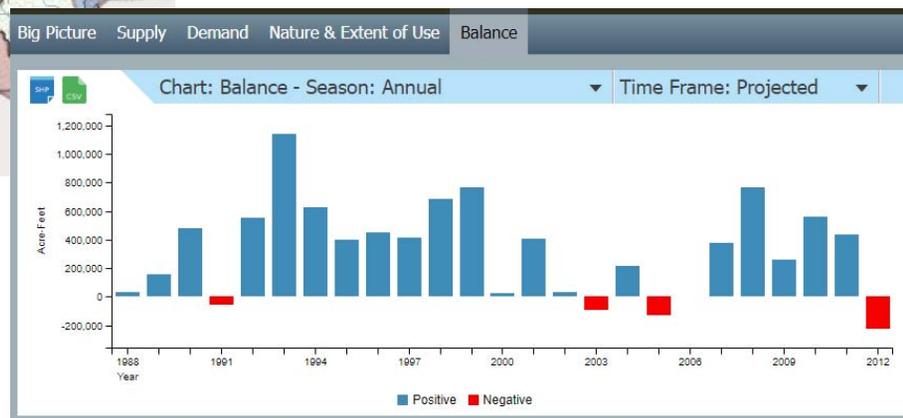
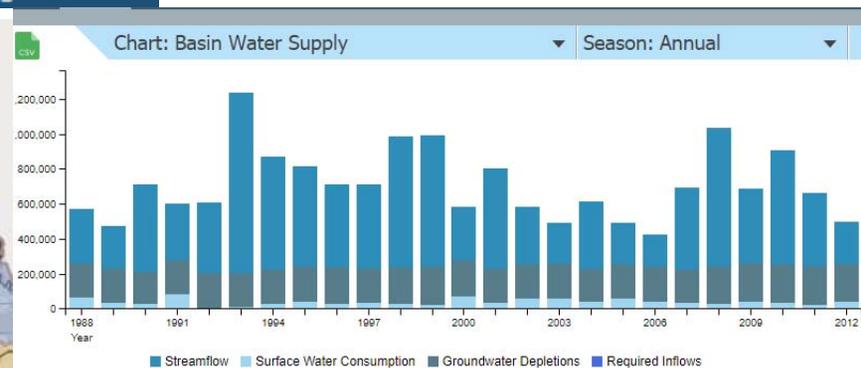
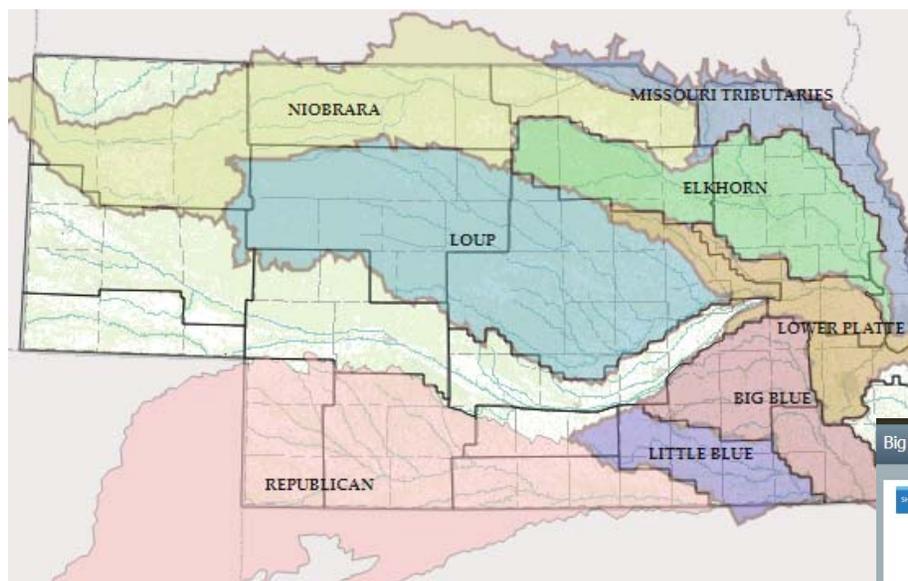
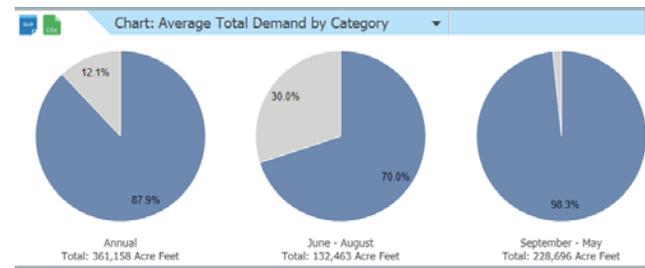
NeDNR studies and research activities

- Stream accretion/depletion calculator for Lower Platte River Basin (development underway)
 - Calculate consumptive use from land cover/use change
 - Section (1 mile by 1 mile) scale
- Regional groundwater model for the Lower Platte-Missouri Tributaries region
 - Model is complete
 - QA in process for stream depletion factors
- INSIGHT web tool for water supply, demand and balance
 - Updated to include Republican River
 - <https://nednr.nebraska.gov/INSIGHT/>

NeDNR studies and research activities

INSIGHT

An Integrated Network of Scientific Information & GeoHydrologic Tools



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

NEBRASKA
DEPT. OF NATURAL RESOURCES



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2018 ACTIONS & PROGRESS

- **Ground Water monitoring and data collection**
 - 11 well permits/6 completed in 2018
 - 4 wells completed from 2017 permits with one in the HCA
 - Water level monitoring in 137 wells, spring & fall, with average static water decrease of 0.39 feet
 - Meters and water use reporting from 412 wells
 - 3.4 billion gallons pumped from 412 metered wells, with 312 irrigation wells





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2018 ACTIONS & PROGRESS

- **Ground Water monitoring and data collection (cont.)**
 - Certified irrigated acres-approved in 2018
 - HCA +0 for same 3,268 acres
 - Remainder +434.23 to 27,492.33 acres
 - Ground water rules variances (no variances requested)
 - Water Banking / Transfers (no activity)



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2018 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 (currently)
 - » 21 inches/3 years/acre, not to exceed 9 inches/year
 - Gravity Irrigation (currently)
 - » 30 inches/3 years/acre, not to exceed 12 inches/year

Regional and Basin collaboration

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

2018 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



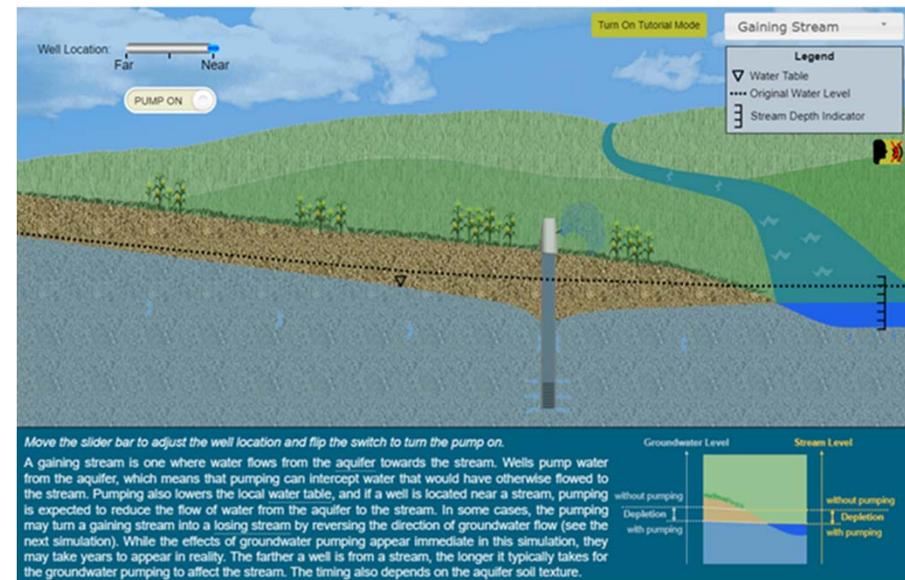
NeDNR education/outreach

■ Events

- Nebraska State Fair
- Husker Harvest Days
- NE State Irrigation Association/NE Water Resources Association (joint convention)
- Nebraska Women in Agriculture
- NE Planning Conference (American Planning Association)
- World-O-Water (Omaha)

■ Internet-based

- Interactive education applications
- <https://dnr.nebraska.gov/water-planning/education>





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2019 & 2020 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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2019 & 2020 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
- Recommendations for Areas with limited aquifer areas
- Discuss coordination of regional water systems and water shortage action plans



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2019 & 2020 ACTIONS

Jointly Identified Actions for Succeeding Two Years

Joint LPSNRD/NeDNR Actions

- Continued participation in regional planning groups (LPRCA, ENWRA, LPR Coalition, and Lower Platte Consortium)
- Jointly participate in one public outreach event
- Review, with the Advisory Committee, the need to update the IMP (consistent with Basin Plan)
- Evaluate the need for modifications to the LPSNRD streamgange network



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QUESTIONS OR COMMENTS?

Amy Zoller, Integrated Water Management Coordinator
Nebraska Department of Natural Resources

David Potter, Assistant General Manager
Lower Platte South Natural Resources District