

2019 ANNUAL INTEGRATED MANAGEMENT PLAN REPORT



LOWER PLATTE SOUTH
natural resources district

David Potter, Assistant General Manager



Melissa Mosier, Integrated Water Management Coordinator

LPSNRD Integrated Management Subcommittee Meeting, August 6, 2020
LPSNRD Board Meeting, August 26, 2020



Voluntary IMP

- LPSNRD and NeDNR jointly adopted a voluntary IMP which became effective May 15, 2014
- Plan consists of 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.



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 2019
- LPSNRD and NeDNR jointly decided that no modifications to the IMP are needed at the time of the 2019 annual review



IMP Annual Report/Review

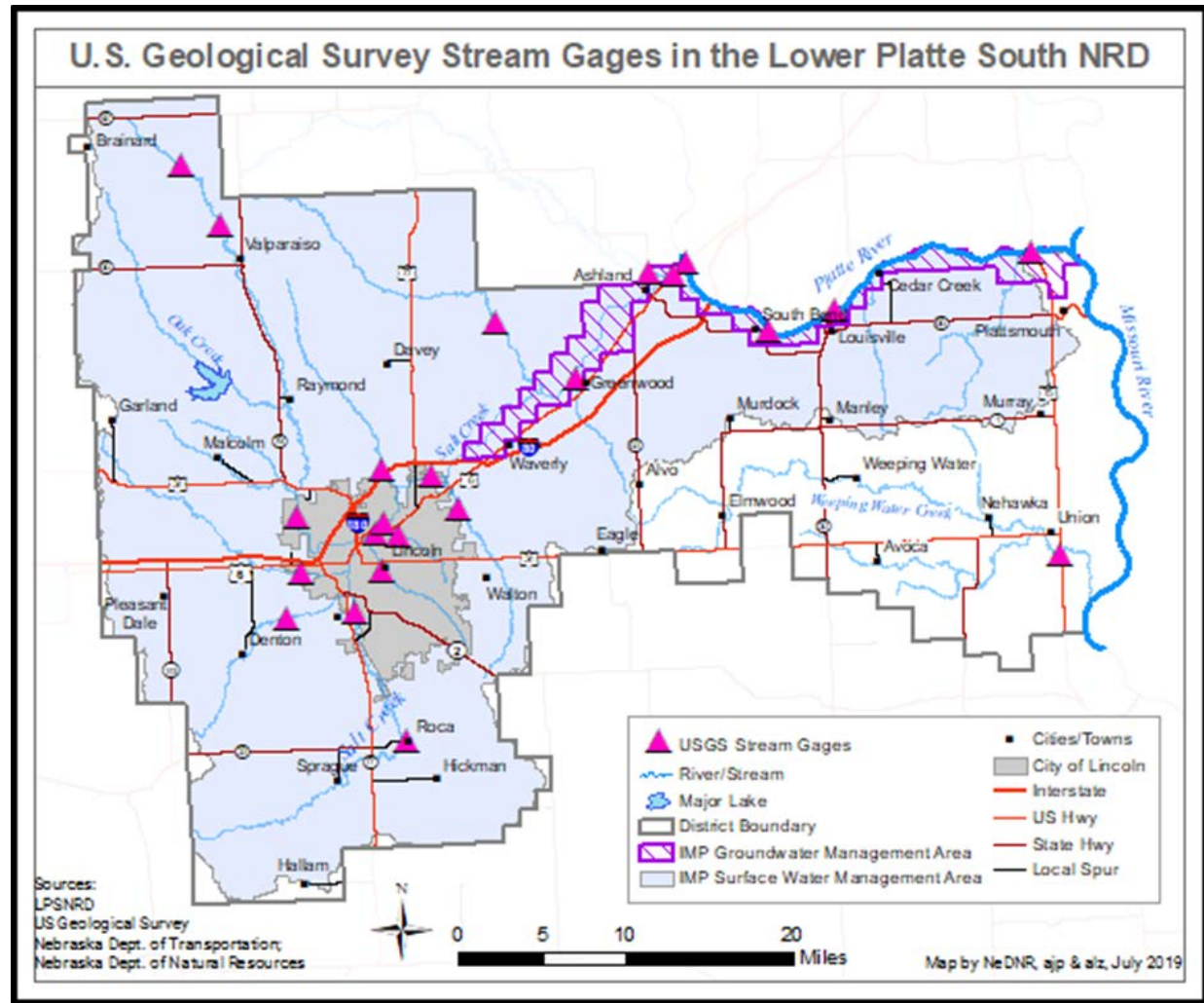
- Monitoring and data collection (groundwater and surface water)
- Studies and planning
- Education/Outreach
- Collaboration (Lower Platte Basin, ENWRA, etc.)

NeDNR's Surface Water Monitoring

- Streamgaging
- Surface water permitting activities
- Voluntary surface water use reporting

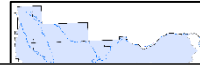
Surface water monitoring: Streamgaging

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



Surface water monitoring: Streamgaging

Little Salt Creek near Lincoln, NE



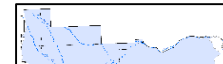
Salt Creek at Roca, NE



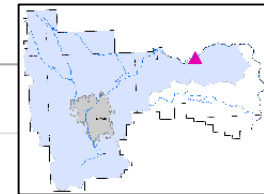
Salt Creek at Greenwood, NE



Stevens Creek near Lincoln, NE



Platte River at Louisville, NE



Average Annual Discharge, Q (cfs)

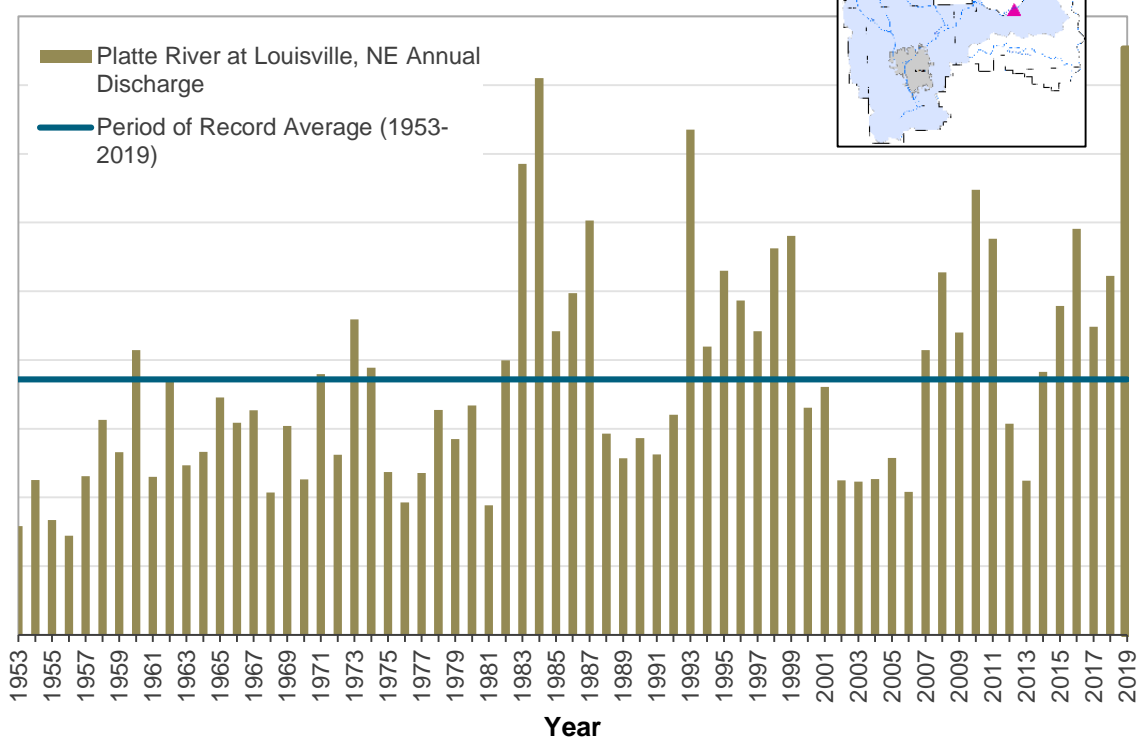
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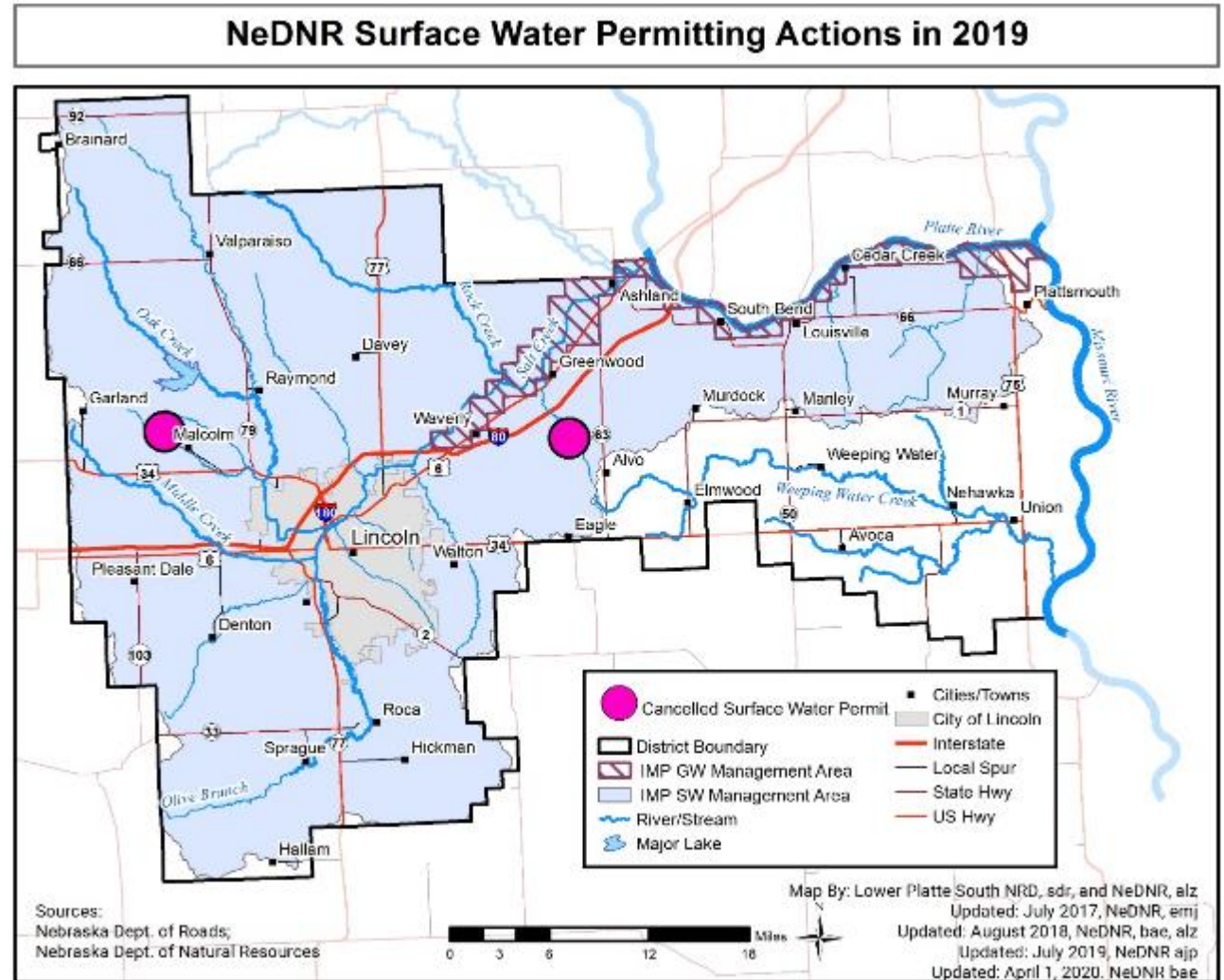
Average Annual Discharge, Q (cfs)

Average Annual Discharge, Q (cfs)



Surface water monitoring: permitting activities

- 0 new permits
- 2 canceled permits
- 0 permits transferred



Surface water monitoring: 2019 permitting activities

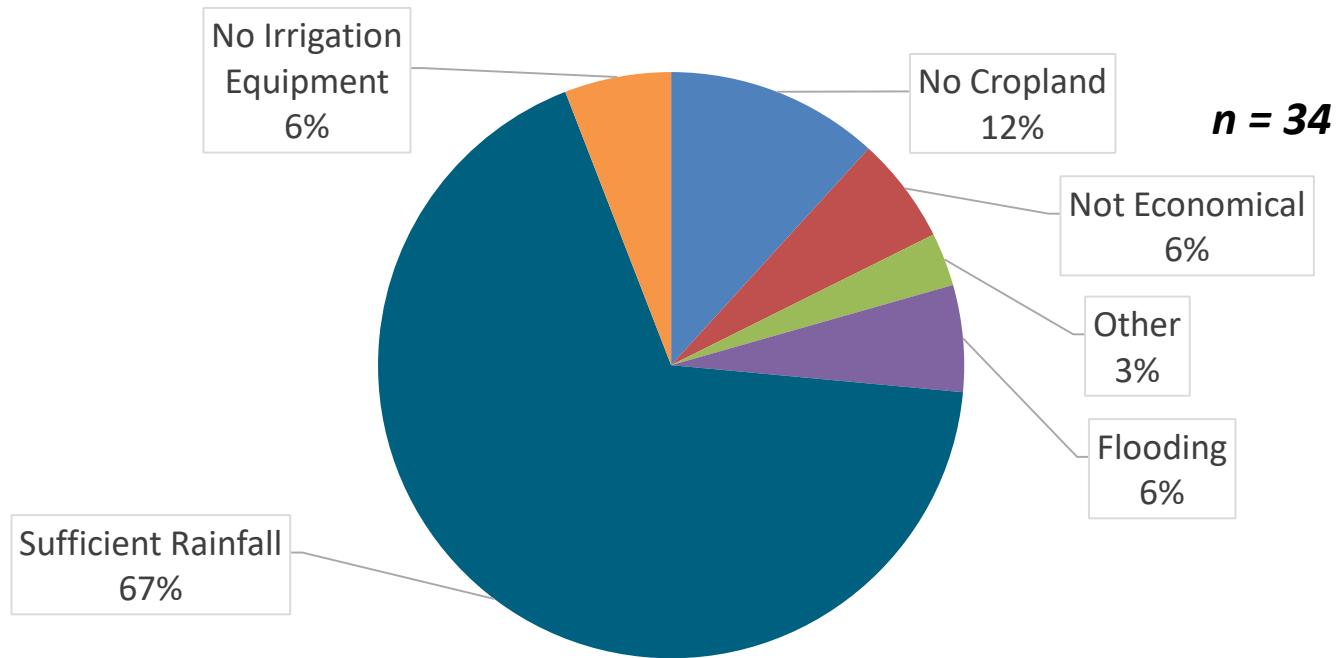
Acres Changes Associated with Surface Water Permitting Actions		
Geographic Area	Newly Permitted Acres	Cancelled Acres
Lower Platte River Basin	0	2.0
Missouri River Tributaries Basin	0	0
Total (Whole NRD)	0	2.0

Surface water voluntary water use reporting

- NeDNR's 6th year of implementation
- Sent out postcards/letters for 207 surface water rights
- 16% response rate for 2019 effort
 - 2018 (28%)
 - 2017 (29%)
 - 2016 (22%)
- Information collected includes:
 - Water use
 - Types of crops
 - Reasons for not irrigating

Voluntary Surface Water Reporting for 2019 in the LPSNRD

Reasons for Not Irrigating with Surface Water

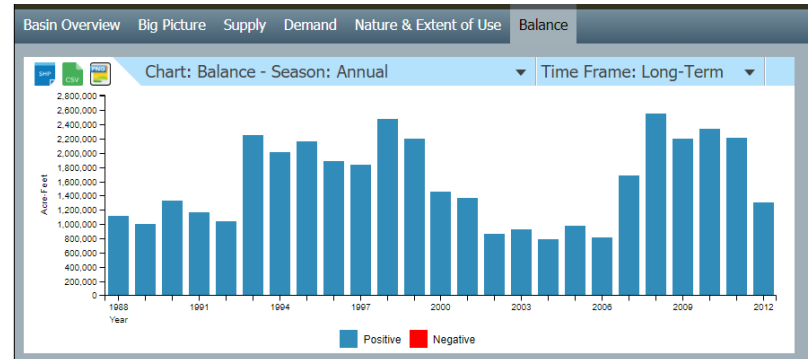
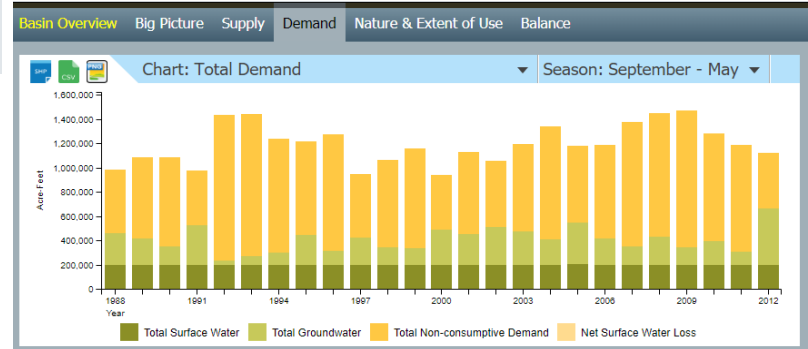
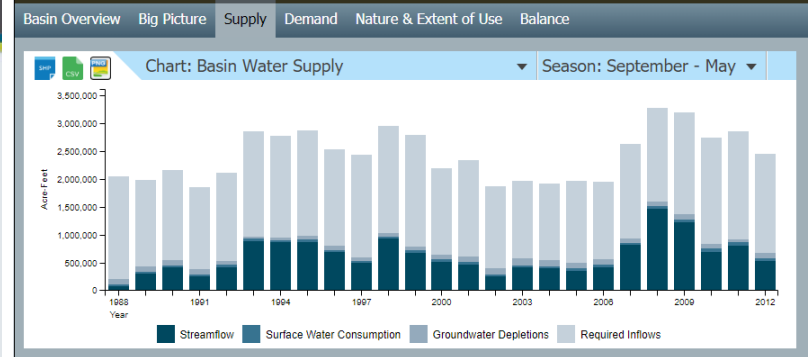
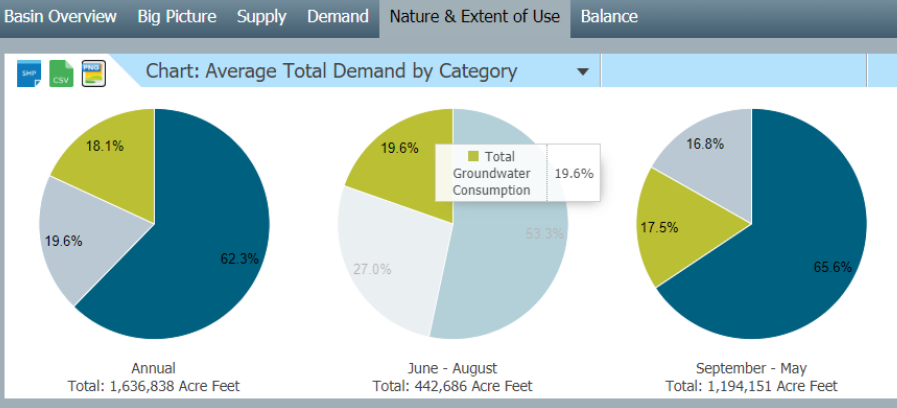
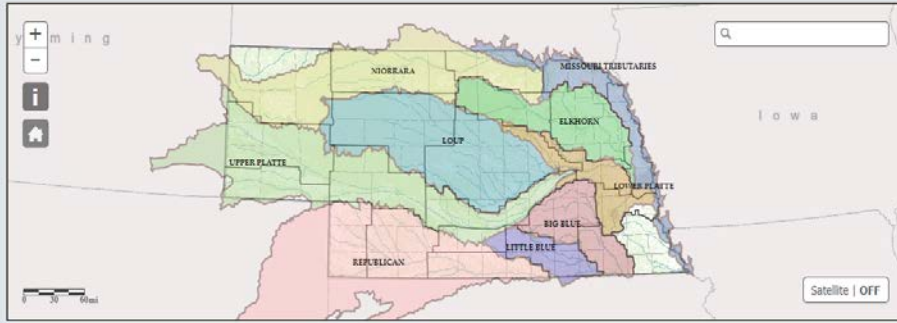


NeDNR/NRD studies and research activities

- 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
 - Initial model development complete
 - Incorporation and evaluation of AEM data
 - Studies have begun in LENRD, and P-MRNRD & LPNNRD
- INSIGHT web tool for water supply, demand and balance
 - Updated to include Republican River & Upper Platte River Basins

Welcome to INSIGHT! We've updated our interface and added data for the Republican River Basin. Click on the map to learn how to interact with the site. You can read about the analysis behind the charts in the methodology document and access the data through the Modeling Data page.
DISCLAIMER: The Republican River Basin analyses are made in conformance with the Republican River Compact and the Final Settlement Stipulation and do not strictly adhere to the INSIGHT methodology.

SELECT REGION ▾





2019 ACTIONS & PROGRESS

- **Groundwater monitoring and data collection**
 - 7 well permits/3 completed in 2019
 - One well completed from 2018 permit
 - Water level monitoring in 138 wells, spring & fall, with average static water increase of 1.62 feet
 - Meters and water use reporting from 418 wells
 - 2.5 billion gallons pumped from 418 metered wells, with 268 irrigation wells





2019 ACTIONS & PROGRESS

- **Groundwater monitoring and data collection (cont.)**
 - Certified irrigated acres-approved in 2019
 - HCA + 0 for same 3,268 acres
 - Remainder + 186.81 to 27,843.59 acres
 - Groundwater rules variances (no variances requested)
 - Water Banking / Transfers (no activity)



2019 ACTIONS & PROGRESS

- **Groundwater 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
- **Groundwater 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, streamgaging
- Lower Platte River Basin Consortium
 - Water supply resiliency, drought planning
 - Drought Contingency Plan adopted October 2019
- Lower Platte River Basin Coalition
 - Coordination and consistency across the Basin
 - Basin-wide Plan approved October 2017
 - First data exchange in April 2018
 - First increment expires in 2021 / Planning for second increment upcoming



Education/Outreach

2019 Activities

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



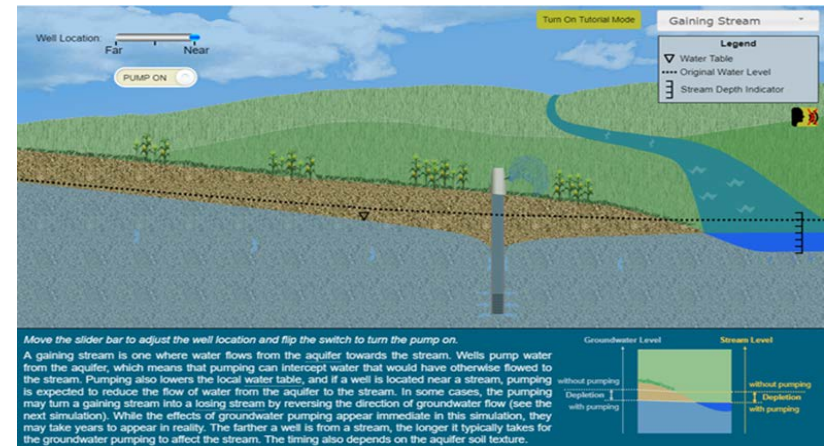
NeDNR education/outreach

■ 2019 Events

- Nebraska State Fair
- Husker Harvest Days
- NE State Irrigation Association/NE Water Resources Association (joint convention)
- Nebraska Women in Agriculture
- American Water Resources Association regional conference
- World-O-Water (Omaha)
- Sandhills Ranch Expo

■ Internet-based

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





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



Jointly Identified Actions for Succeeding Two Years

LPSNRD Actions

- Monitoring of groundwater 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



2020 & 2021 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)
 - Drought contingency table-top exercise planned for fall 2020
 - Coalition moving forward with updating INSIGHT data for Basin Plan
- Jointly participate in one public outreach event, as available
- Review, with the Advisory Committee, the need to update the IMP (consistent with Basin Plan)
- Evaluate the need for modifications to the LPSNRD streamgauge network
- LPSNRD/NeDNR quarterly coordination meetings moving forward
 - Update to Integrated Management Subcommittee 2x/year



LOWER PLATTE SOUTH
natural resources district



QUESTIONS OR COMMENTS?

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