

2020 ANNUAL INTEGRATED MANAGEMENT PLAN REPORT



LOWER PLATTE SOUTH
natural resources district

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**LPSNRD Integrated Management Subcommittee Meeting,
September 1, 2021**

LPSNRD Board Meeting, September 15, 2021



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.



“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 2020
- LPSNRD and NeDNR jointly decided that no modifications to the IMP are needed at the time of the 2020 annual review



IMP Annual Report/Review

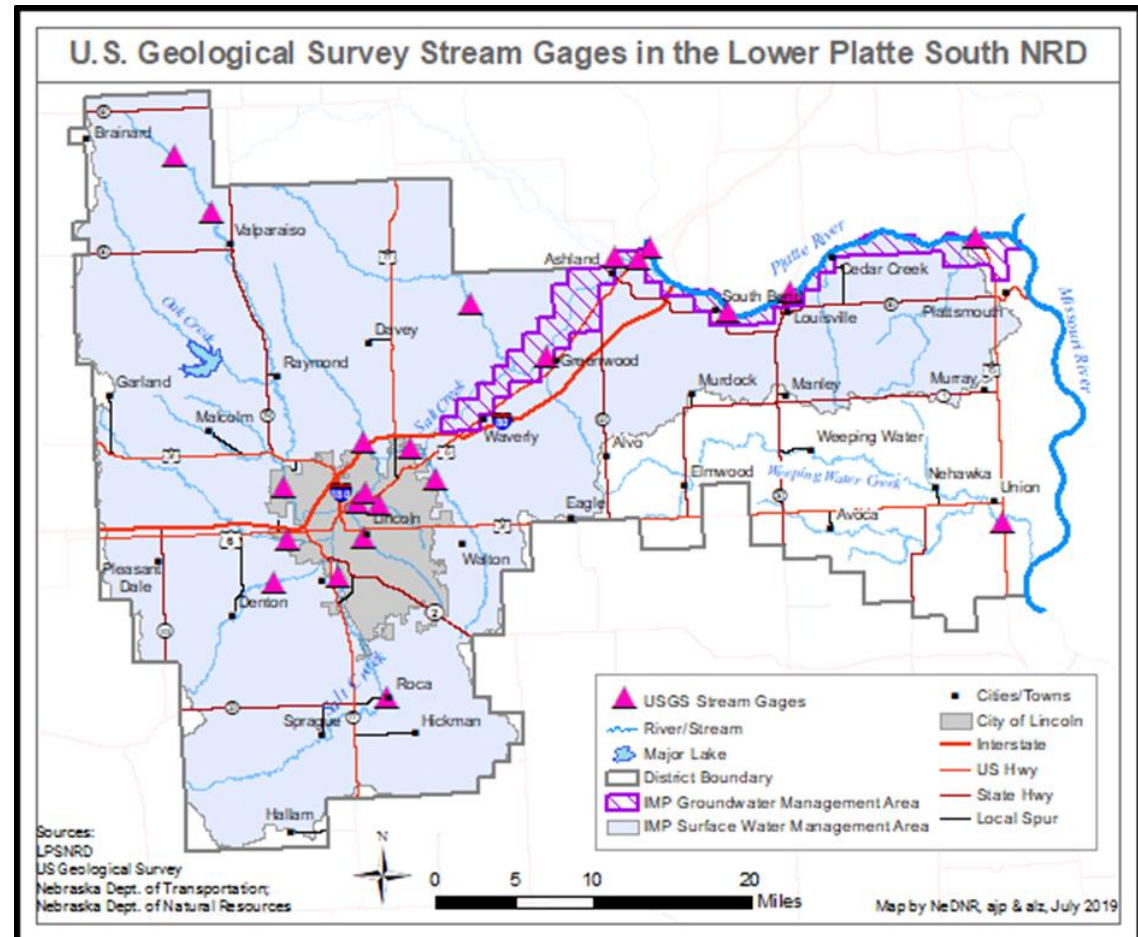
- Monitoring and data collection (groundwater and surface water)
- Studies and planning
- Education/Outreach Collaboration (Lower Platte Basin, ENWRA, etc.)

NeDNR's Surface Water Monitoring

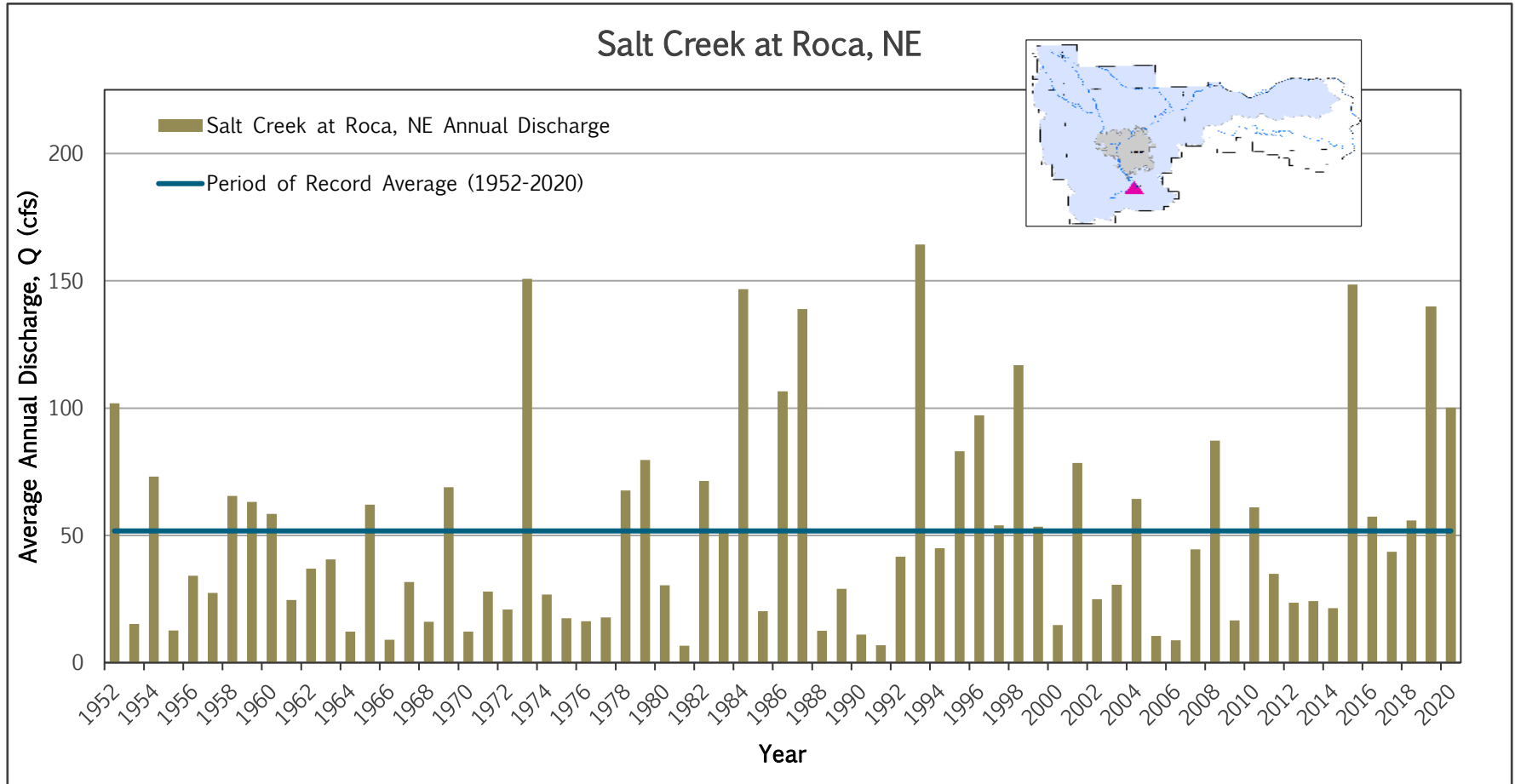
- Streamgaging
- Surface water permitting activities
- Voluntary surface water use reporting

Surface water monitoring: Streamgaging

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

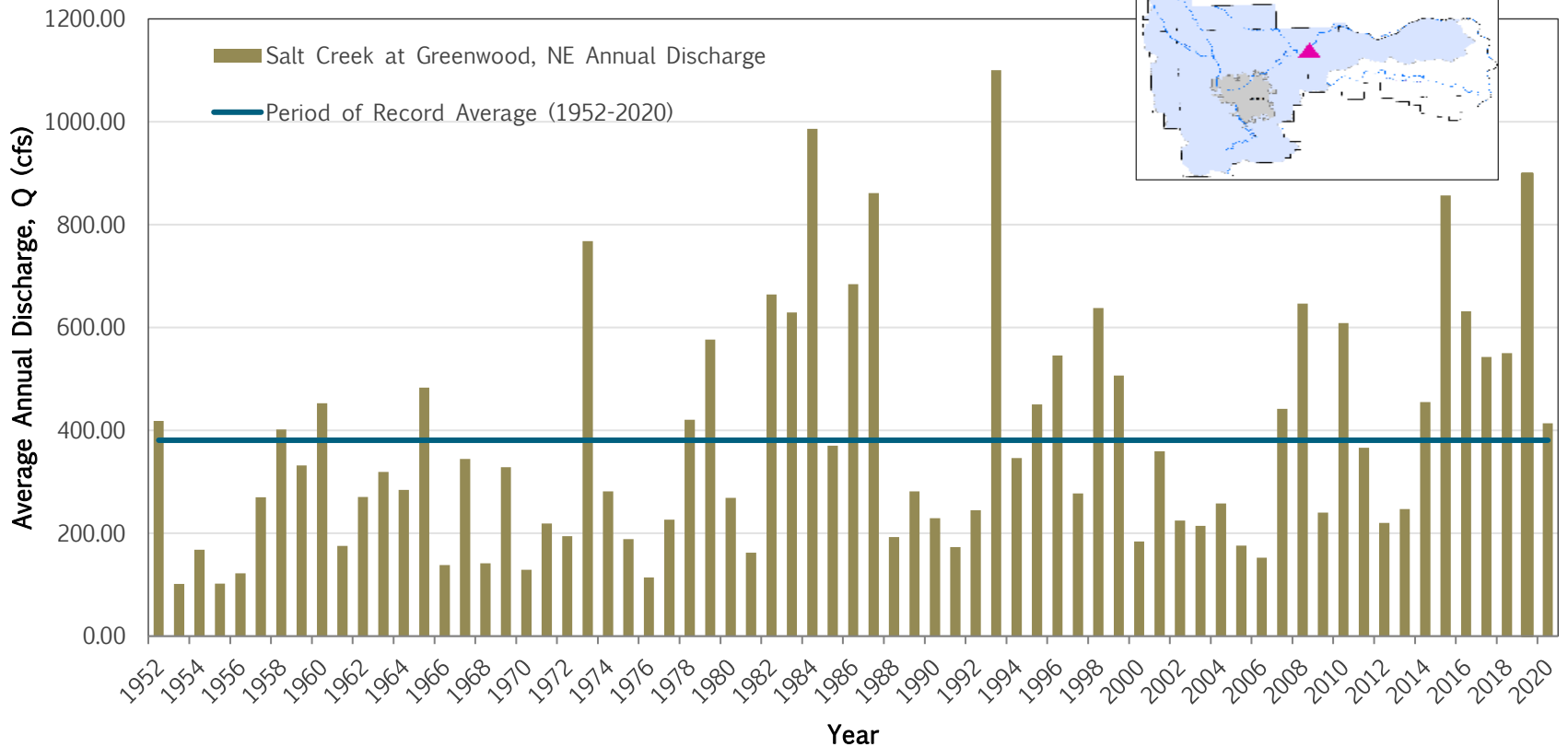


Surface water monitoring: Streamgaging



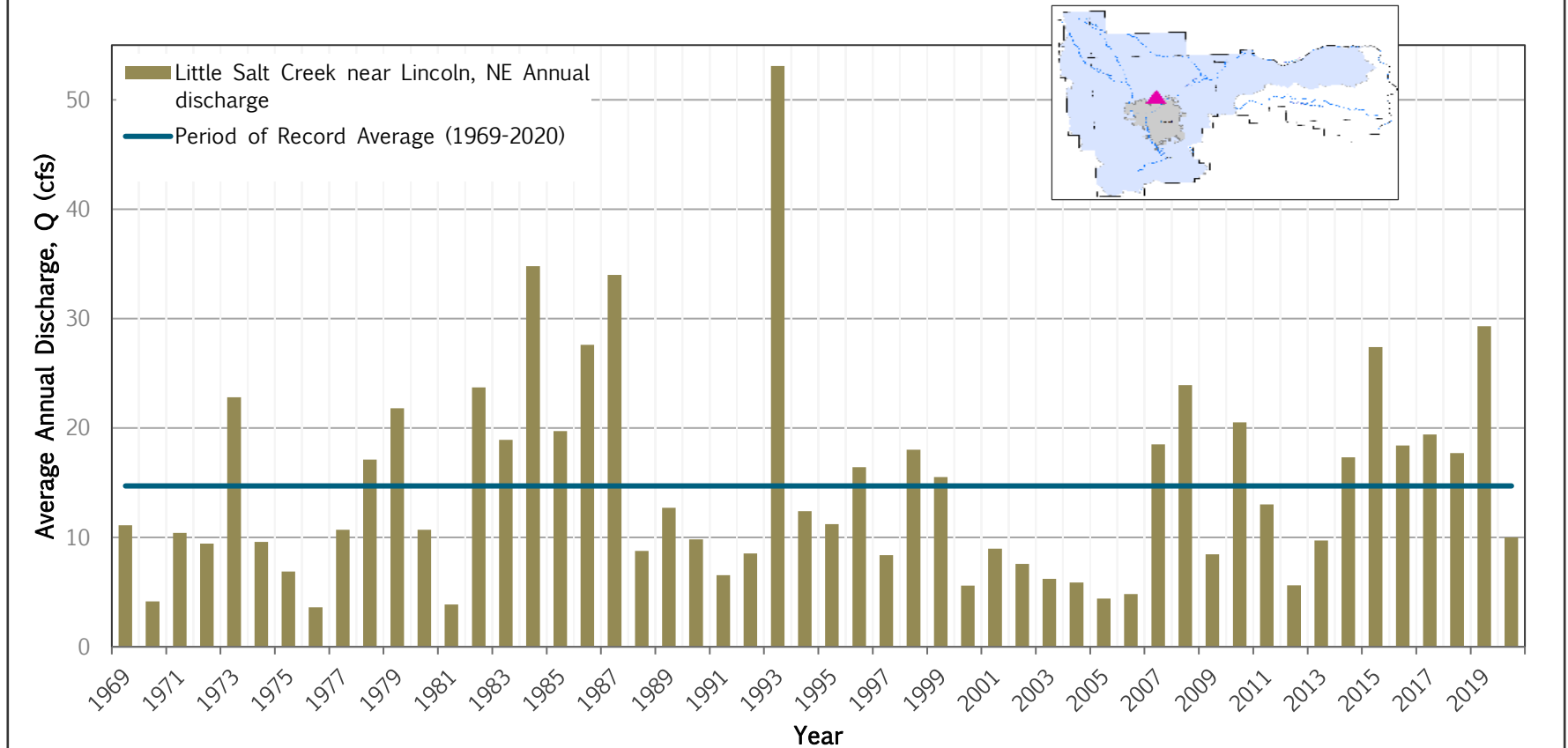
Surface water monitoring: Streamgaging

Salt Creek at Greenwood, NE



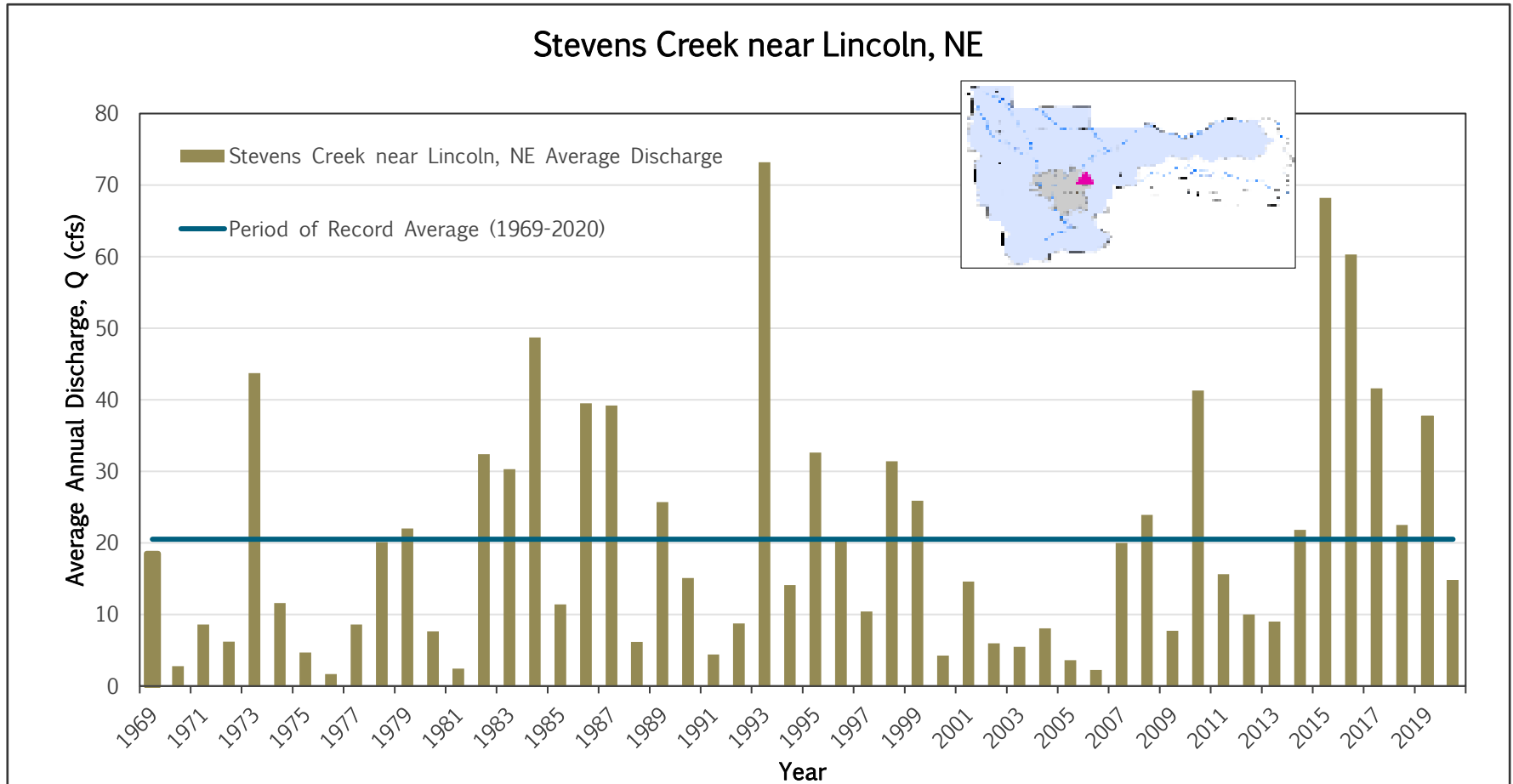
Surface water monitoring: Streamgaging

Little Salt Creek near Lincoln, NE



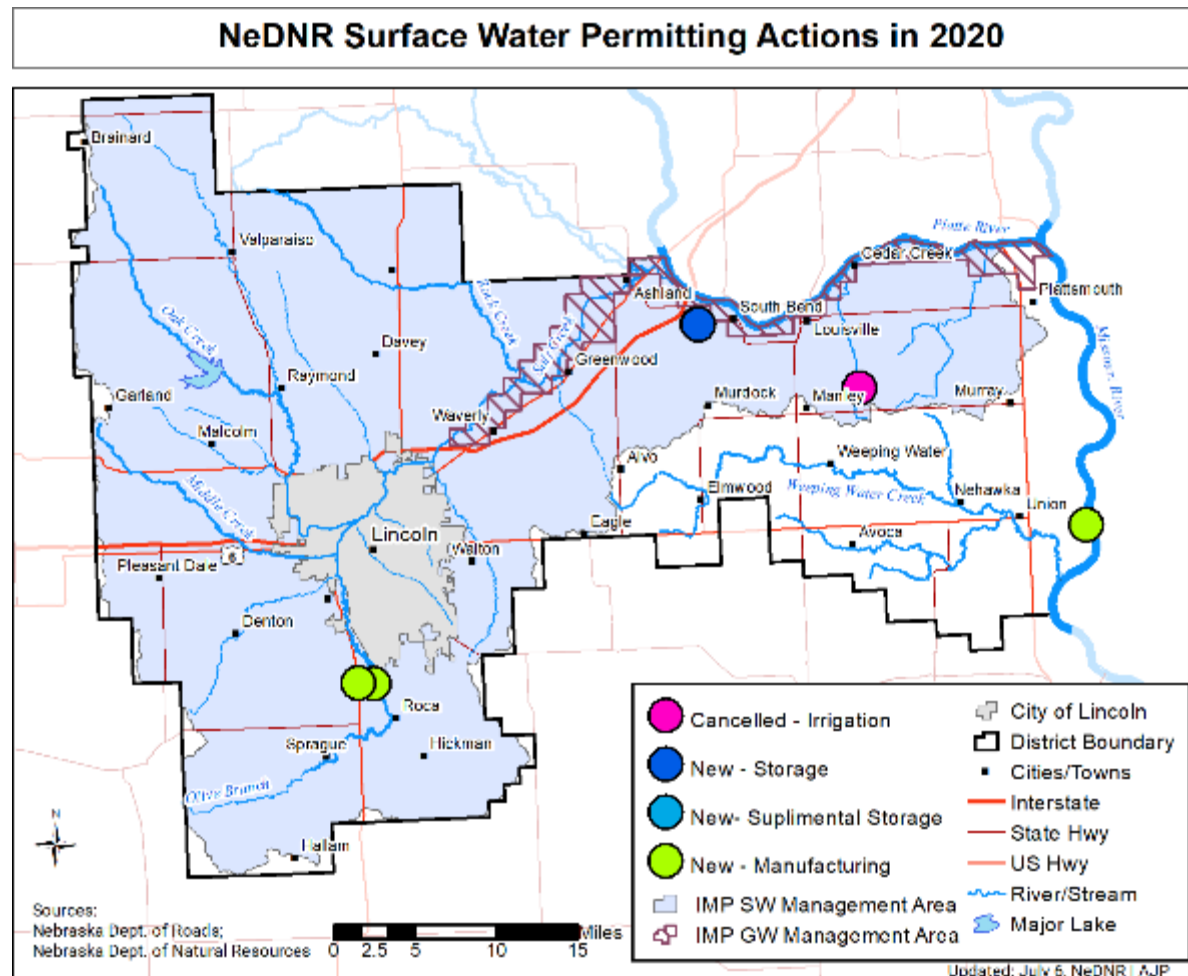
Surface water monitoring: Streamgaging

Stevens Creek near Lincoln, NE



Surface water monitoring: permitting activity

- 5 new permits
- 1 canceled permits
- 0 permits transferred



Surface water monitoring: 2020 permitting activities

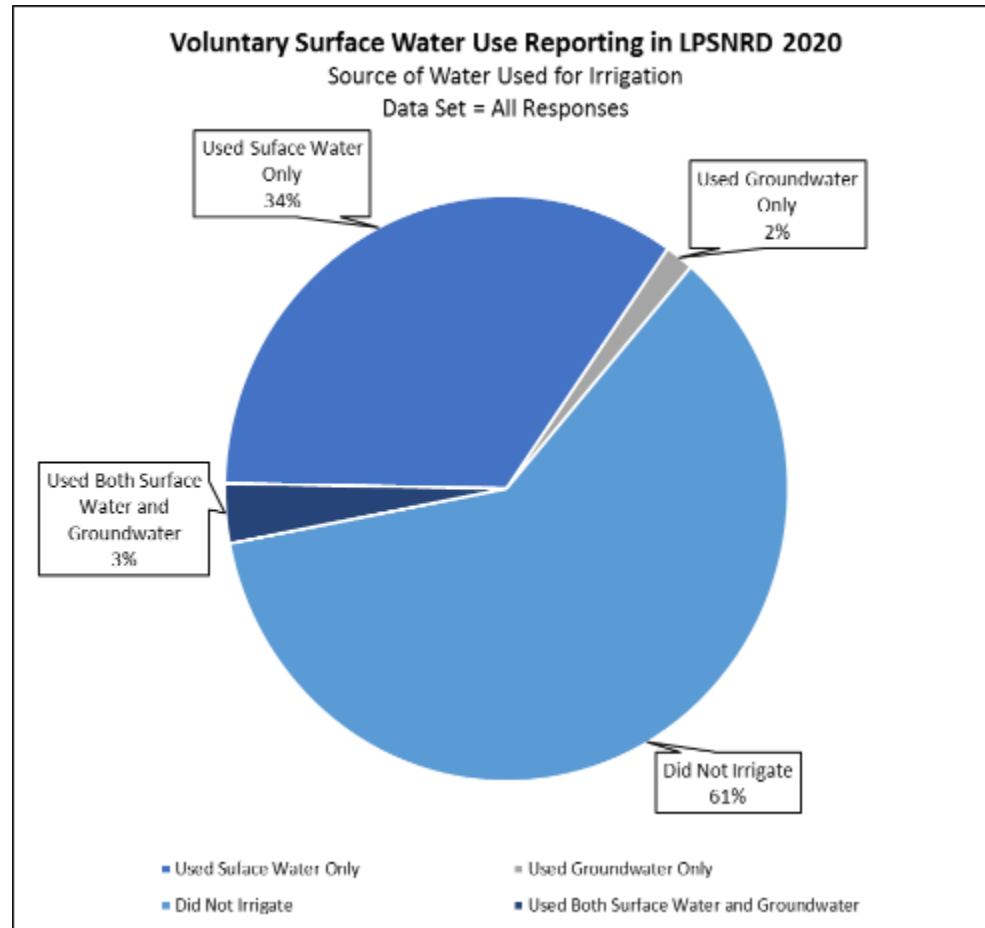
Acres Changes Associated with Surface Water Permitting Actions

Geographic Area	Newly Permitted Acres	Cancelled Acres
Lower Platte River Basin	0	112.7
Missouri River Tributaries Basin	0	0
Total (Whole NRD)	0	112.7

Surface water voluntary water use reporting

- NeDNR's 7th year of implementation
- Sent out postcards/letters for 207 surface water rights
- 29% response rate for 2020 effort
 - 2019 (16%)
 - 2018 (28%)
 - 2017 (29%)
 - 2016 (22%)
- Information collected includes:
 - Water use
 - Types of crops
 - Reasons for not irrigating

2020 LPSNRD Voluntary Surface Water Reporting



NeDNR Surface Water Pump Inspections

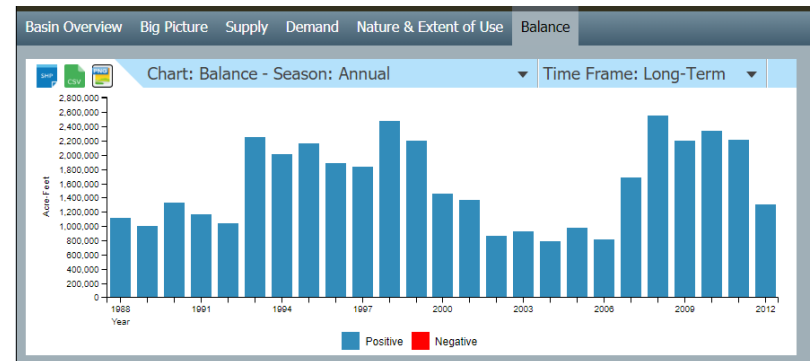
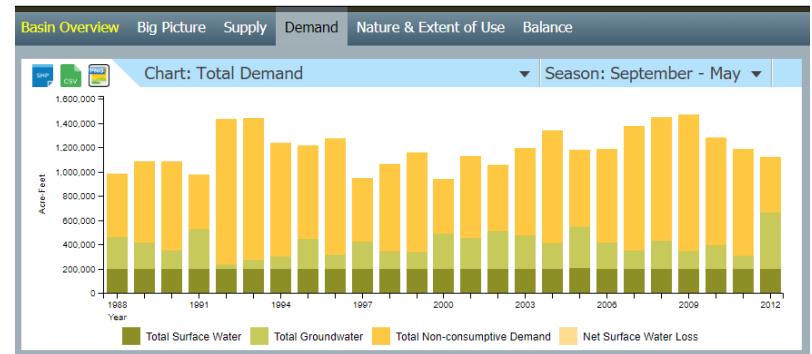
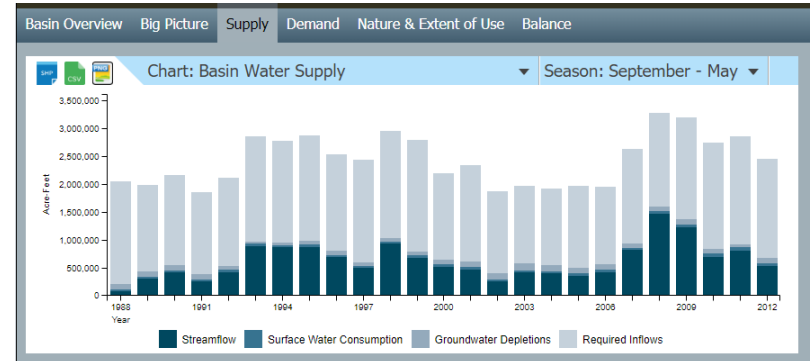
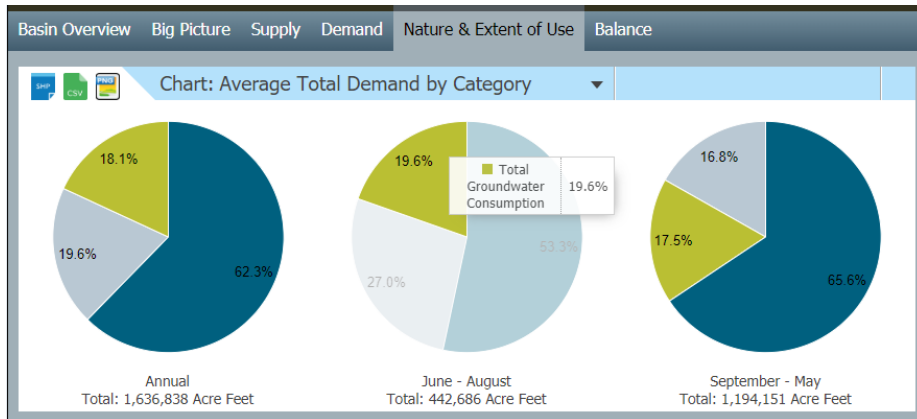
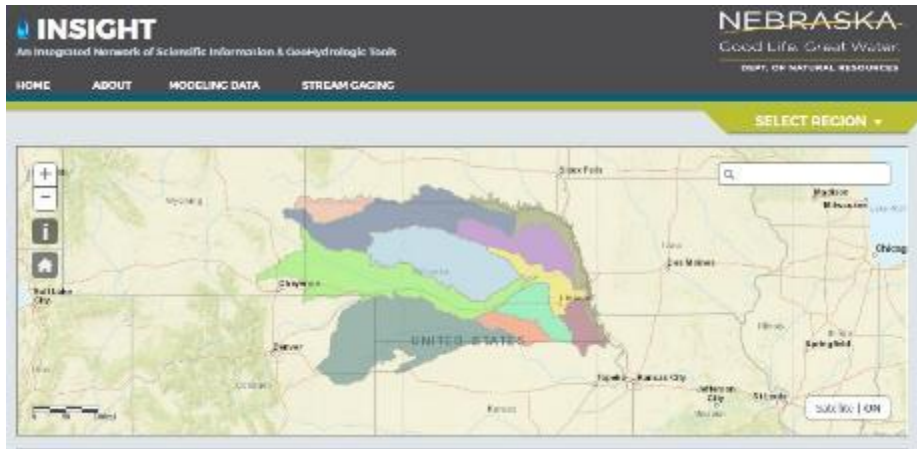
The NeDNR Field Office staff has been conducting surface water pump-site inspections across Nebraska for the past seven years

- The goal is to inspect each pump-site at least once every two years as time and conditions allow.
- In 2020, 153 out of 207 (74%) pump-sites were inspected by NeDNR Field Office staff. Of the 153 pumpsite inspections, 40 (26%) are located in the surface water control area.

NeDNR/NRD studies and research activities

- Stream accretion/depletion calculator for Lower Platte River Basin
 - 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
 - Will be updated with the new Lower Platte information, once the 5-year basin plan analysis is complete in 2022

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





- **Groundwater monitoring and data collection**
 - 9 well permits issued in 2020
 - 5 wells completed (may have prior year permit)
 - Water level monitoring in 142 wells, spring & fall, with average static water increase of 0.09 feet
 - Meters and water use reporting from 462 wells
 - 3.7 billion gallons pumped from 462 metered wells, with 259 irrigation wells





- **Groundwater monitoring and data collection (cont.)**
 - Certified irrigated acres-approved in 2020
 - HCA + 0 for same 3,268 acres
 - Remainder + 0 to 27,843.59 acres
 - Groundwater rules variances (no variances requested)
 - Water Banking / Transfers (no activity)



- **Groundwater Moratoriums**
 - HCA limitation on increasing irrigated acres
 - DVB Special Management Area
 - Allocations (Rolling Allocation)
 - Moratorium on new or increasing irrigated acres
 - Area boundary northeast of Valparaiso changed in 2016
- **Groundwater Allocations**
 - DVB SMA
 - Irrigation – sprinkler and gravity (currently)
 - » 21 inches/3 years (rolling)/acre, not to exceed 9 inches/year



LPSNRD and NeDNR both participated in:

- Eastern Nebraska Water Resources Assessment
 - Aquifer mapping via airborne electromagnetic (AEM) imaging
- Lower Platte River 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 upcoming second increment



2020 Activities

- Groundwater Mgt Plan
- 2 Test Your Well nights
- School activities
- ENWRA collaboration
- Irrigation certification
- BMP promotion
- Media, Social Media, Web
- Publications



NeDNR Education/Outreach

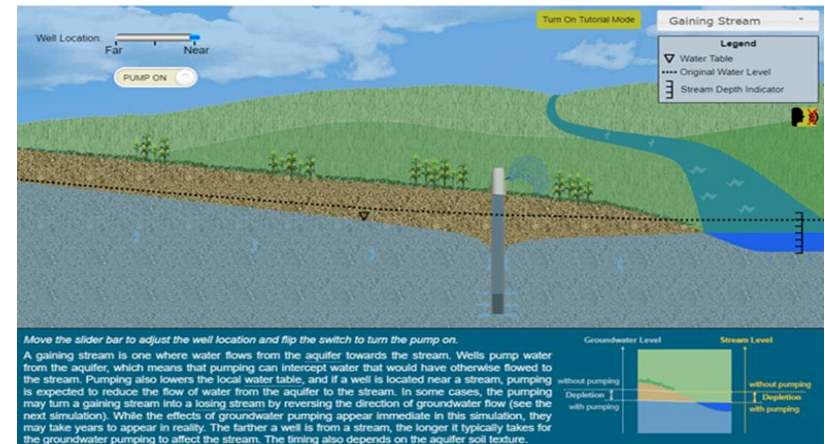
■ 2020 Events

- Nebraska Women in Agriculture
- Participation in other public events was curtailed due to the Covid-19 Pandemic; NeDNR expects to resume normal participation in public events during 2021 and 2022 as health guidelines allow.



■ 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



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 summer 2021
 - 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
- Development, testing and incorporation of AEM data for the LPMT model
- Ongoing Annual reporting and tracking requirements for IMP, Basin Plan and next five-year review of water supplies and water uses
- Continue LPSNRD/NeDNR quarterly coordination meetings
 - Include Integrated Management Subcommittee 2x/year



LOWER PLATTE SOUTH
natural resources district



QUESTIONS OR COMMENTS?

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