

ANNUAL
INTEGRATED
MANAGEMENT
PLAN REPORT

2015



JOINTLY PREPARED BY THE
LOWER PLATTE SOUTH
NATURAL RESOURCES
DISTRICT AND THE
NEBRASKA DEPARTMENT
OF NATURAL RESOURCES

Submitted at the Lower Platte South Board Meeting/IMP Annual
Review

August 17, 2016

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2015 ANNUAL REPORT FOR LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT/NEBRASKA DEPARTMENT OF NATURAL RESOURCES INTEGRATED MANAGEMENT PLAN

Jointly prepared by the Lower Platte South NRD and the Nebraska Department of Natural Resources
Submitted on August 17, 2016

Introduction

The Lower Platte South Natural Resources District (LPSNRD) and the Nebraska Department of Natural Resources (NeDNR) jointly adopted an Integrated Management Plan (IMP) which became effective on May 15, 2014 with the goal of jointly managing ground and surface waters within the LPSNRD to sustain a balance between water uses and supplies for the long term. An in-depth public involvement plan that included focus groups, a 13-month stakeholder process, a virtual town hall, and outside agency outreach was an integral part in developing goals and objectives within the IMP.

The 2015 annual report is consistent with Chapter 9 of the IMP, which outlines procedures for reviewing and potentially modifying the IMP. In June 2016 the LPSNRD and NeDNR met and jointly decided no amendments to the IMP were needed at the time of the 2015 annual review. In addition, the NRD and NeDNR worked collaboratively to identify action steps for the years 2016 and 2017 and these are presented in the “Future Actions” section at the end of this report. The LPSNRD and NeDNR also worked together to write this joint annual report for the annual meeting held on August 17, 2016. In addition, the LPSNRD distributed a public notice of the annual meeting in area newspapers on August 10, 2016; NeDNR also posted the meeting announcement on their website at this time.

This annual report covers the actions and progress made towards IMP action items for both the LPSNRD and NeDNR. The IMP states (Chapter 9) that the LPSNRD and NeDNR will annually report on data collected, on new groundwater or surface permits and uses, and will review progress made toward achieving the goals and objectives. As the LPSNRD regulates groundwater and the NeDNR regulates surface water, some sections are written individually, but wherever possible, sections are written jointly to reflect the partnership required to successfully implement the IMP. This IMP annual report provides transparency, to each other, and to the public of what the LPSNRD and NeDNR do on a regular basis to protect existing water users while allowing for economic viability.

Monitoring and Data Collection

Surface Water Monitoring

Stream Gaging

NeDNR does not operate any stream gages within the IMP area of the LPSNRD. The US Geological Survey (USGS), however, owns and operates 16 stream gages that are currently collecting stream flow data. Table 1 shows the gage name, gage number, beginning date of measurement and whether the LPSNRD assists with gage funding. Figure 1 shows the locations of the gages. Additional streamflow data may be acquired from the USGS's National Water Information System (NWIS) at <http://waterdata.usgs.gov/>. NeDNR will continue to assess the need for additional monitoring in the IMP area, but does not plan to add any stream gages in the IMP at this time.

Table 1. 2015 USGS Stream Gages within the LPSNRD boundary, collecting streamflow data.

Gage Name	Gage Number	Begin Date	LPSNRD assist in funding?
Salt Creek at Roca, Nebr.	06803000	5/14/1951	yes
Salt Creek at Pioneers Boulevard at Lincoln, Nebr.	06803080	6/20/1994	yes
Haines Branch at SW 56th St at Lincoln, Nebr.	06803093	6/20/1994	yes
Middle Creek at SW 63rd St at Lincoln, Nebr.	06803170	6/20/1994	yes
Oak Creek at Air Park Road at Lincoln, Nebr.	06803486	5/21/1987	yes
Salt Creek at Fairgrounds at Lincoln, Nebr.	06803495	6/20/1994	no
Salt Creek at Lincoln, Nebr.	06803500	5/11/1942	yes
Little Salt Creek near Lincoln, Nebr.	06803510	5/11/1942	yes
Salt Creek at 70th Street at Lincoln, Nebr.	06803513	5/31/1994	yes
Stevens Creek near Lincoln, Nebr.	06803520	10/14/1968	yes
Rock Creek near Ceresco, Nebr.	06803530	4/1/1970	yes
Salt Creek at Greenwood, Nebr.	06803555	1/16/1952	no
Wahoo Creek at Ashland, Nebr.	06804700	2/22/1990	no
Weeping Water Creek at Union, Nebr.	06806500	1/11/1950	yes
Antelope Creek at 27th St at Lincoln, Nebr.	06803300	3/14/2012	yes
Deadman's Run at 38th Street at Lincoln, Nebr.	06803502	08/27/2014	no

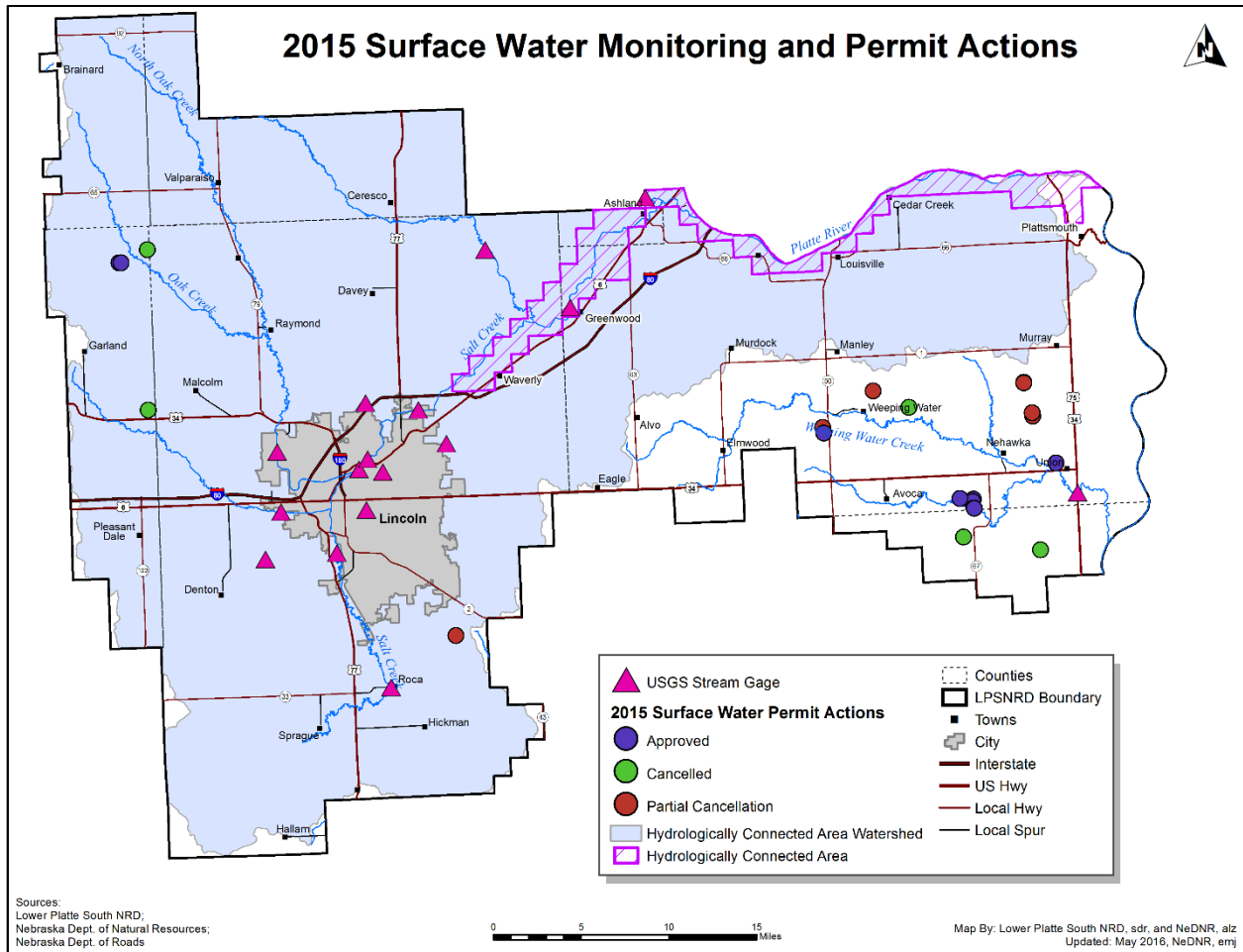


Figure 1. 2015 surface water monitoring and permitting actions.

Although reporting was not required for USGS gages (only NeDNR gages), part of the IMP monitoring plan stated in Chapter 8, Goal 1: Action Item 1.1.3 specifies that NeDNR and LPSNRD should track variability on water use and supply by regularly evaluating data from existing surface water, ground water and weather monitoring networks. Thus, as part of this report, NeDNR compiled annual discharge data (some provisional) from select USGS stream gages that included two locations on the Salt Creek main stem (figures 2 and 3) and two gages (Little Salt Creek, figure 4 and Steven’s Creek, figure 5) on tributaries to Salt Creek. The charts show that both the mainstem and tributaries had extremely high annual discharge in 2015 with respect to the historical record, which coincide with large rain events in 2015. NeDNR will continue to track the variability of streamflow and report on findings and/or analyses in subsequent annual reports.

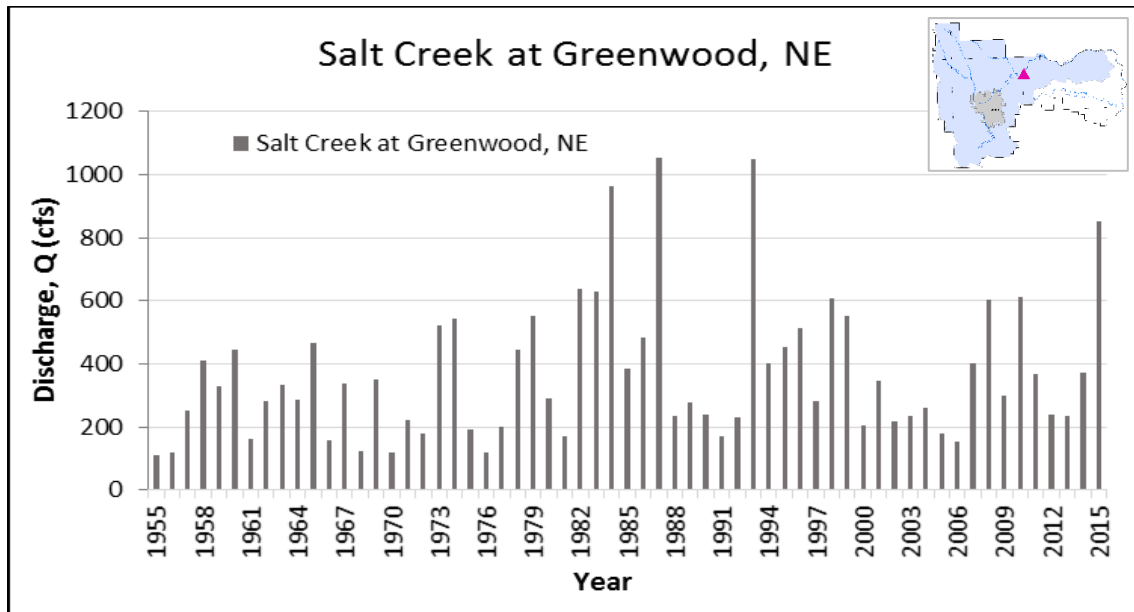


Figure 2. Historical annual discharge for USGS gage, Salt Creek at Greenwood, NE (some provisional data used).

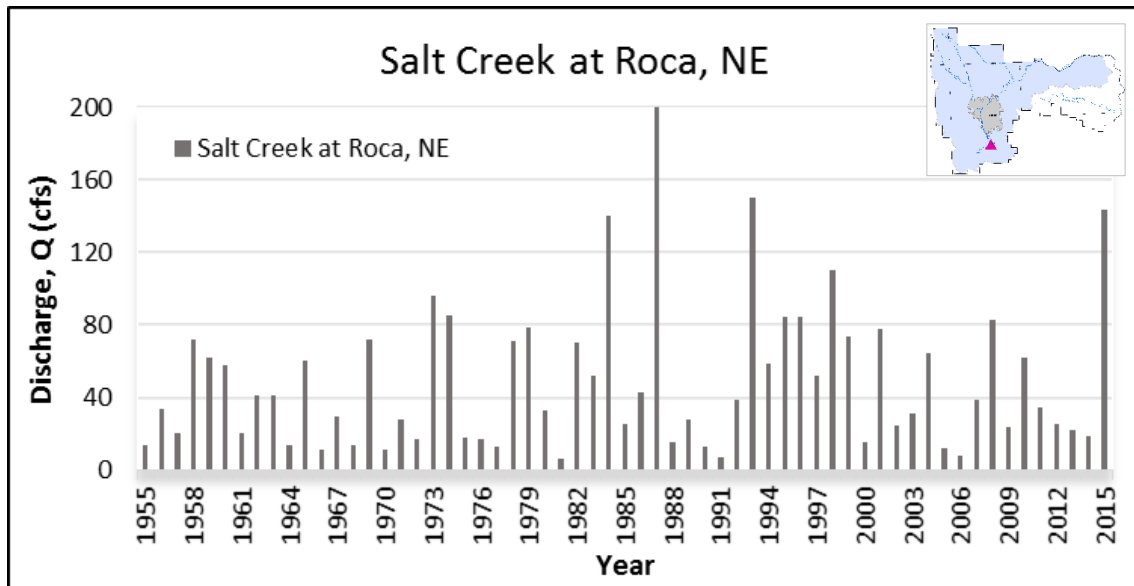


Figure 3. Historical annual discharge for USGS gage, Salt Creek at Roca, NE (some provisional data used).

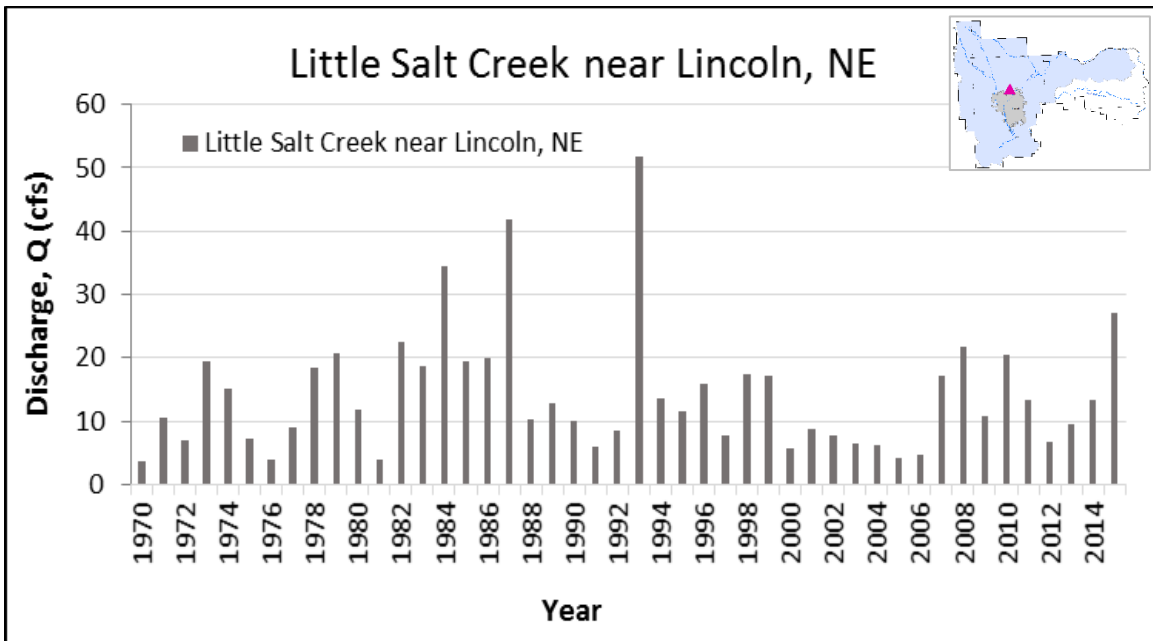


Figure 4. Historical annual discharge for USGS gage, Little Salt Creek near Lincoln, NE (some provisional data used).

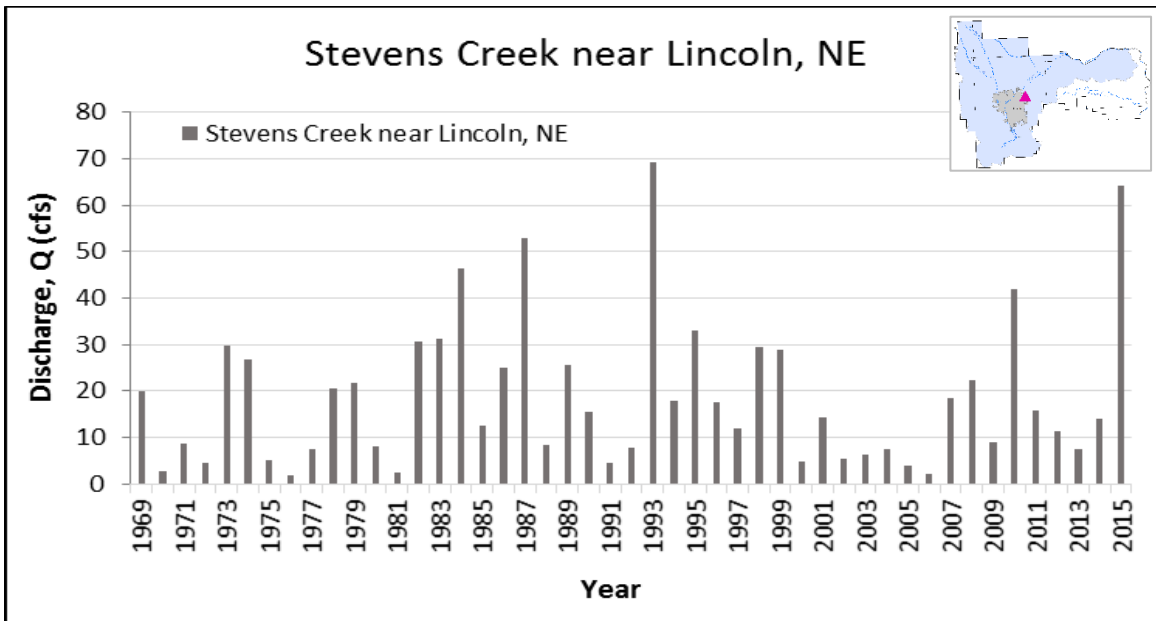


Figure 5. Historical annual discharge for USGS gage, Steven's Creek near Lincoln, NE (some provisional data used).

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Appropriations

The NeDNR continued to monitor and administer surface water appropriations and maintain records concerning cancelled, new, or transferred rights in 2015. During the year, NeDNR approved 11 surface water permits: 6 for irrigation, 5 for storage (Table 2, Figure 1) and cancelled 5 surface water permits, in full, for irrigation (Table 3, Figure 1). Additionally, there were 9 partially cancelled surface water rights: 8 for irrigation and 1 for storage (Table 4, Figure 1). Portions of these appropriations were adjudicated and cancelled due to nonuse. No surface rights were transferred.

Table 2. NeDNR new surface water permits in 2015 (*pre-existing acres).

Appropriation Number	Approval Date	Use	Grant in CFS	Grant in AF	Approved Acres	Section	Township	Range
A-19037	12/22/2015	Storage		100		36	10	12 E
A-19038	12/22/2015	Supplemental Storage		200		36	10	12 E
A-19039	12/22/2015	Storage		100		36	10	12 E
A-19040	12/22/2015	Supplemental Irrigation		300	375*	36	10	12 E
A-19041	12/22/2015	Supplemental Irrigation		100	375*	36	10	12 E
A-19064	12/22/2015	Irrigation from Natural Stream	1.92		134.70	35	10	12 E
A-19122	12/22/2015	Irrigation from Natural Stream	4.35		304.50	36	10	12 E
A-19181	7/22/2015	Storage		13.7		14	12	4 E
A-19182	7/22/2015	Storage		16.5		14	12	4 E
A-19210	12/21/2015	Irrigation from Natural Stream	0.13		8.80	9	10	11 E
A-19267	1/28/2015	Irrigation from Natural Stream	1.5		104.7	22	10	13 E

Table 3. NeDNR fully cancelled surface water permits in 2015.

Appropriation Number	Cancellation Date	Use	Section	Township	Range	Cancelled Acres
A-13979	1/13/2015	Irrigation from Natural Stream	11	9	12 E	111
A-13808	12/11/2015	Irrigation from Natural Stream	16	9	13 E	160
A-15398	3/27/2015	Irrigation from Natural Stream	25	11	4 E	65
A-9216	2/10/2015	Irrigation from Natural Stream	12	12	4 E	55
A-18584	12/11/2015	Irrigation from Natural Stream	5	10	12 E	209.1

Table 4. NeDNR partially cancelled surface water permits in 2015 (IR= Irrigation from Natural Stream, SI=Supplemental Irrigation, and ST=Storage).

Appropriation Number	Current Acres	Cancelled Acres	Cancellation Date	Use	Section	Township	Range	Grant in CFS	Grant in AF
A-13998	71.7	51.9	12/21/2015	IR	9	10	11 E	1.03	
A-14242	42.8	44.2	12/21/2015	IR	4	10	11 E	0.61	
A-14257	95	71.7	12/21/2015	IR	25	11	11 E	1.36	
A-14947	95	71.7	12/21/2015	SI	25	11	11 E		10.99
A-13079	87.3	254.7	7/23/2015	IR	28	11	13 E	1.25	
A-13642	87.3	42.7	7/23/2015	SI	28	11	13 E		14
A-13080	80.3	19.7	1/22/2015	IR	4	10	13 E	1.15	
A-13902	80.3	19.7	1/22/2015	SI	4	10	13 E		4.44
A-16418	0	4.23	1/28/2015	ST	35	9	7 E		37.37

Voluntary Surface Water Use Reporting

2015 was NeDNR's second year of implementing a voluntary water use reporting program in LPSNRD to estimate water use in areas where reporting is not currently required by law. NeDNR sent out postcards and letters to surface water irrigation permit holders within the District, inviting them to participate in the voluntary reporting program. Participants could either fill out an online form at <http://data.dnr.nebraska.gov/wateruse> (ongoing) or call in to report use.

In the LPSNRD, 58 voluntary water use reports were fully completed and received out of 216 surface water diverting water from a flowing source or from a reservoir) irrigation appropriations (26.8%). Permit holders who reported, provided information on the location and number of surface water irrigated acres, whether or not irrigation was used in 2015, the type of irrigation used, crop type, and type of tillage. These reporting activities accounted for nearly 6,000 acres across Cass, Lancaster, Saunders, and Seward counties. Of the 58 total responses:

- 50 (86%) of the respondents used some sort of tillage conservation practices (minimum or no till)
- 10 (17%) irrigated in 2015, accounting for 802 irrigated acres, or 14% of all acres reported.
- The most common crop types were corn (52%), soybeans (44%), forage (3%), and other (1%).

Compared to the 51 voluntary use reports received in 2014, there was roughly a 3.6% increase in participation in 2015 with 58 reports received. Both years' methods were similar, but additional questions regarding the number of acres irrigated and how much water used were added to the 2015 reporting form.

Surface Water Pump-Site Visits

The NeDNR Field Office staff has been conducting surface water pump-site inspections in the IMP area for several years. The goal of the pump-site inspections is to gather information pertaining to use or nonuse of the surface water right, crop type, irrigation status, irrigation method (gravity vs pivot), and if possible, a spot flow measurement.

In 2015, 183 permit sites out of 437 total sites for the NRD (41.8%) were inspected by NeDNR Field Office staff and data pertaining to each site was collected and compiled. Of the inspected sites, 174 sites were for

irrigation from a natural flow, four sites were for irrigation from storage facilities, four sites were for supplemental irrigation, and one site was for manufacturing purposes (gravel washing/dust control). At the time of the inspections, there were 19 sites set-up to irrigate, however, only three sites were actually running, which could be due to a variety of factors including abundant rainfall, timing of visit, etc. The locations of the pump checks are shown in Figure 6.

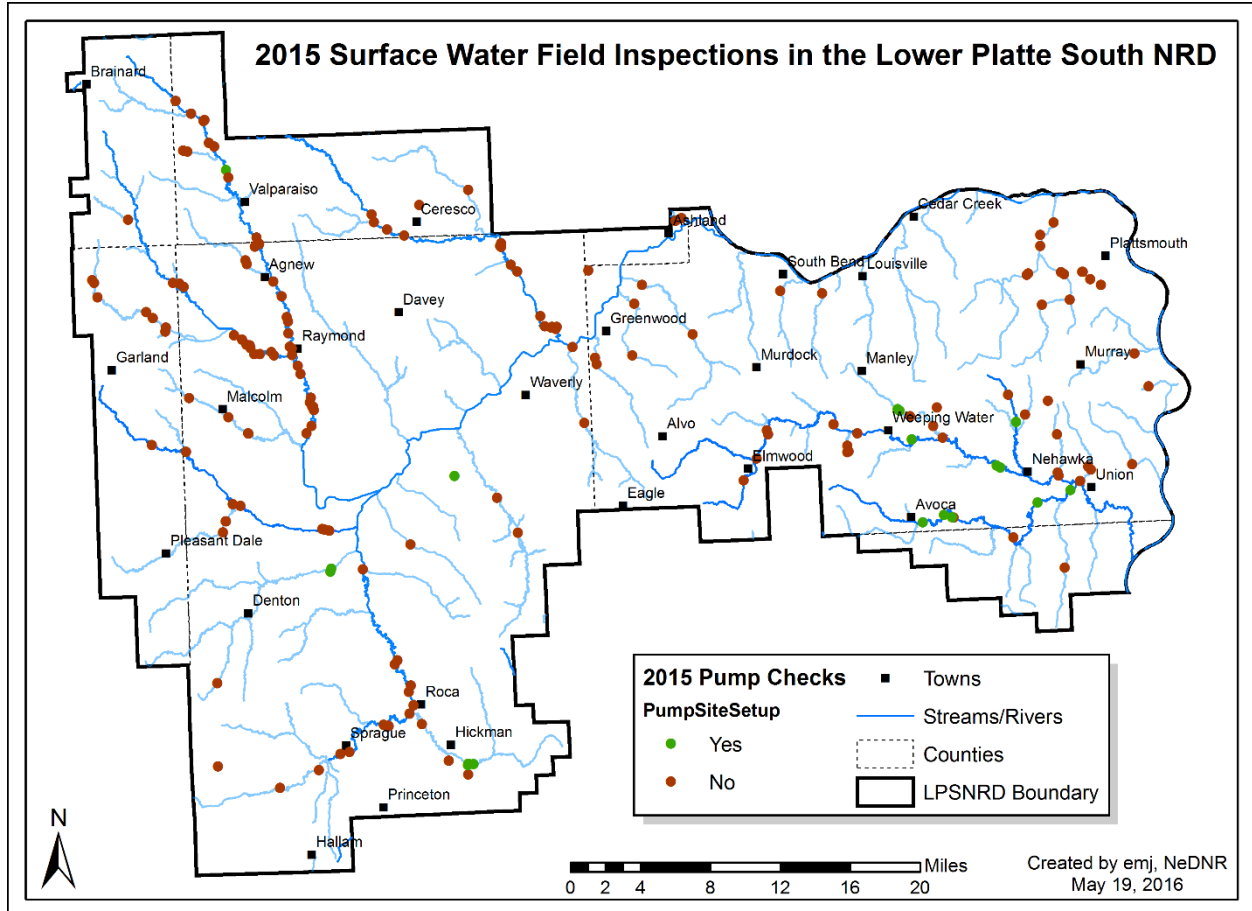


Figure 6. 2015 surface water pump-site checks.

Groundwater Monitoring

Metering and Groundwater Level Monitoring

All wells with capacity to pump over 50 gallons per minute (gpm) are metered, which numbered 397 at the close of 2015. LPSNRD collected records of usage from 397 wells, and in addition from all public supply wells. The calculated total pumping for 2015 from 390 of these wells was 4.5 billion gallons, with 310 irrigation wells accounting for 42.36% of the total measured pumping. This total pumping volume did not include the public supply wells. In addition, the NRD inspected and read 117 groundwater well meters during 2015.

LPSNRD also collected groundwater level data from 123 wells in the spring and fall of 2015. Of these, 28 wells showed declines and 95 wells showed an increase from spring 2014 to spring 2015; the maximum decline was 3.27 feet while the maximum increase was 12.095 feet, with an average static water level increase of 1.72 feet. Figure 7 shows a spatial representation of groundwater level changes. The average

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change by groundwater reservoir is shown in Table 5.

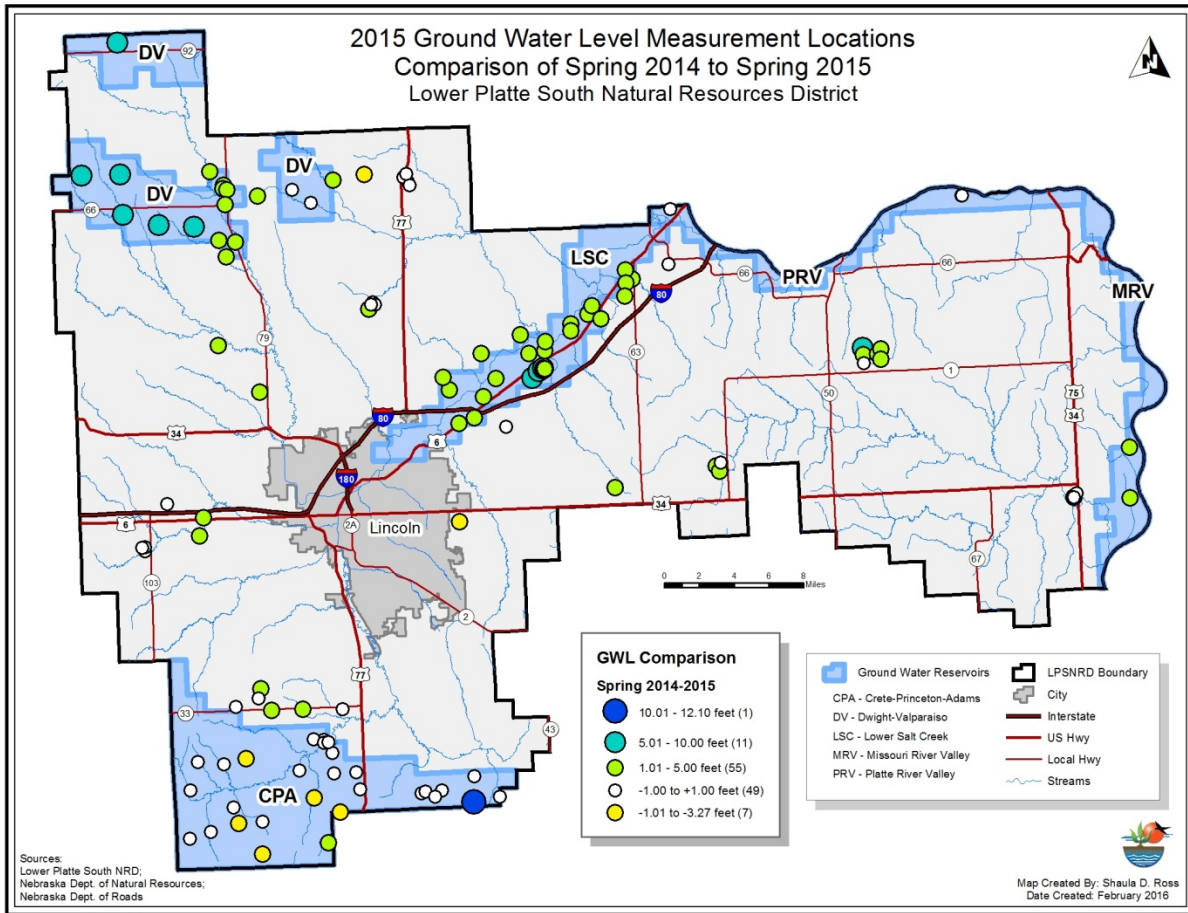


Figure 7. Spring 2014 to Spring 2015 groundwater level changes shown by 123 monitoring wells.

Table 5. Spring 2014 to spring 2015 groundwater level changes in specific reservoir locations.

Average Well Level Change by Ground Water Reservoir	
GW Reservoir	Spring '14 to Spring '15 (ft)
Crete-Princeton-Adams	0.05
Dwight-Valparaiso	4.45
Lower Salt Creek	3.46
Missouri River Valley	2.09
Platte River Valley	0.06
Remaining Area	1.23

Permitting Activities

LPSNRD issued 16 well permits in 2015 for varied uses as reported in Table 6 and locations shown in Figure 8. Of these, 5 wells were completed in 2015, with an additional 9 wells being completed from 2013/2014 permitting activities. All statutory well-spacing minimum requirements were followed for all new and replacement wells.

Table 6. Well permitting activities that were approved or completed in 2015.

Approved GW Well Permits in 2015	Number of Permits	Completed wells in 2015	
Irrigation	5	From 2013 Permits	1
Commercial	4	From 2014 Permits	8
Public Water Supply	2	From 2015 Permits	5
Aquaculture	1		
Lake Supply	2		
Wetland	2		
Total	16	Total	14

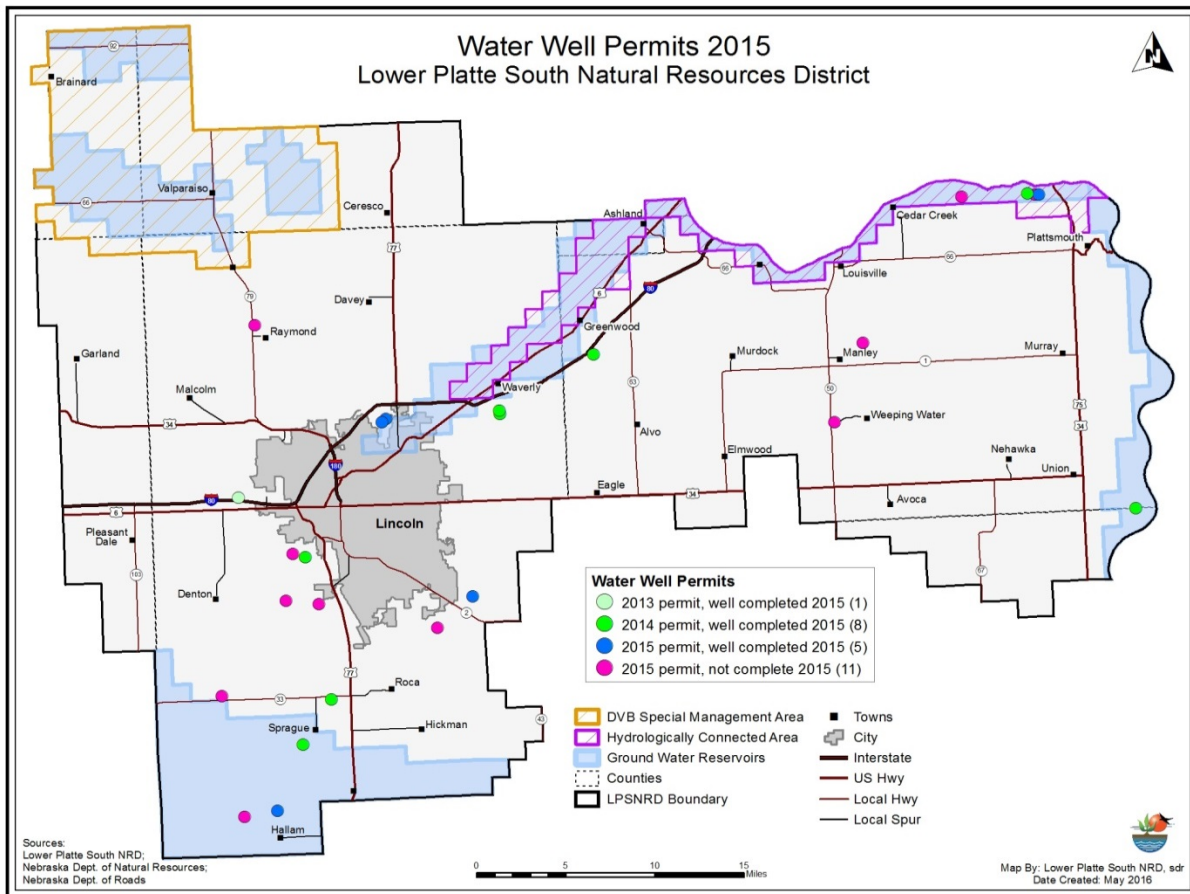


Figure 8. Groundwater well permits approved or completed in 2015.

Land Use and Land Cover (LULC) Monitoring and Actions

In 2015, LPSNRD certified 15 additional groundwater irrigated acres within the Hydrologically Connected Area (HCA), for a total of 3,187 acres (Figure 9). As specified in the IMP, newly certified groundwater irrigated acres within the hydrologically connected area did not exceed 20% (593 acres) of the total certified groundwater irrigated acres in the same area. In the remainder of the District an additional 268.29 groundwater irrigated acres were certified, for a total of 23,382 acres.

One variance was approved to expand certified groundwater irrigated acres in the hydrologically connected area. An additional variance was approved to construct a Class IV replacement well without conducting the required aquifer test, water quality samples, or the hydrogeologic analysis report. No groundwater transfers or water banking actions occurred in the District in 2015. LPSNRD continued to provide cost-share assistance on best management practices and equipment to encourage groundwater efficiency.

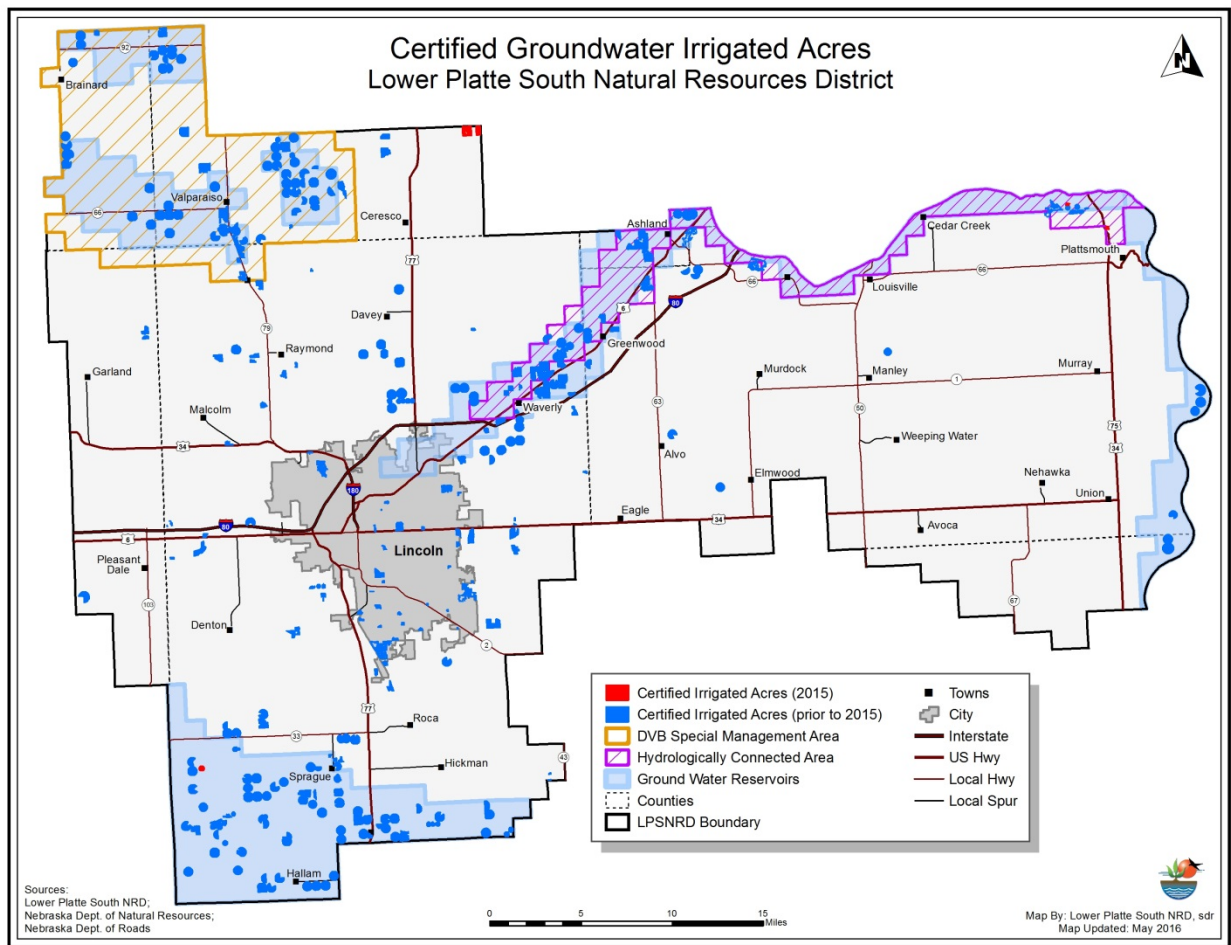


Figure 9. Existing and new certified irrigated acres in 2015.

Regulatory Actions put in Place During 2015

LPSNRD Groundwater Acres Limitations

An annual limitation of 598 additional certified irrigated acres continues to be in place on hydrologically connected areas within the NRD. A temporary moratorium on the Dwight-Valparaiso area was lifted in 2014 following designation of Dwight-Valparaiso-Brainard Special Management Area, but a no increase in certified irrigated acres rule continuing to be in place (Figure 10).

NDNR Surface Water Acres Limitations

IMPs must include one groundwater control and one surface water control. NeDNR's surface water control mimics the LPSNRD groundwater control, which is to restrict the number of acres available for irrigation. More specifically, NeDNR will restrict the number of additional acres for surface water irrigation within the surface water areas that drain into the hydrologically connected areas (surface water control area) in an amount equal to 1/3 of the amount of acres that LPSNRD will allow for new groundwater irrigated acres. At the close of each year, NeDNR inquires with LPSNRD about their acre limitations and then sets their limit to 1/3 of that amount for the following year.

Beginning January 1, 2015, NeDNR limited surface water irrigated acre expansion in the surface water control area to 198 acre/year, an amount equal to 1/3 of the 598 acre/year LPSNRD allows for groundwater irrigated acres in that same area.

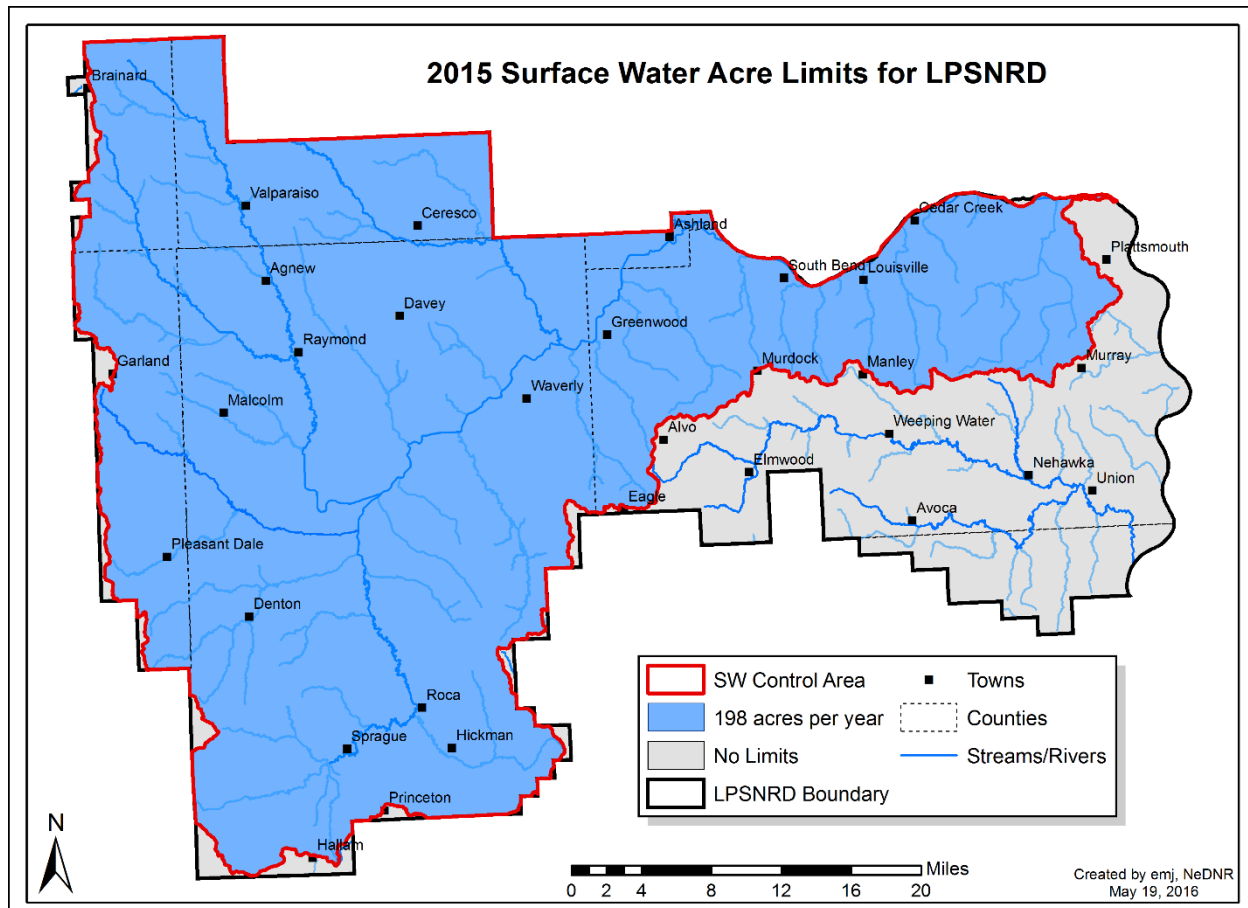


Figure 10. Surface water limits implemented by NeDNR in 2015. LPSNRD surface water irrigated acres were limited to 198 acres for the year within the Surface Water Control Area.

Studies and Planning

The following studies were continued or completed in 2015 by the LPSNRD and NeDNR, with the purpose to gather and evaluate data, information and methodologies that could be used to increase understanding of the surface and groundwater supplies and uses within, and as appropriate, outside the district. These studies help to meet the goals and objectives that were developed through the stakeholder process.

HDR, Inc. Services for Additional IMP Components

In 2014, LPSNRD retained HDR, Inc. to provide professional services to address the following additional components for the Integrated Management Plan. These specific IMP components were completed in 2015 and will be appended to the IMP. In general, the tasks were:

- Process to collect and record water use data from all municipalities and rural water Districts and from all major non-municipal industrial water users. (Chapter 7: I(e)(i) and I(f)(i) page 8)
- Procedures to track depletions and gains to streamflows resulting from new, retired or other changes to water uses within the District. (Chapter 8: II(d) page 11)

- An Emergency Response/Drought Mitigation Plan, which included holding a Drought Tournament, participated in by 30 stakeholders. (Chapter 7: V(a) page 11)

Lower Platte Missouri Tributaries Model Development

NeDNR has contracted with HDR, Inc. to develop a numerical groundwater model for Lower Platte and Missouri Tributaries (LPMTris) basins. In an earlier assessment of available data and hydrogeology, it was determined that the model should be broken into two parts to create the Upper LPMTris and the Nemaha (lower portion) groundwater models (Figure 11). Over the last year, NeDNR developed irrigated/dryland acres datasets for both the Upper LPMTris and Nemaha models, using NRD certified acres datasets, and county assessor spatial data. These land use datasets are used to create inputs for estimating recharge and pumping via a “watershed” model.

At the time of this writing, the Upper LPMTris model is nearing completion of calibration, and work has been initialized for the Nemaha model. When complete, these models will be used as a tool to assess impacts of emerging and historic surface water and groundwater developments in the region, as well as will aid in the refinement of hydrologically connected areas.

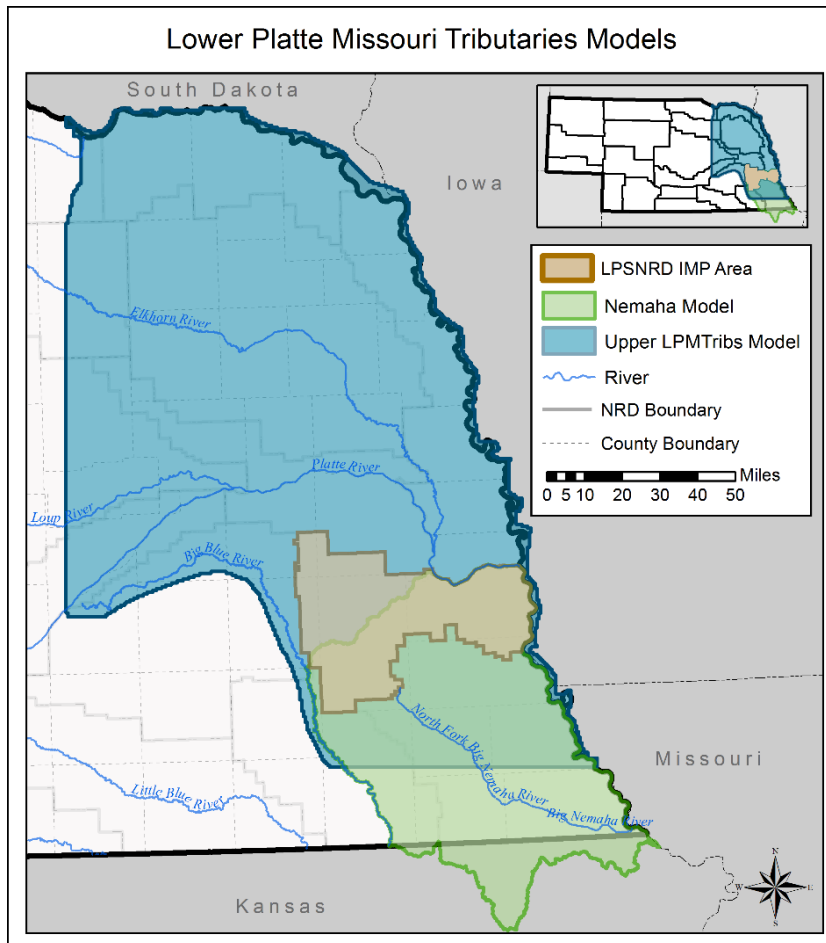


Figure 11. NeDNR’s Upper Lower Platte-Missouri Tributaries model and Nemaha model boundaries.

Water Inventory and Water Use/Supply Management

LPSNRD Accomplishments

LPSNRD continued data collection and sharing of data, and has worked to improve the database that houses this information. LPSNRD further reviewed ground water well permits relative to aquifer capacity and sustainability. LPSNRD also continued the open dialogue with public water suppliers on current and future water supplies, and supported storm water capture and reuse projects in the District. LPSNRD contracted with JEO to conduct a preliminary study on alternatives and estimated costs to provide a potable water supply to the Exit 426 Interchange area in Cass County, supplied by the City of Ashland wellfield. LPSNRD participated with the Lower Platte River Weed Authority and the Lancaster County Weed Authority on invasive species control relative to water supply.

NDNR's Release of INSIGHT

The Integrated Network of Scientific Information and Geohydrologic Tools (INSIGHT) website at <http://dnr.nebraska.gov/insight/> is an important tool for integrated water management. INSIGHT aids water managers and other interested parties to better understand current and future water demands, effectiveness of water management strategies, and critical areas of water shortage. INSIGHT was released in January 2014, and it provides a mechanism to access and review water use and water supply information as it relates to Nebraska's unique subbasins. The user can access information pertaining to precipitation, water demands (irrigation, hydropower, etc.), as well as view maps with associated charts that show overall water balance (current, near-term or long-term) for the subbasin. Another great feature of INSIGHT is that all the datasets that are used to compile the water balance analyses are also stored within the web application, and are available for download.

At this time, NeDNR has compiled data for several basins and subbasins across the state, including the Lower Platte River Basin. The Lower Platte River North Bend to Louisville Subbasin covers a majority of the LPSNRD IMP area (Figure 12). NeDNR plans to expand the area covered by INSIGHT as data become available, such as the modeling data from the Upper LPMT model.

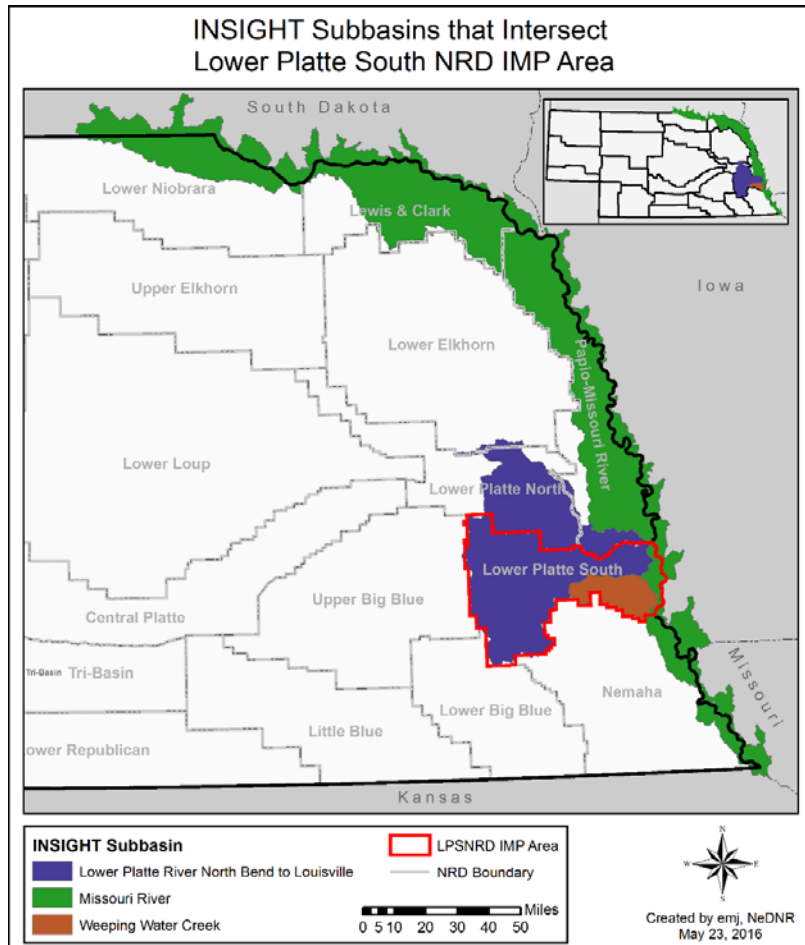


Figure 12. INSIGHT subbasins that intersect with LPSNRD; INSIGHT area will be expanded as data become available.

Education/Outreach

NeDNR Activities

During 2015, NeDNR promoted wise water use and conservation at outreach events, through the development of a television documentary, and through the INSIGHT web portal. NeDNR had educational booths at the Nebraska State Fair (2015 only), Husker Harvest Days, and the Nebraska Women in Agriculture conference, which all attract attendees from across the state. One component of NeDNR’s messaging at the State Fair and Husker Harvest Days was using its groundwater model to demonstrate the hydrologic connection between surface water and groundwater, emphasizing how over-pumping groundwater can change the direction of flow and reduce surface water availability. At the Women in Agriculture Conference, NeDNR focused specifically on the Integrated Water Management Division’s current planning and modeling efforts within each NRD, including the LPSNRD.

NeDNR worked with NET Television in 2015 to develop a 30-minute documentary program entitled “Water Today: Water Tomorrow.” Topics covered in the video that are relevant to integrated management planning include surface water-groundwater interactions, how data and analyses are used to support water supply planning and management decisions, and the uniqueness of IMPs as a

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collaborative management effort between DNR and the NRDs. This video has aired on NET Television stations across the state and is available on both NeDNR and NET's websites for online viewing. Finally, the INSIGHT web site, which provides a mechanism for the public to access and review water use and water supply information as it relates to unique Nebraska subbasins, is also a part of NeDNR's public outreach program.

LPSNRD Activities

Each February the NRD compiles a *Ground Water Management Plan Review*; a report of all groundwater activities completed in the previous calendar year. The report includes results of well sampling and measuring, progress made in on-going ground water programs, the status of each groundwater management area and more. The review is presented in summary to the NRD Board of Directors and the complete review is posted on the NRD's website, <http://www.lpsnrd.org>. The posted review is promoted on the website Home page and in the district newsletter.

In March, 2015, the NRD made aquifer data gathered in aerial scans by Exploration Resources International (XRI) in 2013 available on its website. An interactive map is linked to the website and users may click on a specific location within the DVB Special Management Area to see data for that location. All of the related raw data (the scope of which goes far beyond just the basic aquifer information) and a staff summary of the data are also available on the website. The printed final report by XRI consists of more than 600 pages and the NRD arranged for the printed report to be available for public access at public libraries in Dwight and Valparaiso and at the East Butler Public Schools Library in Brainard.

The NRD hosted 3 Test Your Well Nights for the following areas: Ashland-Greenwood, Ceresco-Davey and Elmwood-Murdock. Private well owners brought in 234 water samples to be tested for nitrates and the NRD worked with local FFA chapters and Science students to test the water.

The LPSNRD worked with UNL Extension to implement a Certification Program for irrigators, and continued to provide cost-share and educational support for irrigation best management practices.

The NRD also promoted its ground water activities through social media platforms Instagram and Facebook. Information was shared about ground water levels, samples, data loggers and monitoring wells.

The stakeholder advisory group for the Dwight-Valparaiso-Brainard Special Management Area (DVB) was kept updated on DVB activities. The group held annual meetings in December of 2014 and in January of 2016, where they were updated by NRD staff and contributed their own input. The group also met in February of 2015 to be updated on aerial electromagnetic imaging activity in DVB.

LPSNRD continually seeks to maintain public awareness to information about ground water levels, available cost-sharing and conservation best management practices through its publications, website and through district media.

Collaboration with Other Entities

ENWRA

Both LPSNRD and NeDNR participated in the Eastern Nebraska Water Resources Assessment (ENWRA) program in 2015, to cooperate on hydrogeologic data research and modeling. ENWRA's participants include six NRDs in eastern Nebraska, and NDNR. As a part of this research effort, in 2014 NDNR and LPSNRD entered into an interlocal cooperative agreement with ENWRA to support a hydrologic framework study which involves using a helicopter based-geophysical remote sensing tool termed Airborne Electromagnetic Survey (AEM), to determine aquifer locations and thicknesses. LPSNRD additionally participated in data sharing of LPSNRD's earlier data from the 2013 AEM flight over the northwestern portion of the District. In 2015, data from flights along Little Salt Creek and the Lower Salt Creek drainage were utilized in further analysis of the connection between ground and surface water in these areas. Also in 2015, LPSNRD applied for a Water Sustainability Fund (WSF) grant for additional AEM flights, with the application coordinated through ENWRA. LPSNRD's application involves detailed flights in the eastern portion of the District, as well as additional flight lines in the Lower Salt Creek drainage to continue refining our understanding of ground water-surface water connection in that area. Finally, representatives from both the LPSNRD and NDNR attended ENWRA's technical and managerial meetings, and kept up-to-date on studies and data collection activities.

LPRBC

Both the LPSNRD and NDNR participated with the Lower Platte River Basin Coalition (LPRBC) to develop a basin-wide water plan. The LPRBC was formed in April, 2013 when seven NRDs in the Lower Platte Basin (including Lower Platte South) and NDNR entered into a five-year interlocal cooperative agreement to form the coalition for the purpose of pursuing and discussing water management in the Basin.

The LPRBC took the initial steps to develop the basin-wide plan in the spring of 2014. During 2015, the LPRBC continued evaluation of draft surface and groundwater controls and a list of potential action items for each individual objective. As part of the planning process, the LPRBC's technical committee discussed the potential applicability of the information available through NDNR's INSIGHT database to the water banking framework. The LPRBC also began the process of identifying a common methodology and accounting system that would provide a guideline for the member NRDs for possible future water banks to support water management activities. In 2015, several workshops on water banking were held, and LPSNRD board members, management, and staff were in attendance. Additional information about the LPRBC activities, including basin-wide plan development, is available on the following website: <http://dnr.nebraska.gov/LPRBC>.

Other Collaborations

The LPSNRD cooperated with the U.S. Geological Survey on collection of surface water / streamflow data. In 2015, LPSNRD staff initiated contact with USGS personnel to begin identification of new stream gage locations in the Oak Creek drainage of the Dwight-Valparaiso-Brainard Special Management Area. This effort utilized the AEM data from 2013, and will ultimately be aimed at further defining the relationship between ground and surface water in this area. The LPSNRD additionally cooperated with UNL, USGS, adjoining NRDs and NDNR on ground water data sharing.

Jointly Identified Actions for Succeeding Two Years

As stated in the IMP, NeDNR and the LPSNRD will jointly identify action steps for the succeeding two years for implementation and are listed below. These are in addition to the continued monitoring and reporting outlined in the regulatory and non-regulatory sections of this annual report, and serve as action steps in meeting goals and objectives presented in the IMP:

1. NeDNR will continue to develop INSIGHT as a tool for water management, and will expand the analysis to the east (Missouri Tributaries) as data become available.
2. Both NeDNR and LPSNRD will continue to participate in ENWRA and LPRBC groups
3. The NeDNR and LPSNRD will continue public outreach activities related to integrated water management, and plan to participate in one joint public outreach event in either FY 2016 or 2017.
4. NeDNR will continue to monitor surface water permit sites on a rotating basis to gain a better understanding of surface water use within the LPSNRD.
5. Both the LPSNRD and NeDNR will evaluate the need for additional stream gages in or near the Lower Platte South NRD and continue collaboration with USGS to install additional stream gages in the Oak Creek drainage in the northwestern portion of the District.
6. The LPSNRD will continue to monitor groundwater level changes through its network of groundwater monitoring wells.
7. The LPSNRD will continue to meter and require annual pumping reports for groundwater wells that have capacity to pump over 50 gpm, as well as public supply wells. The LPSNRD will continue to assimilate the data into a comprehensive dataset.
8. The LPSNRD will continue to collect information on municipal, rural water, and non-municipal industrial water use, land use and population changes, and climate changes.
9. The LPSNRD will continue the work through the contract with HDR, Inc. to complete the IMP component tasks identified through that contract, including further development on a Drought Emergency Response Plan, research on conservation programs for various water uses, analyzing unmeasured water uses, and implementation of revisions to the GIS database.
10. NeDNR will continue development of the Upper Lower Platte Missouri Tributary model, with cooperation from LPSNRD.
11. NeDNR will continue its voluntary water use reporting program.
12. The LPSNRD and NeDNR will initiate a cooperative drought contingency planning effort to study the effectiveness and feasibility of water conveyance via streams from upstream sources to the Lower Platte River for support the public water supplies.
13. The LPSNRD will develop recommendations for the development and management of geographic areas with limited aquifers.
14. The LPSNRD will conduct discussions with municipalities and rural water districts on coordinating services with regional systems and on water shortage action plans.
15. Review the need to update the IMP Goals and Objectives, with participation by the Advisory Committee.