



LOWER PLATTE SOUTH natural resources district

3125 Portia Street | P.O. Box 83581 • Lincoln, Nebraska 68501-3581
P: 402.476.2729 • F: 402.476.6454 | www.lpsnrd.org

Agenda Item #9

Memorandum

Date: March 15, 2022
To: Each Director
From: Paul D. Zillig, General Manager
RE: Water Resources Subcommittee Meeting Minutes.

The Water Resources Subcommittee met at 5:30pm on Monday, March 14, 2022 in the NRD Office. Subcommittee members participating included Susan Seacrest, Larry Ruth, Chelsea Johnson, Christine Lamberty, Bruce Johnson, Ken Vogel, and Gary Hellerich. Others participating included Deborah Eagan, Steve Herdzina, Chris Witthuhn, Maclane Scott, David Potter, Tracy Zayac, Mike Murren and myself.

Chair Seacrest opened the meeting and welcomed those in attendance. The first item on the agenda was a power point review of the 2021 activities related to the Groundwater Management Plan. Steve Herdzina, NRD Water Resources Compliance Specialist, reviewed the information (see attached power point). The Subcommittee discussed the review including groundwater quality and quantity results, monitoring, cost-share programs, permitting, and thoughts on the GW Rules & Regulations improvements that will be considered later this year.

The next item was a report on additional action needed for the completion of the Upper Salt 3-A/SW 2nd Street Project. The total cost of the project is approximately \$2.4M, with \$2M for construction and \$0.4M for landrights, utility relocation, etc. NRCS has informed us that the project is eligible for an additional \$150,628 in Federal funding to further reimburse the NRD for the cost of the project. The attached amendment adds the additional federal funds to the project. USDA/NRCS is reimbursing the NRD 65% of the total project costs.

It was moved by Vogel, seconded by B. Johnson, and unanimously approved by the Subcommittee to **recommend the Board of Directors authorize the approval of Amendment #6 to the Notice of Grant and Agreement Award for the Upper Salt Creek Watershed, Site 3-A Rehabilitation Project.**

There being no additional business the meeting adjourned at 6:55 pm.

PDZ/pz

cc: Steve Seglin & Corey Wasserburger

Ground Water

Lower Platte South NRD Groundwater Management Plan 2021 Annual Review

**Water Resources Subcommittee Meeting
March 14, 2022**

2021 Highlights

- Completed annual groundwater network sampling and level measurements
- Nitrate levels in several designated management areas steady or in slight decline (LSC GWR, Hickman, Union, Valparaiso)
- Emerald not advanced to Phase II and Pleasant Dale remained in Phase II after studies; Greenwood boundary to be modified (partially in LSC Phase II area)
- No new exceedances of Phase II/III triggers
 - Ashland & Raymond (Phase II) studies initiated in 2020; nearing completion
- Received 11th annual reports of water usage from 358 metered wells; calculated water usage for these wells pumping a total of about 4.6 billion gallons (compare with 3.6 billion gallons for 2020); 54% of total used for irrigation (7,600 acre-feet)
- Groundwater levels increased in 47 measured wells and decreased in 92 wells but most changes were small; District-wide average decrease of 0.71'
- Issued 10 new well permits (compare with 9 in 2020); completed review of aquifer test & hydrogeologic report for Monolith & issued 3 permits
- Continued development of voluntary Integrated Management Plan & participation in Lower Platte River Basin Coalition
- Received \$247,500 WSF grant to be matched by \$165,000 NRD funds for 3-D Hydrogeologic Framework & AEM data entry into GW models

2021 Groundwater Quality Results



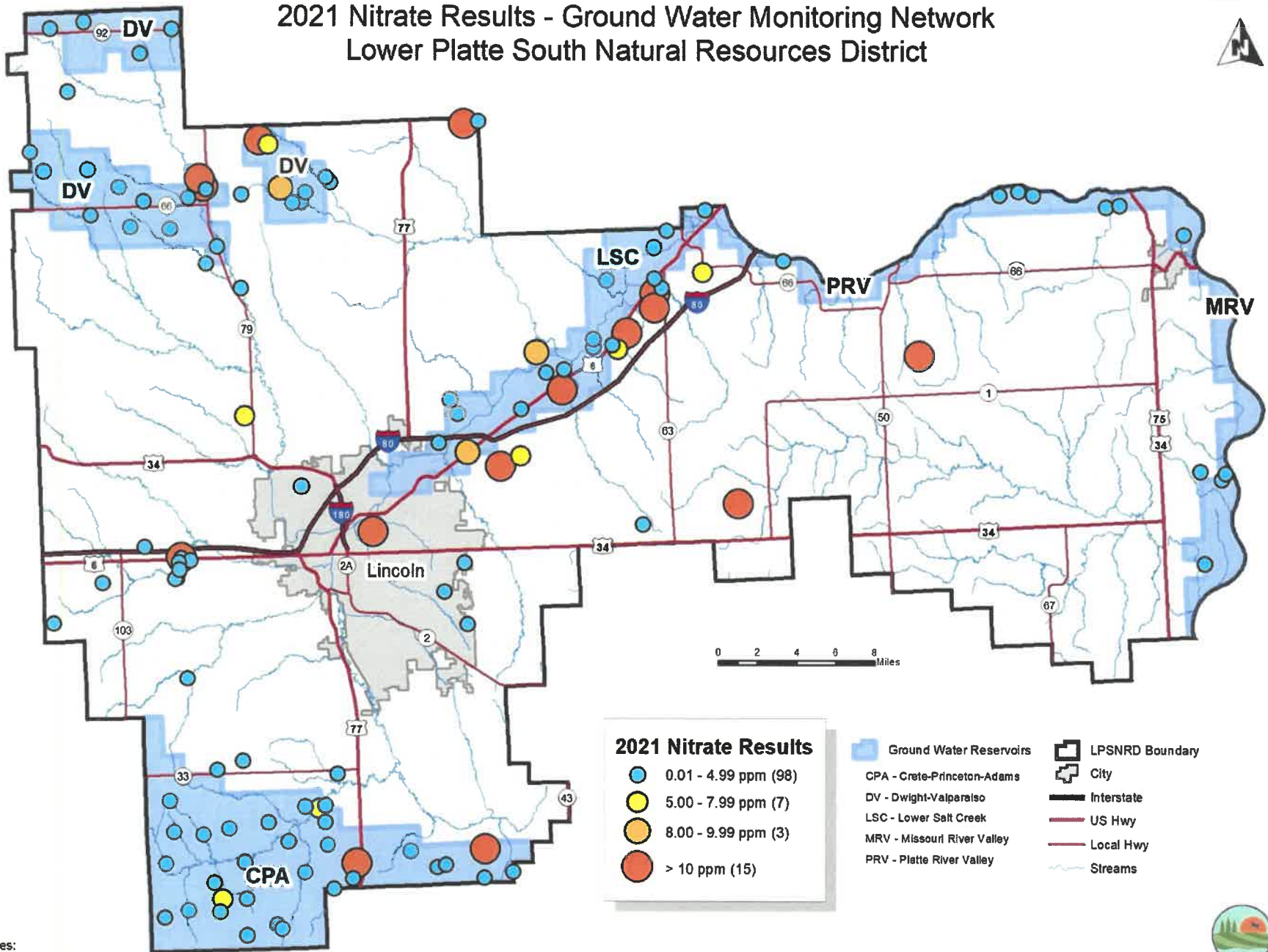
2021 Groundwater Quality Monitoring Summary

274 samples, 57 QA/QC samples from 242
different wells

Parameters:

- Nitrate-N
- Major Ions (rotated between GWRs—Dwight-Valparaiso GWR in 2021)
- Pesticides (rotated between GWRs—Dwight-Valparaiso GWR & community wells in 2021)
- Arsenic (community wells & CWSPA wells)

2021 Nitrate Results - Ground Water Monitoring Network Lower Platte South Natural Resources District



Sources:
Lower Platte South NRD;
Nebraska Dept. of Natural Resources;
Nebraska Dept. of Roads

Map Created By: LPSNRD, sdr
Date Created: February 2022

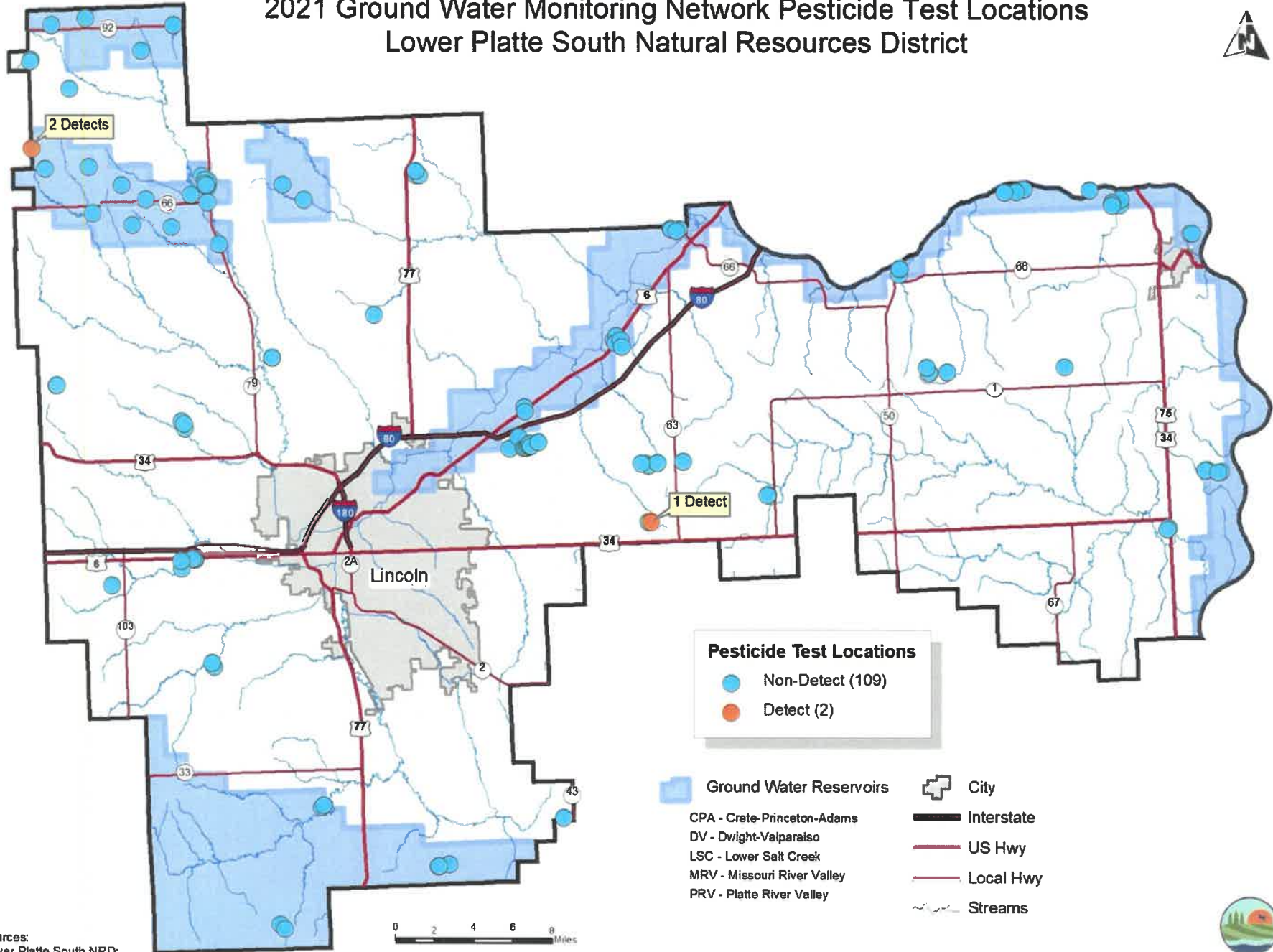


2021 Nitrates by GWR vs. Triggers

Groundwater Reservoir	# Network Wells Sampled	Network Samples \geq 50% of MCL*	Network Samples \geq 80% of MCL*
Crete-Princeton-Adams	31	13%	6%
Dwight-Valparaiso	22	18%	14%
Lower Salt Creek	16	19% (Phase II Area)	19%
Missouri River Valley	5	0%	0%
Platte River Valley	7	0%	0%
Remaining Area	402	33%	24%

*Phase II Trigger: 50% of network wells \geq 50% of MCL (5 ppm)
 Phase III Trigger: 80% of network wells \geq 80% of MCL (8 ppm)

2021 Ground Water Monitoring Network Pesticide Test Locations Lower Platte South Natural Resources District

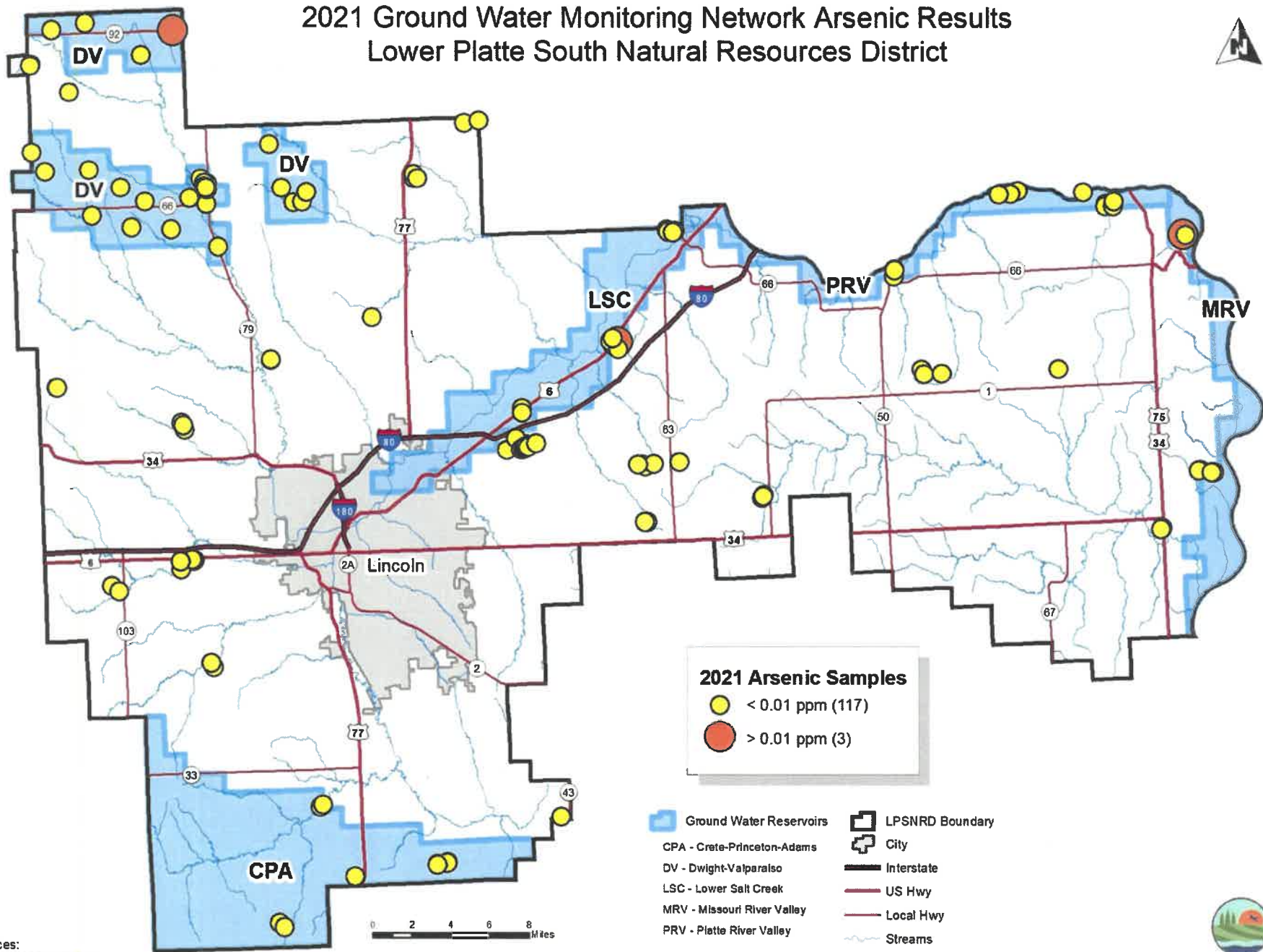


Sources:
Lower Platte South NRD;
Nebraska Dept. of Natural Resources;
Nebraska Dept. of Roads



Map Created By: LPSNRD, sdr
Date Created: February 2022

2021 Ground Water Monitoring Network Arsenic Results Lower Platte South Natural Resources District



2021 Arsenic Samples

- <math>< 0.01 \text{ ppm}</math> (117)
- > 0.01 ppm (3)

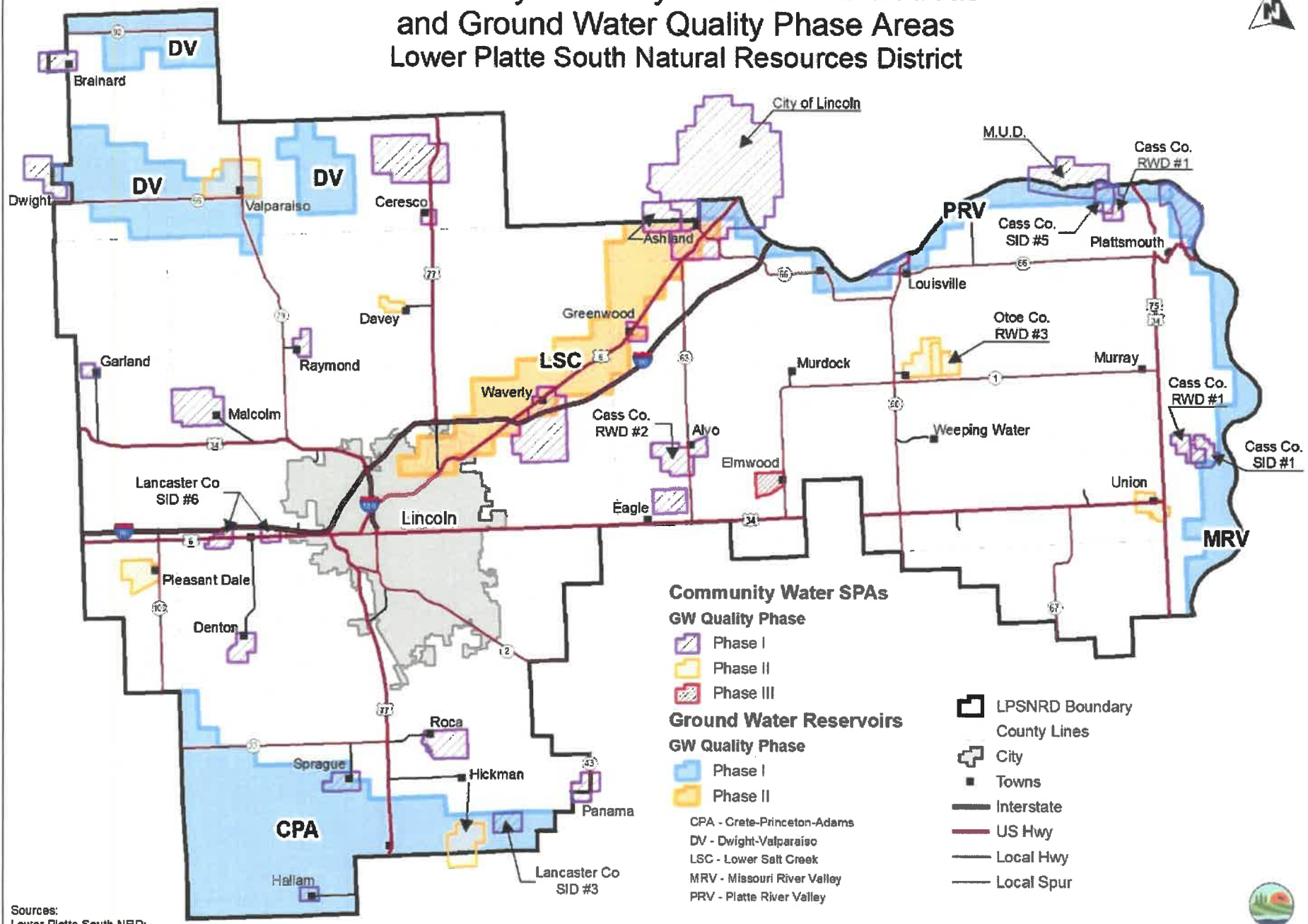
■ Ground Water Reservoirs	 LPSNRD Boundary
CPA - Crete-Princeton-Adams	 City
DV - Dwight-Valparaiso	 Interstate
LSC - Lower Salt Creek	 US Hwy
MRV - Missouri River Valley	 Local Hwy
PRV - Platte River Valley	~ Streams

Sources:
Lower Platte South NRD;
Nebraska Dept. of Natural Resources;
Nebraska Dept. of Roads



Map Created By: LPSNRD, sdr
Date Created: March 2022

Community Water System Protection Areas and Ground Water Quality Phase Areas Lower Platte South Natural Resources District



Community Water SPAs

GW Quality Phase

- Phase I
- Phase II
- Phase III

Ground Water Reservoirs

GW Quality Phase

- Phase I
- Phase II

- CPA - Crite-Princeton-Adams
- DV - Dwight-Valparaiso
- LSC - Lower Salt Creek
- MRV - Missouri River Valley
- PRV - Platte River Valley

- LPSNRD Boundary
- County Lines
- City
- Towns
- Interstate
- US Hwy
- Local Hwy
- Local Spur

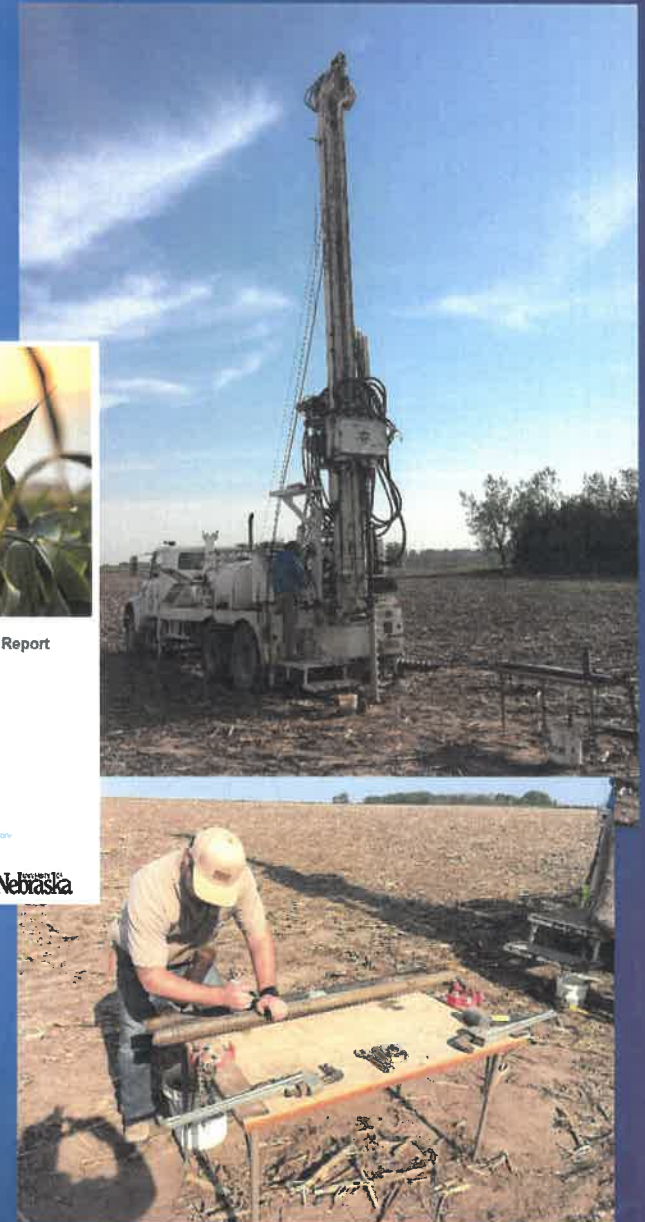
Sources:
Lower Platte South NRD;
Nebraska Dept. of Natural Resources;
Nebraska Dept. of Roads



Map Created By: LPSNRD, sdr
Date Created: March 2019

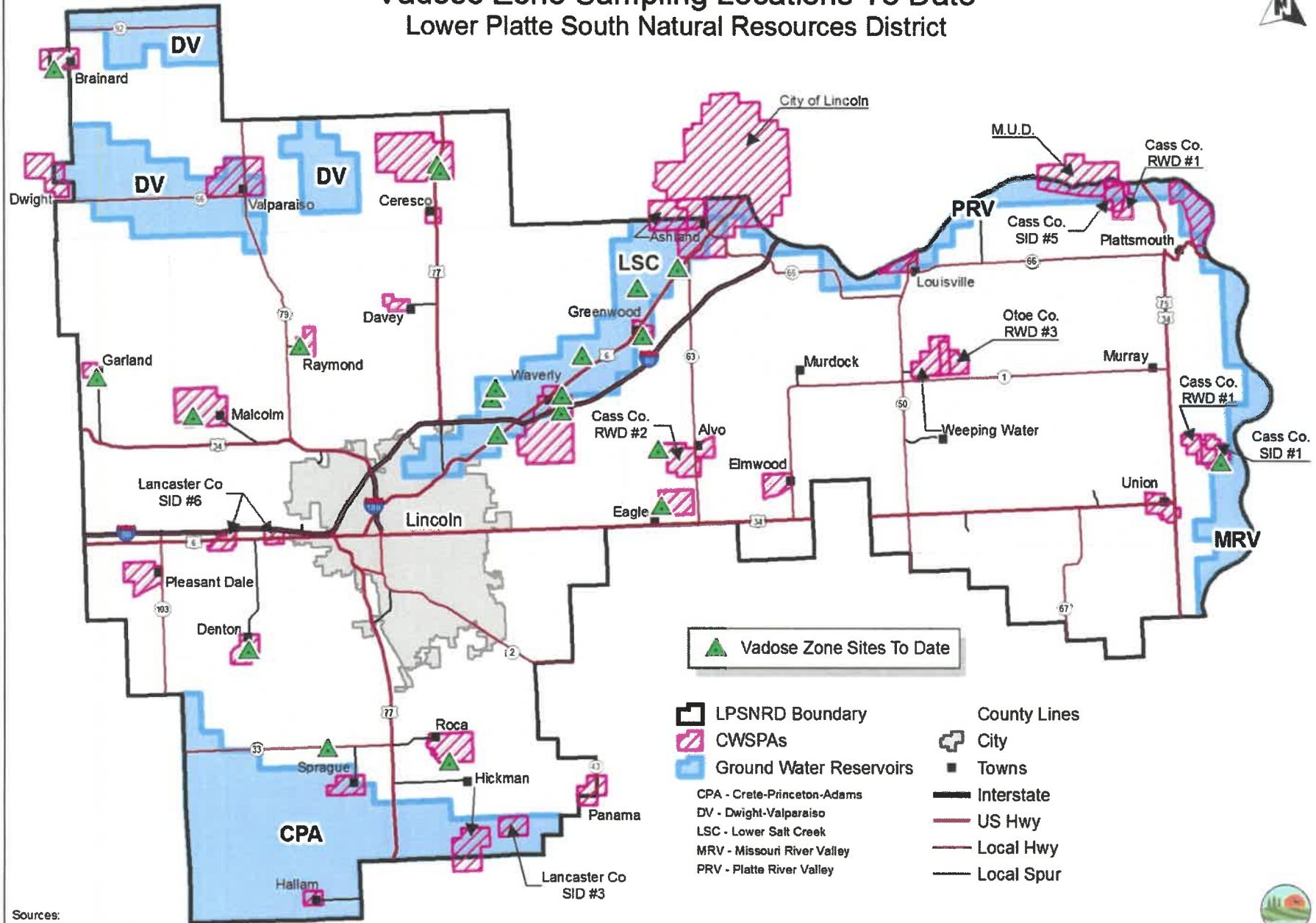
Vadose Zone Program

- Working w/ UNL-WSL on project for advanced methods, SOP development, database
- UNL fieldwork curtailed in 2020 due to COVID pandemic
- Six sites re-sampled in 2021; report being written



Vadose Zone Sampling Locations To Date

Lower Platte South Natural Resources District



Vadose Zone Sites To Date

- LPSNRD Boundary
 - CWSPAs
 - Ground Water Reservoirs
 - County Lines
 - City
 - Towns
 - Interstate
 - US Hwy
 - Local Hwy
 - Local Spur
- CPA - Crete-Princeton-Adams
 DV - Dwight-Valparaiso
 LSC - Lower Salt Creek
 MRV - Missouri River Valley
 PRV - Platte River Valley

Sources:
 Lower Platte South NRD;
 Nebraska Dept. of Natural Resources;
 Nebraska Dept. of Roads



Map Created By: LPSNRD, sdr
 Date Created: March 2018

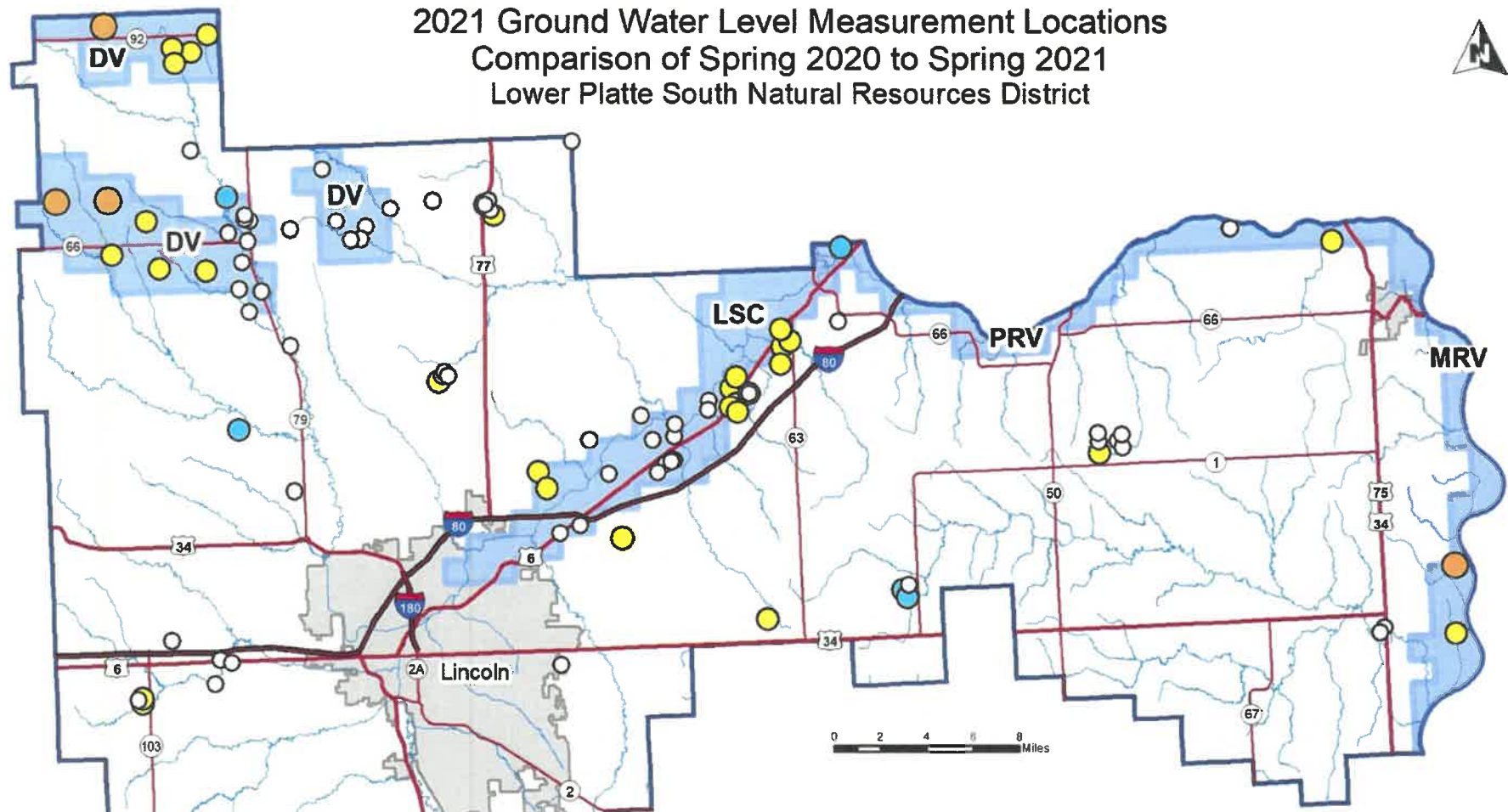
2021 Groundwater Quantity Results



2021 Groundwater Level Monitoring Summary

- 289 water levels measured
- 140 different wells
- Semiannual measurements:
 - Spring: March-April
 - Fall: October-November
- Spring-spring measurements used for comparison & phase determination as specified in GWMP
- 34% of measured wells showed increase; 66% showed decrease from 2019-2020

2021 Ground Water Level Measurement Locations Comparison of Spring 2020 to Spring 2021 Lower Platte South Natural Resources District



GWL Comparison
Spring 2020-2021

- +1.01 to +4.68 ft (14)
- -1.00 to +1.00 ft (84)
- -1.01 to -5.00 ft (37)
- -5.01 to -6.92 ft (4)

■ Ground Water Reservoirs	 LPSNRD Boundary
CPA - Crete-Princeton-Adams	 City
DV - Dwight-Valparaiso	 Interstate
LSC - Lower Salt Creek	 US Hwy
MRV - Missouri River Valley	 Local Hwy
PRV - Platte River Valley	~ Streams

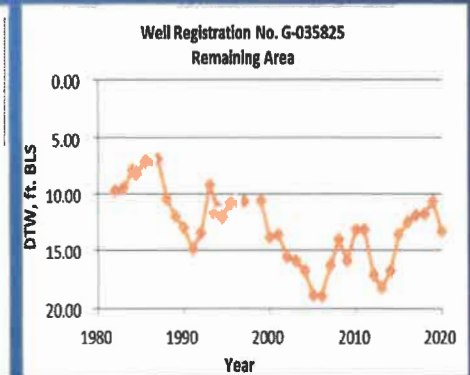
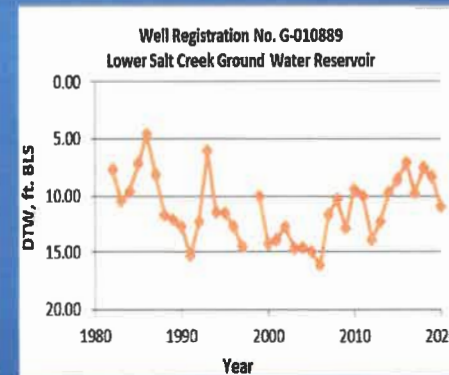
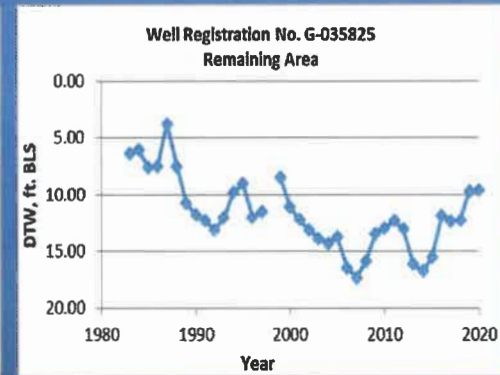
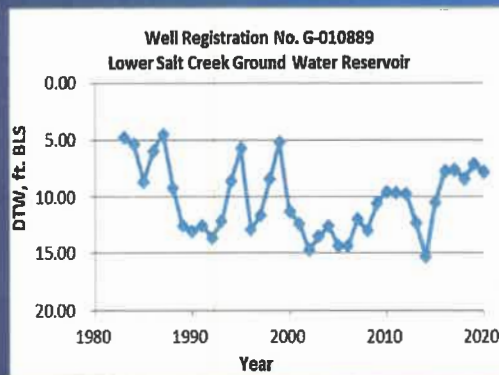
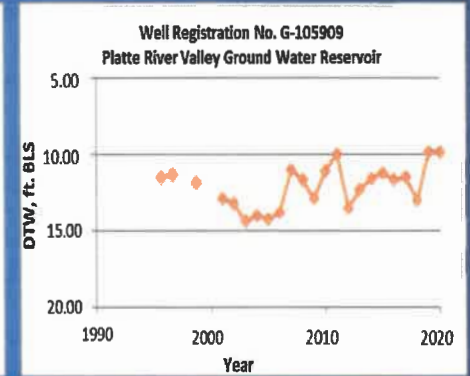
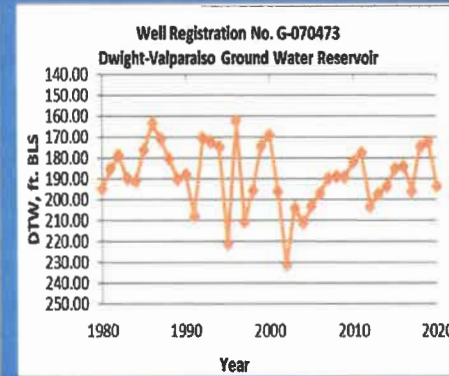
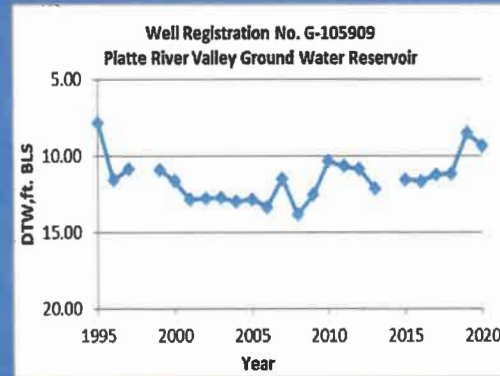
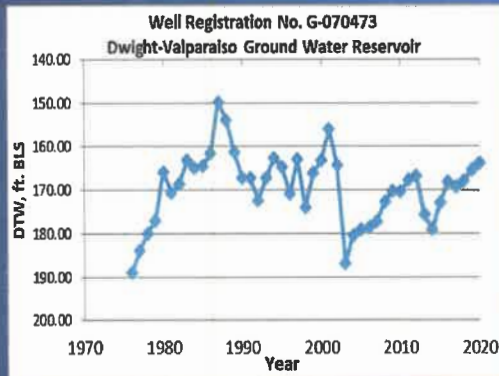
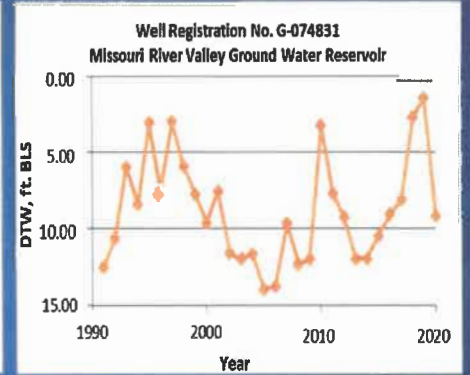
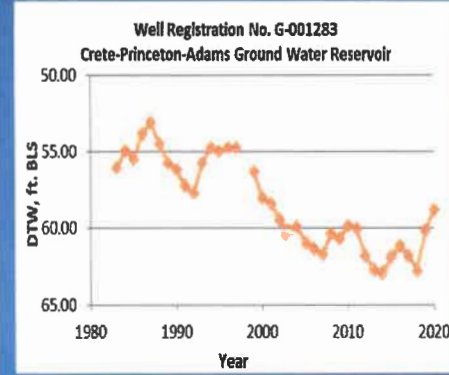
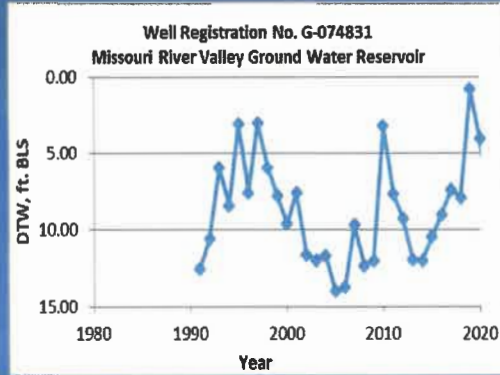
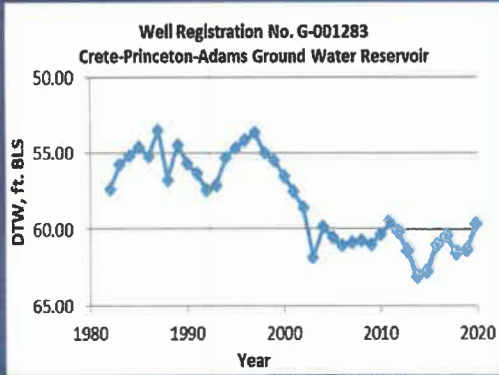
Sources:
Lower Platte South NRD;
Nebraska Dept. of Natural Resources;
Nebraska Dept. of Roads



Map Created By: LPSNRD, sdr
Date Created: March 2022

SPRING

FALL



Quantity Triggers

Groundwater Reservoir	Percentage of wells below Phase II %* reduction in average saturated thickness	Percentage of wells below Phase III%* reduction in average saturated thickness	Average change in Water levels, Spring 2020-2021 (ft.)
Crete-Princeton-Adams	0%	0%	0.42
Dwight-Valparaiso	0%	0%	-1.97
Lower Salt Creek	0%	0%	-1.01
Missouri River Valley	0%	0%	-4.72
Platte River Valley	0%	0%	0.43
Remaining Area	0%	0%	-0.49

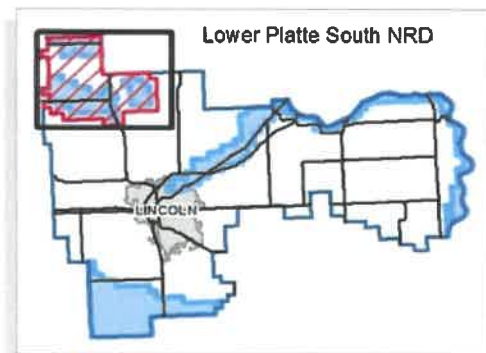
*Phase II: 30% of network wells w/ 8% reduction; LSC is 30% w/ 15%

*Phase III: 50% of network wells w/ 15% reduction; LSC is 50% w/ 30%

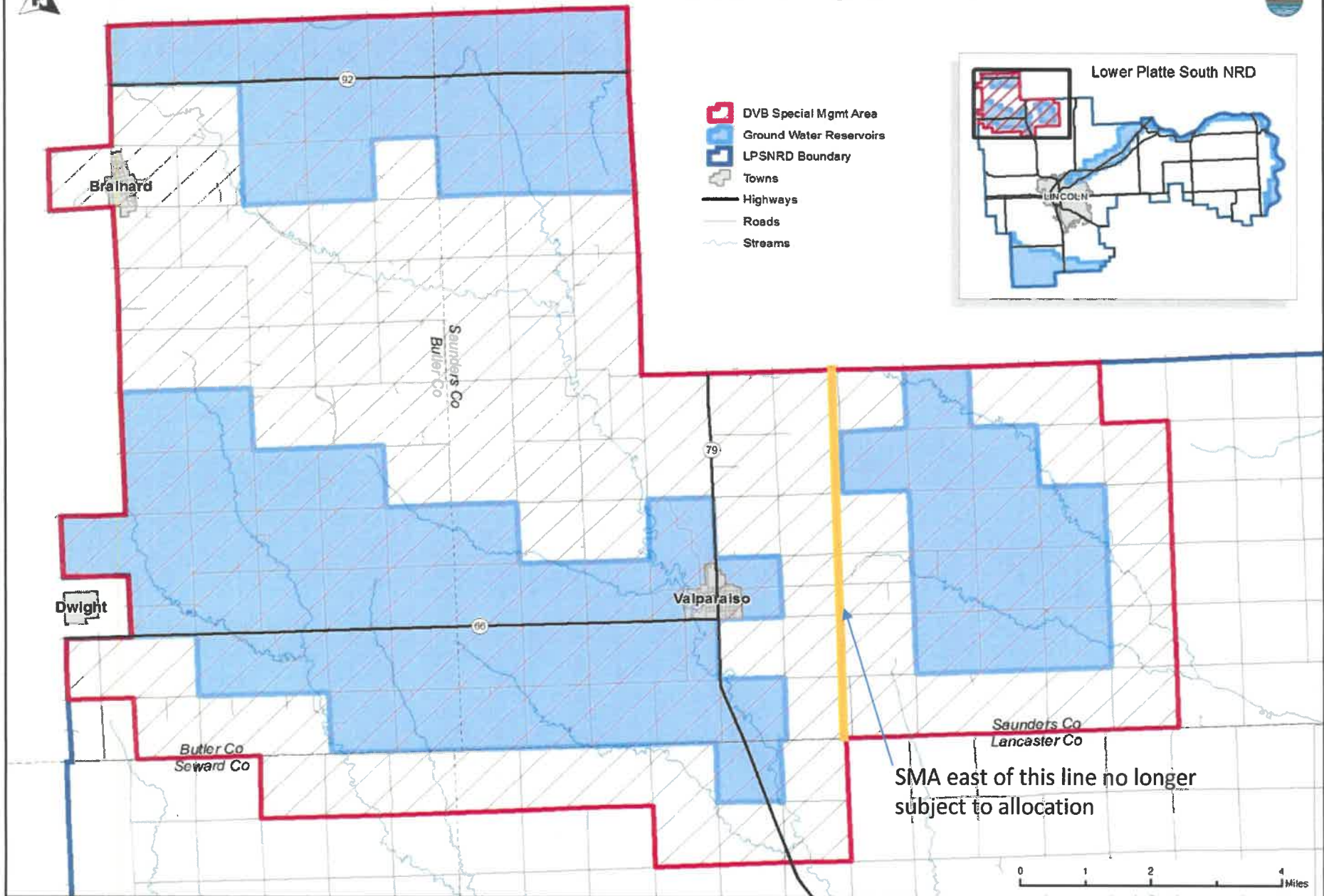
DVB SMA

- 2014—SMA designated; rules & regulations adopted
- 2015—First irrigation certification class held (63 operators); recertification class held 2019
- 2021
 - Second year of new regulations
 - 3 year “rolling” allocation; 21 acre-inches for 3 years w/ 9 acre-inch maximum in any one year
 - No separate allocation for gravity irrigation
 - One violation of allocation in 2020; irrigator assessed 2X over-use penalty; no violations in 2021

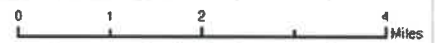
Dwight-Valparaiso-Brainard Special Management Area



- DVB Special Mgmt Area
- Ground Water Reservoirs
- LPSNRD Boundary
- Towns
- Highways
- Roads
- Streams



SMA east of this line no longer subject to allocation



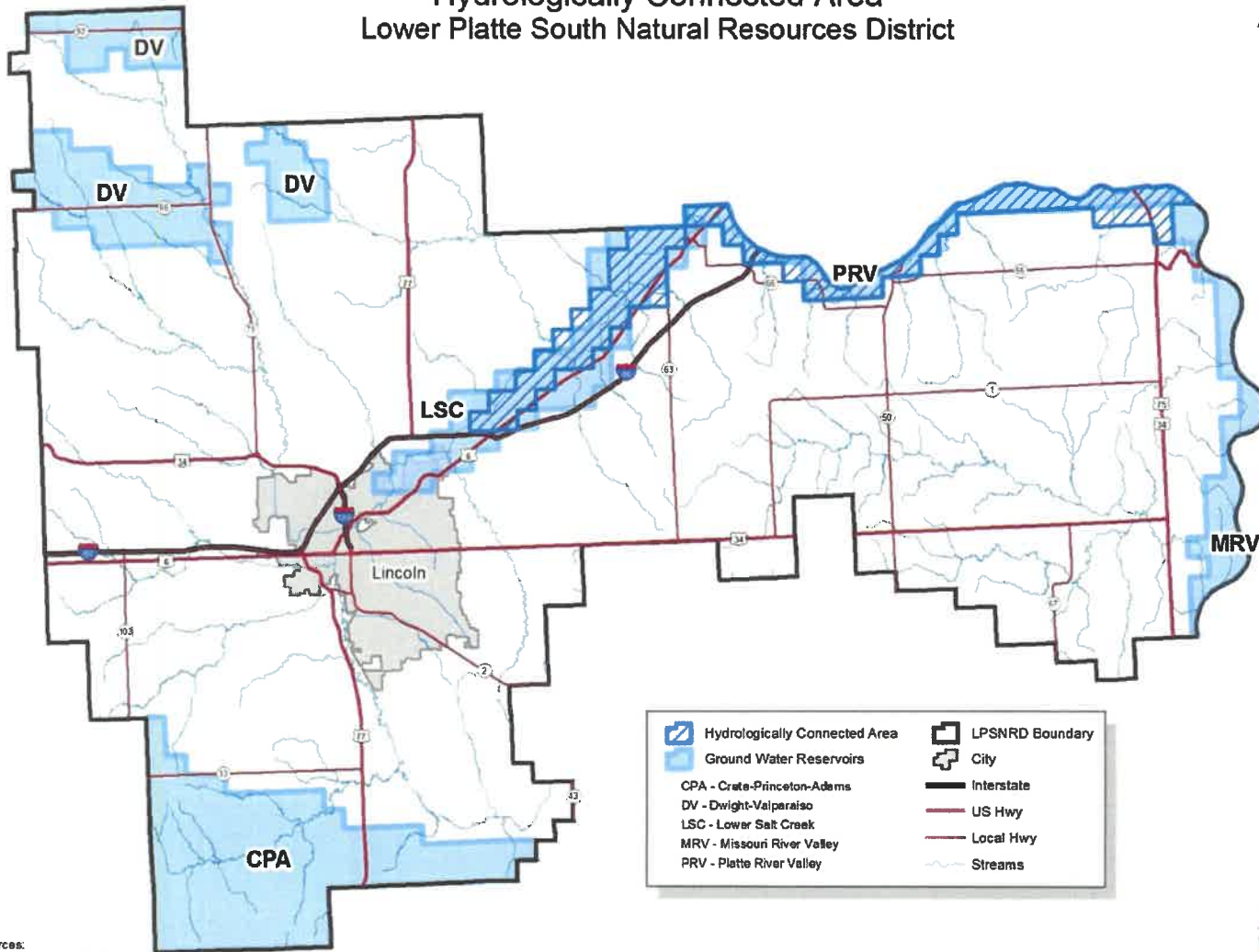
Sources: Lower Platte South NRD; NE Dept of Natural Resources; NE Dept of Environmental Quality; NE Dept of Roads

Map Created By: Shaula D. Ross, LPSNRD - Date: Feb 2015

Certification of Irrigated Acres

- Documentation of lands irrigated with groundwater & well(s) used to irrigate
- Two areas:
 - Hydrologically Connected Area (HCA)
 - Delineated by NDNR
 - Rules & Regulations pursuant to LB483 adopted 7/2009
 - Deadline for certification: 3/31/2009
 - Document “historically groundwater irrigated acres”—acres irrigated BEFORE 12/16/2008
 - Allow for expansion according to LPRBC
 - Remainder of LPSNRD (Non-HCA)
 - LPSNRD groundwater Rules & Regulations
 - Deadline for certification: 1/30/2011 (Current regs state acres must be certified BEFORE being irrigated)

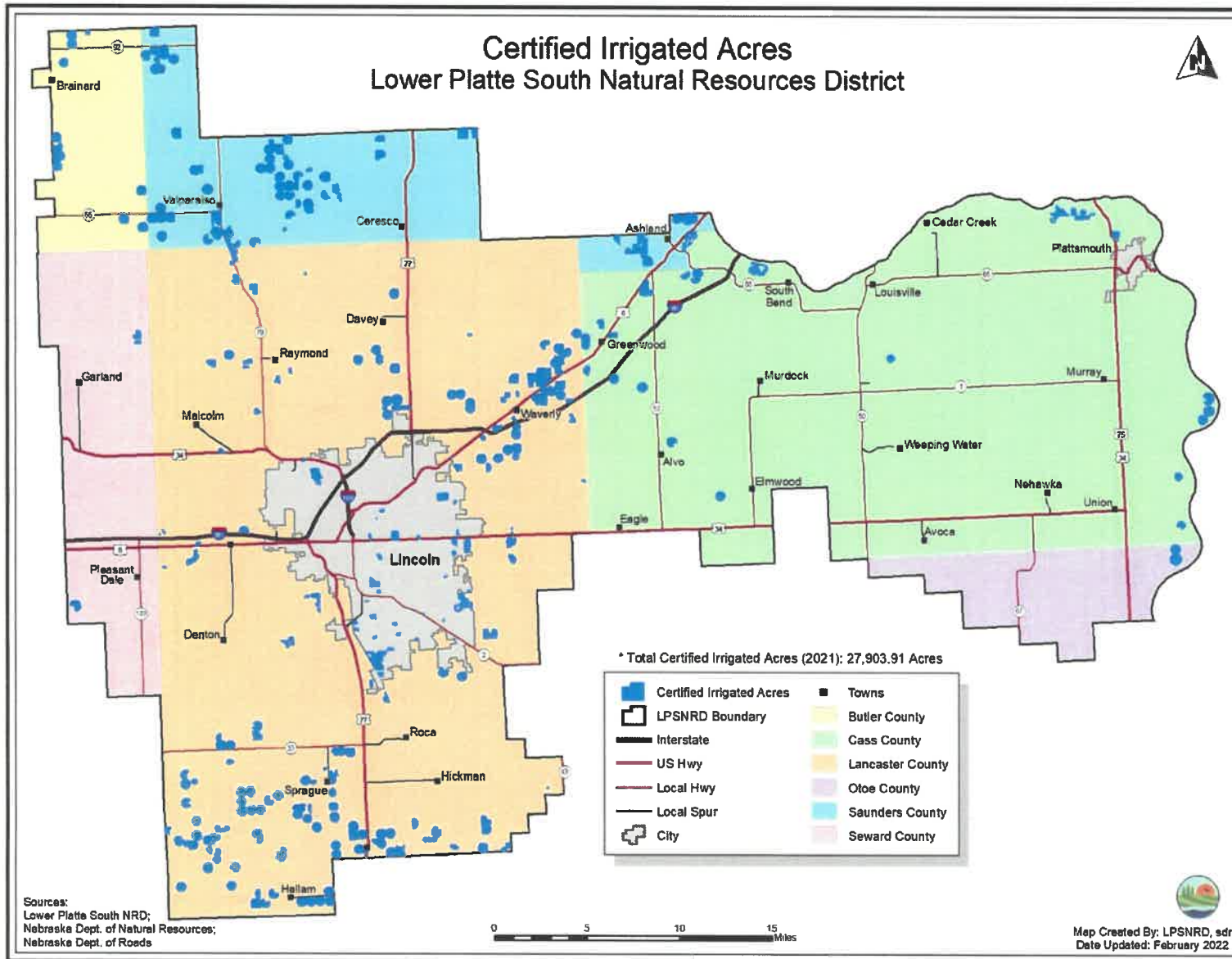
Hydrologically Connected Area Lower Platte South Natural Resources District



Sources:
Lower Platte South NRD;
Nebraska Dept. of Natural Resources;
Nebraska Dept. of Roads

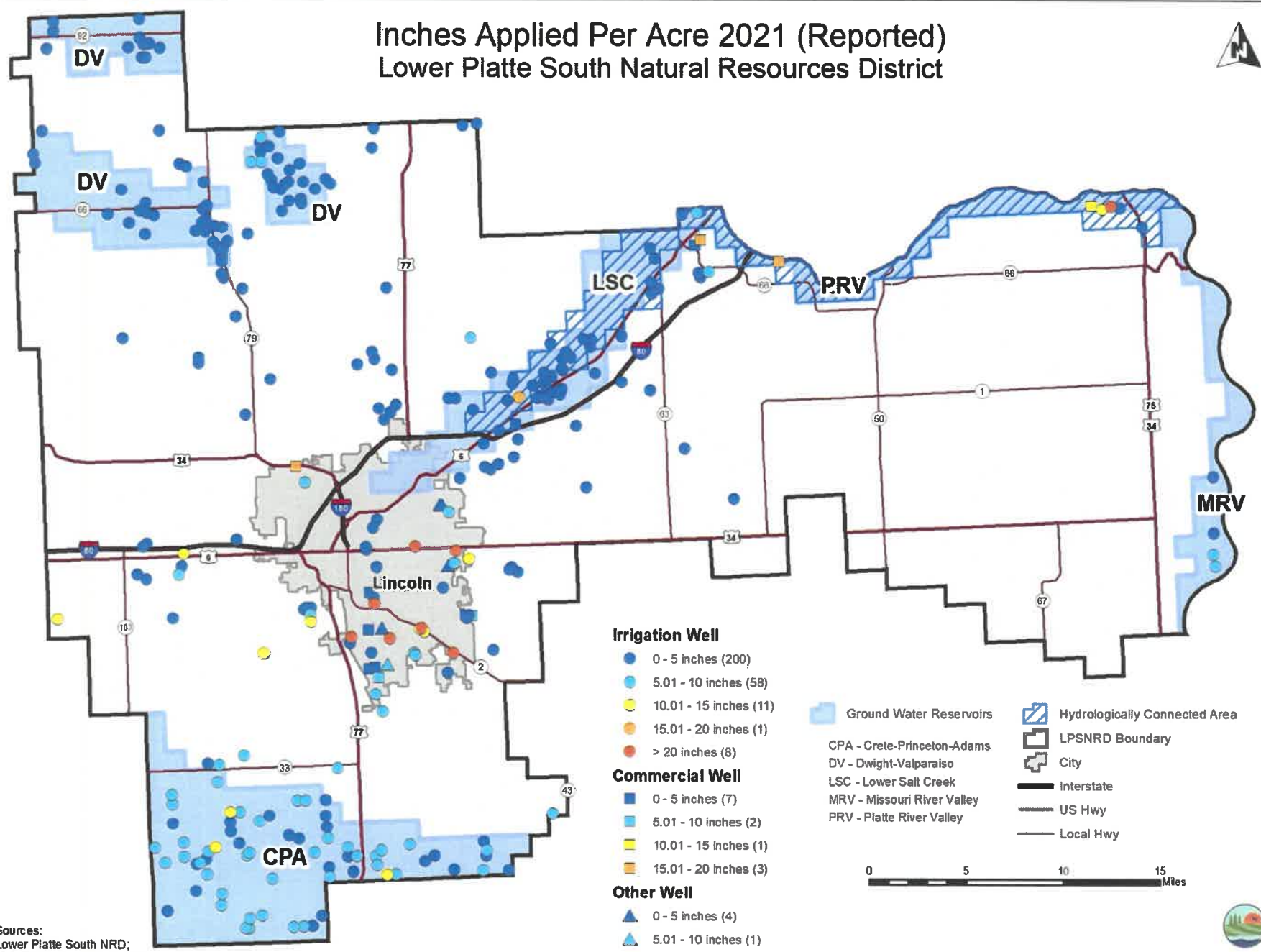
Map Created By: Shaula D. Ross
Date Created: January 2010

About 65 sq. miles in 77 different sections from Waverly to Ashland along Salt Creek, and from Ashland to Plattsmouth along the Platte River. NDNR has completed modelling for Lower Platte Basin; HCA likely to be modified



24,636.71 acres certified in non-HCA;
3,268.2 acres certified in HCA
27,904.91 acres certified District-wide
(61.32 new acres in 2021)

Inches Applied Per Acre 2021 (Reported) Lower Platte South Natural Resources District



Sources:
Lower Platte South NRD;
Nebraska Dept. of Natural Resources;
Nebraska Dept. of Roads



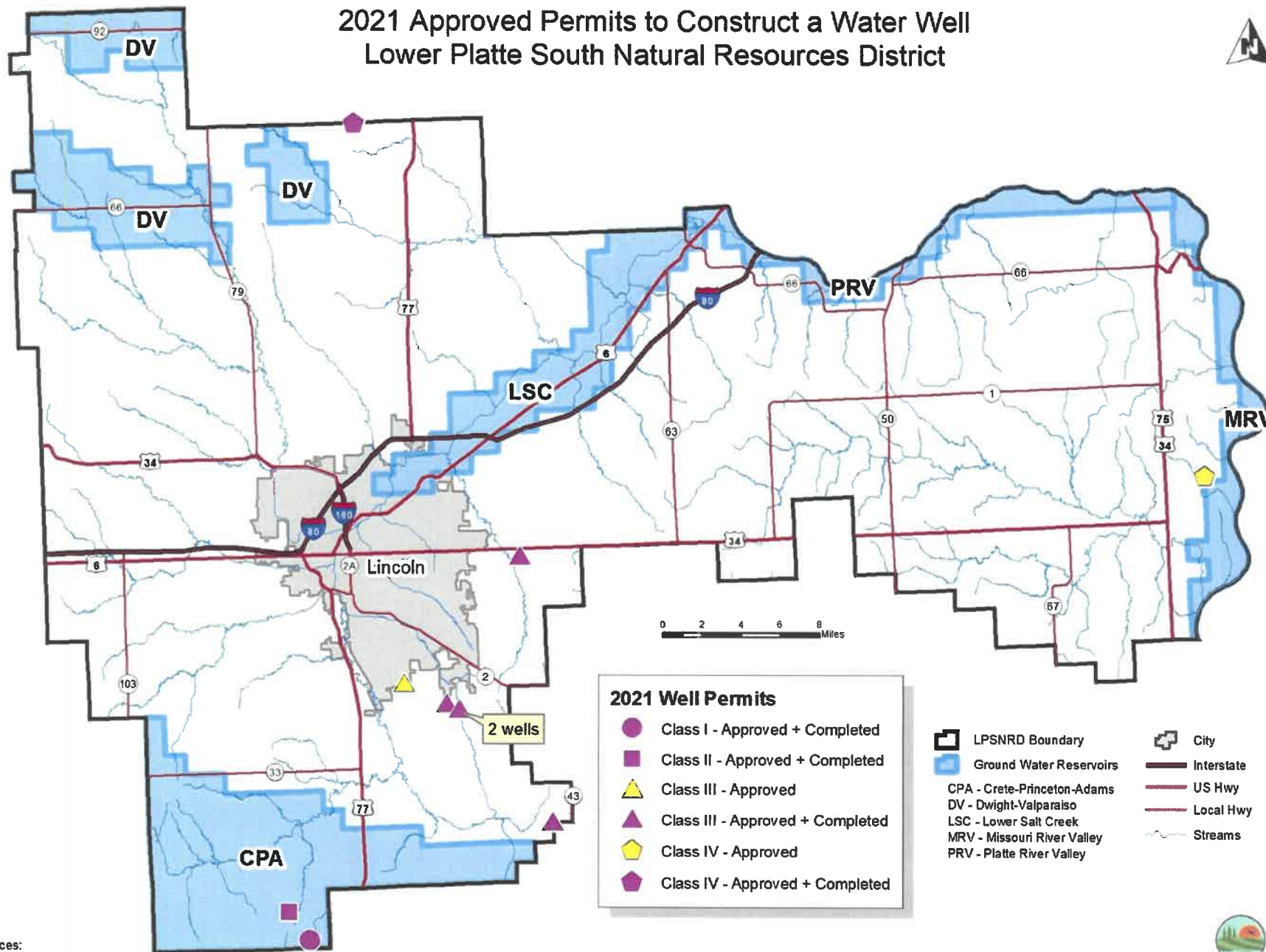
Map Created By: LPSNRD, sdr
Date Created: March 2022

2021 Water Well Permits

- Issued 10 well permits
 - 6 irrigation, 3 commercial, 1 public supply
 - 5 of these completed in 2020
- Monolith—3 wells estimated at 320-400 M gal/year
 - Modeling report received late 2020
 - NRD retained LRE Water to assist in review
 - Permit issued mid-2021; conditions include long-term monitoring of quality & quantity



2021 Approved Permits to Construct a Water Well Lower Platte South Natural Resources District



- 2021 Well Permits**
- Class I - Approved + Completed
 - Class II - Approved + Completed
 - ▲ Class III - Approved
 - ▲ Class III - Approved + Completed
 - ⬠ Class IV - Approved
 - ⬠ Class IV - Approved + Completed

- ▭ LPSNRD Boundary
 - Ground Water Reservoirs
 - ⊕ City
 - Interstate
 - US Hwy
 - Local Hwy
 - ~ Streams
- CPA - Crete-Princeton-Adams
 DV - Dwight-Valparaiso
 LSC - Lower Salt Creek
 MRV - Missouri River Valley
 PRV - Platte River Valley

Sources:
 Lower Platte South NRD;
 Nebraska Dept. of Natural Resources;
 Nebraska Dept. of Roads



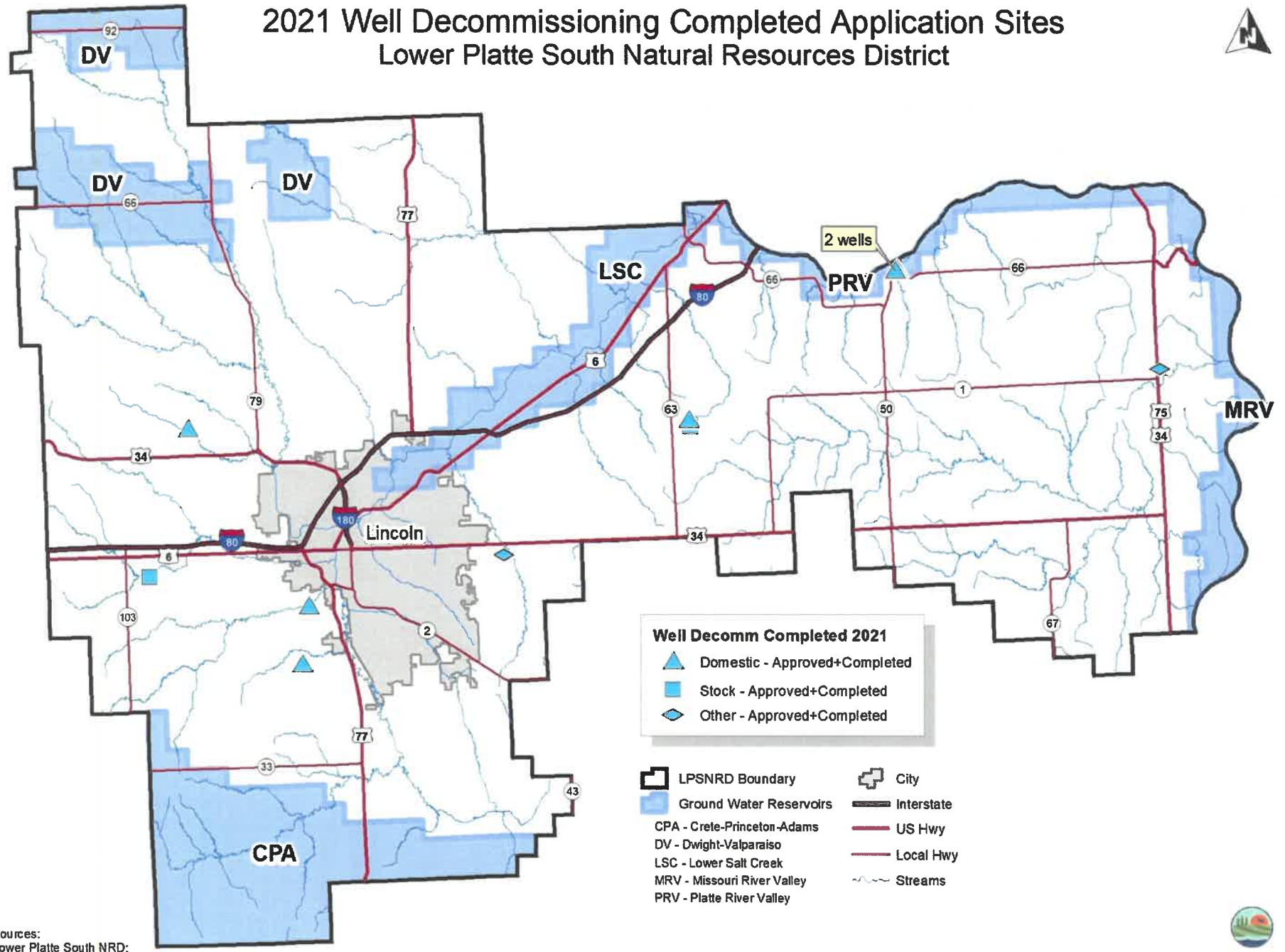
Map Created By: LPSNRD, sdr
 Date Created: March 2022

2021 Well Decommissioning Program

- Decommissioned 10 wells
 - 6 domestic
 - 2 livestock
 - 2 other
- As of 12/31/2021, 1,040 wells decommissioned in LPSNRD since 1990!



2021 Well Decommissioning Completed Application Sites Lower Platte South Natural Resources District



Well Decomm Completed 2021

- ▲ Domestic - Approved+Completed
- Stock - Approved+Completed
- ◆ Other - Approved+Completed

- LPSNRD Boundary
- Ground Water Reservoirs
- CPA - Crete-Princeton-Adams
- DV - Dwight-Valparaiso
- LSC - Lower Salt Creek
- MRV - Missouri River Valley
- PRV - Platte River Valley
- + City
- Interstate
- US Hwy
- Local Hwy
- Streams

Sources:
Lower Platte South NRD;
Nebraska Dept. of Natural Resources;
Nebraska Dept. of Roads

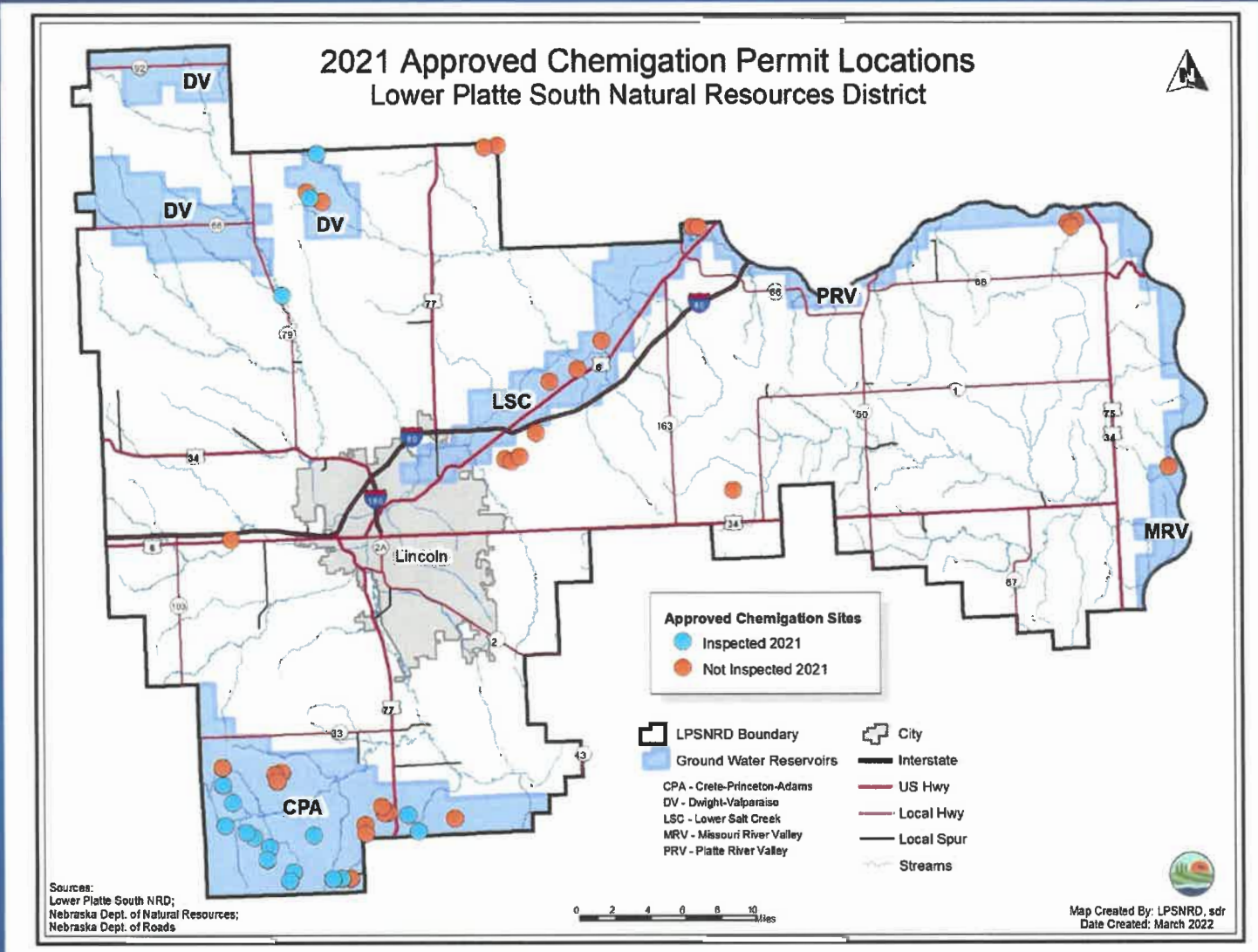


Map Created By: LPSNRD.sdr
Date Created: March 2022

2021 Chemigation Program

- Issued 47 renewal permits
 - District-wide total of 5,066 acres permitted for chemigation
- Completed 17 inspections; no violations found





groundwater Reservoir	# of Chemigation Permits	# of Acres
Crete-Princeton-Adams	25	2,999
Dwight-Valparaiso	4	461
Lower Salt Creek	3	231
Missouri River Valley	1	95
Platte River Valley	4	264
Remaining Area	10	1,018

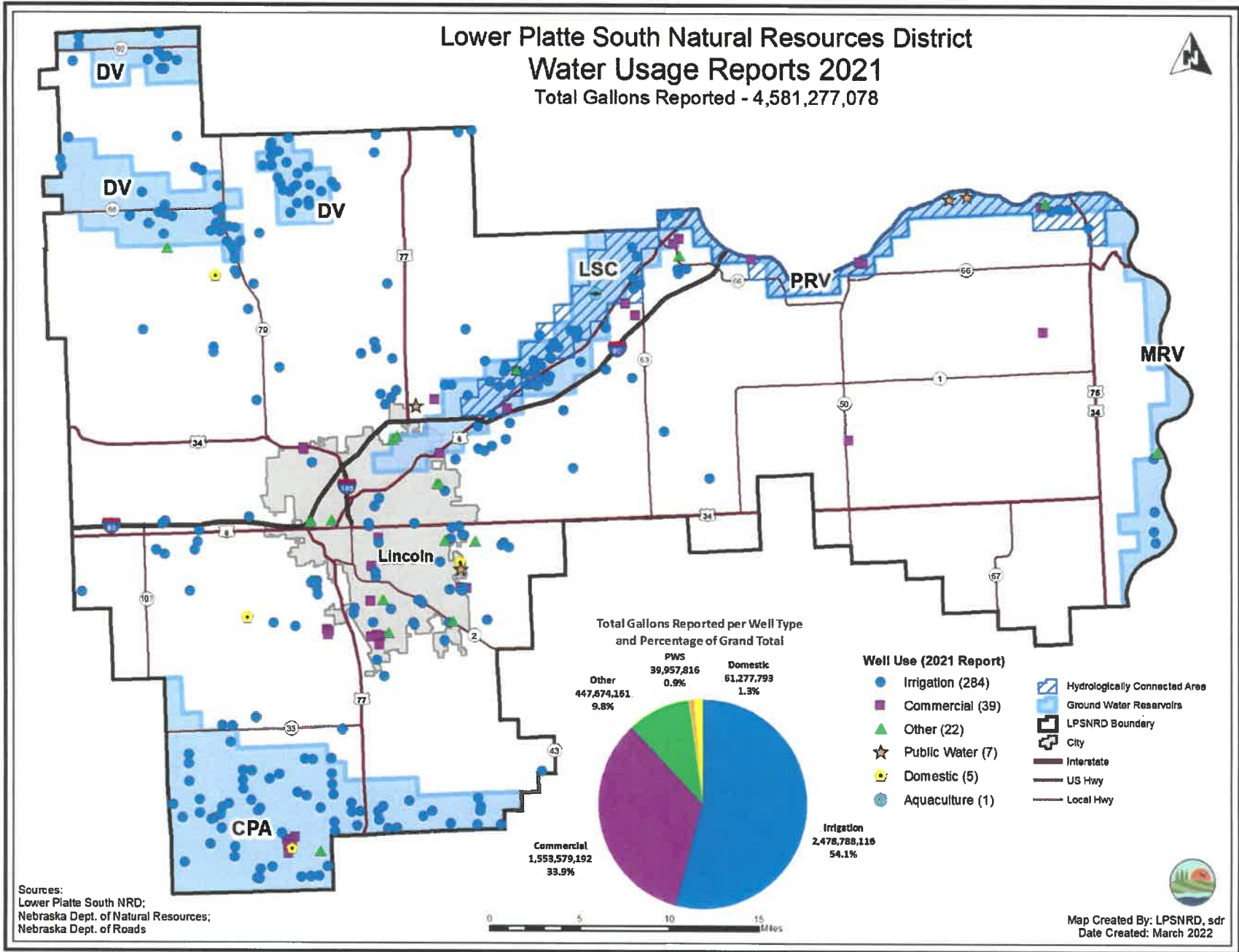
2021 Water Meter Program Highlights

- 1/30/2011 deadline; regulations now require that meters be in place BEFORE well use
- 50% cost-share up to \$750
- One cost-share application in 2021
- Completed 142 inspections
- 11th year of annual reporting
 - 358 reports received in 2021
 - Calculations of water pumped



Lower Platte South Natural Resources District Water Usage Reports 2021

Total Gallons Reported - 4,581,277,078



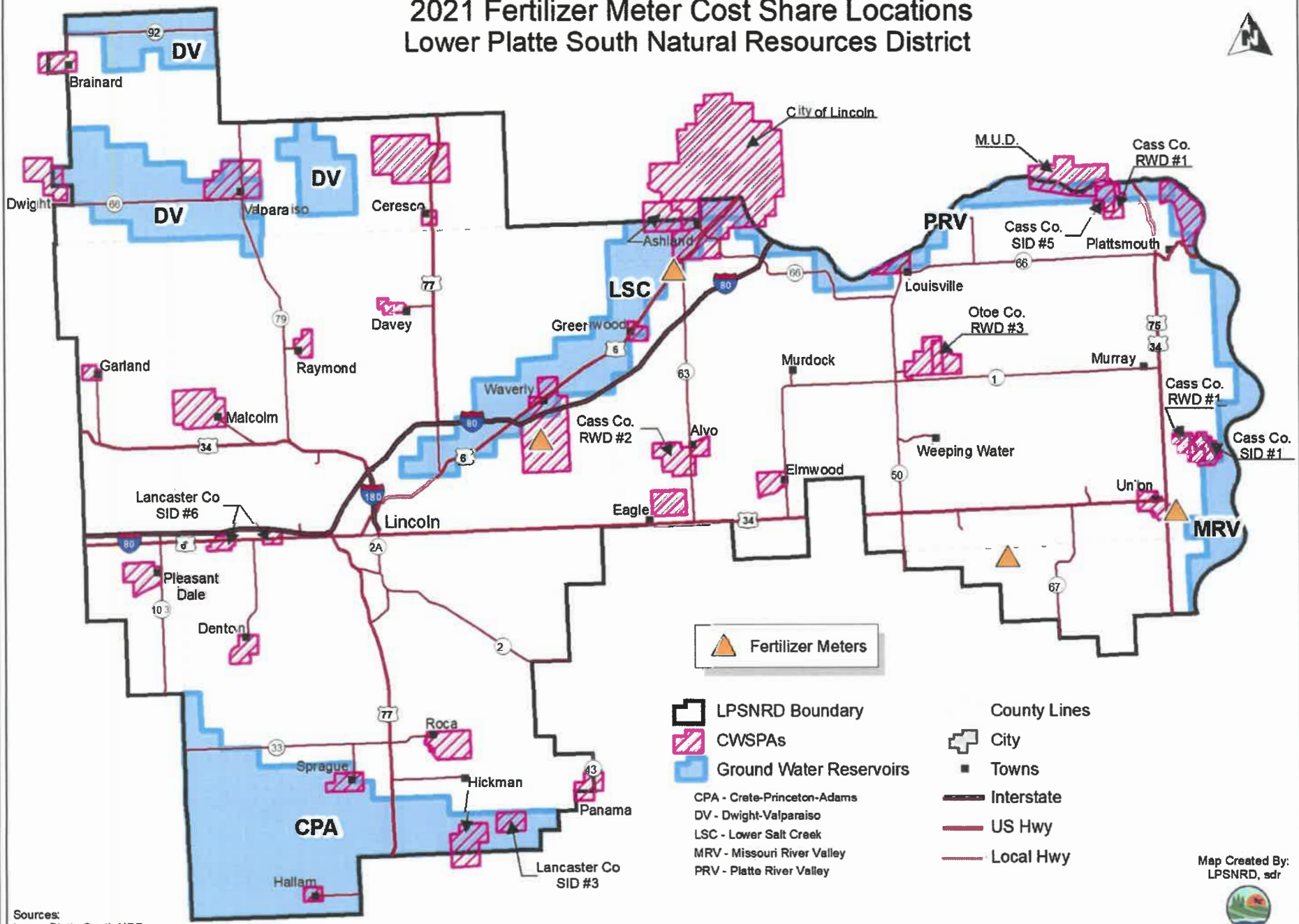
4.6 B gallons = 168,690 acre-inches = 14,057 acre-feet
(91,271 acre-inches/7,606 acre-feet for irrigation wells)

2021 Fertilizer Meter Program Highlights

- Received & cost-shared on 4 applications



2021 Fertilizer Meter Cost Share Locations Lower Platte South Natural Resources District



Fertilizer Meters

LPSNRD Boundary
 CWSPAs
 Ground Water Reservoirs

County Lines
 City
 Towns
 Interstate
 US Hwy
 Local Hwy

CPA - Crete-Princeton-Adams
 DV - Dwight-Valparaiso
 LSC - Lower Salt Creek
 MRV - Missouri River Valley
 PRV - Platte River Valley

Sources:
 Lower Platte South NRD;
 Nebraska Dept. of Natural Resources;
 Nebraska Dept. of Roads



Map Created By:
 LPSNRD, sdr



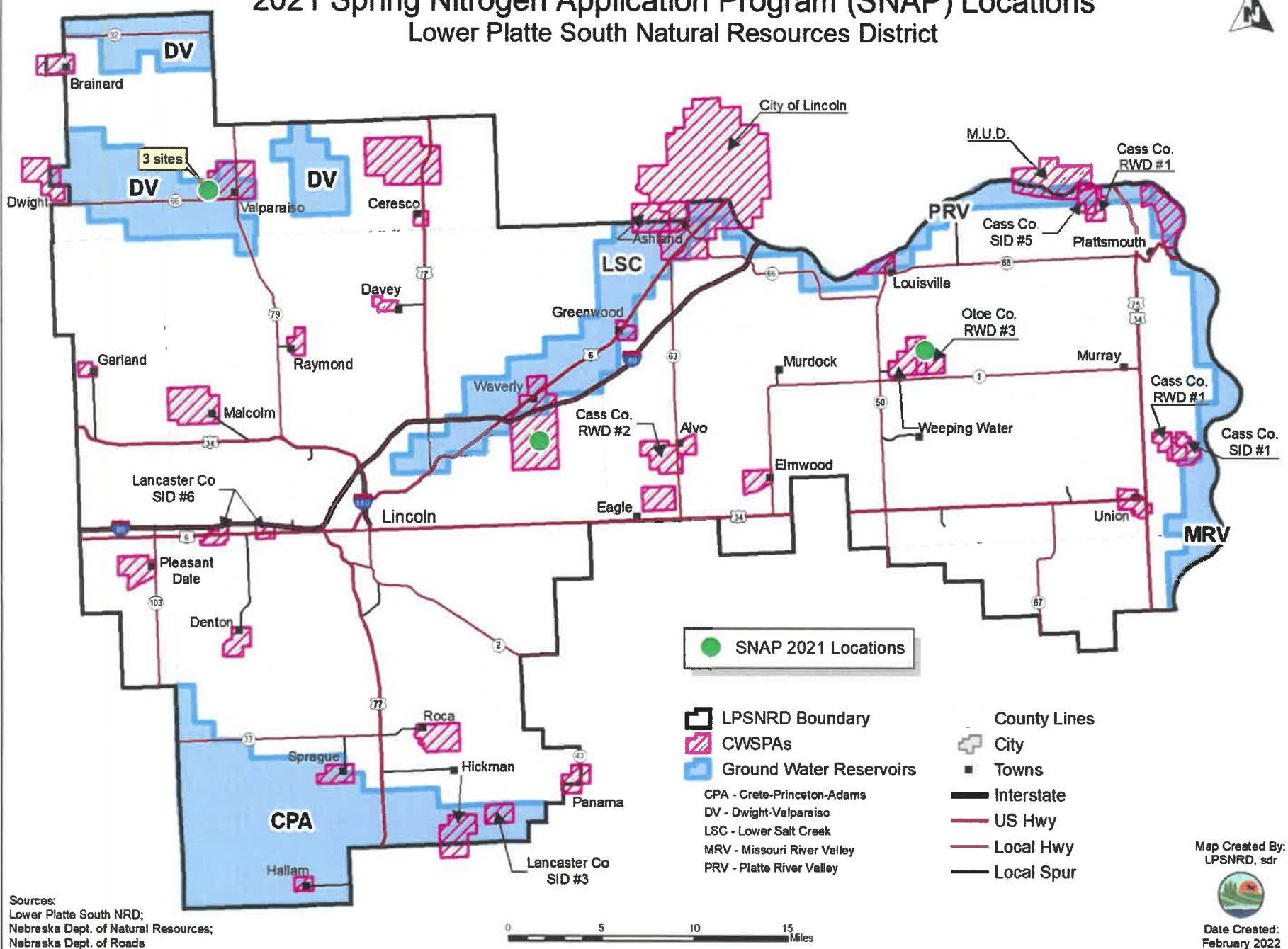
Date Created:
 February 2022

2021 Spring Nitrogen Application (SNAP) Highlights

- Program encourages spring application of N fertilizer by offsetting spring fertilizer costs (higher than fall costs)
- 5 applications received & approved in 2021



2021 Spring Nitrogen Application Program (SNAP) Locations Lower Platte South Natural Resources District



Sources:
Lower Platte South NRD;
Nebraska Dept. of Natural Resources;
Nebraska Dept. of Roads

Map Created By:
LPSNRD, sdr



Date Created:
February 2022

2021 Miscellaneous Activities

- Variety of I/E & Public Information Activities
 - Virtual/onsite classroom presentations (720 students)
 - Field trips (1,500 students)
 - One Test Your Well Night (Elmwood-Murdock)
 - Substantial outreach during Monolith permit process
- Continued participation in ENWRA
 - Continued analysis/development of AEM data & applications, especially 3-D projects in GeoScene
 - WSF grant for \$144,000 & \$96,000 local funds for recharge studies & water table map updates
 - Ongoing meetings, website, data collection, etc.
- Research
 - Renewed vadose zone sampling at 6 sites
 - WSF Grant for \$247,500 & \$165,000 NRD funds for 3-D Hydrogeologic Framework & incorporation of AEM data into groundwater models

THANKS!!!!!!

- Steve Herdzina
- Chris Witthuhn
- Maclane Scott
- Dan Schulz
- Parker Robinson
- Katie Cameron
- Mike Mascoe
- McKenzie Barry
- Adam Sutton
- Shaula Ross

QUESTIONS?



NOTICE OF GRANT AND AGREEMENT AWARD

1. Award Identifying Number 69-6526-4-871		2. Amendment No. 006	3. Award/Project Period 09-26-2014-07/30/2022	4. Type of Award Instrument Cooperative		
5. Agency: (Name and Address) USDA, Natural Resources Conservation Service Federal Building, Room 152 100 Centennial Mall North Lincoln, NE 68508			6. Recipient Organization: (Name and Address) Lower Platte South Natural Resources District PO Box 83531 Lincoln, NE 68501-3581 <table border="1"> <tr> <td>DUNS: 044690550</td> <td>EIN: 470542969</td> </tr> </table>		DUNS: 044690550	EIN: 470542969
DUNS: 044690550	EIN: 470542969					
7. Agency Program Contact: Allen Gehring 402-437-4037 Allen.Gehring@usda.gov		8. Agency Administrative Contact: Cassandra Hayes 816-823-5608 Cassandra.Hayes@usda.gov		9. Recipient Program Contact: Paul D. Zillig 402-476-2729 pzillig@lpsnrd.org		
10. Recipient Administrative Contact: Paul D. Zillig 402-476-2729 pzillig@lpsnrd.org		11. CFDA Number 10.916		12. Authority PL.83-566, 16 USC Sec 1012 as amended by Section 313, PL 106-472		
13. Type of Action ii. Amendment/Revision		14. Project Director Paul D. Zillig				

15. Project Title/Description:
Assistance for the rehabilitation of Upper Salt Creek Watershed, Site 3A. (This amendment is being done to add \$150,628 in additional funding received).

16. Entity Type: Profit Nonprofit Higher Education Federal State/Local Indian/Native American
Other

17. Select Funding Type:			18. Accounting and Appropriation Data			
<input checked="" type="checkbox"/> Federal	<input checked="" type="checkbox"/> Non-Federal		Financial Code	Amount	Fiscal Year	Treasury Symbol
Original Funds Total:	\$ 1,750,000.00	\$ 528,850.00	NR.AI.WSRP.31.2124.2222F	\$ 150,628.00	2022	1221002
Additional Funds Total:	\$ 150,628.00					
Grand Total:	\$ 1,900,628.00	\$ 528,850.00				

19. APPROVED BUDGET

Personnel	\$	Fringe Benefits	\$
Travel	\$	Equipment	\$
Supplies	\$	Contractual	\$ 767,850.00
Construction	\$ 1,252,228.00	Other	\$ 409,400.00
Total Direct Cost\	\$ 2,429,478.00	Total Indirect Cost	\$
		Total Non-Federal Funds	\$ 528,850.00
		Total Federal Funds Awarded	\$ 1,900,628.00
		Total Approved Budget	\$ 2,429,478.00

This agreement is subject to applicable USDA statutory provisions and Financial Assistance Regulations. In accepting this award or amendment and any payments made pursuant thereto, the undersigned represents that he or she is duly authorized to act on behalf of the awardee organization, agrees that the award is subject to the applicable provisions of this agreement (and all attachments), and agrees that acceptance of any payments constitutes an agreement by the payee that the amounts, if any found by USDA to have been overpaid, will be refunded or credited in full to USDA.

(Continuation)

NOTICE OF GRANT AND AGREEMENT AWARD

Award Identifying Number	Amendment No.	Award/Project Period	Type of Award Instrument
69-6526-4-871	006	09-26-2014-07/30/2022	Cooperative

List of Attachments:

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Name and Title of Authorized Government Representative	Signature	Date
Robert Lawson, STC		
Name and Title of Authorized Recipient Representative	Signature	Date
Paul Zillig, General Manager		

NONDISCRIMINATION STATEMENT

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW., Washington, DC 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider, employer, and lender.

PRIVACY ACT STATEMENT

The above statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. Section 522a).

BUDGET NARRATIVE FOR WATERSHED & FLOOD PREVENTION OPERATIONS
AGREEMENT NO: 69-6526-4-871, Amendment #006
PROJECT: Upper Salt Creek Site 3-A, LOWER PLATTE SOUTH NRD

The official budget described in this Budget Narrative will be considered the total budget as last approved by the Federal awarding agency for this award.

Amounts included in this budget narrative are estimates. Reimbursements will be based on actual expenditures, not to exceed the amount obligated.

The budget includes the following breakdown of the added costs:

- Total Updated Project Budget: \$2,429,478.00
- Increase NRCS funding in the amount of \$150,628 towards construction and all associated costs.

(Authorized Sponsor Representative) Signature and Title