

Water Committee Meeting
Wednesday, August 28, 2024 6:00 PM
Lower Platte North NRD Office
P.O. Box 126
Wahoo, NE 68066

1. UNFINISHED BUSINESS

2. REGULATORY

2.A. GROUND WATER MANAGEMENT AREA

2.A.1. Variance Request in the Hydrologically Connected Area (Limited Development Area)
Deadline is September 15.

2.A.2. Variance Requests in the Non-Hydrologically Connected Area (Normal Development Area)
The NRD has received 2 applications for this area.
Reichmuth Ag - C N1/2 18-18-1E, Platte County, 15 acres
Doug Bartek - E SW 23 -16-8E, Saunders County. 64 acres

Staff explained to the Committee on Reichmuth Ag application that if you score just the 15 acres, then it would not be eligible because of the previous land class prior to removing the trees and leveling the land. If the whole field is scored, it then becomes eligible with maps attached showing the differences.

The committee discussed the efficiency of the irrigation system by allowing it to complete the circle. The committee discussed the erosion potential and whether cover crops and/or filter strips should be required. This would require more oversight by the NRD staff, but this is what NRCS conservation plans are designed to address.

2.A.3. Variance Requests in the Restricted Development Areas

Randy Vavrina was present to explain the reasoning for asking for this variance. He was agreeable to adding the acres without increasing pumping. He is aware of domestic wells in this limited water area and is in contact with his neighbors.

Discussion from March 28 Water Committee Meeting:

Vavrina and Sons Inc purchased property in SW1/4 33-16N-4E, Butler County. (2 miles NW of Bruno). They currently have an irrigation well, G-064907, in the middle of the East Half of 32-16N-4E, where they irrigate 66.79 acres. The 3-year average for this field is 5.17 acre-inches/year. They are requesting an expansion of acre variance which would decrease their current 27-inch rolling allocation to irrigate the additional 64 acres in Section 33. They

would be irrigating 130.79 acres with a 13.79 acre-inch allocation over 3 years. Map attached.

This well is in the LPNNRD GWEL network with a graph attached.

The committee discussed the locations of the domestic wells in this restricted (red) area. The committee asked for further information like FSA cropping information, soil types and slopes. When the information is obtained, the committee will discuss this situation.

Attached is the soil map for this tract.

2.A.4. Voluntary Integrated Water Management Plan - LPNNRD

Staff from NeDNR and LPNNRD made their required annual report on V-IMP activities to the Committee. The presentation is attached.

2.A.5. Well Permit Program

2.A.6. Expansion of Irrigation Acres Variance

The committee directed staff that a variance application would be required as the land was never developed.

The tract is shown by the NRD as irrigated, but the producer did not develop it. He has now applied for a gravity to conversion application with NRCS in the Richland-Schuyler Area. These acres were already included in the certified irrigation acres report for the V-IMP and scored 453.08.

2.A.7. De-Certification of Irrigated Acres

Eugene Walla is requesting to de-certify 7.56 irrigated acres in the SW SE 21-17-5E, Saunders County. Staff explained to them that they would not be able to irrigate this tract and would need a variance if they plan on irrigating in the future. Saunders County Assessor is requesting a letter to this effect. Staff will be sending a letter to the assessor to notify them that this land will be de-certified as requested by the producer.

Attached is the location and their plan to put this tract into CRP.

2.A.8. Cost Share Programs

2.A.8.a. Irrigation Well Sample Kits

301 kits to producers so far in 2024. More kits continue to arrive in the mail and are being requested.

2.A.9. Bellwood Phase 2 Area

2024 is the twenty-second year for this Phase 2 Area.

| | Nitrate-nitrogen Range | Percent Nitrate-nitrogen 0 to 8.0 ppm | Percent Nitrate-nitrogen 8.01 to 10.00 ppm | Percent Nitrate-nitrogen 10.01 to 15 ppm | Percent Nitrate-nitrogen greater than 15 ppm |
|--|------------------------|---------------------------------------|--|--|--|
| | 0 to 25 ppm | 46.3% (44 of 95) | 8.4% (8 of 95) | 45.3% (43 of 95) | |

| | | | | | |
|--|---------------|--------------------|--------------------|--------------------|-----|
| | | | | | |
| | 0 to 25 ppm | 47% (44 of 94) | 15% (14 of 94) | 38% (36 of 94) | |
| | 0 to 24 ppm | 41% (29 of 71) | 14% (10 of 71) | 45% (32 of 71) | |
| | 0 to 31 ppm | 48% (48 of 100) | 9% (9 of 100) | 43% (43 of 100) | |
| | 0 to 28 ppm | 53.75% (43 of 80) | 7.5% (6 of 80) | 38.75% (31 of 80) | |
| | 0 to 22 ppm | 45.5% (41 of 90) | 15.5% (14 of 90) | 39% (35 of 90) | |
| | 0 to 35.7 ppm | 48.65% (54 of 111) | 11.71% (13 of 111) | 39.64% (44 of 111) | |
| | 0 to 26.6 ppm | 51% (56 of 110) | 6% (7 of 110) | 43% (47 of 110) | |
| | 0 to 28.9 ppm | 57% (61 of 107) | 9% (10 of 107) | 34% (36 of 107) | |
| | 0 to 25.8 ppm | 50% (53 of 107) | 9% (10 of 107) | 14% (44 of 107) | 26% |
| | 0 to 22.3 ppm | 51% (55 of 108) | 13% (14 of 108) | 18% (39 of 108) | 20% |
| | 0 to 32.3 ppm | 43% (31 of 72) | 8% (6 of 72) | 14% (35 of 72) | 33% |
| | 0 to 35.1 ppm | 34% (25 of 74) | 11% (8 of 74) | 26% (41 of 74) | 26% |

| | | | | | |
|--|------------------|-------------------|------------------|-------------------|-------------------|
| | 0 to 23.5 ppm | 36% (27 of 74) | 15% (11 of 74) | 19% (36 of 74) | 22% |
| | 0 to 30.9 ppm | 40% (25 of 63) | 11% (7 of 63) | 22% (31 of 63) | 28% |
| | 0 to 24.5 ppm | 46% (22 of 48) | 10% (5 of 48) | 28% (21 of 48) | 22% |
| | 0 to 20.5 ppm | 33.33% (20 of 60) | 13.33% (8 of 60) | 35% (21 of 60) | 18.33% (11 of 60) |
| | 0.12 to 27.7 ppm | 40.6% (26 of 64) | 15.6% (10 of 64) | 25% (16 of 64) | 18.8% (12 of 64) |
| | 0.13 to 23.0 ppm | 43.75% (28 of 64) | 12.50% (8 of 64) | 26.56% (17 of 64) | 17.19% (11 of 64) |
| | 0 to 19.8 ppm | 50.8% (32 of 63) | 15.9% (10 of 63) | 20.6% (13 of 63) | 12.7% (8 of 63) |
| | 0.09 to 18.0 ppm | 45% (13 of 29) | 14% (4 of 29) | 31% (9 of 29) | 10% (3 of 29) |

More samples from this area have been returned - these are either at HHS Lab or are to be taken to HHS Lab.

2.A.10. Richland - Schuyler Phase 3 Area

2024 is the ninth year of this Phase 3 Area. This Phase 3 area went into effect September 1, 2015. The 55 sections of this area first went into a Phase 2 Area in 2004. The ten sections that were in Phase 2 are now in Phase 3. As such, the 2020, 2021 and 2022 numbers (at bottom of table) are for 65 sections.

| Year | Nitrate-nitrogen Range | Percent Nitrate-nitrogen 0 to 8.0 ppm | Percent Nitrate-nitrogen 8.01 to 10.00 ppm |
|------|------------------------|---------------------------------------|--|
| 2004 | 0 to 47 ppm | 30% (42 of 139) | 10% (14 of 139) |
| 2005 | 0 to 120 ppm | 31.3% (74 of 236) | 10.2% (24 of 236) |
| 2006 | 0 to 53 ppm | 28% (50 of 181) | 14% (26 of 181) |
| 2007 | 0 to 99 ppm | 32% (75 of 231) | 10% (22 of 231) |

| | | | |
|------|----------------|-------------------|-------------------|
| 2008 | 0 to 46 ppm | 28% (53 of 190) | 12% (23 of 190) |
| 2009 | 0 to 57 ppm | 33% (72 of 216) | 6% (13 of 216) |
| 2010 | 0 to 57.5 ppm | 31% (70 of 229) | 7% (15 of 229) |
| 2011 | 0 to 65.8 ppm | 28% (67 of 241) | 9% (21 of 241) |
| 2012 | 0 to 52.6 ppm | 29% (70 of 241) | 9% (21 of 241) |
| 2013 | 0 to 94.0 ppm | 25% (63 of 252) | 9% (23 of 252) |
| 2014 | 0 to 101.0 ppm | 27% (68 of 251) | 9% (22 of 251) |
| 2015 | 0 to 53.3 ppm | 23% (55 of 238) | 12% (29 of 238) |
| 2016 | 0 to 50.5 ppm | 25% (58 of 228) | 10% (22 of 228) |
| 2017 | 0 to 53.4 ppm | 25% (60 of 238) | 6% (14 of 238) |
| 2018 | 0 to 56.9 ppm | 26.5% (50 of 189) | 6.3% (12 of 189) |
| 2019 | 0 to 39.4 ppm | 25% (53 of 209) | 11% (22 of 209) |
| 2020 | 0 to 50.8 ppm | 26% (69 of 261) | 6% (15 of 261) |
| 2021 | 0 to 43.0 ppm | 25.5% (67 of 263) | 8.4% (22 of 263) |
| 2022 | 0 to 58.5 ppm | 23.0% (57 of 248) | 6.45% (16 of 248) |
| 2023 | 0 to 46.5 ppm | 26% (68 of 263) | 6% (17 of 263) |
| 2024 | 0 to 42.5 ppm | 21% (19 of 91) | 5% (5 of 91) |

More samples from this area have been returned-these are either at HHS Lab or are to be taken to HHS Lab.

2.A.11. Nitrate Assessment Project

Attached is an invoice for \$10,702.75 per contract with LRE for the nitrate assessment in the Shell Creek Area in conjunction with Newman Grove and Platte Center.

2.B. Groundwater Management Plan Update

Staff from LPN and LRE conducted 2 public open houses in Platte Center (16 in attendance) and Wahoo (12 in attendance). People in attendance had opportunities to provide feedback on the water resources in the District. A couple of discussion items were on what practices are being done to curb the nitrate issues and domestic wells on acreages or subdivisions. Staff will be complying more details on the feedback at the next Water Committee Meeting.

Attached is some information on proposed goals and aquifer sub-areas. Please review as adjustments can be made by the local knowledge of the areas.

Other information from the open houses is attached.

2.C. CHEMIGATION

For 2024, we have 652 renewals and 56 new permit applications for a current total of 708. Inspections for 195 renewal permits have been completed.

2.D. GROUND WATER ENERGY LEVELS

Staff conducted summer water level measurements in the WANN Basin.

2.E. GROUND WATER QUALITY SAMPLING

The remaining two sites in Butler County were sampled with 1 remaining in Saunders County. The remaining Boone County site may not be irrigated this year.

3. GROUND WATER PROGRAMS

3.A. DECOMMISSIONED WELL PROGRAM

3.A.1. Well Estimates

new wells has been reviewed and approved for decommissioning since the last Committee meeting.

| Well Owner | Type of Well | Cost Share Estimate | County |
|------------|--------------|---------------------|--------|
| | | | |
| | | | |
| | | | |

3.A.2. Plugged Wells

One well has been plugged, reviewed, and ready for cost share payment approval this month.

| Well Owner | Type of Well | Cost Share Estimate | County |
|-------------------------|--------------|---------------------|--------|
| Dworak Agribusiness LLC | Irrigation | \$753.77 | Butler |
| | | | |
| | | | |

3.B. LOWER PLATTE NORTH NRD GROUND WATER STUDIES

3.B.1. Phase Area Update

Received 1 application for flow meter cost share and 4 applications for

chemigation equipment to 1 producer for payment.

Erin Peterson G-016935 N NW S22-17-3, Colfax - \$1,000
MJM Farms 4 sites at \$500/site - \$2,000
NNE 27-17-2, SENW 27-17-2, NW 33-18-2, and NNW 27-17-2, Colfax
County.

Attached is some information about the demonstration projects of variable rate nitrogen in the phase areas. These projects utilized satellite imagery to apply nitrogen and compared this to the producer decisions on nitrogen management. The Nebraska State Legislature passed LB 1368, the Nitrogen Reduction Incentive Act (NiRIA) with a draft of the proposal attached. At the present time, the LPN has 2 management areas in higher nitrate management with information shown below.

Richland- Schuyler (Phase 3) - 24,812 reported irrigation acres at \$15/acre would be \$372,180.

Bellwood (Phase 2) - 7,514 reported irrigated acres at \$15/acre would be \$112,710.

LPN would be receiving \$38,058.73.

Part of the process of moving to a Phase 4 level will require reduction in nitrogen use on some fields, split application and water use information. During the phase 4 process, staff would meet with producers to develop a management plan.

3.B.2. Lower Platte River Consortium

The group met on August 21 to update the basin water flow, a 5-year update and potential projects to include in the update. The group decided on the following projects to include in the updated plan for further review.

- 12–16 reservoirs for Salt Creek Flood Protection
- Water Sense Program
- Fremont Dewatering
- Graywater Use
- Drought Education

Attached are notes from the meeting.

4. METOS Update

LPN staff and METOS staff have been in discussion on a suitable agreement for all parties about the equipment damaged by their former employee. Potential action at the board meeting.

The proposal that has been brought forward is outlined.

- METOs will update all the existing equipment in the weather stations at no cost other than shipping it to their headquarters in California.
 - Weather stations will include rainfall, wind, and evapotranspiration (ET) rates etc.
 - The NRD has 70 base stations.
- Year 1 will be implementation and setup of the equipment and Year 2 will allow the public to utilize these sites. Some of the sites will be set up quickly.

- NRD staff will set these sites up at NRD recreation areas, schools and with other interested parties, but spatially throughout the District.
 - We currently have inactive weather station sites in Saunders, Butler, Dodge, Colfax, Platte and Boone Counties. These will be reactivated.
 - The first 2 years there will be no cost for equipment updates or subscriptions for the LPNNRD
 - If, after 2 years, no acceptable terms can be obtained by both parties, the equipment will be returned to METOs.
5. Long Range Plan
Attached is LPN long range plan. Please take the time to review before the board meeting.
6. SURFACE WATER PROGRAMS

6.A. STATE LAKES, FOR THE WEEK OF

This week's beach Bacteria and Harmful Algal Bloom results are now posted on the NDEE web page ([Current Health Alerts and Sampling Results For This Week](#)).

Maple Creek Recreation Area Lake in Colfax County will be on Health Alert this week. Calamus Reservoir in Garfield County will be removed from Health Alert. West Mormon Island Lake (SRA) in Hall County remains closed, so no sample was taken.

There will be 1 beach on Health Alert this week.

| Current Lakes on "Health Alert" | | | |
|---|---------------|--------------------------|--------------------|
| Lake | County | Microcystin (ppb) | Sample Date |
| Maple Creek Recreation Area Lake | Colfax | 17.47 | 8/19/2024 |

When a lake exceeds 8 ppb of microcystin it will be placed on Health Alert. If a lake is under a Health Alert, signs will be posted recommending people avoid full body contact activities such as swimming, wading, skiing, jet skiing, etc.

There are 4 beaches with *E.coli* testing above 235 colonies/100 ml.

| Lakes with High <i>E.coli</i> Bacteria | | | |
|---|------------------|----------------------------|--------------------|
| Lake | County | <i>E.coli</i> (MPN) | Sample Date |
| Branched Oak Lake - Area 10 | Lancaster | 435 | 8/19/20214 |
| Branched Oak Lake - Liebers Point | Lancaster | 308 | 8/19/20214 |
| Maple Creek Recreation Area Lake | Colfax | >2419 | 8/19/20214 |
| Maskenthine Reservoir | Stanton | >2419 | 8/19/20214 |

When *E. coli* bacteria levels test above 235 colonies/100 ml a Health Alert is not issued. However, conditions are at a higher risk to human health when swimming. Considering the more rapid changes in bacteria conditions, signs are not posted with these higher levels. Although, we want people to be aware of beach conditions and use their own judgment as to whether they use a listed waterbody.

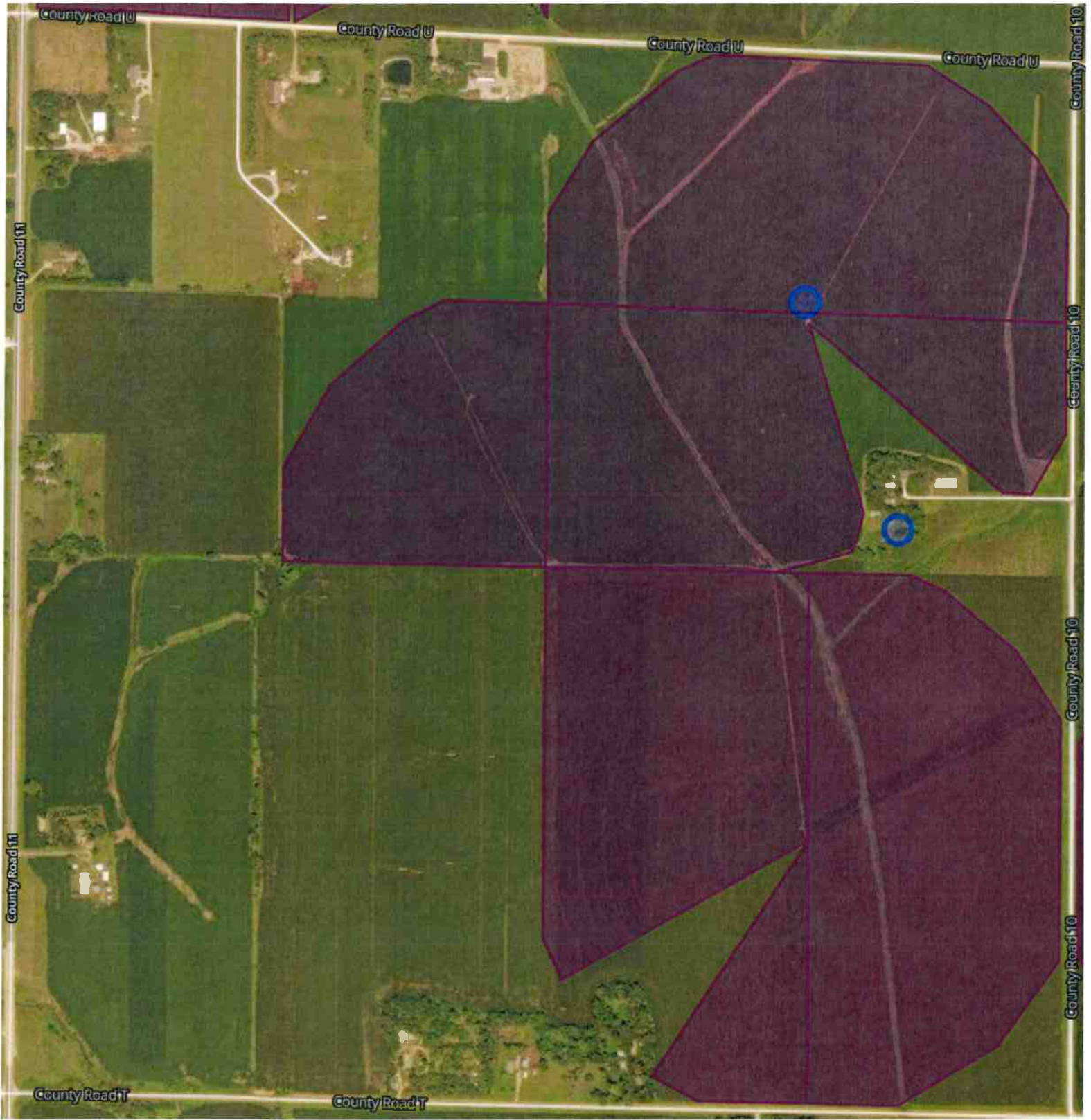
6.B. USGS STREAM FLOW GAUGING SITES

As discussed at the last committee, a 5-year annual contract for stream gauges was suggested. A contract to that effect is attached with LPN responsibility for the 5 years would be \$89,675 (\$17,935 annually) and invoiced quarterly.

An invoice is attached for \$19,010 for last year's contract with USGS for 2 stream gauges and 1 groundwater monitoring well.

7. OTHER

7.A. COMMENTS FROM THE PUBLIC



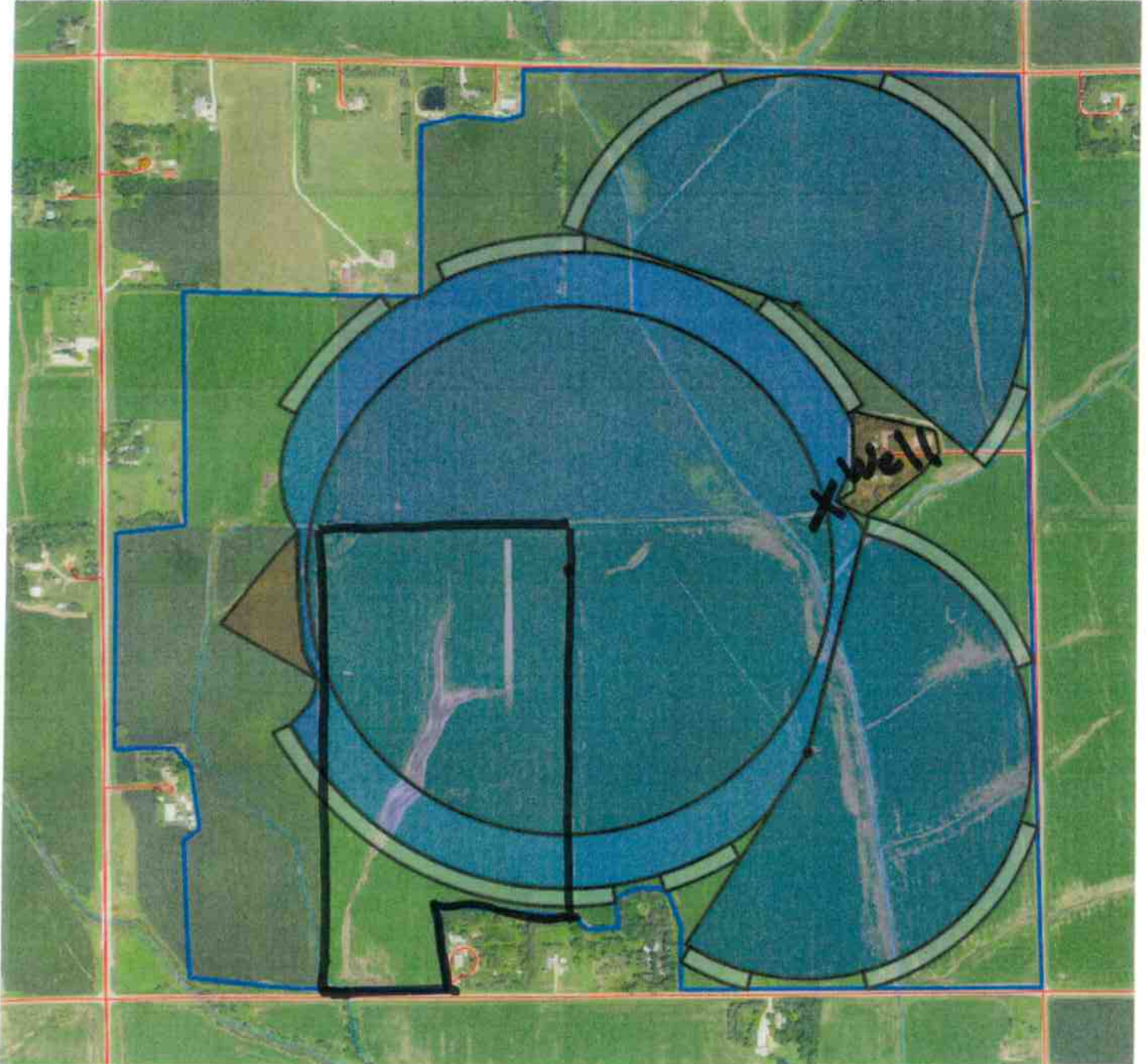
Doug Bartek

Advanced Irrigation Solutions LLC



4285 N Broad St
Fremont Ne 68025
402-720-7900

Grower: Dalton Bartek



| | | | | |
|---------------------------|-----------------------|------------------|------------------------|-----------------|
| Draft Changes | | | | |
| Application Number | Applicant Name | Date: | 8/27/24 10:27 AM | |
| LPN-V-024- | Doug Bartek | | Total Score-> | 442.5 |
| Category | Divisions | Points Available | Percent of Application | Points Received |

| | | | | |
|--|--------------------|-----|----------|----|
| New Groundwater Consumptive Use | WF= 1.0 | | | |
| | 0 to 8 Acre Feet | 100 | 0 | 0 |
| | 9 to 16 Acre Feet | 80 | 100 | 80 |
| | 17 to 24 Acre Feet | 60 | 0 | 0 |
| | 25 to 32 Acre Feet | 40 | 0 | 0 |
| | 33 to 40 Acre Feet | 20 | 0 | 0 |
| | 41+ Acre Feet | 0 | 0 | 0 |
| | | | Total -> | 80 |

| | | | | |
|----------------------------|------------------------------|-----|----------|----|
| Land Class of field | WF= 1.0 | | | |
| | No Land Impact | 100 | 0 | 0 |
| | Class 1 | 100 | 0 | 0 |
| | Class 2 | 80 | 100 | 80 |
| | Class 3 | 60 | 0 | 0 |
| | Class 4 | 40 | 0 | 0 |
| | Class 5 | 10 | 0 | 0 |
| | Class 6-8/ not more than 20% | 0 | 0 | 0 |
| | | | Total -> | 80 |

| | | | | |
|---|-----------------|-----|----------|------|
| Stream Depletion Factor From DNR | WF= 1.25 | | | |
| | 10 to 20% | 100 | 0 | 0 |
| | 21 to 30% | 90 | 0 | 0 |
| | 31 to 40% | 80 | 0 | 0 |
| | 41 to 50% | 70 | 0 | 0 |
| | 51 to 60% | 60 | 0 | 0 |
| | 61 to 70% | 50 | 100 | 62.5 |
| | 71 to 80% | 40 | 0 | 0 |
| | 81 to 90% | 20 | 0 | 0 |
| | >90% | 10 | 0 | 0 |
| | | | Total -> | 62.5 |

| | | | | |
|----------------------------|----------------|-----|----------|----|
| Saturated Thickness | WF= 1.0 | | | |
| | 176 to 200 ft. | 100 | 0 | 0 |
| | 151 to 175 ft. | 90 | 0 | 0 |
| | 126 to 150 ft. | 80 | 0 | 0 |
| | 101 to 125 ft. | 70 | 0 | 0 |
| | 76 to 100 ft. | 40 | 0 | 0 |
| | 51 to 75 ft. | 20 | 100 | 20 |
| | 26 to 50 ft. | 10 | 0 | 0 |
| | 0 to 25 ft. | 0 | 0 | 0 |
| | | | Total -> | 20 |

| | | | | |
|-----------------------|----------------|-----|----------|-----|
| Specific Yield | WF= 1.0 | | | |
| | 18.1 to 22 % | 100 | 100 | 100 |
| | 14.1 to 18 % | 60 | 0 | 0 |
| | 10.1 to 14 % | 30 | 0 | 0 |
| | 6.1 to 10 % | 10 | 0 | 0 |
| | 2 to 6% | 0 | 0 | 0 |
| | | | Total -> | 100 |

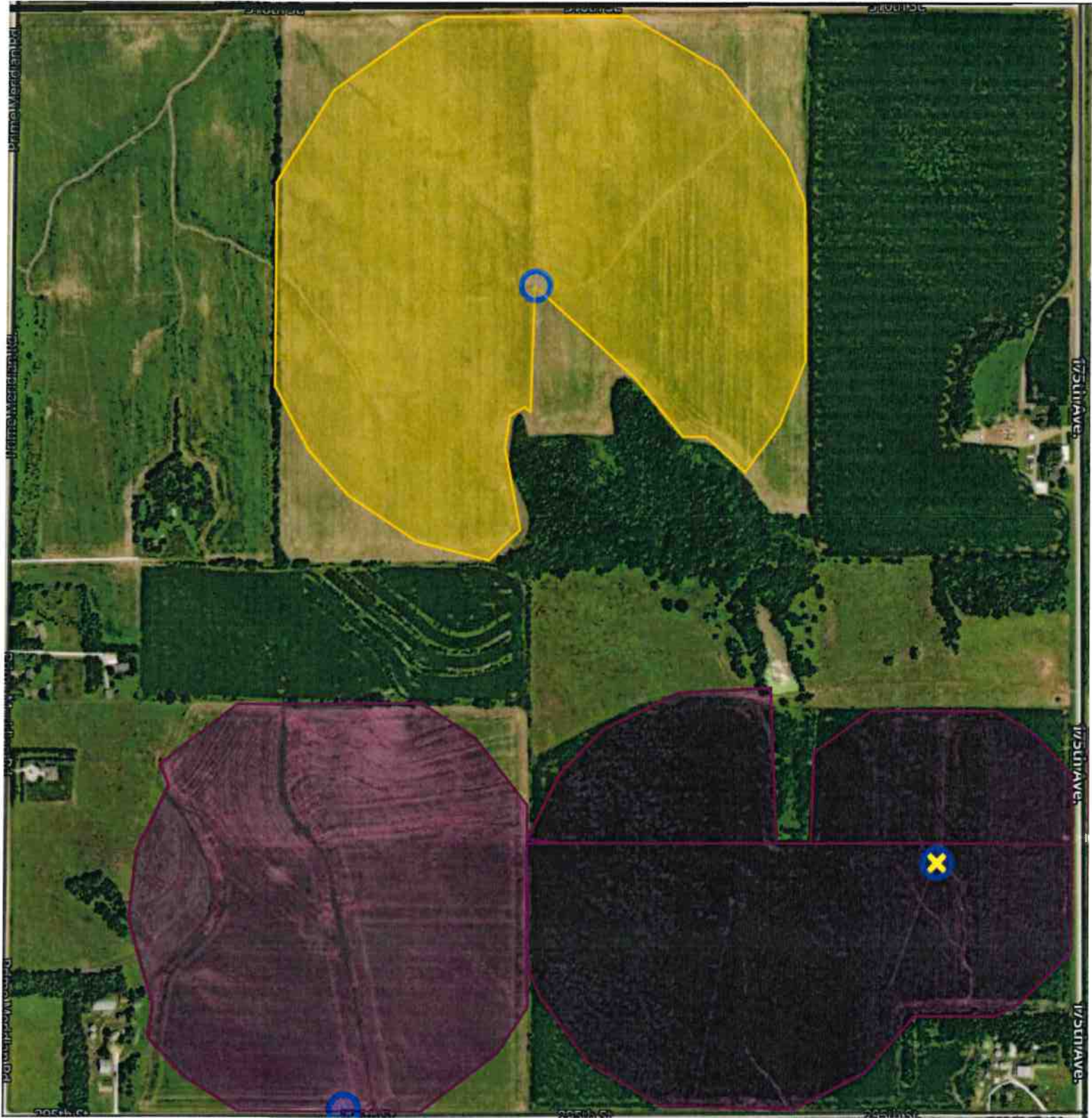
| | | | | |
|-----------------------|----------------|-----|---|---|
| Transmissivity | WF= 1.0 | | | |
| | 21331 to 23700 | 100 | 0 | 0 |
| | 18961 to 21330 | 90 | 0 | 0 |
| | 16591 to 18960 | 80 | 0 | 0 |

| | | | |
|----------------|----|-----|----|
| 14221 to 16590 | 70 | 0 | 0 |
| 11851 to 14220 | 60 | 0 | 0 |
| 9481 to 11850 | 50 | 0 | 0 |
| 7111 to 9480 | 40 | 100 | 40 |
| 4741 to 7110 | 30 | 0 | 0 |
| 2371 to 4740 | 20 | 0 | 0 |
| 0 to 2370 | 10 | 0 | 0 |
| Total -> | | | 40 |

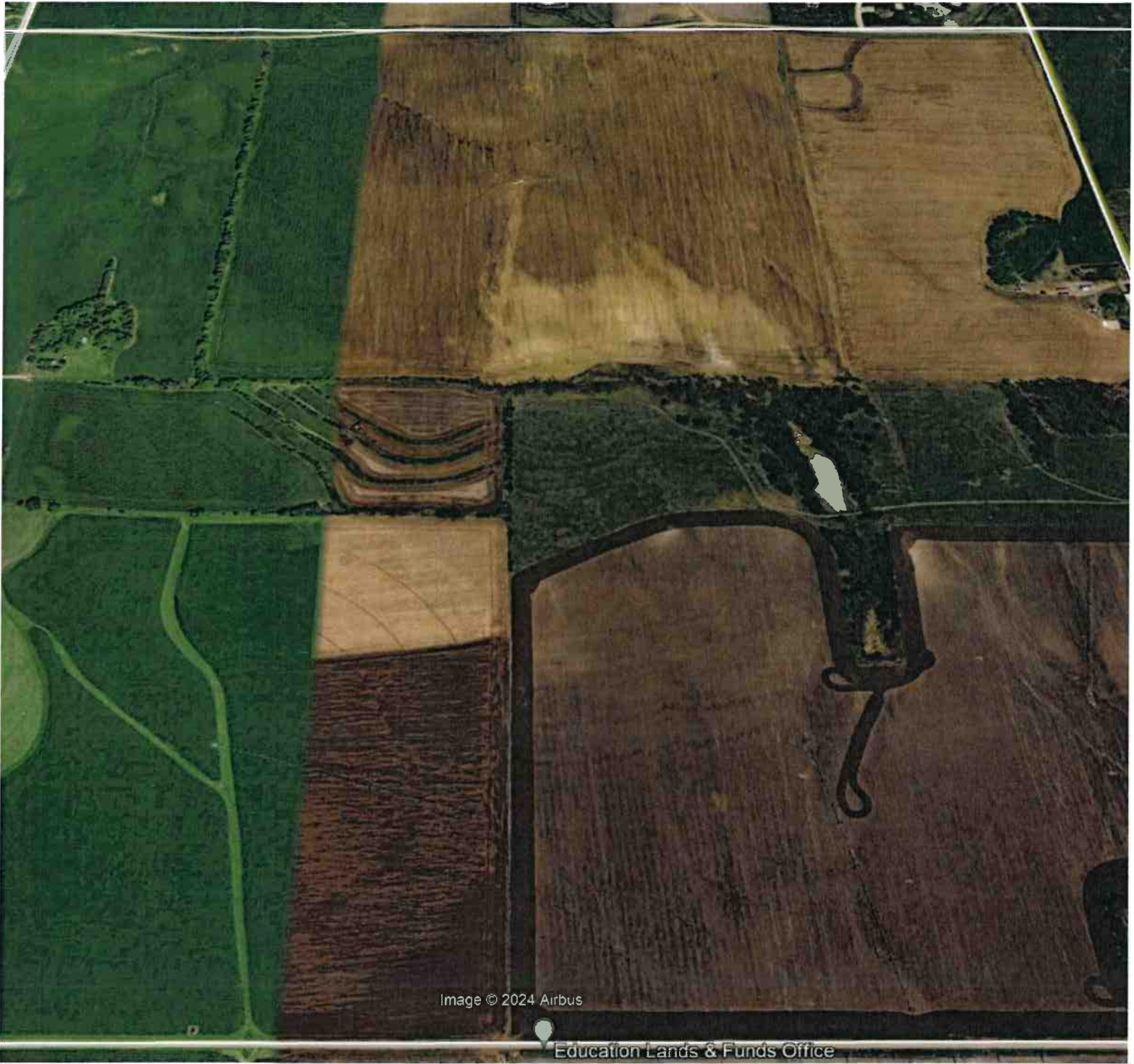
| | | | | | |
|---------------------------|----------------|---------------------|-----|-----|----|
| Irrigation Systems | WF= 1.0 | | | | |
| | | Subsurface Drip | 100 | 0 | 0 |
| | | Surface Drip | 80 | 0 | 0 |
| | | Pivot | 60 | 100 | 60 |
| | | Gravity, Gun, Other | 10 | 0 | 0 |
| Total -> | | | 60 | | |

| | | | | | |
|--------------------------|----------------|--------------------------|----|---|---|
| Additional Points | WF= 1.0 | | | | |
| | | Chemigation | 10 | 0 | 0 |
| | | Variable Rate Irrigation | 10 | 0 | 0 |
| Total -> | | | 0 | | |

| | | | | |
|--|--|--|---------------|-------|
| Minimum Score of 300 is needed to be considered for variance approval Once a variance is submitted and not approved, it will be carried over for 3 years Land Classes 6-8, with slopes, greater than 20% of the parcel not eligible for a variance | | | Total Score-> | 442.5 |
|--|--|--|---------------|-------|



Reckmuth Ag



Reichmath Ag

| | | | | |
|---------------------------|-----------------------|------------------|------------------------|-----------------|
| Draft Changes | | | | |
| Application Number | Applicant Name | Date: | 8/27/24 10:30 AM | |
| LPN-V-024- | Reichmuth Ag | | Total Score-> | 299.08 |
| Category | Divisions | Points Available | Percent of Application | Points Received |

| | | | | |
|--|--------------------|-----|----------|-----|
| New Groundwater Consumptive Use | WF= 1.0 | | | |
| | 0 to 8 Acre Feet | 100 | 100 | 100 |
| | 9 to 16 Acre Feet | 80 | 0 | 0 |
| | 17 to 24 Acre Feet | 60 | 0 | 0 |
| | 25 to 32 Acre Feet | 40 | 0 | 0 |
| | 33 to 40 Acre Feet | 20 | 0 | 0 |
| | 41+ Acre Feet | 0 | 0 | 0 |
| | | | Total -> | 100 |

| | | | | |
|----------------------------|------------------------------|-----|----------|-------|
| Land Class of field | WF= 1.0 | | | |
| | No Land Impact | 100 | 0 | 0 |
| | Class 1 | 100 | 0 | 0 |
| | Class 2 | 80 | 36.9 | 29.52 |
| | Class 3 | 60 | 1.5 | 0.9 |
| | Class 4 | 40 | 0 | 0 |
| | Class 5 | 10 | 61.6 | 6.16 |
| | Class 6-8/ not more than 20% | 0 | 0 | 0 |
| | | | Total -> | 36.58 |

| | | | | |
|---|-----------------|-----|----------|------|
| Stream Depletion Factor From DNR | WF= 1.25 | | | |
| | 10 to 20% | 100 | 0 | 0 |
| | 21 to 30% | 90 | 0 | 0 |
| | 31 to 40% | 80 | 0 | 0 |
| | 41 to 50% | 70 | 0 | 0 |
| | 51 to 60% | 60 | 0 | 0 |
| | 61 to 70% | 50 | 0 | 0 |
| | 71 to 80% | 40 | 0 | 0 |
| | 81 to 90% | 20 | 0 | 0 |
| | >90% | 10 | 100 | 12.5 |
| | | | Total -> | 12.5 |

| | | | | |
|----------------------------|----------------|-----|----------|----|
| Saturated Thickness | WF= 1.0 | | | |
| | 176 to 200 ft. | 100 | 0 | 0 |
| | 151 to 175 ft. | 90 | 0 | 0 |
| | 126 to 150 ft. | 80 | 0 | 0 |
| | 101 to 125 ft. | 70 | 0 | 0 |
| | 76 to 100 ft. | 40 | 100 | 40 |
| | 51 to 75 ft. | 20 | 0 | 0 |
| | 26 to 50 ft. | 10 | 0 | 0 |
| | 0 to 25 ft. | 0 | 0 | 0 |
| | | | Total -> | 40 |

| | | | | |
|-----------------------|----------------|-----|----------|----|
| Specific Yield | WF= 1.0 | | | |
| | 18.1 to 22 % | 100 | 0 | 0 |
| | 14.1 to 18 % | 60 | 0 | 0 |
| | 10.1 to 14 % | 30 | 100 | 30 |
| | 6.1 to 10 % | 10 | 0 | 0 |
| | 2 to 6% | 0 | 0 | 0 |
| | | | Total -> | 30 |

| | | | | |
|-----------------------|----------------|-----|---|---|
| Transmissivity | WF= 1.0 | | | |
| | 21331 to 23700 | 100 | 0 | 0 |
| | 18961 to 21330 | 90 | 0 | 0 |
| | 16591 to 18960 | 80 | 0 | 0 |

| | | | |
|----------------|----|-----|----|
| 14221 to 16590 | 70 | 0 | 0 |
| 11851 to 14220 | 60 | 0 | 0 |
| 9481 to 11850 | 50 | 0 | 0 |
| 7111 to 9480 | 40 | 0 | 0 |
| 4741 to 7110 | 30 | 0 | 0 |
| 2371 to 4740 | 20 | 100 | 20 |
| 0 to 2370 | 10 | 0 | 0 |
| Total -> | | | 20 |

| | | | | | |
|---------------------------|----------------|---------------------|-----|-----|----|
| Irrigation Systems | WF= 1.0 | | | | |
| | | Subsurface Drip | 100 | 0 | 0 |
| | | Surface Drip | 80 | 0 | 0 |
| | | Pivot | 60 | 100 | 60 |
| | | Gravity, Gun, Other | 10 | 0 | 0 |
| Total -> | | | 60 | | |

| | | | | | |
|--------------------------|----------------|--------------------------|----|---|---|
| Additional Points | WF= 1.0 | | | | |
| | | Chemigation | 10 | 0 | 0 |
| | | Variable Rate Irrigation | 10 | 0 | 0 |
| Total -> | | | 0 | | |

| | | | | |
|--|--|--|---------------|--------|
| Minimum Score of 300 is needed to be considered for variance approval Once a variance is submitted and not approved, it will be carried over for 3 years Land Classes 6-8, with slopes, greater than 20% of the parcel not eligible for a variance | | | Total Score-> | 299.08 |
|--|--|--|---------------|--------|

| | | | | |
|---------------------------|-----------------------|------------------|------------------------|-----------------|
| Draft Changes | | | | |
| Application Number | Applicant Name | Date: | 8/27/24 10:33 AM | |
| LPN-V-024- | Reichmuth Ag | | Total Score-> | 322.64 |
| Category | Divisions | Points Available | Percent of Application | Points Received |

| | | | | |
|--|--------------------|-----|----------|-----|
| New Groundwater Consumptive Use | WF= 1.0 | | | |
| | 0 to 8 Acre Feet | 100 | 100 | 100 |
| | 9 to 16 Acre Feet | 80 | 0 | 0 |
| | 17 to 24 Acre Feet | 60 | 0 | 0 |
| | 25 to 32 Acre Feet | 40 | 0 | 0 |
| | 33 to 40 Acre Feet | 20 | 0 | 0 |
| | 41+ Acre Feet | 0 | 0 | 0 |
| | | | Total -> | 100 |

| | | | | |
|----------------------------|------------------------------|-----|----------|-------|
| Land Class of field | WF= 1.0 | | | |
| | No Land Impact | 100 | 0 | 0 |
| | Class 1 | 100 | 0 | 0 |
| | Class 2 | 80 | 34.7 | 27.76 |
| | Class 3 | 60 | 45.1 | 27.06 |
| | Class 4 | 40 | 11 | 4.4 |
| | Class 5 | 10 | 9.2 | 0.92 |
| | Class 6-8/ not more than 20% | 0 | 0 | 0 |
| | | | Total -> | 60.14 |

| | | | | |
|---|-----------------|-----|----------|------|
| Stream Depletion Factor From DNR | WF= 1.25 | | | |
| | 10 to 20% | 100 | 0 | 0 |
| | 21 to 30% | 90 | 0 | 0 |
| | 31 to 40% | 80 | 0 | 0 |
| | 41 to 50% | 70 | 0 | 0 |
| | 51 to 60% | 60 | 0 | 0 |
| | 61 to 70% | 50 | 0 | 0 |
| | 71 to 80% | 40 | 0 | 0 |
| | 81 to 90% | 20 | 0 | 0 |
| | >90% | 10 | 100 | 12.5 |
| | | | Total -> | 12.5 |

| | | | | |
|----------------------------|----------------|-----|----------|----|
| Saturated Thickness | WF= 1.0 | | | |
| | 176 to 200 ft. | 100 | 0 | 0 |
| | 151 to 175 ft. | 90 | 0 | 0 |
| | 126 to 150 ft. | 80 | 0 | 0 |
| | 101 to 125 ft. | 70 | 0 | 0 |
| | 76 to 100 ft. | 40 | 100 | 40 |
| | 51 to 75 ft. | 20 | 0 | 0 |
| | 26 to 50 ft. | 10 | 0 | 0 |
| | 0 to 25 ft. | 0 | 0 | 0 |
| | | | Total -> | 40 |

| | | | | |
|-----------------------|----------------|-----|----------|----|
| Specific Yield | WF= 1.0 | | | |
| | 18.1 to 22 % | 100 | 0 | 0 |
| | 14.1 to 18 % | 60 | 0 | 0 |
| | 10.1 to 14 % | 30 | 100 | 30 |
| | 6.1 to 10 % | 10 | 0 | 0 |
| | 2 to 6% | 0 | 0 | 0 |
| | | | Total -> | 30 |

| | | | | |
|-----------------------|----------------|-----|---|---|
| Transmissivity | WF= 1.0 | | | |
| | 21331 to 23700 | 100 | 0 | 0 |
| | 18961 to 21330 | 90 | 0 | 0 |
| | 16591 to 18960 | 80 | 0 | 0 |

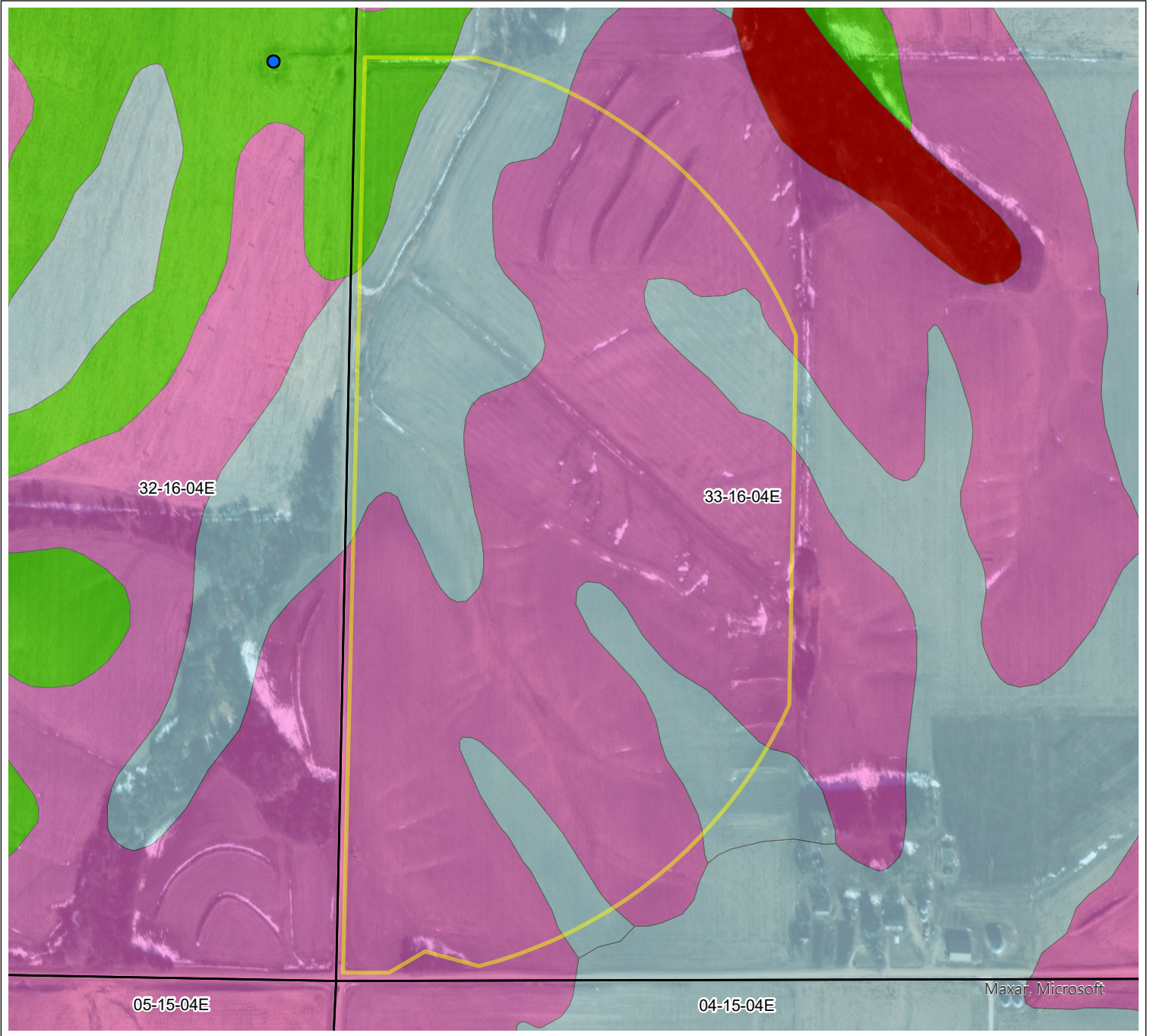
| | | | |
|----------------|----|-----|----|
| 14221 to 16590 | 70 | 0 | 0 |
| 11851 to 14220 | 60 | 0 | 0 |
| 9481 to 11850 | 50 | 0 | 0 |
| 7111 to 9480 | 40 | 0 | 0 |
| 4741 to 7110 | 30 | 0 | 0 |
| 2371 to 4740 | 20 | 100 | 20 |
| 0 to 2370 | 10 | 0 | 0 |
| Total -> | | | 20 |

| | | | | | |
|---------------------------|----------------|---------------------|-----|-----|----|
| Irrigation Systems | WF= 1.0 | | | | |
| | | Subsurface Drip | 100 | 0 | 0 |
| | | Surface Drip | 80 | 0 | 0 |
| | | Pivot | 60 | 100 | 60 |
| | | Gravity, Gun, Other | 10 | 0 | 0 |
| Total -> | | | 60 | | |

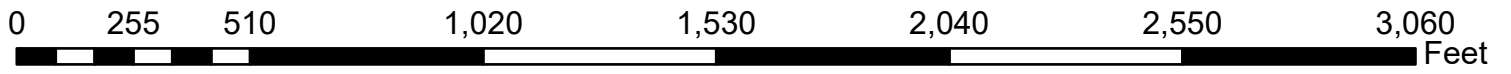
| | | | | | |
|--------------------------|----------------|--------------------------|----|---|---|
| Additional Points | WF= 1.0 | | | | |
| | | Chemigation | 10 | 0 | 0 |
| | | Variable Rate Irrigation | 10 | 0 | 0 |
| Total -> | | | 0 | | |

| | | | | |
|--|--|--|---------------|--------|
| Minimum Score of 300 is needed to be considered for variance approval Once a variance is submitted and not approved, it will be carried over for 3 years Land Classes 6-8, with slopes, greater than 20% of the parcel not eligible for a variance | | | Total Score-> | 322.64 |
|--|--|--|---------------|--------|

Proposed Expansion 33-16-04E Butler County



Maxar, Microsoft



Land Class

- | | |
|--|---|
|  1 |  4 |
|  2 |  5 |
|  3 |  6; 7; 8 |

Class 2: 19.2 Acres, 29.6% of field
 Class 3: 1.7 Acres, 2.6% of field
 Class 4: 43.9 Acres, 67.8% of field



RegCD: G-064907

Well #: UP-14A SWN 20

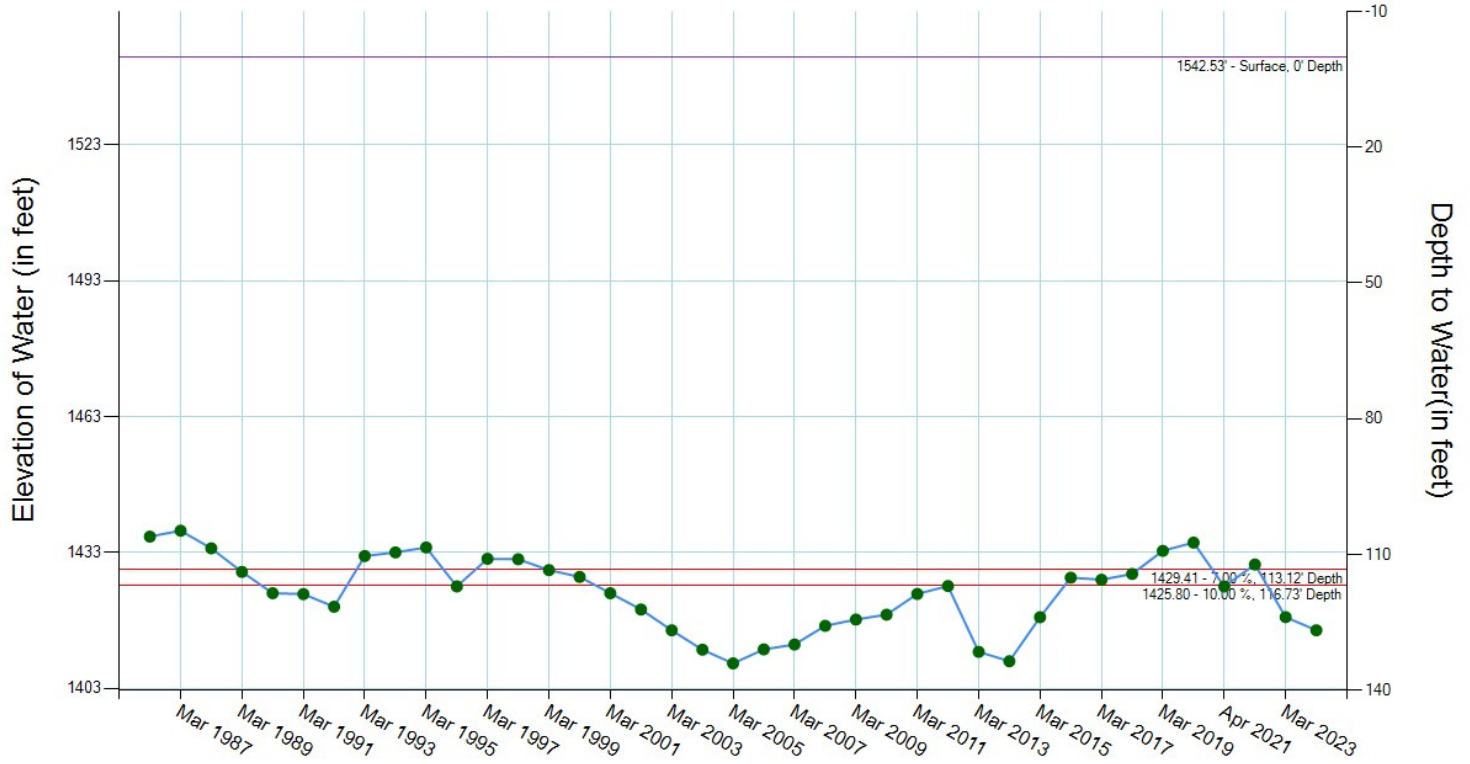
Region: Uplands

County: Butler

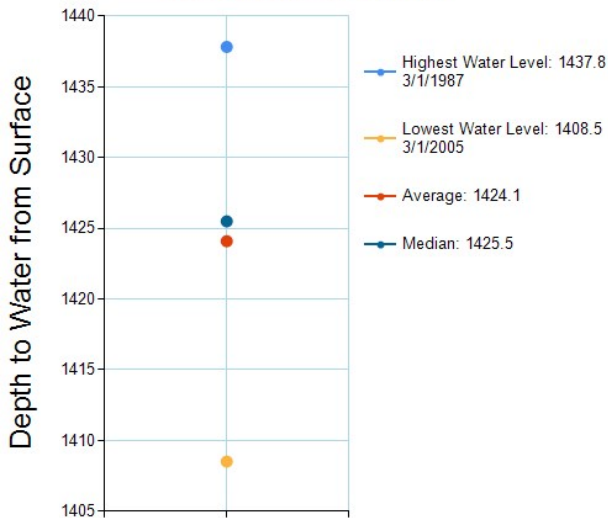
Legal: 16-4E-32

Owner Name: Terry Vavrina

Water Level Readings

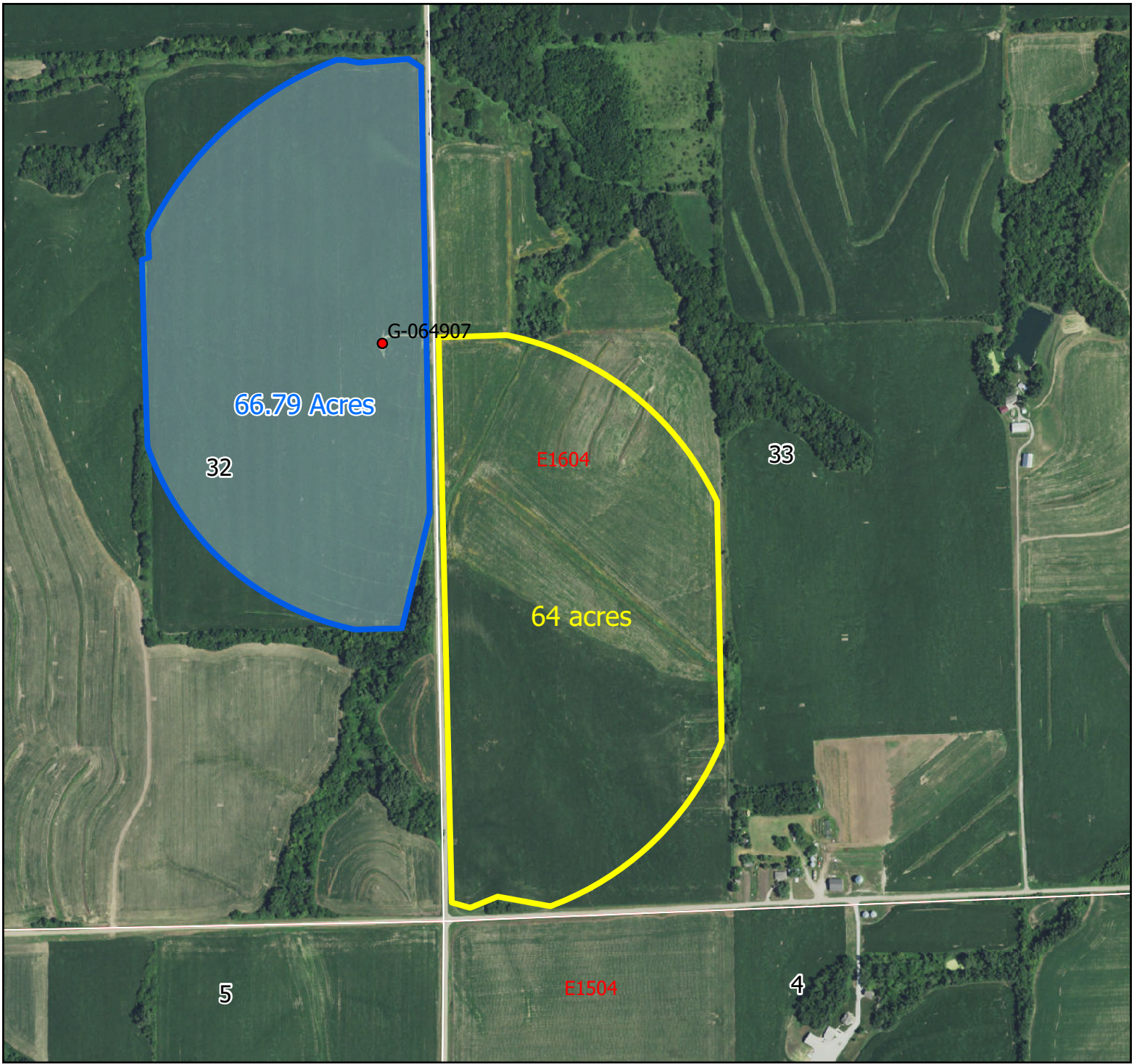


Record Results



Historical Readings (date - reading)

| | | | |
|---------------------|---------------------|---------------------|---------------------|
| 03/01/1986 - 1436.5 | 03/01/1996 - 1425.5 | 03/01/2006 - 1411.6 | 03/01/2016 - 1427.5 |
| 03/01/1987 - 1437.8 | 03/01/1997 - 1431.6 | 03/01/2007 - 1412.7 | 03/01/2017 - 1427 |
| 03/01/1988 - 1433.9 | 03/01/1998 - 1431.5 | 03/01/2008 - 1416.8 | 03/21/2018 - 1428.3 |
| 03/01/1989 - 1428.7 | 03/01/1999 - 1429.1 | 03/01/2009 - 1418.2 | 03/28/2019 - 1433.4 |
| 03/01/1990 - 1424 | 03/01/2000 - 1427.6 | 03/01/2010 - 1419.3 | 03/24/2020 - 1435.2 |
| 03/01/1991 - 1423.8 | 03/01/2001 - 1424 | 03/01/2011 - 1423.9 | 04/01/2021 - 1425.5 |
| 03/01/1992 - 1421 | 03/01/2002 - 1420.4 | 03/01/2012 - 1425.6 | 03/18/2022 - 1430.4 |
| 03/01/1993 - 1432.2 | 03/01/2003 - 1415.8 | 03/01/2013 - 1411.1 | 03/22/2023 - 1418.7 |
| 03/01/1994 - 1433 | 03/01/2004 - 1411.5 | 03/01/2014 - 1409 | 03/20/2024 - 1415.8 |
| 03/01/1995 - 1434.1 | 03/01/2005 - 1408.5 | 03/01/2015 - 1418.7 | |



Proposed Expansion: 33-16-04E Butler County

LOWER PLATTE NORTH NRD INTEGRATED MANAGEMENT PLAN 2024 ANNUAL REPORT

AUGUST 28 @ 6:00PM
LPNNRD OFFICE, WAHOO, NE

Daryl Andersen
Water Resources Manager



Tyler Martin
IWM Coordinator



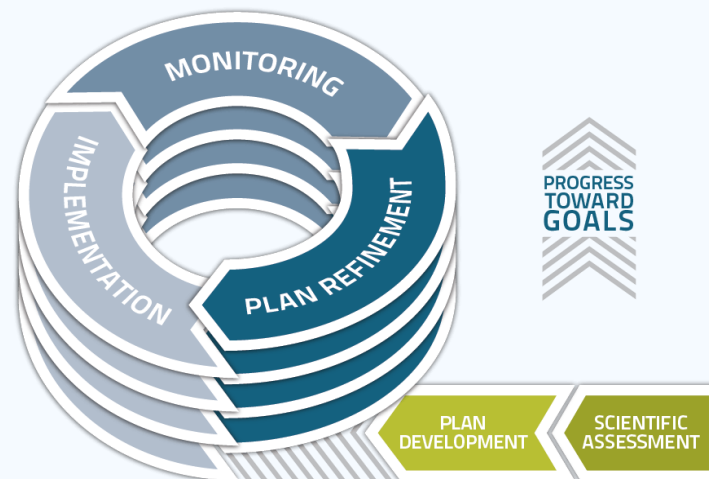
PURPOSE

- IMP Process
- Surface and Groundwater Data Collection and Monitoring
 - NeDNR and LPNNRD
- Consortium Plan Implementation
- Action Plan

WHY CONDUCT IMP REVIEWS?

Joint management of hydrologically connected (HC) groundwater and surface water:

- Identify new opportunities and challenges
- Increase understanding of HC areas (data, studies)
- Evaluate and convey progress towards goals and objectives
- Prioritize joint management actions for upcoming years



IMP OVERVIEW

IMP GOALS

Goal 1

Develop and maintain a District-wide water supply inventory.

Goal 2

Develop and maintain a District-wide water demand inventory.

Goal 3

Develop and implement water use policies and practices with the purpose of achieving and sustaining a balance between water uses and supplies.

Goal 4

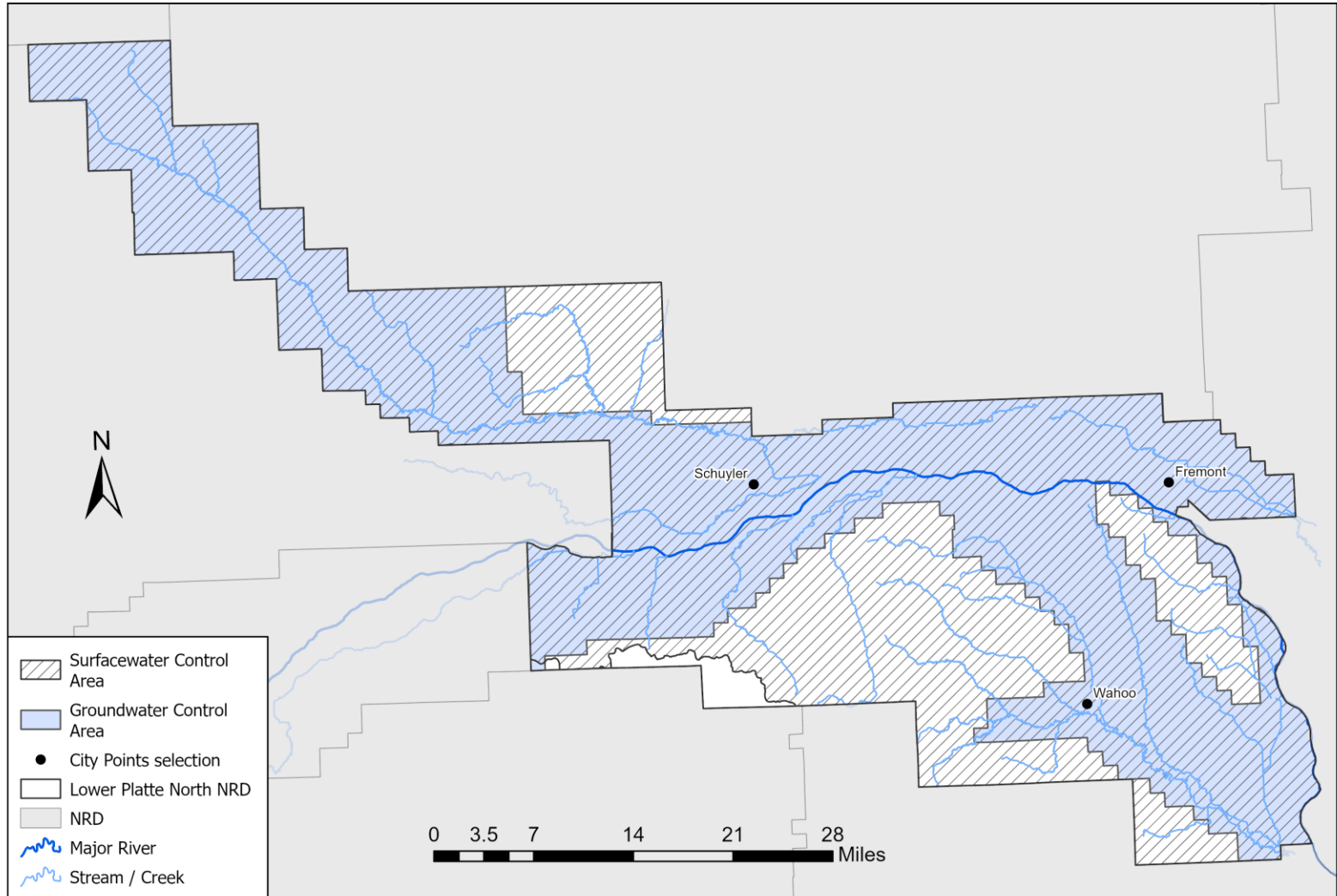
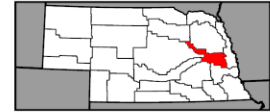
Communicate to the public that Nebraska has a great supply of water, and we need to continue to manage it well.

Goal 5

Coordinate with Lower Platte River Basin NRDs, and appropriate groups and agencies, to develop a water management plan for the Lower Platte River Basin that maintains a balance between current and future water supplies and demands.

LPNNRD IMP CONTROL AREAS

Voluntary Integrated Management Plan Control Areas



IMP CONTROLS

- Groundwater
 - Limit new groundwater uses to 50% of the annually available stream depletions over the Basin Plan's first five-year increment
 - Require annual use reports for municipal groundwater users
- Surface water
 - Limit new groundwater uses to 50% of the annually available stream depletions over the Basin Plan's first five-year increment
 - Require annual use reports for municipal surface water permit holders and municipal groundwater transfer permit holders

SURFACE WATER AND GROUNDWATER MONITORING

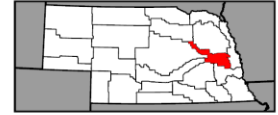
NeDNR DATA COLLECTION & MONITORING

NeDNR Monitoring

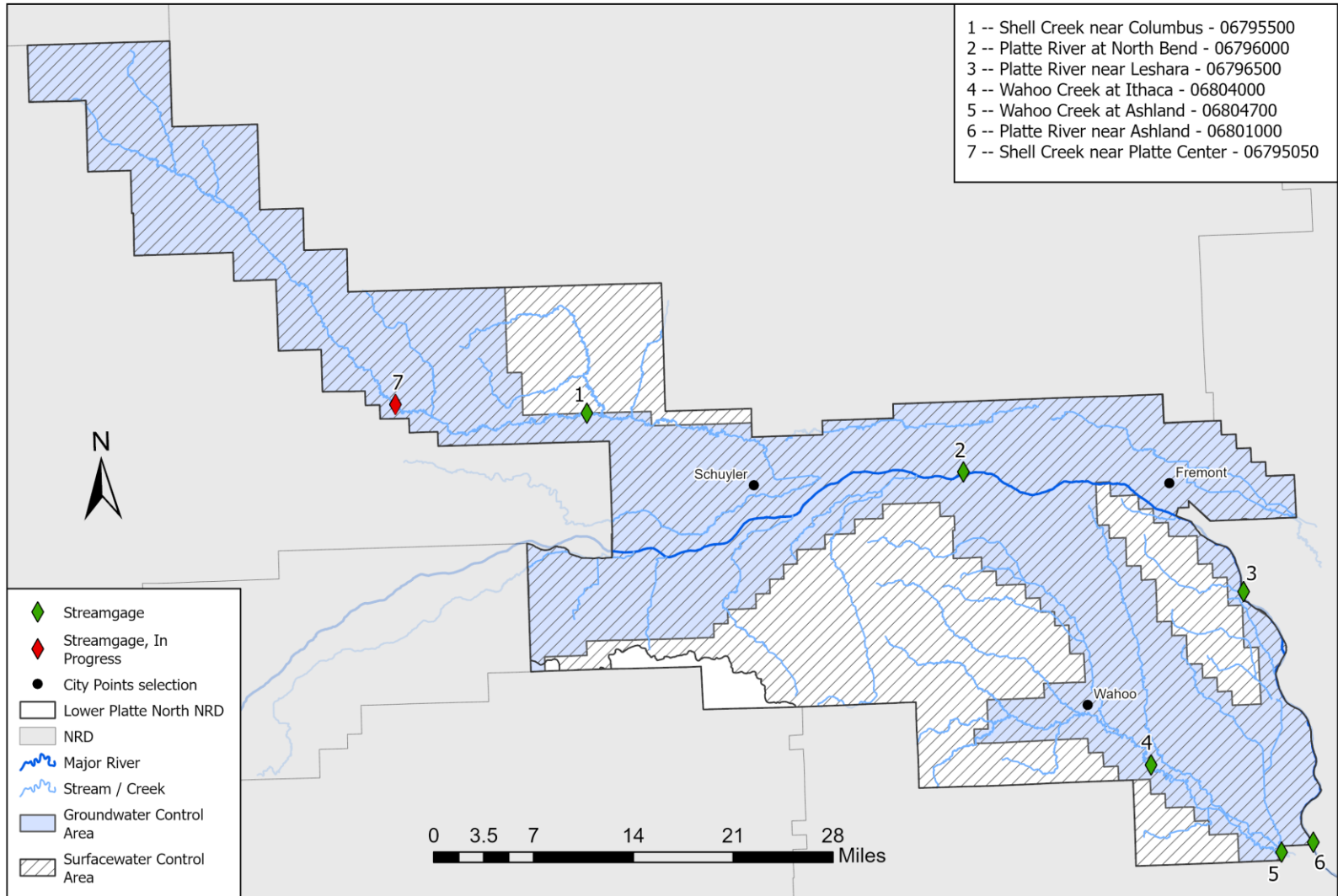
- Surface water monitoring: streamgage locations
- Surface water pump site inspections
- Surface water administration
- Voluntary surface water use reporting
- Hydrologic Investigation Project (HIP)

USGS STREAMGAGE LOCATIONS IN LPNNRD

Streamgages within the Lower Platte North IMP Control Area

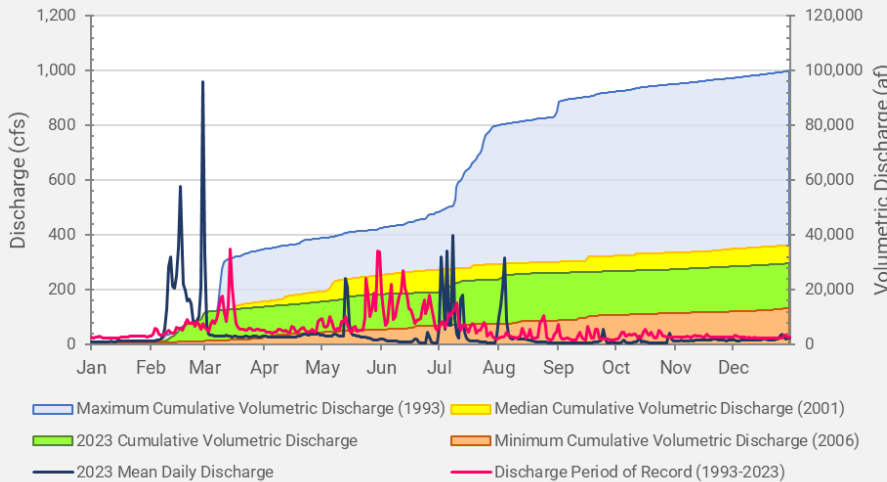


- 1 -- Shell Creek near Columbus - 06795500
- 2 -- Platte River at North Bend - 06796000
- 3 -- Platte River near Leshara - 06796500
- 4 -- Wahoo Creek at Ithaca - 06804000
- 5 -- Wahoo Creek at Ashland - 06804700
- 6 -- Platte River near Ashland - 06801000
- 7 -- Shell Creek near Platte Center - 06795050

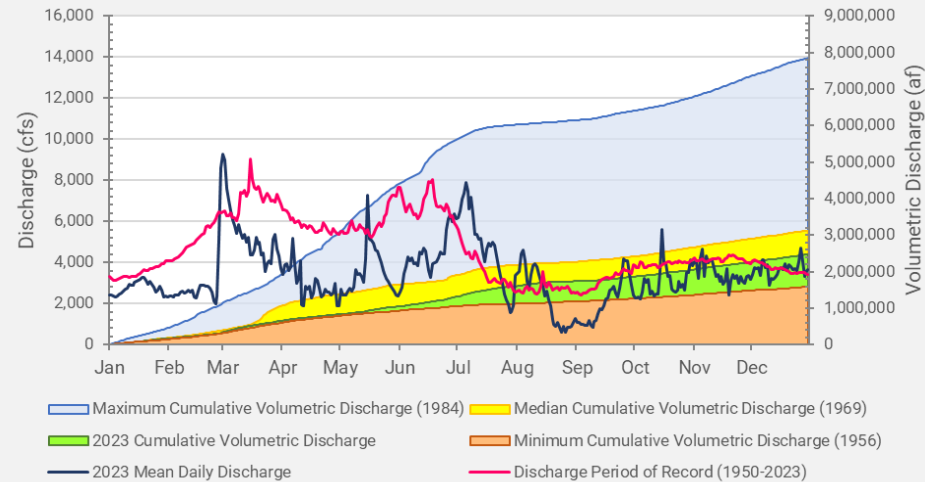


SURFACE WATER MONITORING

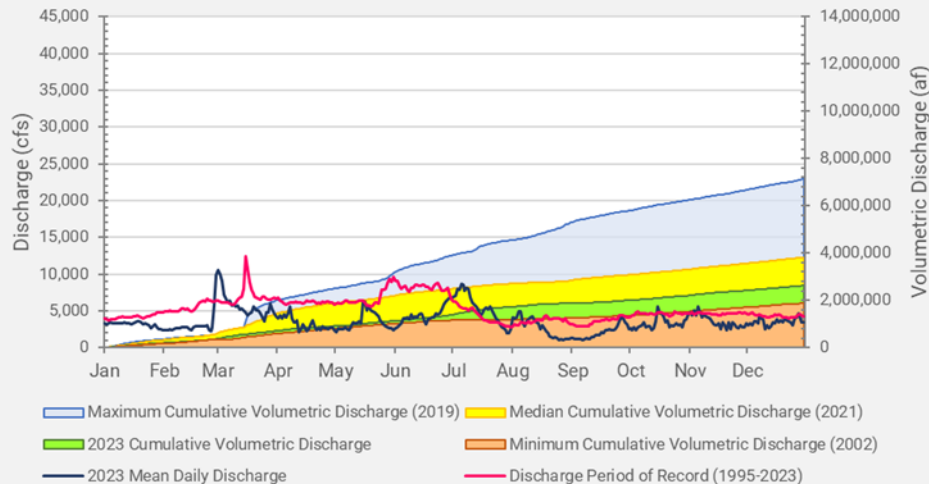
Shell Creek near Columbus
USGS #06795500



Platte River at North Bend
USGS #06796000

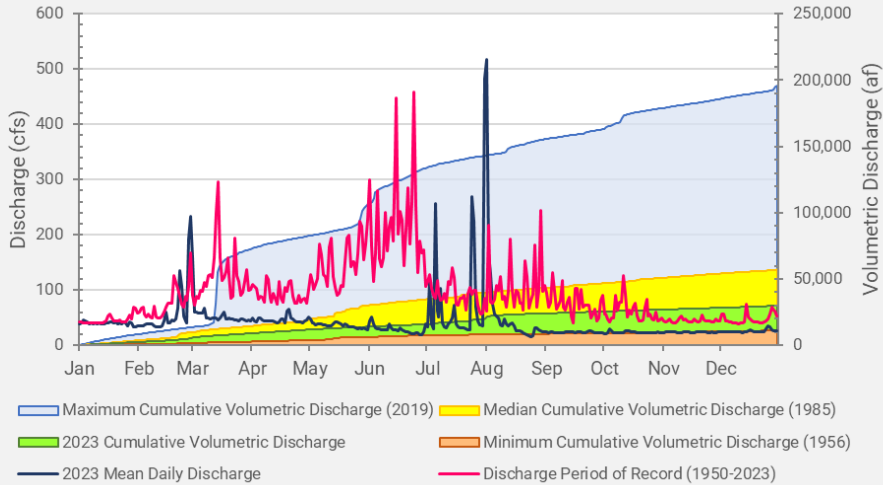


Platte River near Leshara
USGS #06796500

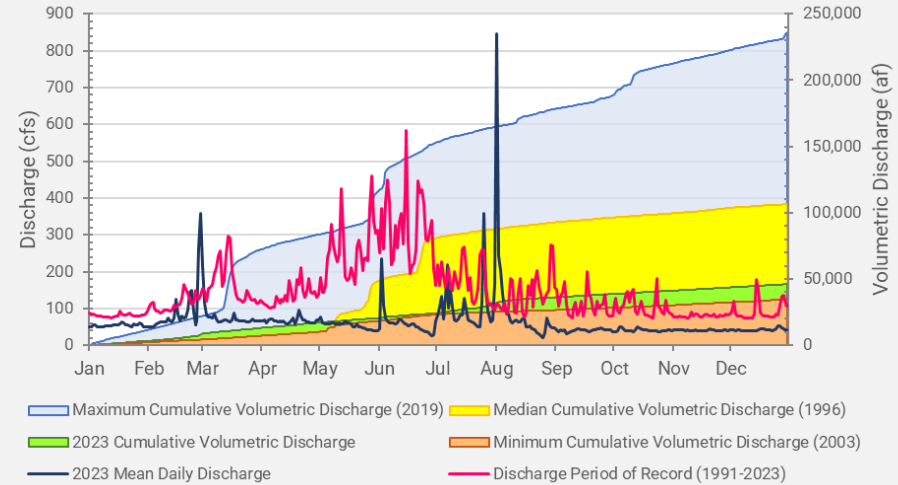


SURFACE WATER MONITORING

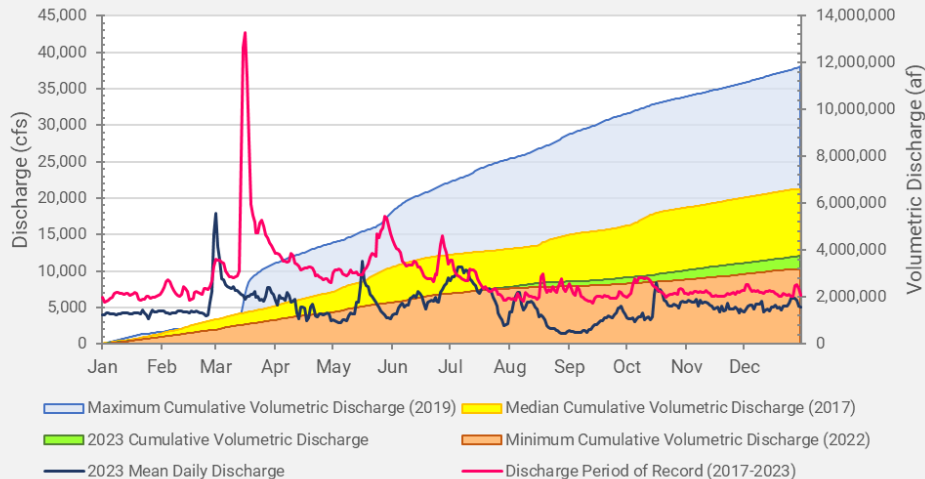
Wahoo Creek at Ithaca
USGS #06804000



Wahoo Creek at Ashland
USGS #06804700



Platte River near Ashland
USGS #06801000



NE DNR SURFACE WATER PUMP SITE INSPECTIONS

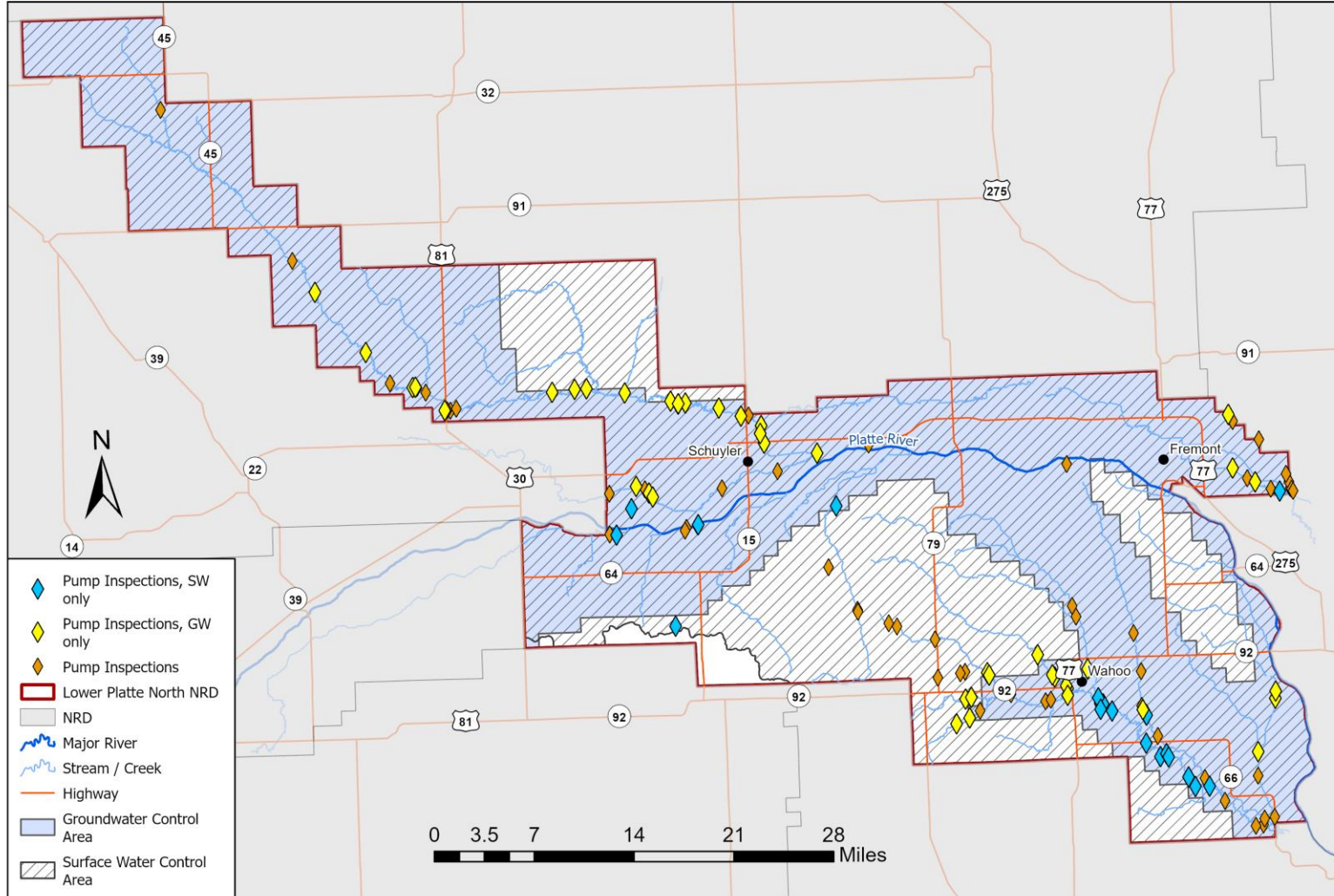
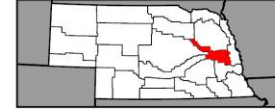
During Summer 2023, the Department inspected 143 pump sites within the LPNNRD. Of the sites visited:

- 24 were surface water
- 54 were groundwater
- 70 appeared to be dryland
- 2 comingled
- A total of 220 pump site observations were made. Some rights were visited more than once for water administration purposes.

As time and conditions allow, the NeDNR field office staff visit pump sites for each appropriation to check for compliance and collect various data.

NE DNR SURFACE WATER PUMP SITE INSPECTIONS

2023 Pump Site Inspections within the Lower Platte North IMP Control Area



NE DNR SURFACE WATER PUMP SITE INSPECTIONS

| 2023 Surface Water Pump Site Inspections - Lower Platte Basin NRDs | | | |
|--|-------------------------|---------------------------------|--|
| NRD | Total Number of Permits | Number of pump site Inspections | Number of pump sites set up for irrigation |
| Lower Elkhorn | 344 | 341 | 85 |
| Lower Loup | 758 | 656 | 368 |
| Lower Platte North | 137 | 137 | 24 |
| Lower Platte South | 201 | 175 | 36 |
| Papio-Missouri River | 109 | 91 | 19 |
| Upper Elkhorn | 86 | 84 | 21 |
| Upper Loup | 30 | 18 | 0 |
| Total | 1665 | 1502 | 553 |

NE DNR VOLUNTARY SURFACE WATER USE REPORTING FOR LPNNRD

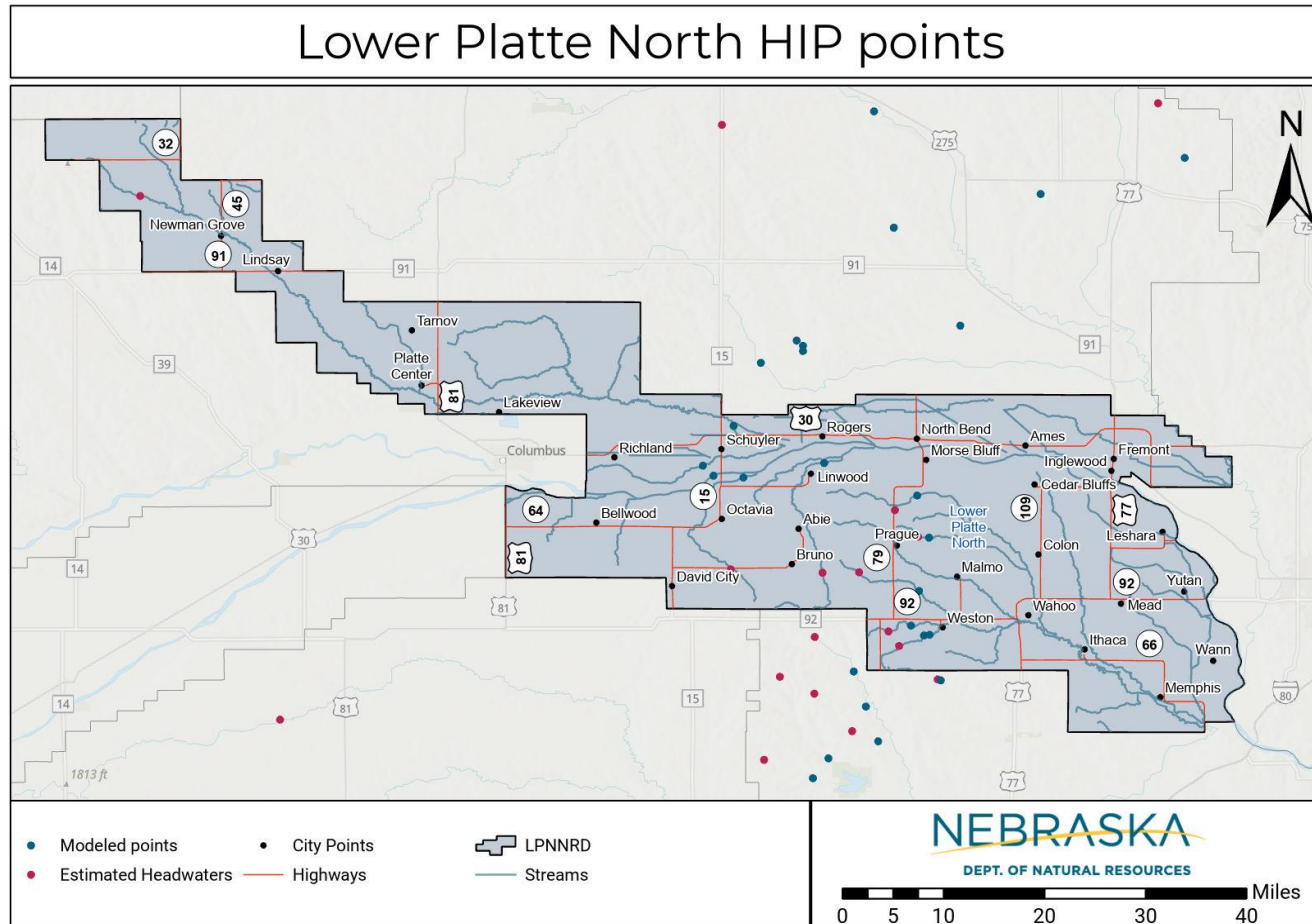
| | Surface Water Only | Groundwater Only | Co-Mingled | Dryland | Average Inches |
|--|--------------------|------------------|------------|---------|----------------|
| 2023 Water Use Acres and Source | | | | | |
| # Responses | 16 | 6 | 2 | 9 | |
| Acres Irrigated | 1765 | | 217 | | |
| | | | | | |
| 2023 Estimated Water Use* | | | | | |
| # Responses | 9 | | 3 | | 6.3 |
| Acres Irrigated | 831.5 | | 65 | | |

**The estimated water applied is reported by a sub-set of the total voluntary responses. The estimate here represents those who included water use data in their response.*

HYDROLOGIC INVESTIGATION PROJECT (HIP)

- Designed to identify GW/SW interaction throughout Eastern Nebraska
- Assist in aligning and verifying actual conditions with the LPMT model
- Recent efforts
 - Installation of streamgages to monitor wet/dry conditions
 - Identification of perennial and intermittent streams to increase the accuracy of the sub-regional modeling streams layer

HYDROLOGIC INVESTIGATION PROJECT



NE DNR SURFACE WATER ADMINISTRATION

2023 Surface Water Administration in the Lower Platte Basin

| Date of closure | Date Reopened | Permit Type | Number Affected | Reason for Closure | Reason for Reopening |
|-----------------|---------------|--------------|-----------------|---|--|
| 8/21/2023 | 9/26/2023 | Natural Flow | 139 | Not enough water for NGPC instream flow right | Water for NGPC instream flow right has been exceeded |
| 8/21/2023 | 9/26/2023 | Storage | 31 | Not enough water for NGPC instream flow right | Water for NGPC instream flow right has been exceeded |
| 10/4/2023 | 10/16/2023 | Natural Flow | 139 | Not enough water for NGPC instream flow right | Water for NGPC instream flow right has been exceeded |
| 10/4/2023 | 10/16/2023 | Storage | 31 | Not enough water for NGPC instream flow right | Water for NGPC instream flow right has been exceeded |

NE DNR GROUNDWATER PERMITTING ACTIONS

Groundwater permits cancelled = 0
Groundwater permits issued = 1 (Pending)

Includes groundwater permits for the following uses:

- Application to Drill Without Regard to Spacing
- Industrial Groundwater Transfers
- Industrial Transfer Notice
- Municipal Groundwater Transfers
- Municipal Notice of Intent
- Permit to Violate Well Spacing
- Permit to Transfer to Adjoining State

Note: the groundwater permit is for well spacing, proposed well is in violation of a well in Lower Elkhorn NRD and has since been dismissed.

MUNICIPAL & INDUSTRIAL SURFACE WATER USES

- No new surface water applications for municipal or industrial uses were approved during 2023.

NE DNR SURFACE WATER PERMITTING ACTIONS

- Approved for expedited transfer = 0
- Applications approved = 1
 - Permit is for irrigation, pumps out of Wahoo Creek for a total of 27 acres

NeDNR Surface Water Permitting Actions

Surface Water Appropriations Expired, Cancelled-in-Part or Cancelled-in-Full in 2023 Within the Voluntary IMP Area

| Appropriation Number | Cancel Date | Source | NeDNR Action | Location Diversion or Reservoir | Use | Begin Acres | Cancelled | | | Estimated Date of Last Use | Basis for NeDNR Action |
|----------------------|-------------|----------------------------|-------------------|---------------------------------|-----|-------------|-----------|-------------|------------|----------------------------|------------------------|
| | | | | | | | Acres | Grant (cfs) | Grant (af) | | |
| A-9116 | 4/25/2023 | Clear Cr. | Cancelled in Full | S8-T16N-R2E | IR | 95.0 | 95.0 | 1.36 | 285.0 | 1980 | REL-9860 |
| A-12183 | 4/25/2023 | Platte River | Cancelled in Full | S8-T16N-R2E | IR | 92.0 | 92.0 | 1.32 | 277.5 | 1997 | REL-9861 |
| A-15841 | 4/17/2023 | Platte River | Cancelled in Full | S11-T16N-R2E | IR | 21.6 | 21.6 | 0.31 | 64.8 | Never used | PDNU-9848 |
| A-13534 | 4/17/2023 | Bone Cr. | Cancelled in Full | S33-T16N-R3E | IR | 57.5 | 57.5 | 0.82 | 172.5 | 1996 | PDNU-9867 |
| A-7244 | 3/30/2023 | Platte River, Tributary to | Cancelled in Full | S21-T17N-R6E | IR | 1.0 | 1.0 | 0.01 | 3.0 | 1977 | REL-9851 |
| A-12070 | 11/27/2023 | Platte River | Cancelled in Full | S21-T17N-R7E | IR | 15.0 | 15.0 | 0.21 | 45.0 | 1993 | REL-11032 |
| A-12069 | 3/3/2023 | Platte River, Tributary to | Cancelled in Full | S21-T17N-R7E | IR | 45.1 | 45.1 | 0.64 | 135.3 | 1993 | REL-9868 |

NeDNR Surface Water Permitting Actions

Surface Water Appropriations Expired, Cancelled-in-Part or Cancelled-in-Full in 2023 Within the Voluntary IMP Area

| Appropriation Number | Cancel Date | Source | NeDNR Action | Location Diversion or Reservoir | Use | Begin Acres | Cancelled | | | Estimated Date of Last Use | Basis for NeDNR Action |
|----------------------|-------------|----------------|-------------------|---------------------------------|-----|-------------|-----------|-------------|------------|----------------------------|------------------------|
| | | | | | | | Acres | Grant (cfs) | Grant (af) | | |
| A-13142 | 5/4/2023 | Cottonwood Cr. | Cancelled in Full | S23-T15N-R6E | IR | 29.00 | 29.00 | 0.41 | 87.0 | 1977 | REL-9885 |
| A-13322 | 3/13/2023 | Sand Cr. | Cancelled in Full | S30-T16N-R7E | IR | 54.00 | 54.00 | 0.77 | 162.0 | 1988 | REL-9872 |
| A-13945 | 4/25/2023 | Sand Cr. | Cancelled in Full | S32-T16N-R7E | IR | 77.60 | 77.60 | 1.11 | 232.8 | 2018 | PDNU-9878 |
| A-8174 | 1/17/2023 | Sand Cr. | Cancelled in Full | S15-T15N-R7E | IR | 36.00 | 36.00 | 0.26 | 108.0 | 1980 | REL-9833 |
| A-8528 | 10/4/2023 | Sand Cr. | Cancelled in Full | S34-T15N-R7E | IR | 1.50 | 1.50 | 0.01 | 4.5 | 2008 | PDNU-10027 |
| A-14282 | 5/12/2023 | Wahoo Cr. | Cancelled in Full | S20-T14N-R8E | IR | 152.70 | 152.70 | 2.18 | 458.1 | 2018 | PDNU-9904 |
| A-16612 | 3/31/2023 | Silver Cr. | Cancelled in Full | S29-T15N-R8E | IR | 107.20 | 107.20 | 1.53 | 321.6 | Never Used | PDNU-9890 REL-9891 |

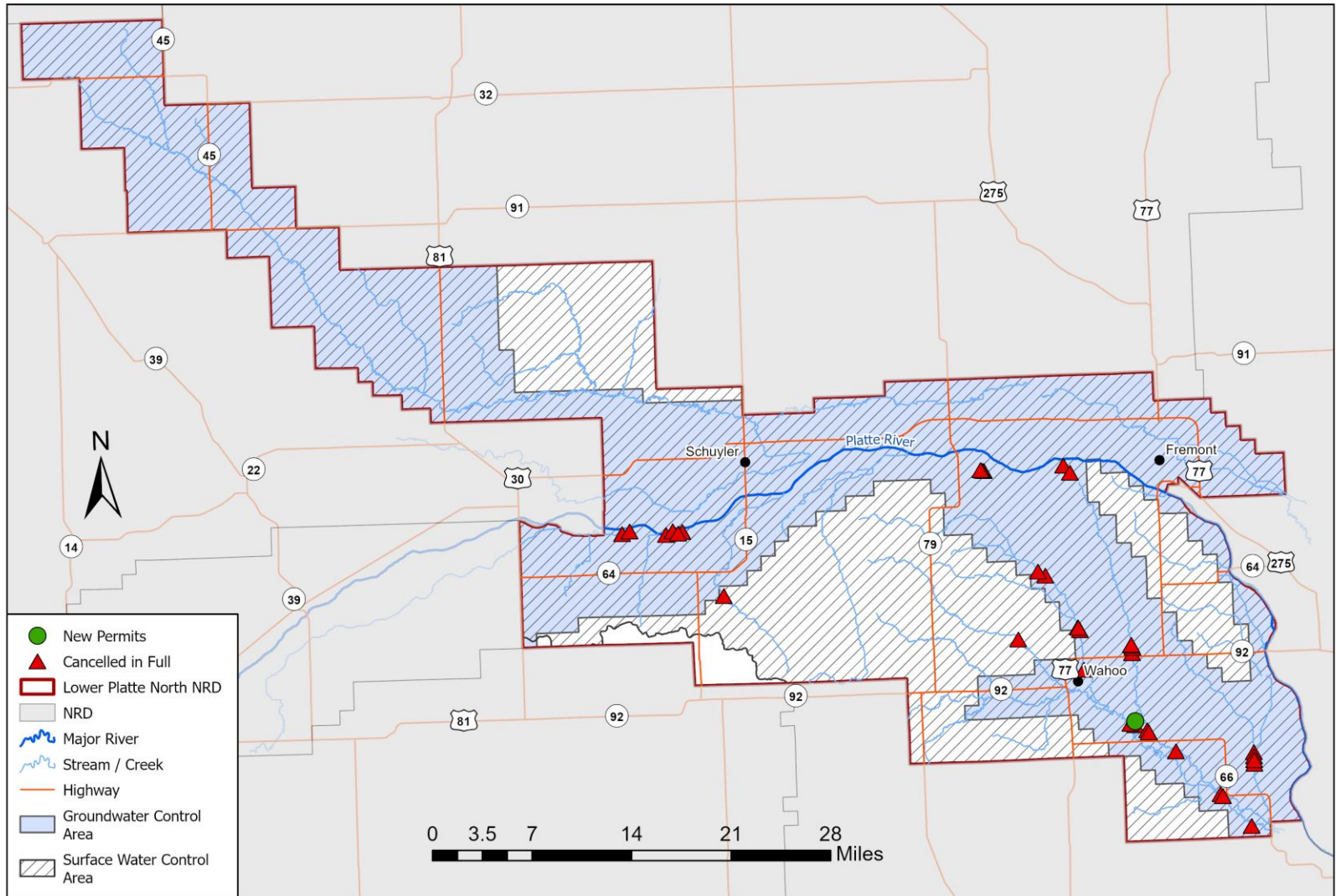
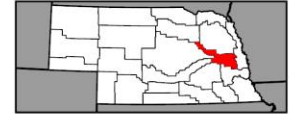
NeDNR SURFACE WATER PERMITTING ACTIONS

| Surface Water Appropriations Expired, Cancelled-in-Part or Cancelled-in-Full in 2023 Within the Voluntary IMP Area | | | | | | | | | | | |
|---|----------------|-----------------|----------------------|--|-----|----------------|-----------|----------------|---------------|-----------------------------------|------------------------------|
| Appropriation Number | Cancel Date | Source | NeDNR Action | Location Diversion or Reservoir | Use | Begin Acres | Cancelled | | | Estimate d Date of Last Use | Basis for NeDNR Action |
| | | | | | | | Acres | Grant (cfs) | Grant (af) | | |
| A-5982 | 3/13/2023 | Silver Cr. | Cancelled in Full | S28-T14N- R8E | IR | 145.00 | 145.00 | 1.40 | 435.0 | 2017 | PDNU-9829 |
| A-15521 | 5/12/2023 | Silver Cr. | Cancelled in Full | S35-T14N- R8E | IR | 80.00 | 80.00 | 1.14 | 240.0 | Never Used | PDNU-9905 |
| A-11785 | 8/31/2023 | Wahoo Cr. | Cancelled in Full | S34-T13N- R9E | IR | 82.50 | 82.50 | 1.18 | 247.0 | 2008 | PDNU-9829 |
| A-8322 | 4/24/2023 | Silver Cr. | Cancelled in Full | S17-T13N- R9E | IR | 22.00 | 22.00 | 0.31 | 66.0 | 1978 | PDNU- 10031 |
| A-14657 | 6/20/2023 | Clear Cr. | Cancelled in Full | S35-T14N- R9E | IR | 281.90 | 281.90 | 4.03 | 845.7 | 2018 | REL-9933 |
| A-12070* | 11/27/2023 | Platte River | Cancelled in Part | S21-T17N- R7E | IR | 40.0 | 25.0 | 36.0 | 75.0 | 1994 | REL-9951 |
| A-8528* | 10/4/2023 | Sand Cr. | Cancelled in Part | S34-T15N- R7E | IR | 34.8 | 33.3 | 24.0 | 99.9 | 2008 | REL-9889 REL-9975 |

* A-8528 and A-12070 are also cancelled in full on the same date as the cancelled in part. There are different relinquishment numbers assigned for each action.

MAP OF SURFACE WATER PERMITTING ACTIONS

2023 Surface Water Permitting Actions within the Lower Platte North IMP Control Area



LPNNRD

DATA COLLECTION & MONITORING

IMP includes 14 collection and monitoring activities for the NRD

- NRD Monitoring
 - Irrigated acres expansion
 - Groundwater level measurements
 - Municipal water use
- Other
 - Studies and Planning
 - Education/Outreach Collaborations

LPNNRD

DATA COLLECTION AND MONITORING

- Groundwater elevation data
 - The following compares Spring 2024 to 2023 with all areas lower in 2024. Districtwide Spring of 2024 was 1.17 feet lower.
 - The Upland area was 2.16 feet lower
 - The Todd Valley area was 1.62 feet lower.
 - The Platte Valley area was 0.58 feet lower.
 - The Shell Creek area was 0.71 feet lower
 - The WANN Basin area was 0.86 feet lower

**Access data from the LPNNRD's 2023 Report for the Lower Platte River Basin-Wide Management Plan—put in a HyperLink*

LPNNRD

DATA COLLECTION AND MONITORING

- Flow meter data - 2023
 - 1312 flow meters throughout District
 - 1155 flow meters are on irrigation systems
 - Water Use Information
 - SQS#1 - 4.65 in/ac
 - SQS#2 - 4.59 in/ac.
 - Rest of the District - 5.56 in/ac
- Certified irrigated groundwater acres
(HCA - Hydrological Connected Area)
 - Total Irrigated - 392,484.47 acres
 - HCA Area - 335,720.95 acres
 - Non-HCA - 56,763.52 acres
- Municipal and industrial groundwater uses
 - Communities are required to report
 - In 2026 communities new water uses might need to be considered for consumptive use.
 - Industrial reports are voluntary

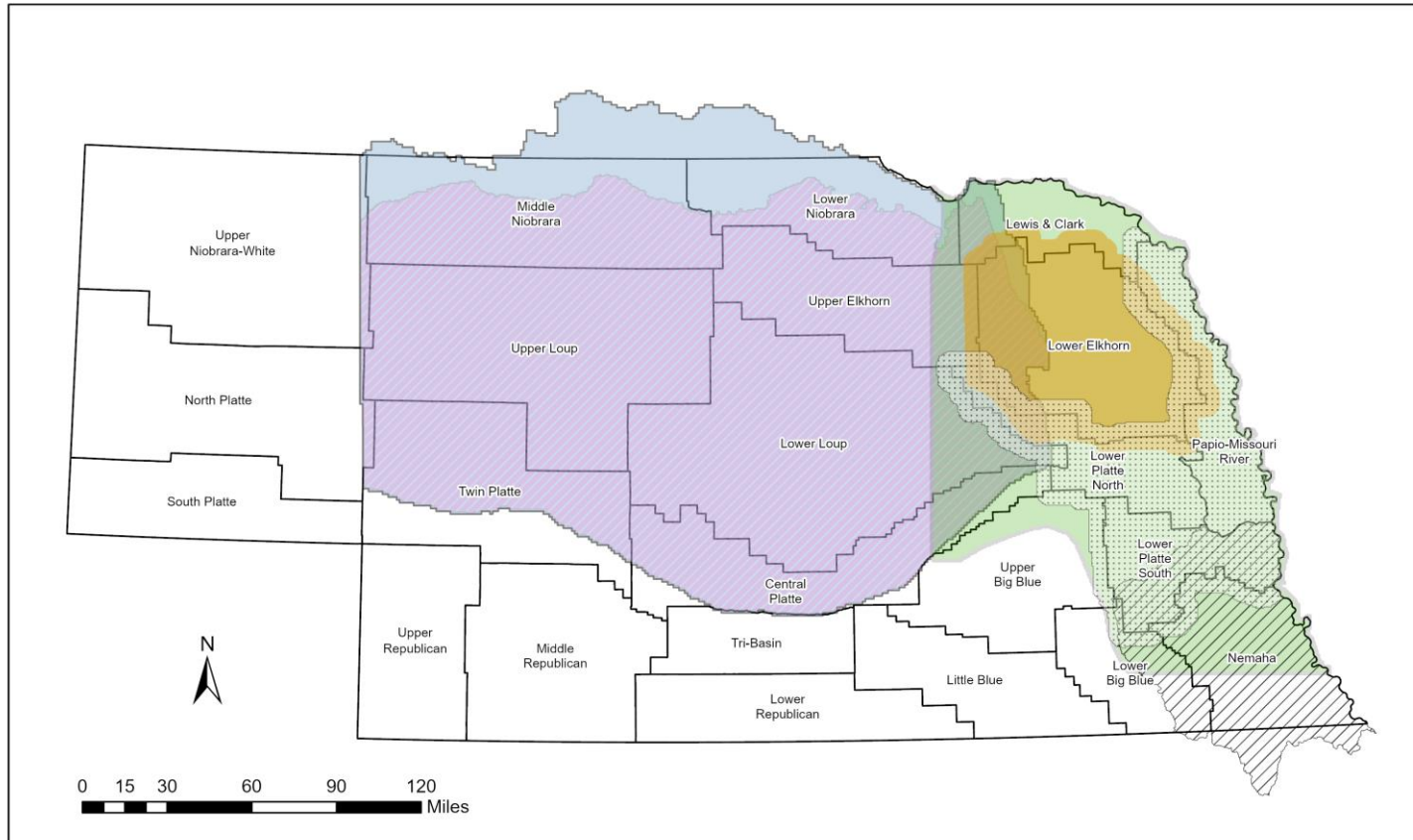
LPNNRD

DATA COLLECTION AND MONITORING

- New groundwater consumptive uses (agricultural, municipal, industrial)
 - Agricultural: 203.76 Acre Feet
 - 1287.14 acres approved for irrigation
 - None for industrial or municipal
 - These are for wells permitted by the NRD
- Transfer of acres for groundwater consumptive uses (agricultural, municipal, industrial)
 - Agricultural - 1.61 Acre Feet
 - Saunders County

BASIN-WIDE MODELING EFFORTS

Lower Platte Missouri Tributaries Basin Model Coverage



Created by NeDNR | JWJ | 22 July 2024

LPMT 3D (DISTRICT) MODEL

- Currently working on constructing model inputs into sub-regional model (LPMT 3D)
- To be used in Basin wide analysis
- Analysis will include an updated Hydrological Connected Area (HCA) area.
 - Currently called LPN Blue Area
- HCA would be an area that a groundwater well that is constructed in the 10/50 area would deplete river flow by at least 10 percent of the water pumped over a 50-year period.

MODELING UPDATES

SUB-REGIONAL MODEL

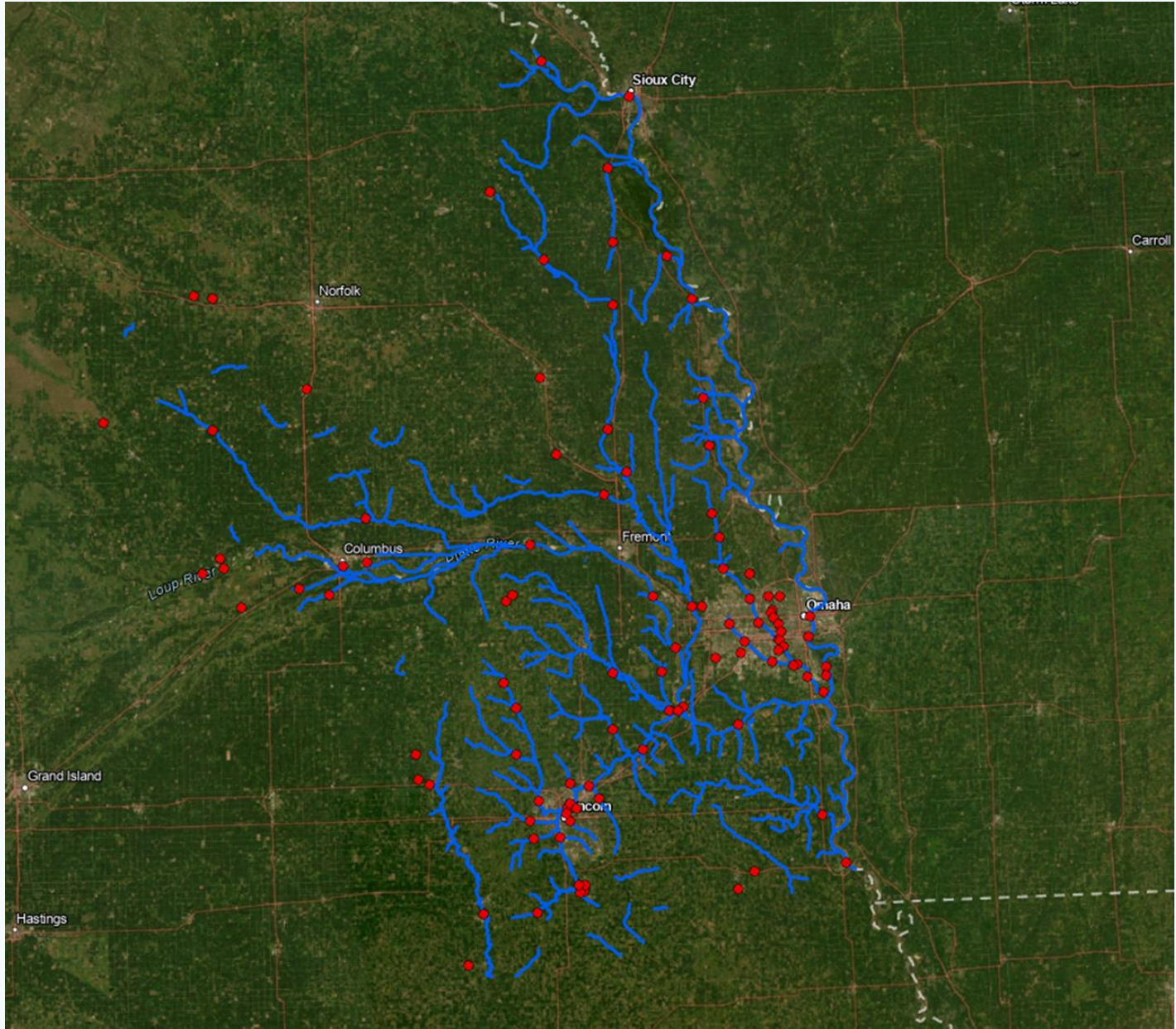
Revised Schedule

LOWER PLATTE RIVER SUB-REGIONAL GROUNDWATER MODELING

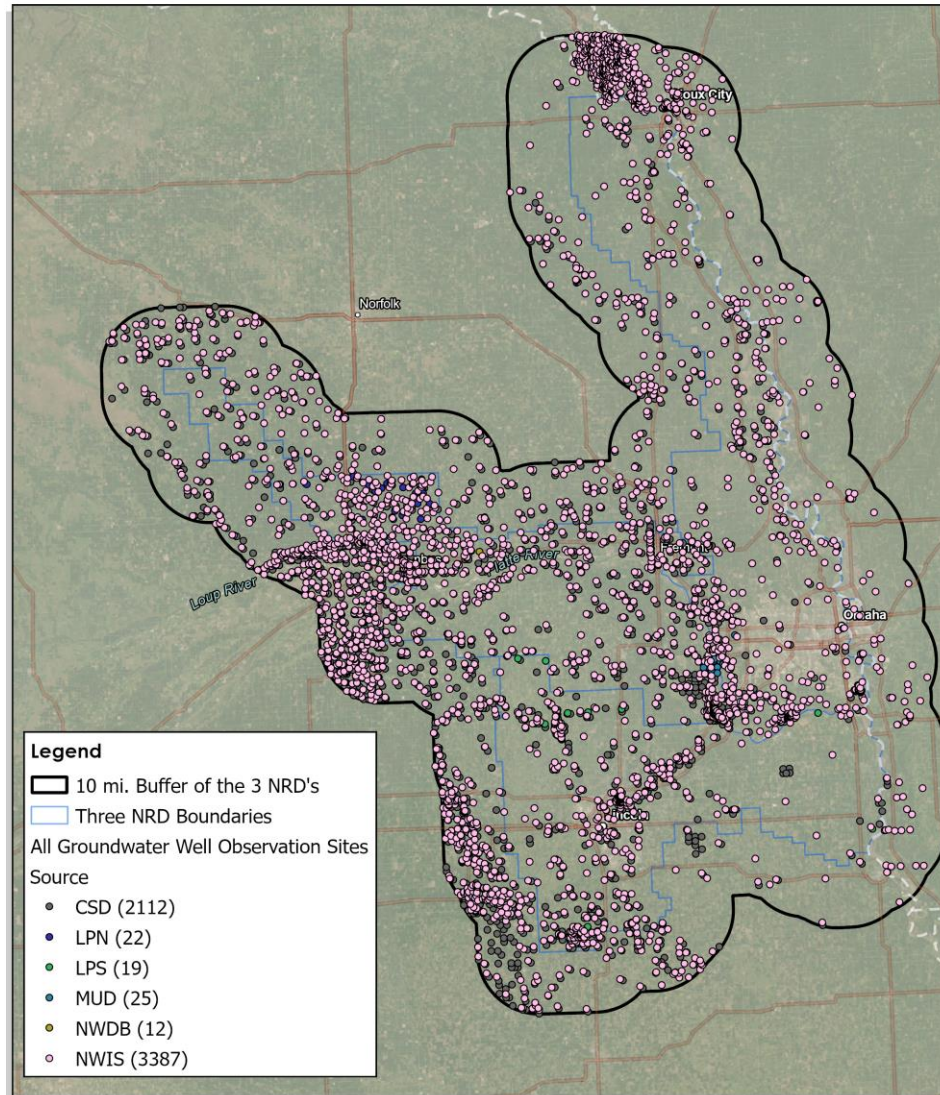
JEO Project No. 221004.00

| Activity | 2023 | | | | | 2024 | | | | | | | 2025 | | | | | | | |
|---|--------|-----------|---------|----------|----------|---------|----------|-------|-------|-----|------|------|--------|-----------|---------|----------|----------|---------|----------|-------|
| | August | September | October | November | December | January | February | March | April | May | June | July | August | September | October | November | December | January | February | March |
| Notice to Proceed | | | | | | | | | | | | | | | | | | | | |
| Project Kick Off | | | | | | | | | | | | | | | | | | | | |
| Building Hydrogeology Framework of the Groundwater Model | | | | | | | | | | | | | | | | | | | | |
| Development of Refined Watershed Model from New and Updated Regional Watershed Model of Lower Platte Missouri Tributaries Model | | | | | | | | | | | | | | | | | | | | |
| Integrating Watershed Model Estimated Recharge and Pumping into Groundwater Model and Couple Groundwater Model with Adjacent Model and Parent LPMT Regional Model | | | | | | | | | | | | | | | | | | | | |
| Model Calibration | | | | | | | | | | | | | | | | | | | | |
| Model Testing and Documentation | | | | | | | | | | | | | | | | | | | | |
| Model Use Training | | | | | | | | | | | | | | | | | | | | |

LPMT 3D STREAMS LAYER



LPMT GROUNDWATER SITES



Created By: ECM
Date: 05/30/2024
Revised: 07/25/2024
Software: ArcPro 3.2.2
File: 221004.00

Available Groundwater Sites

Eastern Nebraska

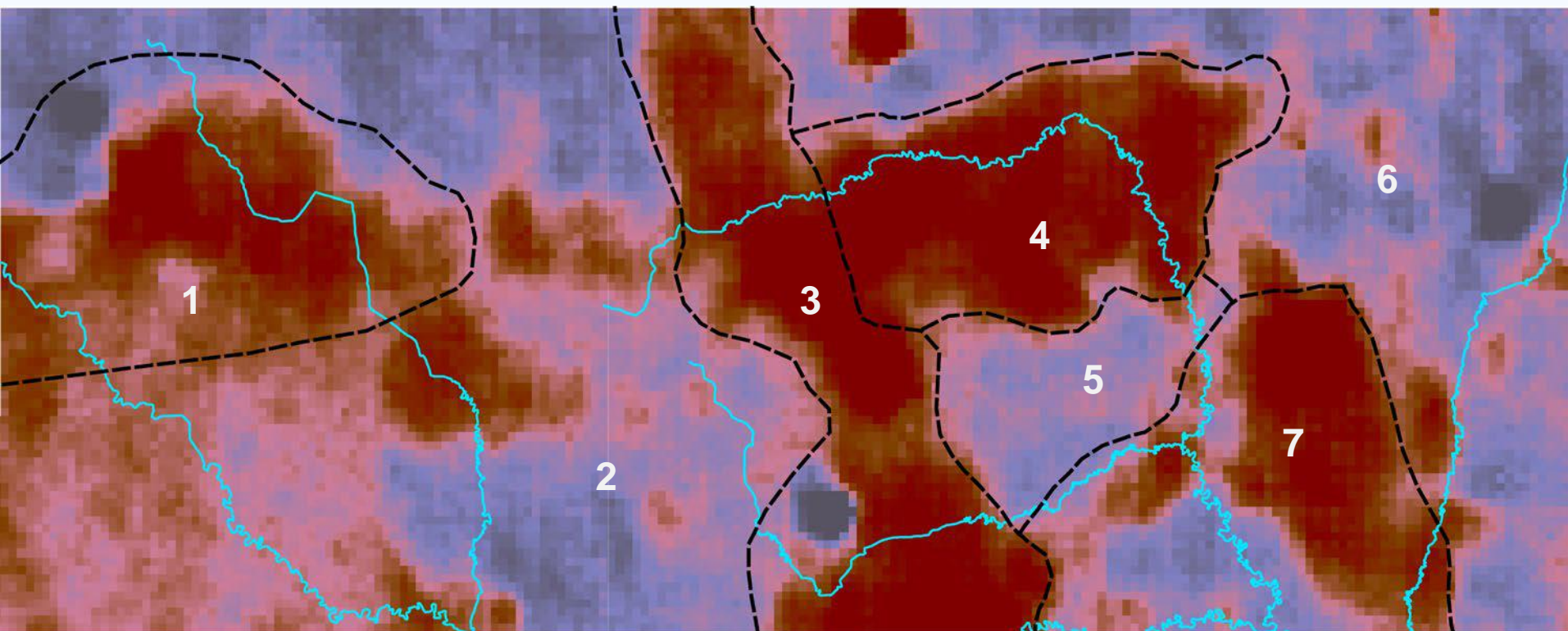
0 5 10 20 Miles



This map was prepared using information from record drawings supplied by JEO and/or other applicable city, county, federal, or public or private entities. JEO does not guarantee the accuracy of this map or the information used to prepare this map. This is not a scaled plot.

IMP MODELING UPDATES

- LPNNRD hydrogeologic framework study with UNL-CSD (SQS # 2)
 - Seven groundwater management zones were developed based on hydrofacies probability and hydrograph characteristics
 - Map is from UNL-CSD published study June 2023



BASIN COALITION PLAN IMPLEMENTATION

BASIN-WIDE ACTIVITIES

LPNNRD and NeDNR participate in the Lower Platte River Basin Coalition (LPRBC)

- Managers' and Technical Team meetings
- Annual reporting (see next slide)
- Annual Reporting Database
 - Tool to report and store annual water use data
- Lower Platte Missouri Tributaries Model
 - Tool to analyze aquifer-stream interactions

ESTIMATED STREAM DEPLETIONS

NEW DEPLETIONS ACCOUNTING

LOWER PLATTE RIVER BASIN 2022-2023

| 2022 and 2023 Estimated Stream Depletions and Accretions Summary | | | | | | | | | | |
|--|------------|-----------|------------|-----------|------------|-----------|------------|-----------|----------------------|----------|
| NRD | 2022 | | | | 2023 | | | | Net Total Depletions | |
| | Depletions | | Accretions | | Depletions | | Accretions | | | |
| | Peak | Non-Peak | Peak | Non-Peak | Peak | Non-Peak | Peak | Non-Peak | Peak | Non-Peak |
| Lower Elkhorn | 0 | 0 | 10 | 0 | 0 | 0 | 38.02 | 0 | 28.0 | 0 |
| Lower Loup | 145.97 | 17.4 | 83.87 | 9.5 | 46.1 | 0 | 19.2 | 0 | 127.4 | 7.9 |
| Lower Platte North | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 14.0 | 0 |
| Lower Platte South | 39.2 | 10 | 20 | 10 | 0 | 0 | 0 | 50 | 19.2 | -50 |
| Papio-Missouri River | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 18 |
| Upper Elkhorn | 0 | 0 | 0 | 0 | 0 | 30.9 | 0 | 0 | 0.0 | 30.9 |
| Upper Loup | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 0 |
| Basin Total | 185 | 45 | 114 | 20 | 60 | 31 | 57 | 50 | 189 | 7 |

DEPLETIONS PERCENTAGES

BASIN WIDE AND LPNNRD

| NRD | Total New Peak Season Depletions | Remaining 5-YR Allowable Depletion (AF) | Combined Percent of Allowable | Percent of Remaining 5-YR Allowable Depletion |
|--------------------------|-------------------------------------|---|----------------------------------|---|
| Upper Loup NRD | 39.5 | 5354.0 | 0.7% | 99.3% |
| Lower Loup NRD | 15.2 | 11913.5 | 0.1% | 99.9% |
| Upper Elkhorn NRD | 0.3 | 2927.0 | 0.0% | 100.0% |
| Lower Elkhorn NRD | 267.9 | 8088.1 | 3.2% | 96.8% |
| Papio-Missouri River NRD | 88.5 | 1722.9 | 4.9% | 95.1% |
| Lower Platte South NRD | -0.9 | 2066.5 | 0.0% | 100.0% |
| Lower Platte North NRD | 219.4 | 3571.4 | 5.8% | 94.2% |
| TOTALS | 630 | 35,643 | 1.7% | 98% |

EDUCATION & OUTREACH ACTIVITIES

NeDNR

- State Fair
- Husker Harvest Days

LPNNRD

- Nitrogen Certification Classes
- School Presentations

Joint Activities

- Spring Conservation Educational Event

ACTIONS AND GOALS

JOINTLY IDENTIFIED ACTIONS FOR NEXT TWO YEARS

- Cooperate on efforts to increase sources of available surface & groundwater data
- Participate in basin-wide and regional planning efforts such as ENWRA, the Lower Platte River Consortium (drought planning), and Lower Platte River Basin Coalition (LPRBC)
- Participate in education and outreach events
- Update the LPNNRD plan to work together with the Basinwide Plan
- Finish the LPMT-3D Model for inclusion in the 5-year BWP update

QUESTIONS?

Daryl Andersen
Water Resources Manager
dandersen@lpnrd.org



THANK YOU!

Tyler Martin
IWM Coordinator
tyler.martin@nebraska.gov





Road G

Road G

Road G

County Road 1

County Road 1

County Road 2

County Road 1

County Road 2

County Road 1

County Road 2

Road F

Road F





Conservation Plan Map

Client(s): EUGENE WALLA
 Location: Sec. 21-17-5E
 Saunders County, Nebraska
 Approximate Acres: 7.28

Assisted By: Elison Sanders
 WAHOO SERVICE CENTER
 LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT



Prepared with assistance from USDA-Natural Resources Conservation Service



| Conservation Practice Polygons | | | | | |
|--------------------------------|---------------------------------|--|---|--|---------------------------------|
| | Prescribed Burning (338) | | Upland Wildlife Habitat Management (645) | | Herbaceous Weed Treatment (315) |
| | Access Control (472) | | Early Successional Habitat Development/Management (647) | | Wildlife Habitat Planting (420) |
| | Forage Harvest Management (511) | | Prescribed Grazing (528) | | Practice Schedule PLUs |





August 21, 2024
 Invoice No: 27392

| | |
|-----------------------|--------------------|
| Invoice Total: | \$10,702.75 |
|-----------------------|--------------------|

Daryl Andersen
 Lower Platte North NRD
 511 Commercial Park Road
 Wahoo, NE 68066-0126

Please Remit To:
LRE Water
1221 Auraria Pkwy
Denver, CO 80204
(303) 455-9589
billing@LREwater.com

Invoice Email: dandersen@lpnrd.org
 Project No.: 5036LPN04
 Project Name: LPNNRD Nitrate Assessment Project

Professional Services through July 25, 2024

Task 01 Risk Tool Expansion

Professional Personnel

| | Hours | Rate | Amount | |
|--------------------|--------------|------------------------|---------------|-------------------|
| Bauer, Jacob | 2.50 | 225.00 | 562.50 | |
| Carter, Will | 11.25 | 208.00 | 2,340.00 | |
| Close, Kelly | 11.00 | 250.00 | 2,750.00 | |
| Mohr, Jonathan | 3.00 | 195.00 | 585.00 | |
| Sopiwnik, Roscoe | 2.25 | 200.00 | 450.00 | |
| Totals | 30.00 | | 6,687.50 | |
| Total Labor | | | | \$6,687.50 |
| | | Total this Task | | \$6,687.50 |

Task 02 USC Groundwater Model

Professional Personnel

| | Hours | Rate | Amount | |
|--------------------|--------------|------------------------|---------------|-------------------|
| Bauer, Jacob | 8.00 | 225.00 | 1,800.00 | |
| Mohr, Jonathan | 2.00 | 195.00 | 390.00 | |
| Stokes, Scott | 12.25 | 149.00 | 1,825.25 | |
| Totals | 22.25 | | 4,015.25 | |
| Total Labor | | | | \$4,015.25 |
| | | Total this Task | | \$4,015.25 |

| | |
|---------------------------|--------------------|
| Total this Invoice | \$10,702.75 |
|---------------------------|--------------------|

Outstanding Invoices

| Number | Date | Balance |
|---------------|-------------|-------------------|
| 27048 | 7/16/2024 | 7,802.50 |
| Total | | \$7,802.50 |

| | |
|----------------------|--------------------|
| Total Now Due | \$18,505.25 |
|----------------------|--------------------|

Draft Goals and Objectives – For Review – August 14, 2024

GOALS AND OBJECTIVES

1.1 GROUNDWATER MANAGEMENT GOALS AND OBJECTIVES

The primary management target, defined below in the Vision Statement, is to maintain the ‘groundwater reservoir life goal’ – defined within the rules and regulations as the period of time which the District establishes as its goal for maintenance of the supply and quality of water in a groundwater reservoir. The goals and objectives are intended to guide water resource management decision making.

LPNNRD Groundwater Management Vision Statement

Strive for the continuous management of the groundwater reservoir, in perpetuity, to ensure it meets the standards appropriate for its various uses, including domestic, livestock, public water supply, irrigation, agriculture, wildlife, industrial, and other beneficial uses. Minimizing, as much as possible, the adverse impact of these uses on the quantity and quality of groundwater that supports lakes, wetlands, and streams.

By implementing the five goals and objectives, the LPNNRD can ensure groundwater remains a reliable resource while protecting the ecosystems that depend on it. Goal categories include monitoring, pollution prevention, conservation, public education, and sustainable management plans and regulations.

Goal 1 – To continuously monitor and assess groundwater levels and quality to detect changes early.

- **Objective 1.1** - The effort to monitor and sample water quality will be continued and expanded as necessary focusing on wells with known screened interval data.
- **Objective 1.2** – Integrate scientific advances and research into plans and regulations.
- **Objective 1.3** – Repeat annual NRD-wide cooperative sampling to help understand nonpoint source contamination.
- **Objective 1.4** – Collaborate with various partners to review and expand the monitoring network.
- **Objective 1.5** – Maintain and steadily expand the spring/fall water energy level monitoring network.
- **Objective 1.6** – Explore opportunities to obtain real-time water use and aquifer level data.
- **Objective 1.7** – Continue expansion of the dedicated monitoring well network, for both quantity and quality purposes, at critical locations in the District.

Goal 2 – To reduce the potential for pollution to ensure a sustainable supply of high-quality, consumable, and safe groundwater for all users in the NRD.

- **Objective 2.1** – Utilize available studies and tools to gain a stronger understanding of groundwater flow and contamination movement.
- **Objective 2.2** - Obtain and assess data that supports sustainable development decisions.
- **Objective 2.3** – Explore efforts for cost share programs that promote reduction of pollutants to the aquifer.

- **Objective 2.4** – Offer cost share for well decommissioning.
- **Objective 2.5** – Promote cutting-edge technologies to improve application efficiencies as nitrate-reducing tools.
- **Objective 2.6** – Proactively manage Phase Areas where vulnerable aquifers or excessive nitrate exist and recognize the importance of reducing nitrogen leaching to aquifers that provide public water supplies.

Goal 3 – The LPNNRD will continue to encourage the use of highly-efficient water conservation management practices intended to maintain water levels.

- **Objective 3.1** – Utilize hydrogeologic and modeling data to assess the impacts of new uses and understand the response of water levels to drought or reduced precipitation trends.
- **Objective 3.2** – Promote efficient irrigation and farming practices to improve soil health, reduce erosion, and enhance water retention and recharge.
- **Objective 3.3** – Connect property owners to existing conservation programs that benefit water quality and quantity.
- **Objective 3.4** – Create a strategy for managing water declines and supporting communities during severe droughts.
- **Objective 3.5** – Continue management of Control Areas where thin or limited aquifers exist and recognize the importance of conjunctive management of hydrologically connected areas.

Goal 4 – Continue to be a resource for outreach and education of youth and adults emphasizing the importance of ensuring sustainable water resources remain available.

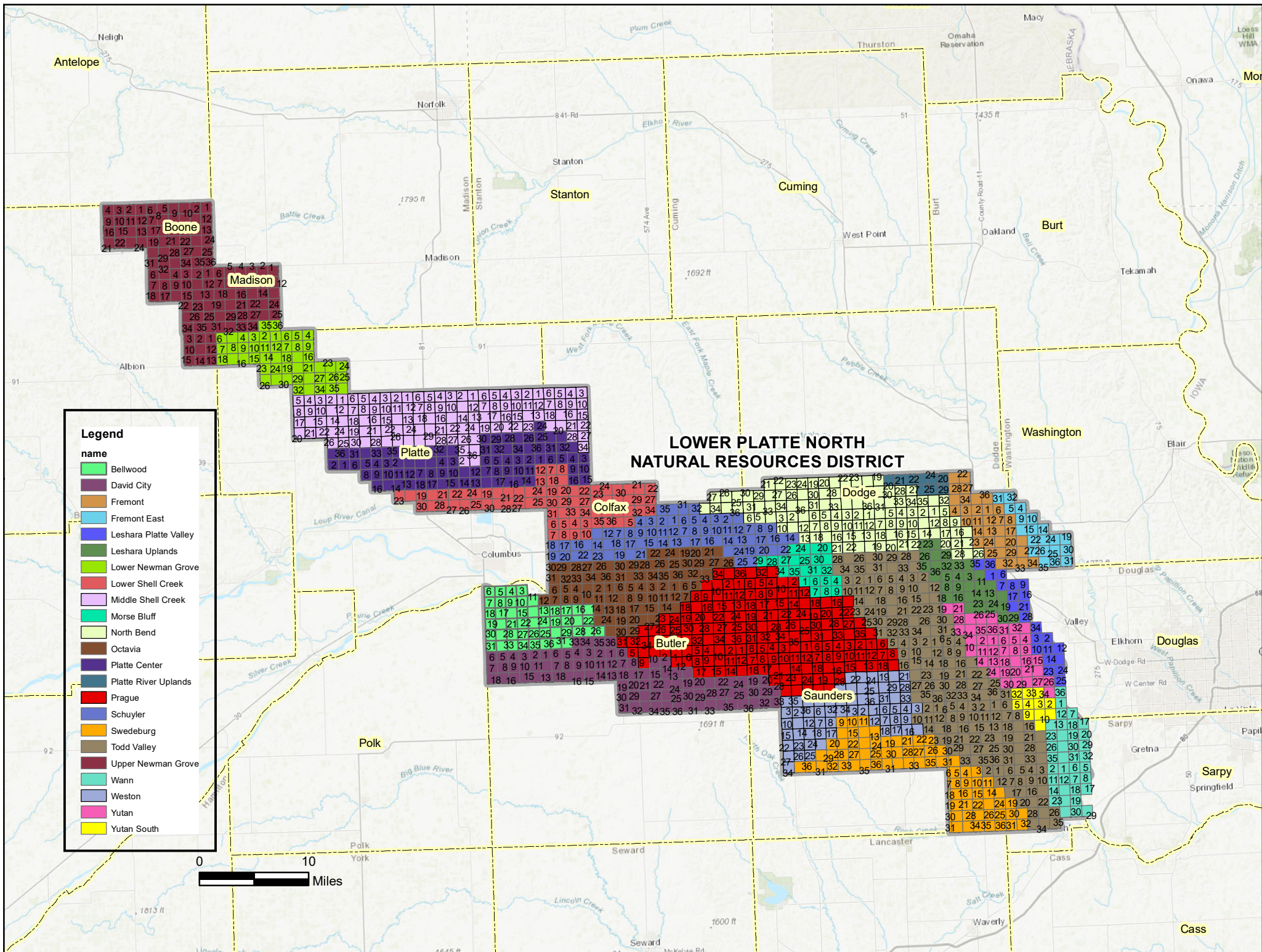
- **Objective 4.1** – Involve stakeholders in the review process to gather diverse perspectives and needs.
- **Objective 4.2** – Expand public education programs to raise awareness about water quality issues and encourage water conservation measures.
- **Objective 4.3** – Utilize hydrogeologic data and studies to provide an opportunity for one-on-one education.
- **Objective 4.4** – Participate in natural resources workshops, county fairs, camps, workshops, and classroom presentations.
- **Objective 4.5** – Demonstrate cutting-edge technologies for water and fertilizer management.
- **Objective 4.6** - Provide information and education through news articles, social media, newsletters, brochures, and the website.
- **Objective 4.7** – Create a web-based graphic user interface to allow users to obtain and view hydrogeologic data and other relevant maps and information.

Goal 5 – To develop and enforce rules and regulations and plans that balance usage with natural replenishment rates and reduce contamination.

- **Objective 5.1** – Regularly update the Groundwater Management Plan and Rules and Regulations to meet changing water uses, emerging contaminants, and integration of the latest policies.
- **Objective 5.2** – Align the regulations with new state and federal policies to ensure compliance and leverage available resources.

- **Objective 5.3** – Implement an adaptive management approach that allows for flexibility and adjustment based on monitoring results and changing conditions.
- **Objective 5.4** – Continue active participation in Lower Platte River Basin integrated and drought management plans and implementation.
- **Objective 5.5** – Encourage community participation in NDEE’s Wellhead Protection Program.
- **Objective 5.6** – Utilize the hydrogeological based subareas to manage Control Areas, and as the basis for defining study areas for potential Phase Areas.
- **Objective 5.7** – Regularly review and update the Integrated Management Plan to balance water uses and ensure sustainable water management, including maintaining instream flows.
- **Objective 5.8** – Support and conduct special studies, research, and data gathering activities.

DRAFT



**LOWER PLATTE NORTH
NATURAL RESOURCES DISTRICT**

Legend

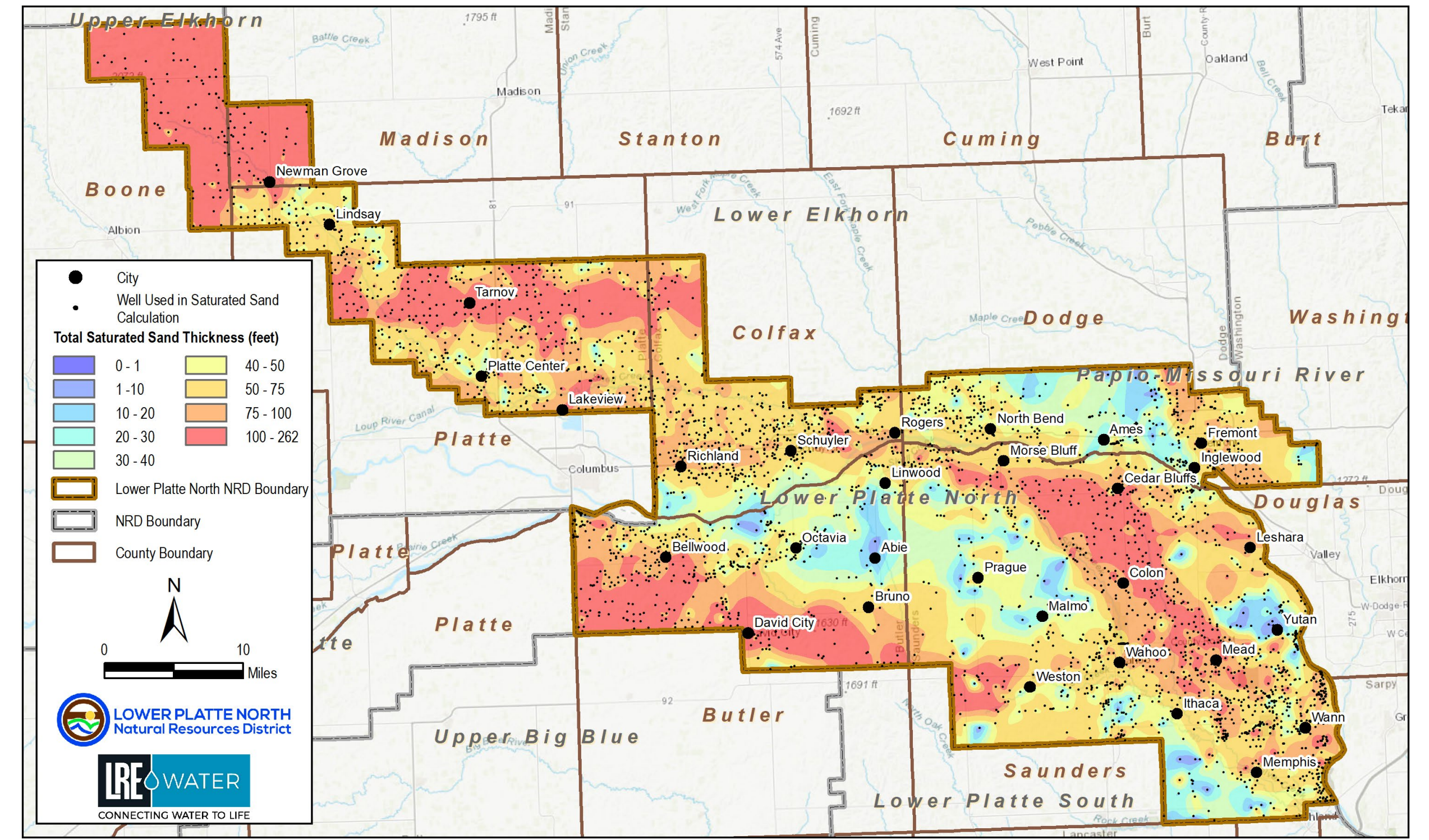
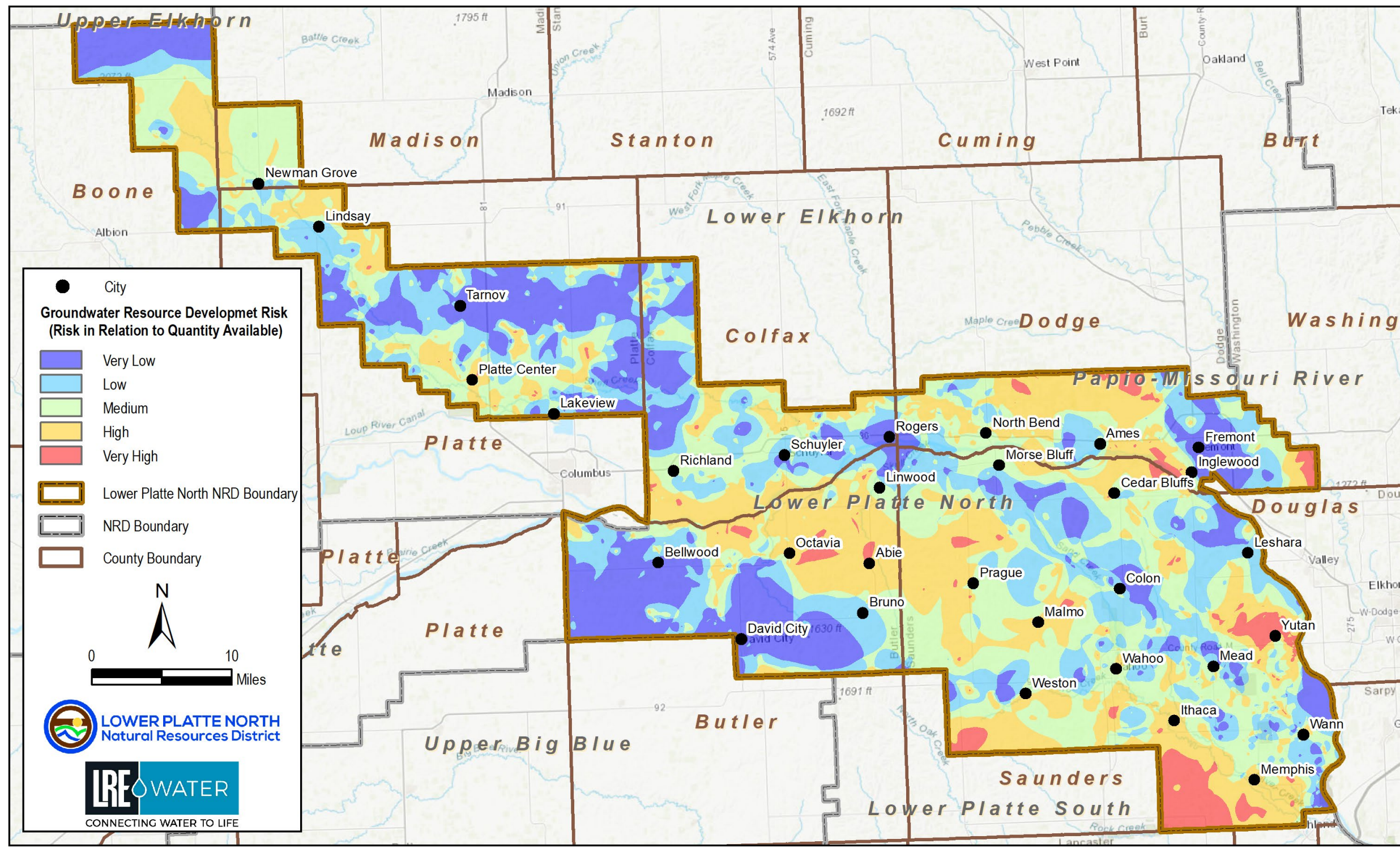
| name | color |
|-----------------------|--------------|
| Bellwood | Light Green |
| David City | Brown |
| Fremont | Orange |
| Fremont East | Light Blue |
| Leshara Platte Valley | Dark Blue |
| Leshara Uplands | Dark Green |
| Lower Newman Grove | Light Green |
| Lower Shell Creek | Red |
| Middle Shell Creek | Purple |
| Morse Bluff | Light Green |
| North Bend | Light Yellow |
| Octavia | Brown |
| Platte Center | Dark Blue |
| Platte River Uplands | Dark Green |
| Prague | Red |
| Schuyler | Blue |
| Swedeburg | Orange |
| Todd Valley | Brown |
| Upper Newman Grove | Dark Red |
| Wann | Light Green |
| Weston | Light Blue |
| Yutan | Pink |
| Yutan South | Yellow |



HYDROGEOLOGIC DATA, MONITORING, AND NITRATE CONCENTRATIONS

GROUNDWATER RESOURCE DEVELOPMENT RISK

SATURATED SAND & GRAVEL THICKNESS

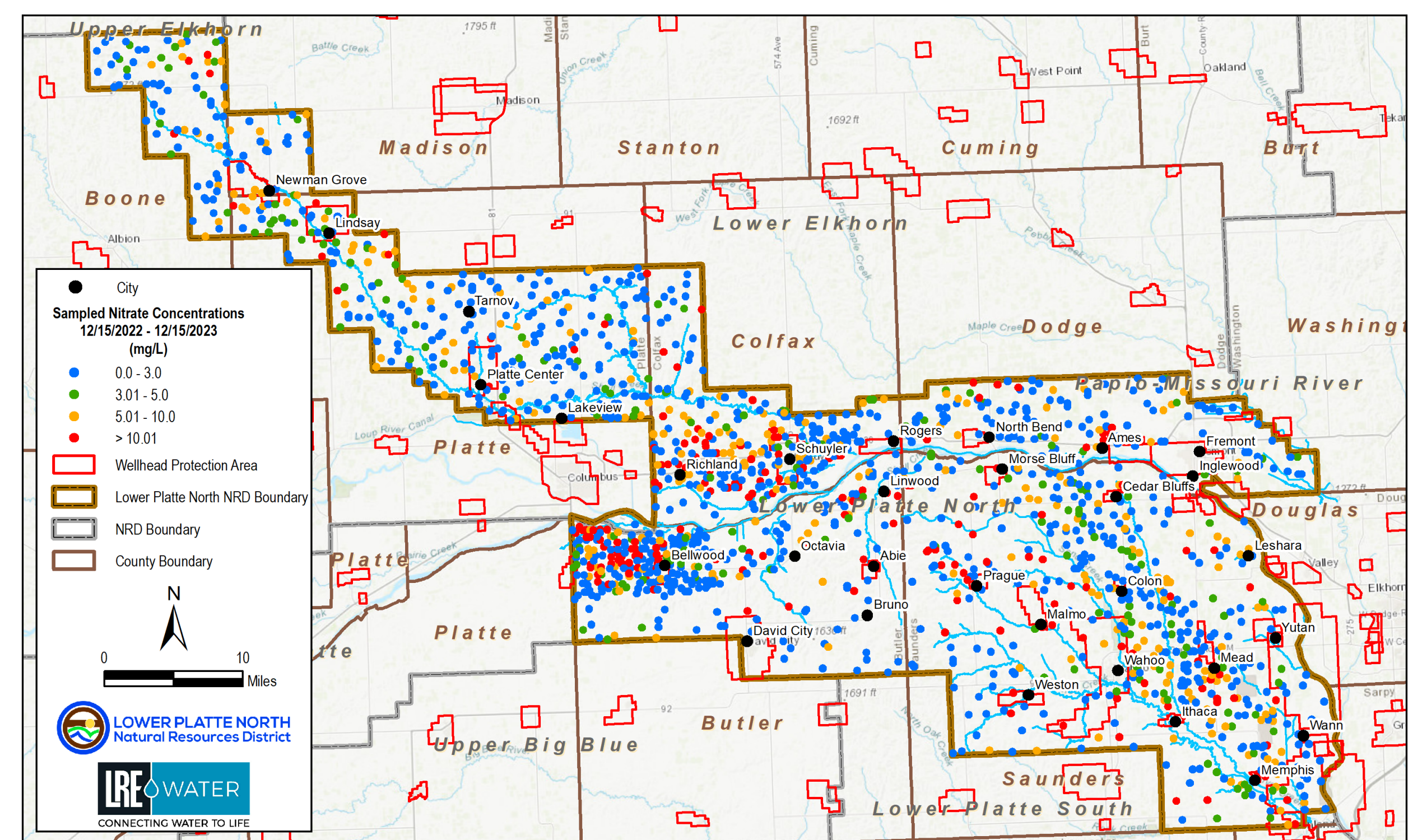
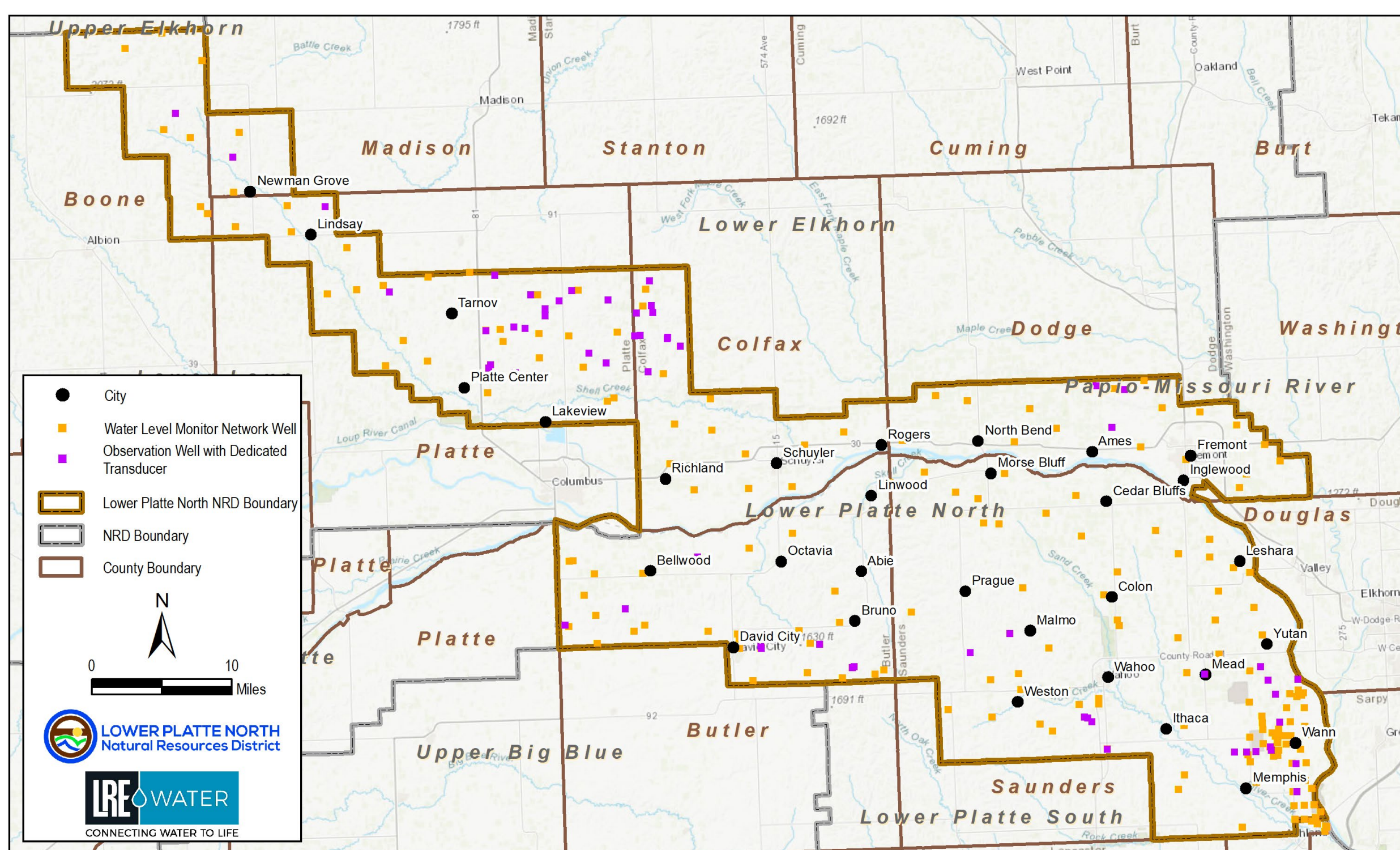


- Illustrates risk of irrigation development based upon geologic data.
- Built using Transmissivity (T) and Total Saturated Sand Thickness and incorporated into ESRI ModelBuilder, each weighted at 50%.
- The layer was created in 2023 as part of the Hydrogeologic Framework.

- Total saturated sand/gravel thickness water determined by reviewing all available well logs that encountered bedrock.
- All unconsolidated sand layers below the install or interpolated water level were considered saturated.
- Saturated clay is not included in this dataset.

EXISTING OBSERVATION NETWORK

NITRATES & WELLHEAD PROTECTION AREAS

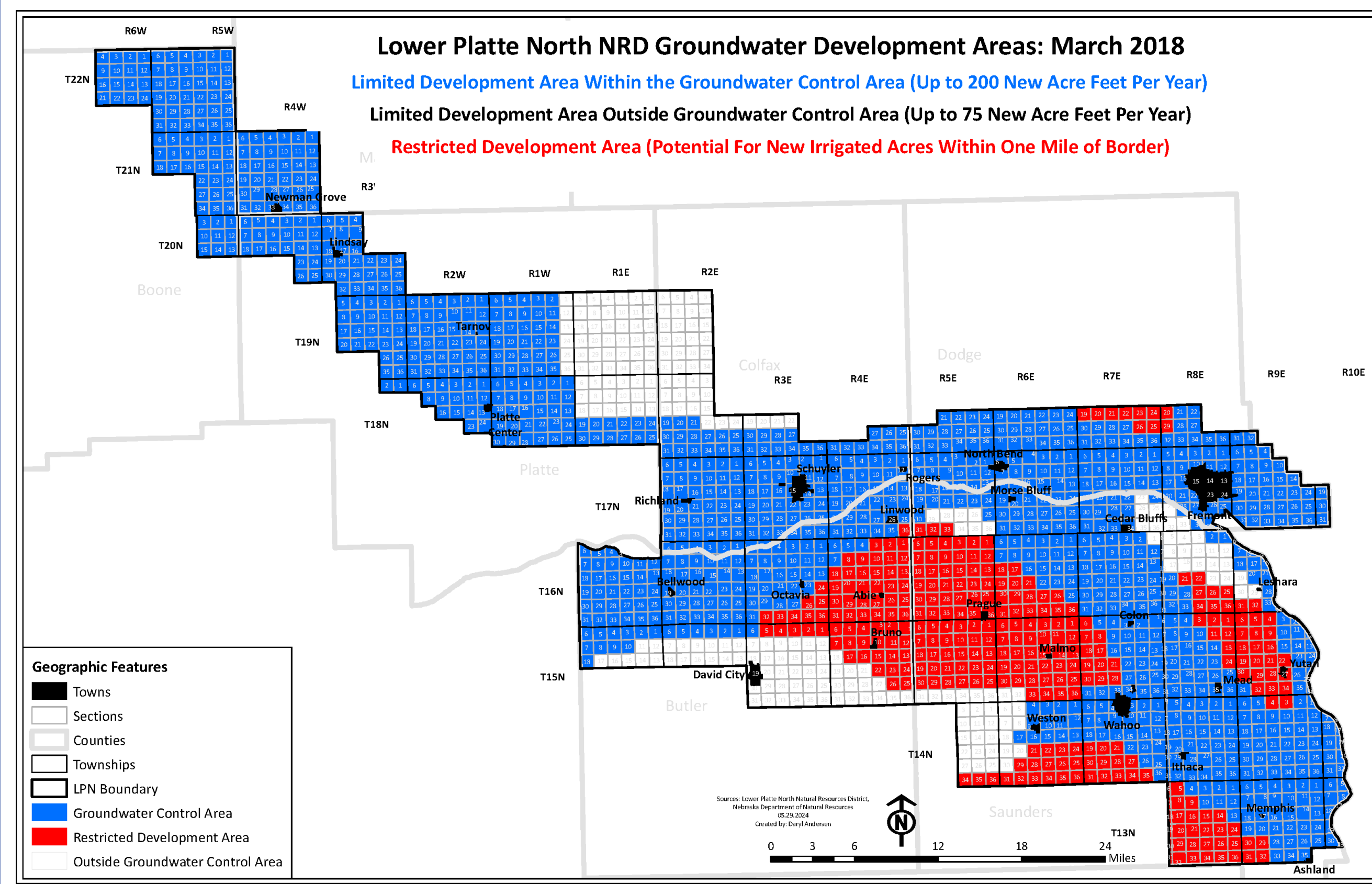


- LPNNRD has 215 irrigation wells that are measured in the spring and fall.
- Another 62 wells have dedicated logging equipment with telemetry, allowing staff to see water levels in real time.
- Water level data is critical to supporting water management decisions.

- The primary water quality concern district-wide is nitrate contamination.
- The Maximum Contaminant Level (MCL) is 10 mg/L or parts per million.
- Annually collected nitrate data is used to determine if additional actions are necessary to reduce nitrate infiltration through 'phase areas'.

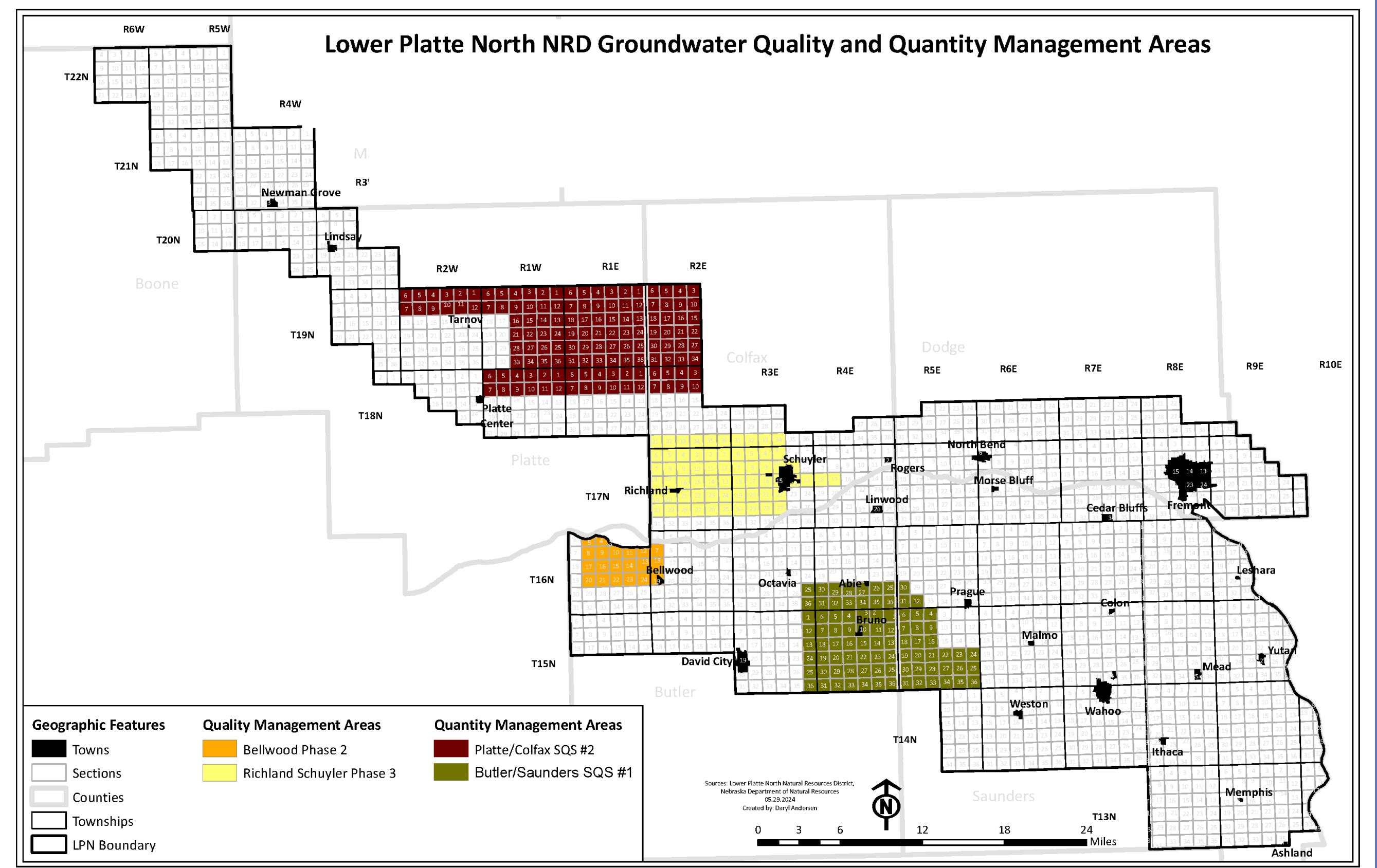
MANAGEMENT POLICIES & PRACTICES

INTEGRATED MANAGEMENT - DEVELOPMENT AREAS



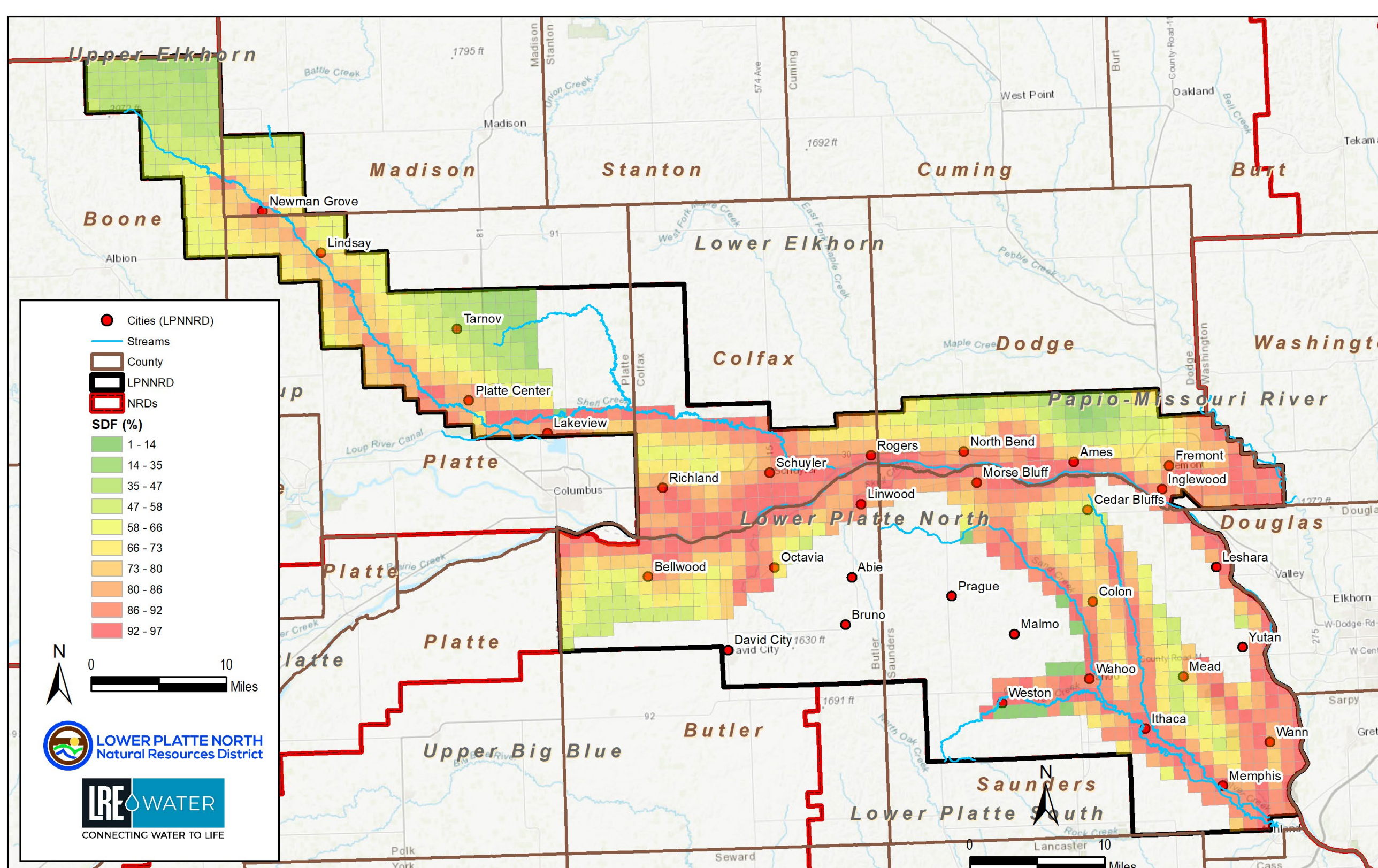
- Based upon the joint Voluntary Integrated Management Plan.
- Places limits on new water consumption for groundwater and surface water.
- New depletions are managed through the Lower Platte River Basin Water Management Plan.

GROUNDWATER MANAGEMENT AREAS



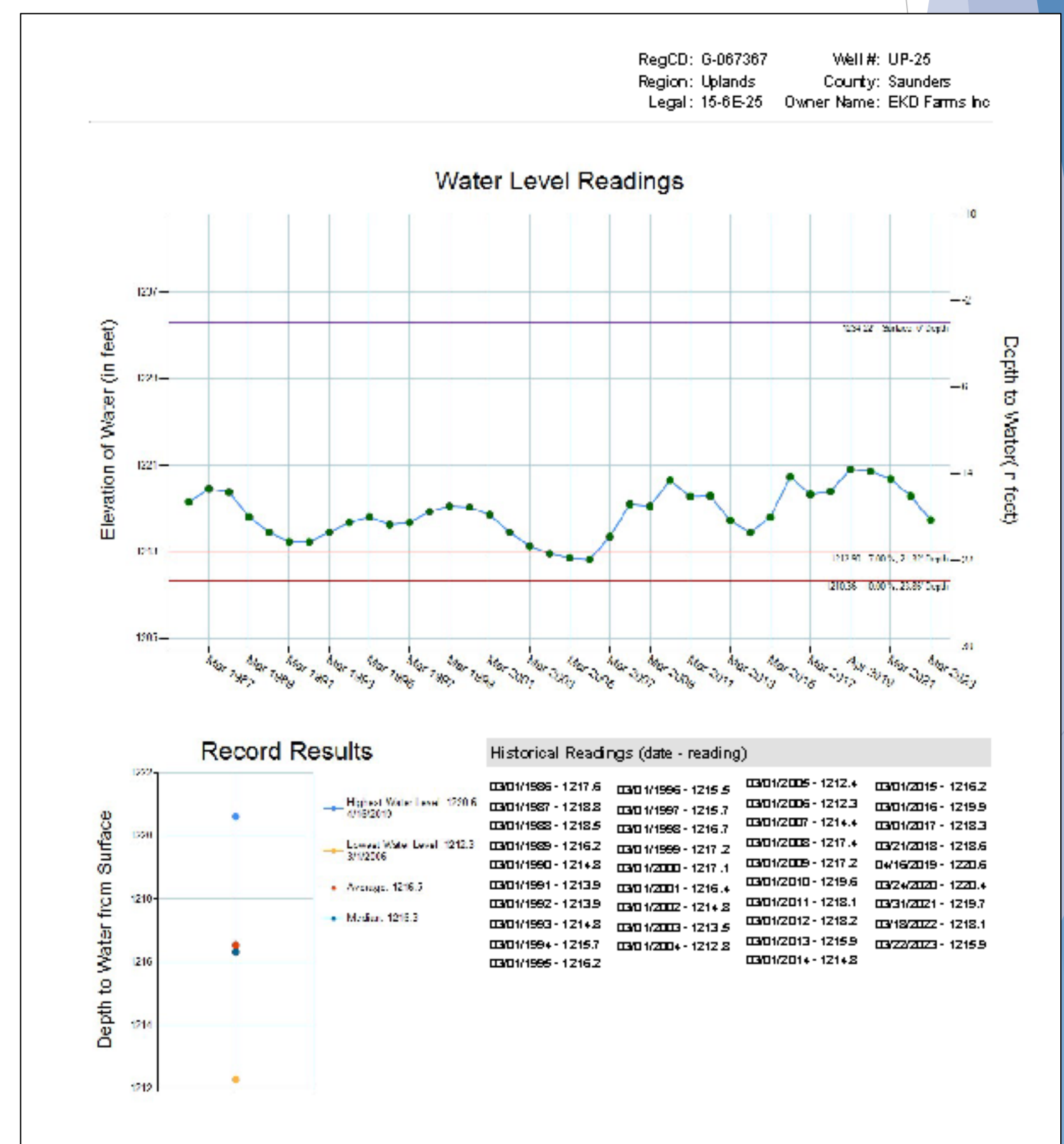
- Based upon LPNNRD's Rules & Regulations (Updated: June 15, 2018).
- Water quality area (Phases) triggered by nitrate contamination.
- Water quantity (Special Quantity Subareas) triggered by groundwater issues.

HYDROLOGICALLY CONNECTED AREAS



- Hydrologically Connected Areas (HCAs) were established by the Nebraska Department of Natural Resources (NeDNR).
- HCAs are managed by the Groundwater Control Area shown above in blue.
- These are areas where groundwater and surface water resources are directly connected and may have an impact on each other.

WATER LEVEL HYDROGRAPHS



- Each spring, LPNNRD staff record water levels in 215 irrigation wells.
- This data is used to evaluate trends in water levels and supports decisions on water management.
- The LPNNRD is conducting a review of the water level monitoring program as part of the GWMP update.

SUPPORTING DATA SOURCES

GEOLOGIC DATA COLLECTION



DRILLING



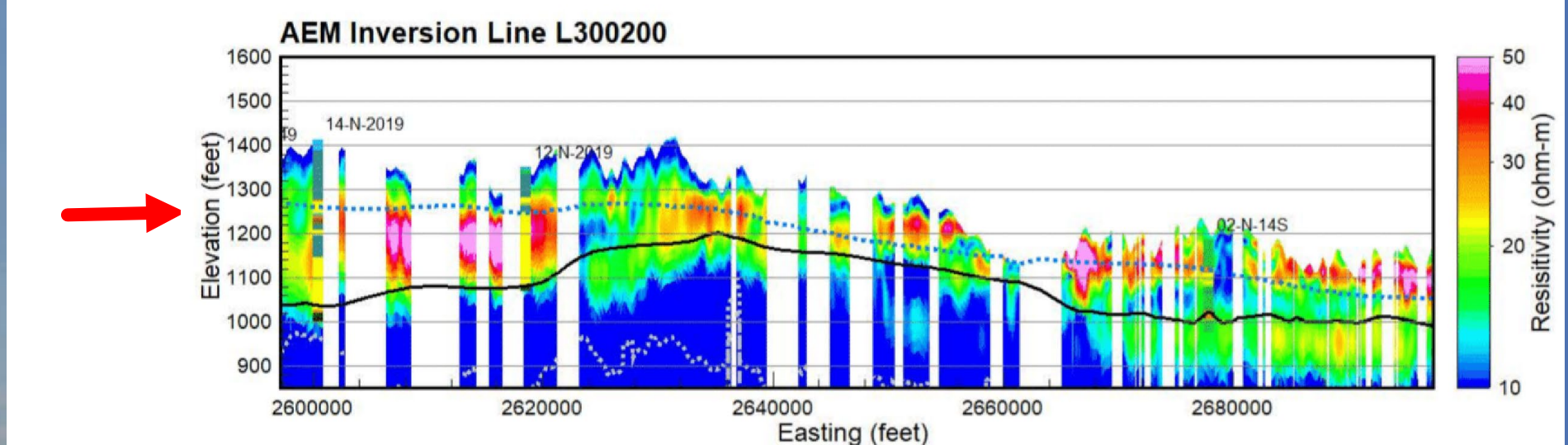
| Well No. | Depth (ft) | Stratigraphic Unit | Remarks |
|-----------|------------|---|---------|
| 14-N-2019 | 0 | Dark gray clay with silt | |
| 14-N-2019 | 10 | Gray brown clay, medium to very coarse sand, trace of fine to very fine, well-sorted silt | |
| 14-N-2019 | 20 | Light brown, fine to coarse sand, with very coarse sand, trace of silt | |
| 14-N-2019 | 30 | Gray clay | |
| 14-N-2019 | 40 | Gray to very fine sand, trace of silt | |
| 14-N-2019 | 50 | Gray to medium sand, trace of silt | |
| 14-N-2019 | 60 | Gray to medium sand, with large green, trace of silt | |
| 14-N-2019 | 70 | Gray, fine to medium sand, with large green, trace of silt | |
| 14-N-2019 | 80 | Large green, with fine sand, trace of very fine silt | |
| 14-N-2019 | 90 | Limestone | |

LOGGING

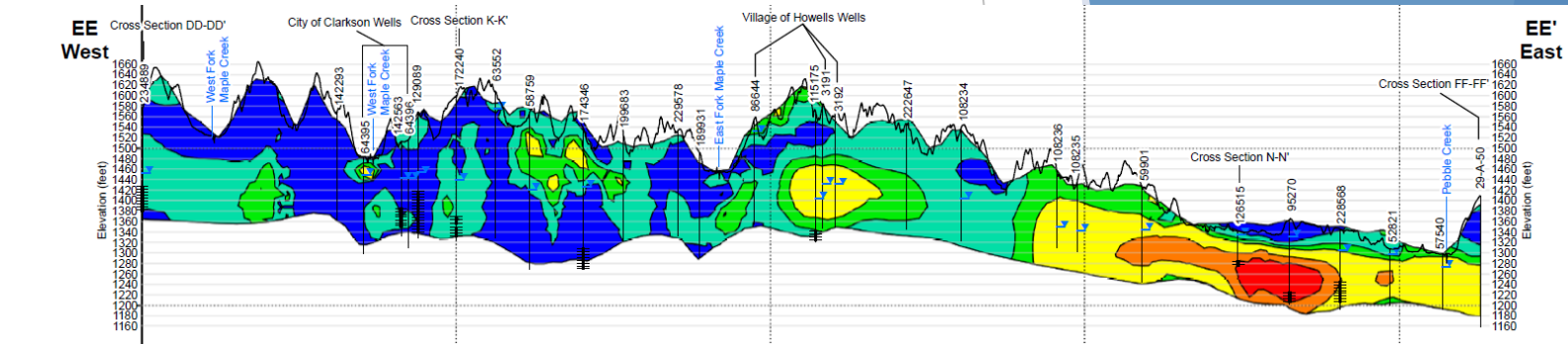
AIRBORNE ELECTROMAGNETIC (AEM) SURVEY



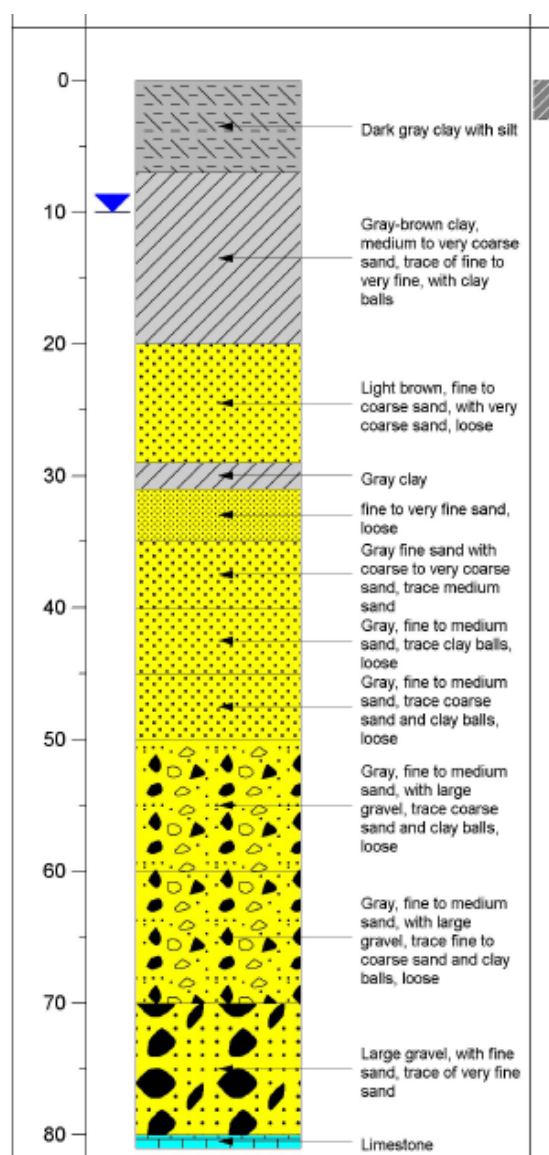
FLIGHTS



RAW DATA

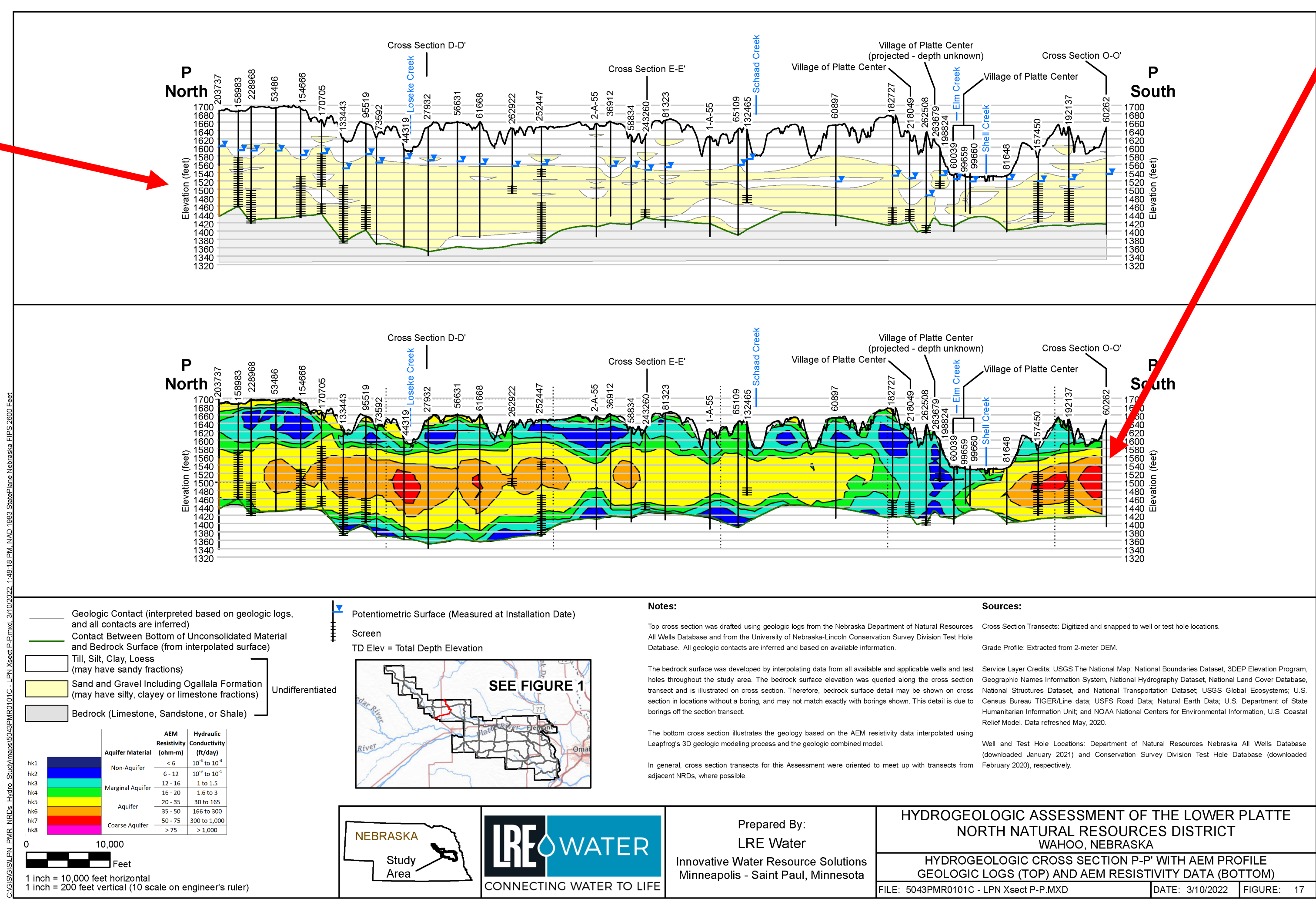


INTERPOLATION / CONCEPTUAL MODEL



BOREHOLE DESCRIPTION

LPNNRD HYDROGEOLOGIC CROSS SECTIONS



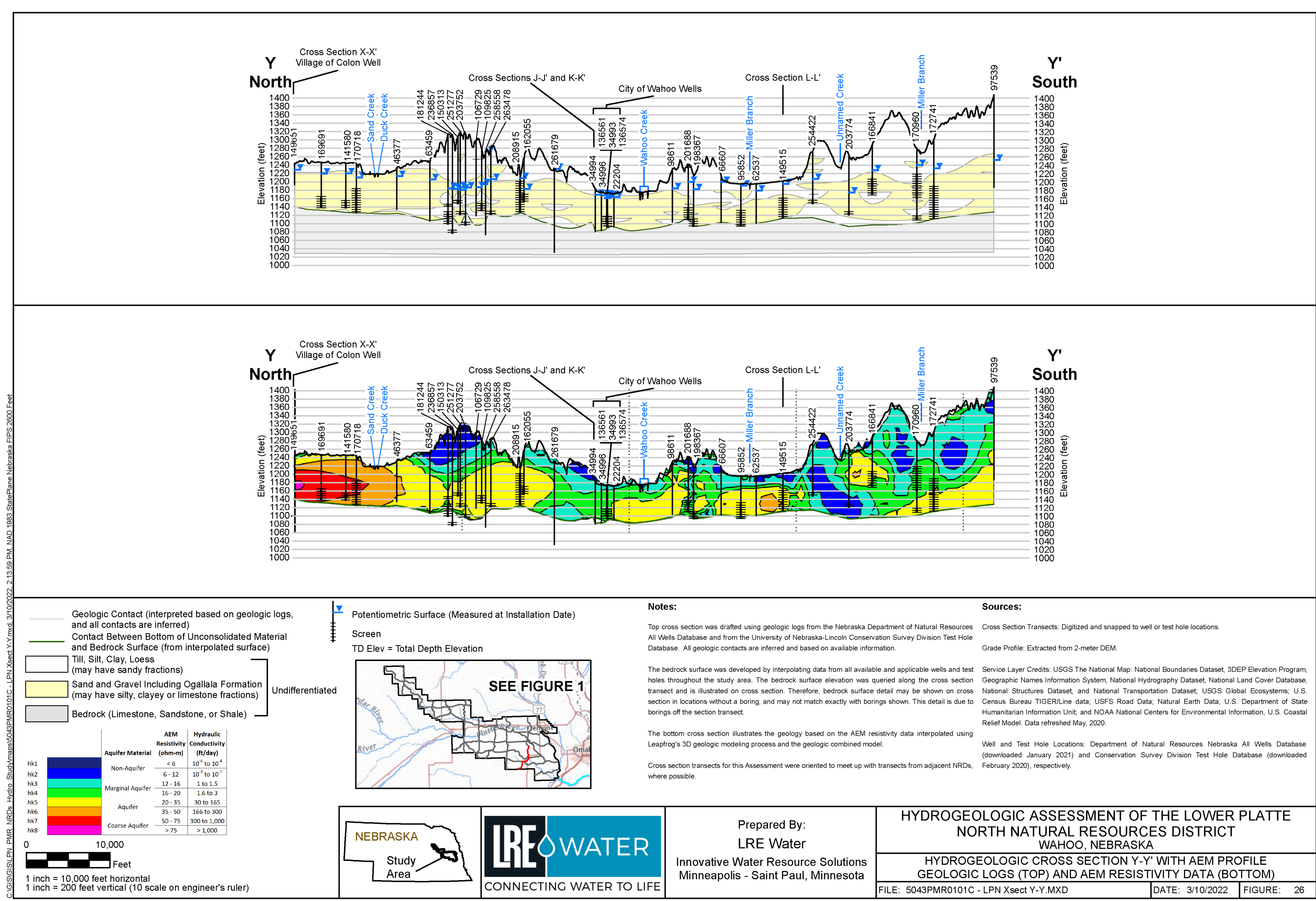
Geologic Contact (interpreted based on geologic logs, and all contacts are inferred)
Contact Between Bottom of Unconsolidated Material and Bedrock Surface (from interpolated surface)
Til. Silt, Clay, Loess (may have sandy fractions)
Sand and Gravel (including Ogallala Formation (may have silty, clayey or limestone fractions))
Undifferentiated
Bedrock (Limestone, Sandstone, or Shale)

Notes:
 Top cross section was drafted using geologic logs from the Nebraska Department of Natural Resources All Wells Database and from the University of Nebraska-Lincoln Conservation Survey Division Test Hole Database. All geologic contacts are inferred and based on available information.
 The bedrock surface was developed by interpolating data from all available and applicable wells and test holes throughout the study area. The bedrock surface elevation was queried along the cross section transect and is illustrated on cross section. The bedrock surface detail may be shown on cross section in locations without a boring, and may not match exactly with borings shown. This detail is due to borings of the section transect.
 The bottom cross section illustrates the geology based on the AEM resistivity data interpolated using Leapfrog's 3D geologic modeling process and the geologic combined model.
 In general, cross section transects for this Assessment were oriented to meet up with transects from adjacent NRDs, where possible.

Sources:
 Cross Section Transects: Digitized and snapped to well or test hole locations.
 Grade Profile: Extracted from 2-meter DEM.
 Service Layer Credits: USGS The National Map, National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Digital Elevation; U.S. Census Bureau TIGER/Line data; USFS Road Data; National Earth Data, U.S. Department of State International Information List; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020.
 Well and Test Hole Locations: Department of Natural Resources Nebraska All Wells Database (downloaded January 2021) and Conservation Survey Division Test Hole Database (downloaded February 2020), respectively.

Prepared By:
LRE Water
 Innovative Water Resource Solutions
 Minneapolis - Saint Paul, Minnesota

HYDROGEOLOGIC ASSESSMENT OF THE LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT
WAHOO, NEBRASKA
 HYDROGEOLOGIC CROSS SECTION P-P' WITH AEM PROFILE
 GEOLOGIC LOGS (TOP) AND AEM RESISTIVITY DATA (BOTTOM)
 FILE: 5043PMRD101C - LPN Xsect P-P.MXD DATE: 3/10/2022 FIGURE: 17



Geologic Contact (interpreted based on geologic logs, and all contacts are inferred)
Contact Between Bottom of Unconsolidated Material and Bedrock Surface (from interpolated surface)
Til. Silt, Clay, Loess (may have sandy fractions)
Sand and Gravel (including Ogallala Formation (may have silty, clayey or limestone fractions))
Undifferentiated
Bedrock (Limestone, Sandstone, or Shale)

Notes:
 Top cross section was drafted using geologic logs from the Nebraska Department of Natural Resources All Wells Database and from the University of Nebraska-Lincoln Conservation Survey Division Test Hole Database. All geologic contacts are inferred and based on available information.
 The bedrock surface was developed by interpolating data from all available and applicable wells and test holes throughout the study area. The bedrock surface elevation was queried along the cross section transect and is illustrated on cross section. The bedrock surface detail may be shown on cross section in locations without a boring, and may not match exactly with borings shown. This detail is due to borings of the section transect.
 The bottom cross section illustrates the geology based on the AEM resistivity data interpolated using Leapfrog's 3D geologic modeling process and the geologic combined model.
 In general, cross section transects for this Assessment were oriented to meet up with transects from adjacent NRDs, where possible.

Sources:
 Cross Section Transects: Digitized and snapped to well or test hole locations.
 Grade Profile: Extracted from 2-meter DEM.
 Service Layer Credits: USGS The National Map, National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Digital Elevation; U.S. Census Bureau TIGER/Line data; USFS Road Data; National Earth Data, U.S. Department of State International Information List; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed May, 2020.
 Well and Test Hole Locations: Department of Natural Resources Nebraska All Wells Database (downloaded January 2021) and Conservation Survey Division Test Hole Database (downloaded February 2020), respectively.

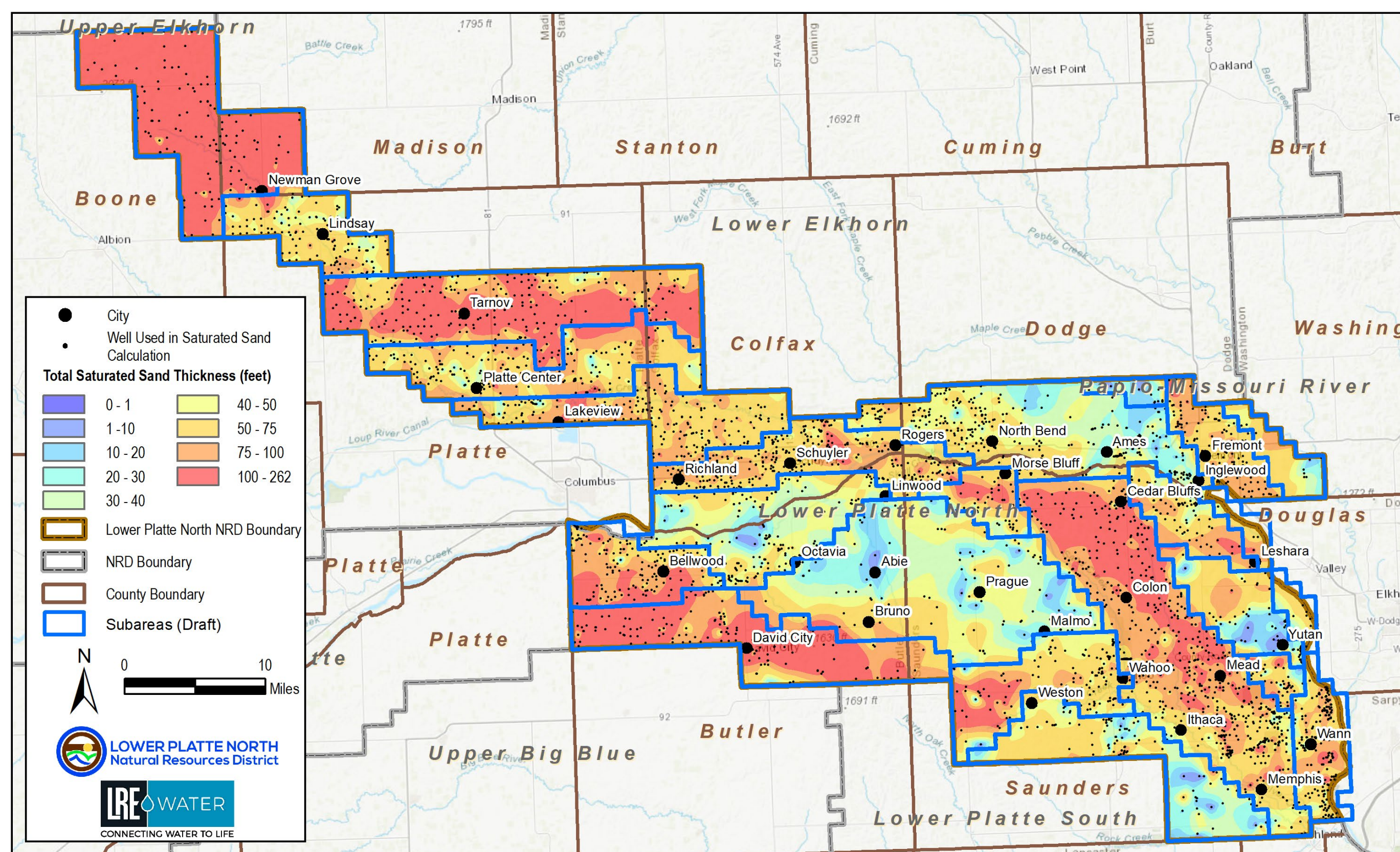
Prepared By:
LRE Water
 Innovative Water Resource Solutions
 Minneapolis - Saint Paul, Minnesota

HYDROGEOLOGIC ASSESSMENT OF THE LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT
WAHOO, NEBRASKA
 HYDROGEOLOGIC CROSS SECTION Y-Y' WITH AEM PROFILE
 GEOLOGIC LOGS (TOP) AND AEM RESISTIVITY DATA (BOTTOM)
 FILE: 5043PMRD101C - LPN Xsect Y-Y.MXD DATE: 3/10/2022 FIGURE: 26

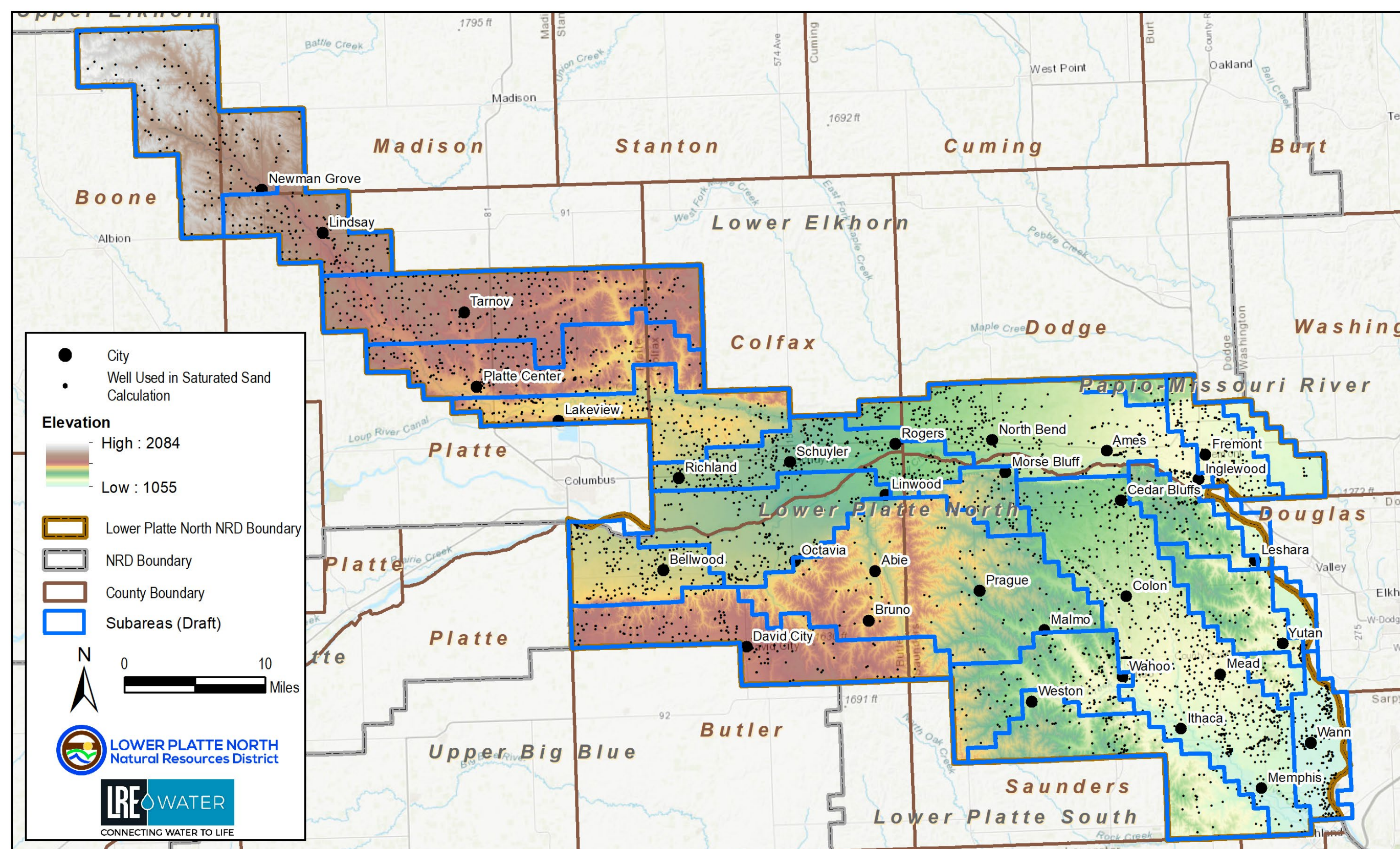
GROUNDWATER MANAGEMENT SUBAREAS
DRAFT / SUBJECT TO BOARD REVIEW & APPROVAL

- The LPNNRD is exploring the theory of utilizing ‘subareas’ as a foundation of groundwater management.
- Subareas were originally established in 2009, based upon hydrogeology and topography, but have not been adopted at this time.
- Subareas would be used primarily for evaluation and managing concerns with groundwater quantity but could also be used as target areas for nitrate studies.
- The 2024 draft subareas are based on the LPNNRD Hydrogeologic Assessment completed in 2023, which includes AEM data.

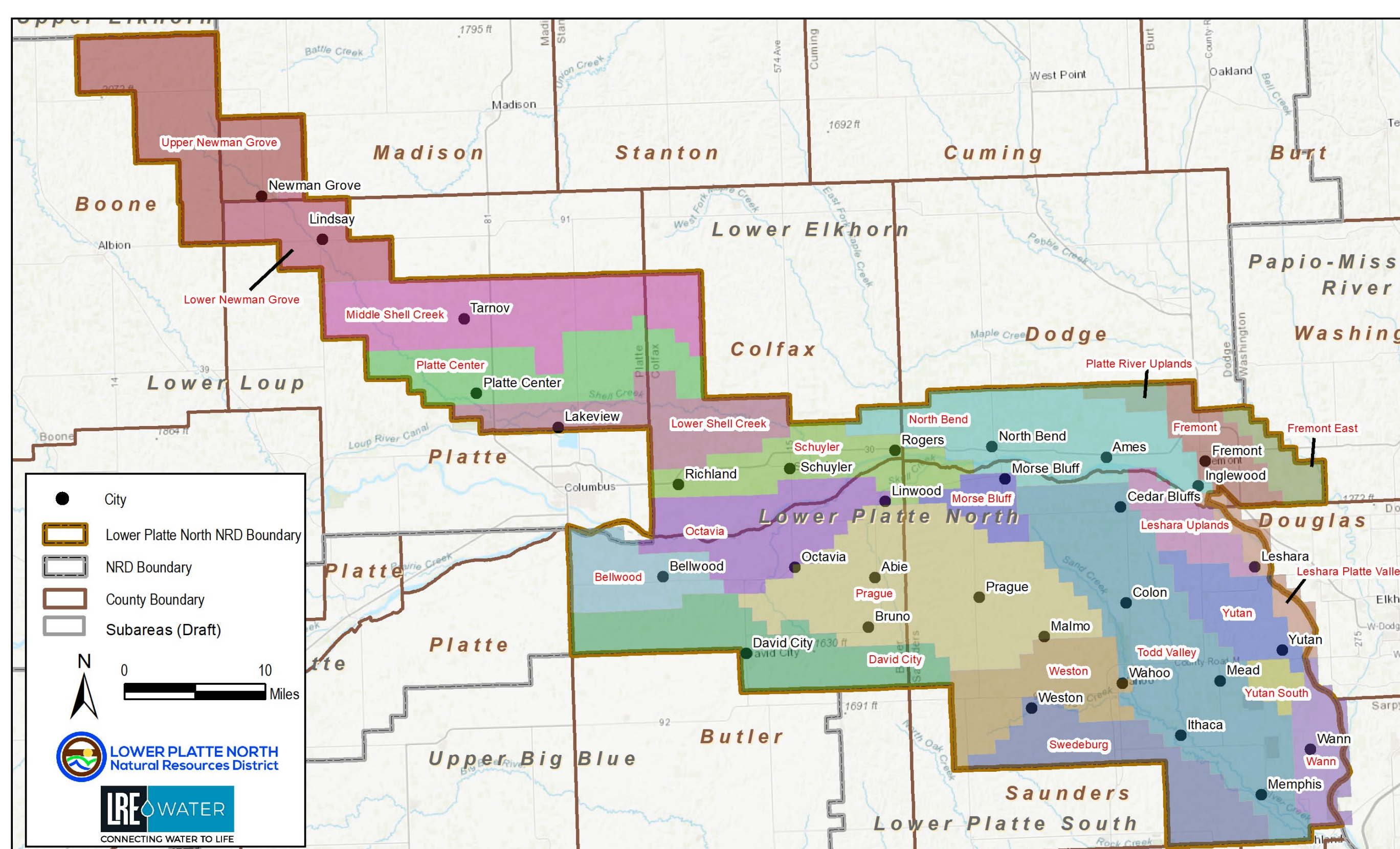
SUBAREAS & SATURATED THICKNESS



SUBAREAS & SURFACE TOPOGRAPHY



SUBAREAS (DRAFT)





LOWER PLATTE NORTH
Natural Resources District



Open House Meeting

Monday, August 26, 6:00PM (Platte Center)

Tuesday, August 27, 6:00PM (Wahoo)

GROUNDWATER MANAGEMENT PLAN UPDATE

LREWATER.COM

ROCKY MOUNTAIN | MIDWEST | SOUTHWEST | TEXAS

PRESENTATION OUTLINE

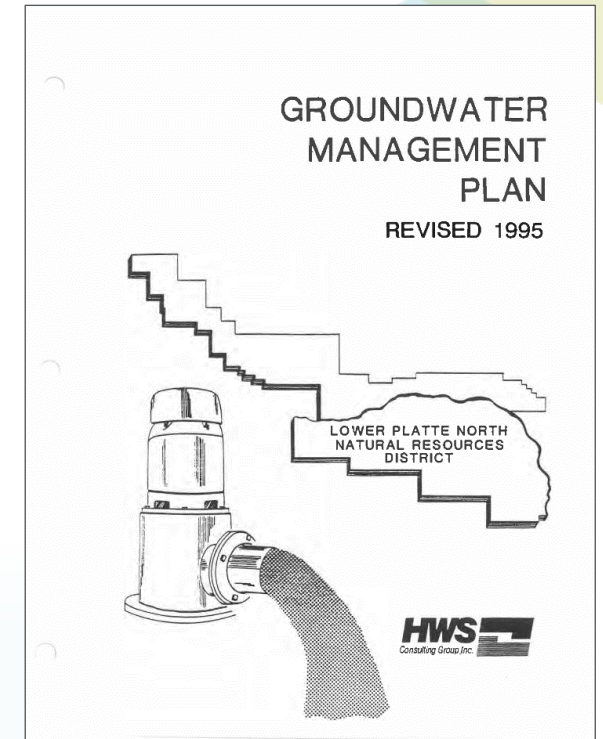
- 1) Plan Purpose & Requirements
- 2) Water Quality
- 3) Water Quantity
- 4) Proposed Subareas
- 5) Schedule
- 6) Open Discussion



PLAN PURPOSE & REQUIREMENTS

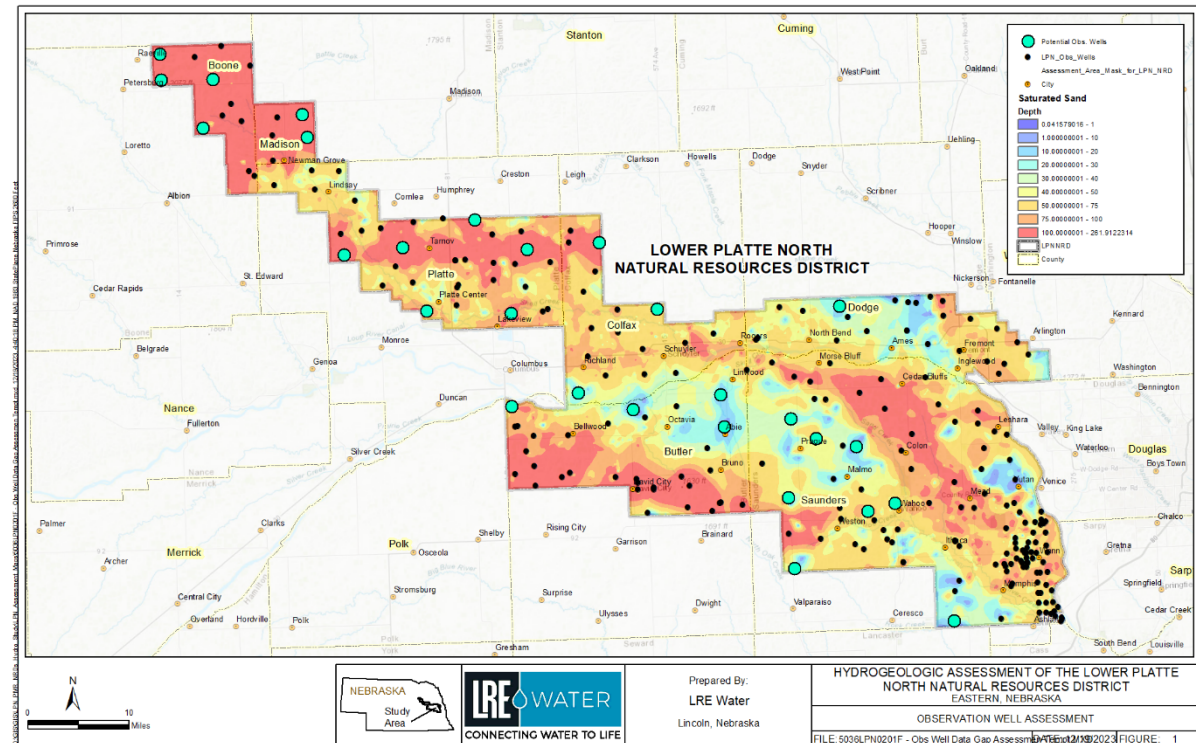
GROUNDWATER MANAGEMENT PLAN

- Groundwater Management and Protection Act
 - State Statue 46-709 – GWMP Required Contents
 - Utilize best available scientific data
 - 14 required elements
 - State Agency Reviews
 - Created in 1985
 - Updated in 1991 and 1994



PLAN REQUIREMENTS

1. Groundwater Supplies (transmissivity, saturated thickness, etc.)
2. Recharge
3. Precipitation
4. Crop water needs
5. Data collection programs
6. Water uses
7. Quality concerns



PLAN REQUIREMENTS

8. Conservation and augmentation programs
9. Supplementation supplies
10. Opportunity to integrate and coordinate water supplies
11. Goals and objectives
12. Sub-irrigation uses
13. Relative economic value of groundwater uses
14. Groundwater Management Areas

Draft Goals and Objectives – For Review – August 14, 2024

GOALS AND OBJECTIVES

1.1 GROUNDWATER MANAGEMENT GOALS AND OBJECTIVES

The primary management target, defined below in the Vision Statement, is to maintain the ‘groundwater reservoir life goal’ – defined within the rules and regulations as the period of time which the District establishes as its goal for maintenance of the supply and quality of water in a groundwater reservoir. The goals and objectives are intended to guide water resource management decision making.

LPNNRD Groundwater Management Vision Statement

Strive for the continuous management of the groundwater reservoir, in perpetuity, to ensure it meets the standards appropriate for its various uses, including domestic, livestock, public water supply, irrigation, agriculture, wildlife, industrial, and other beneficial uses. Minimizing, as much as possible, the adverse impact of these uses on the quantity and quality of groundwater that supports lakes, wetlands, and streams.

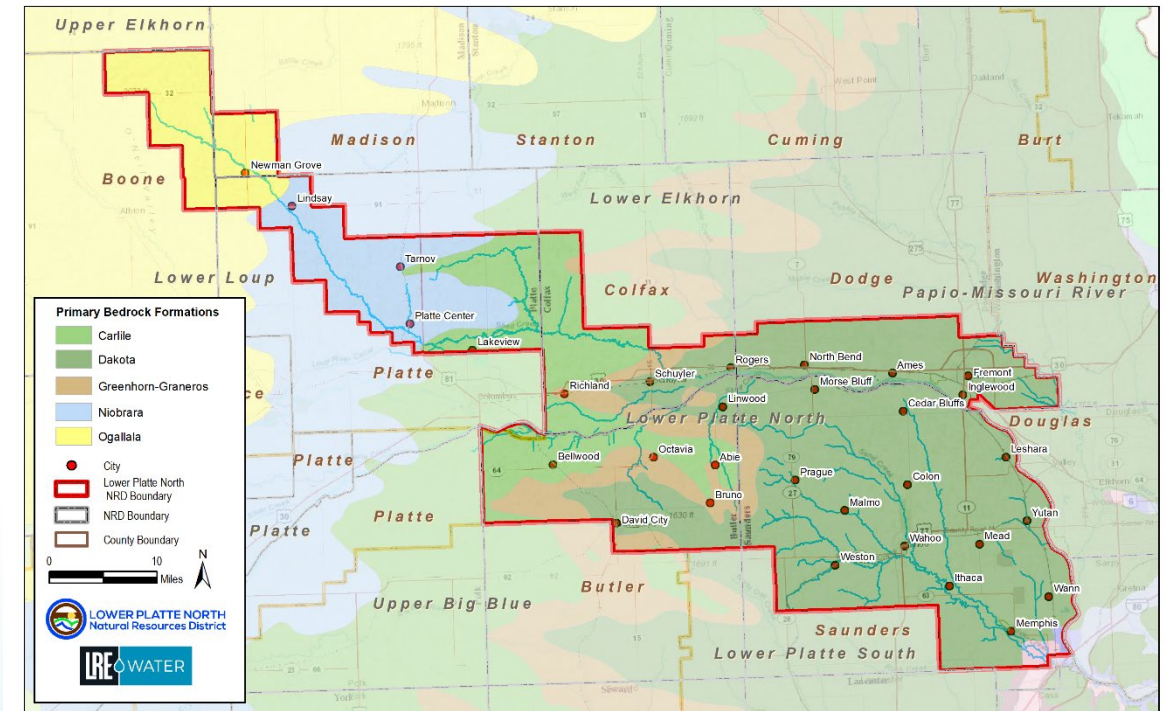
STAKEHOLDER ROLES & RESPONSIBILITIES

- 1) Work with LPNNRD
- 2) First Meetings – June 4 & June 6
- 3) Communicate throughout process
- 4) Provide guidance and information
- 5) Talk with other stakeholders
- 6) Review the GWMP draft

ADD PICTURE
FROM
Stakeholder
MTG IN
WAHOO

RULES & REGULATIONS

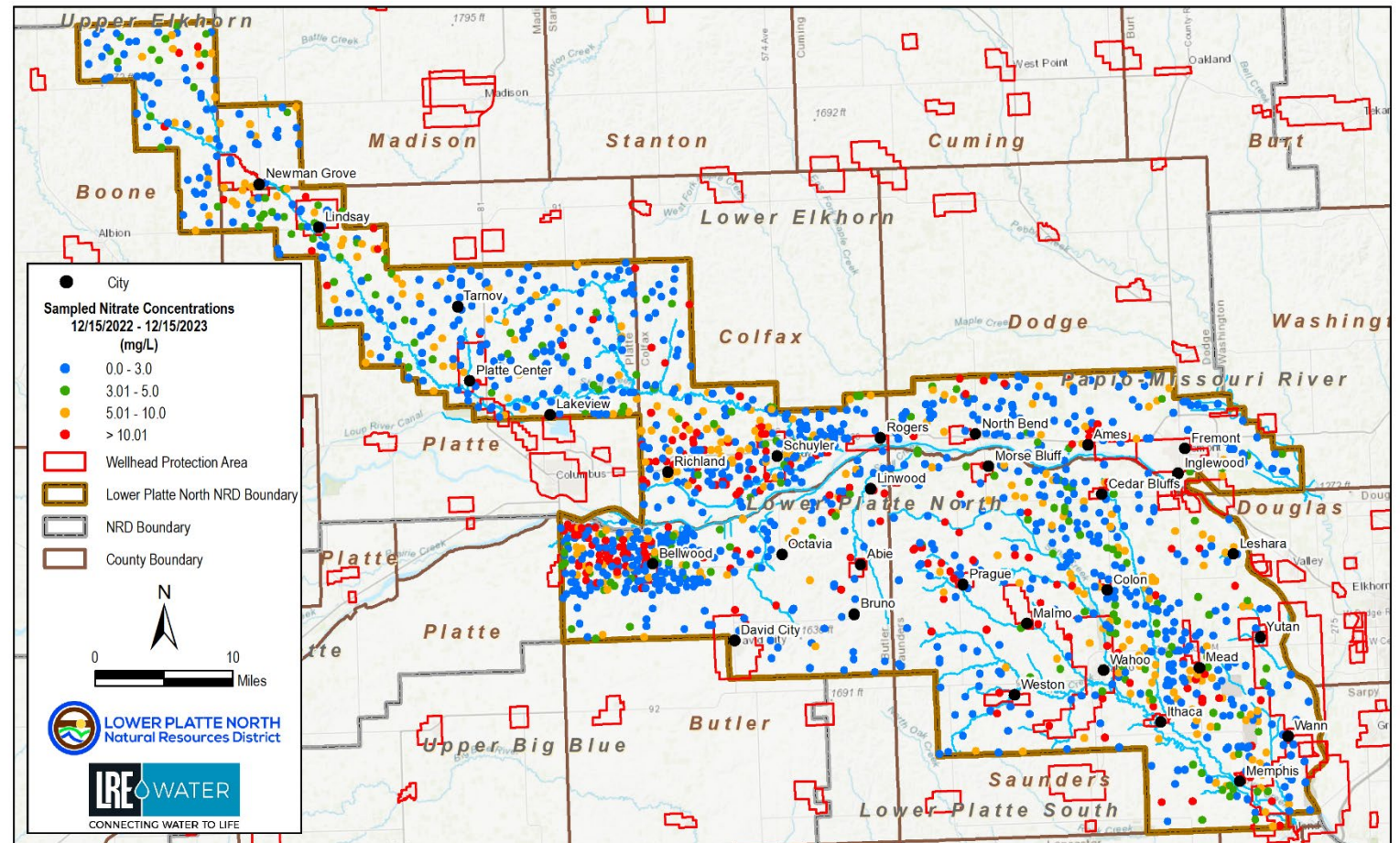
- The GWMP serves as a foundation for groundwater Rules & Regulations
- NRD Authority to Implement Rules, Regulations, and Controls (Neb. Rev. Stat. 46-709)
 - Last Amended – June 15, 2018
- Rule changes are not part of the GWMP Update



WATER QUALITY

QUALITY - NITRATE CONCENTRATIONS

- Maximum Contaminant Level (MCL) = 10 ppm
- Wellhead protection areas
- 53 Statewide Network wells sampled annually



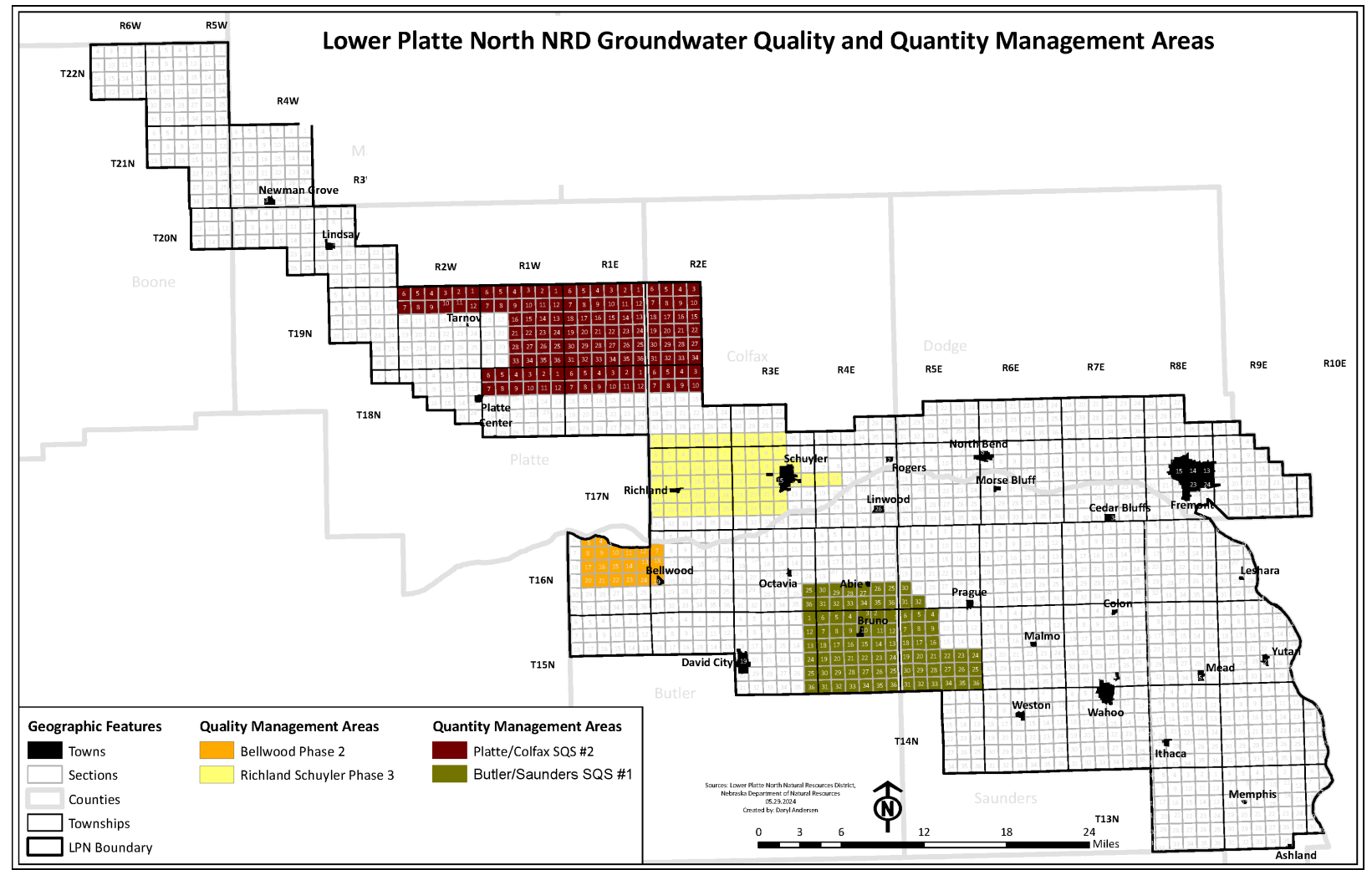
CURRENT PHASE TRIGGERS

- Quality Phase Triggers – based upon concentration of nitrate
 - Phase 1 – 0-8 ppm
 - Phase 2 - > 8-10 ppm
 - Phase 3 - > 10 - 15 ppm
 - Phase 4 – 15 ppm +



GROUNDWATER MANAGEMENT AREAS

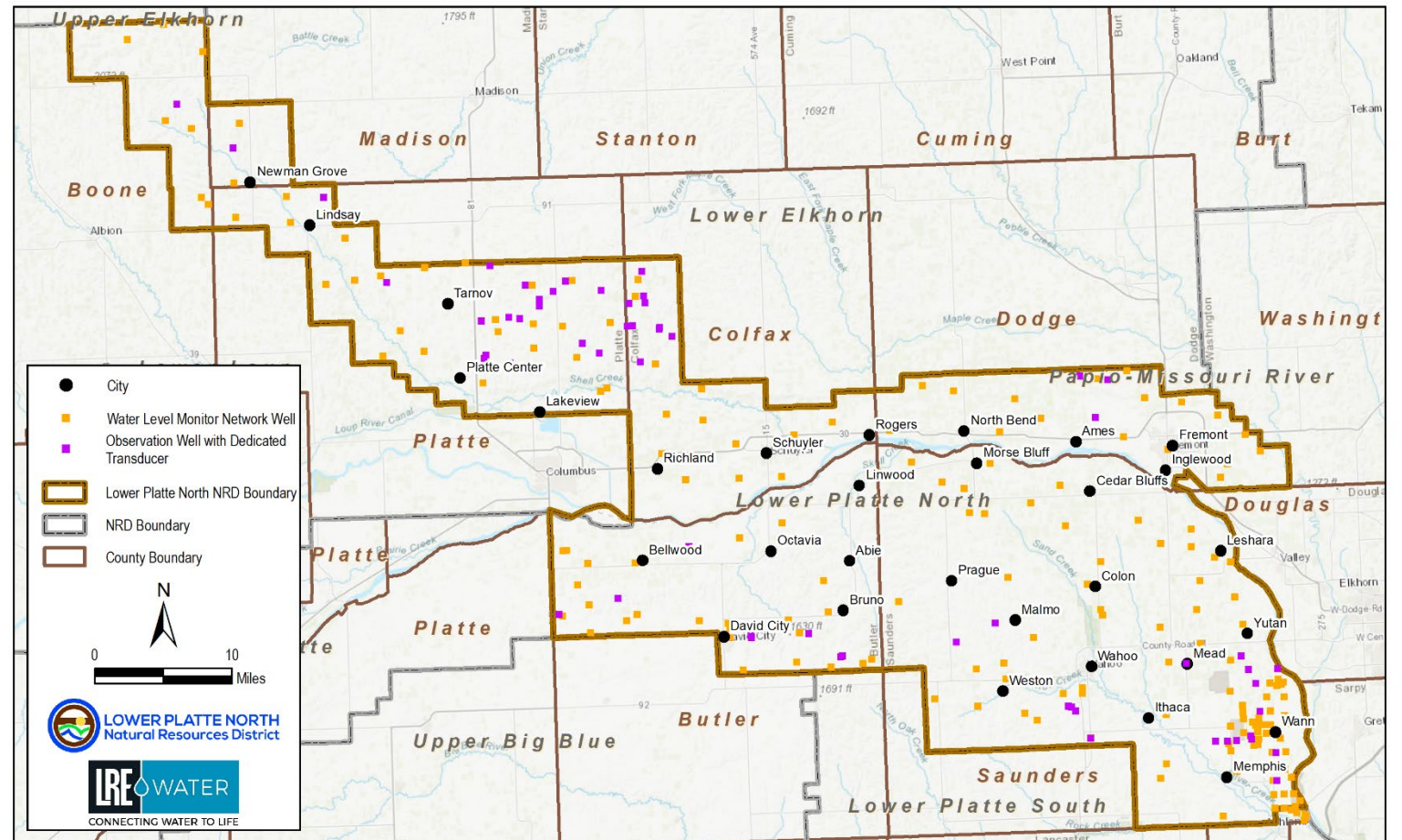
- Driven by Rules & Regulations
- Two quality phase areas



WATER QUANTITY

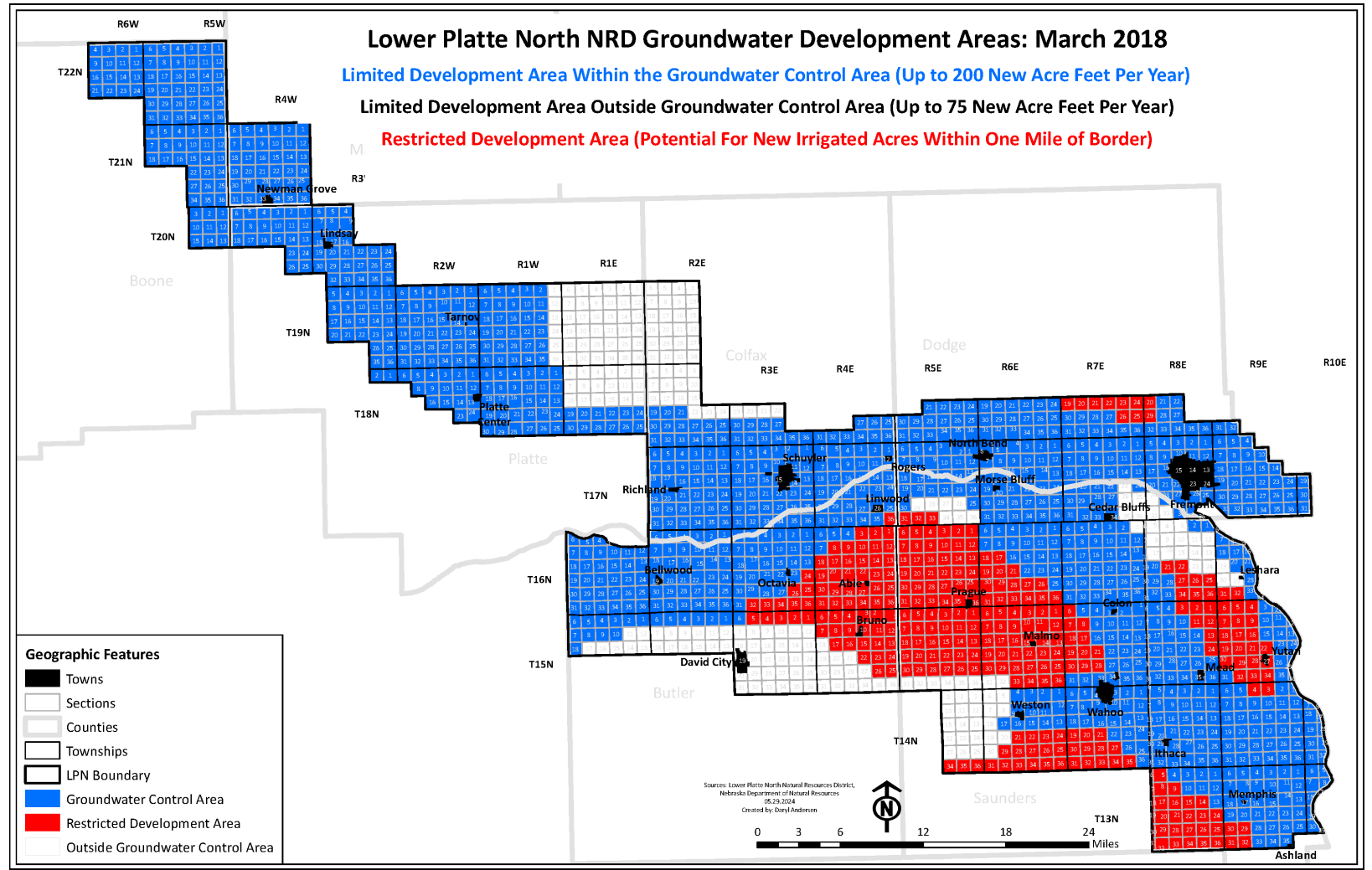
QUANTITY - MONITORING NETWORK

- Spring/fall water levels (215)
- Dedicated observation wells (62)



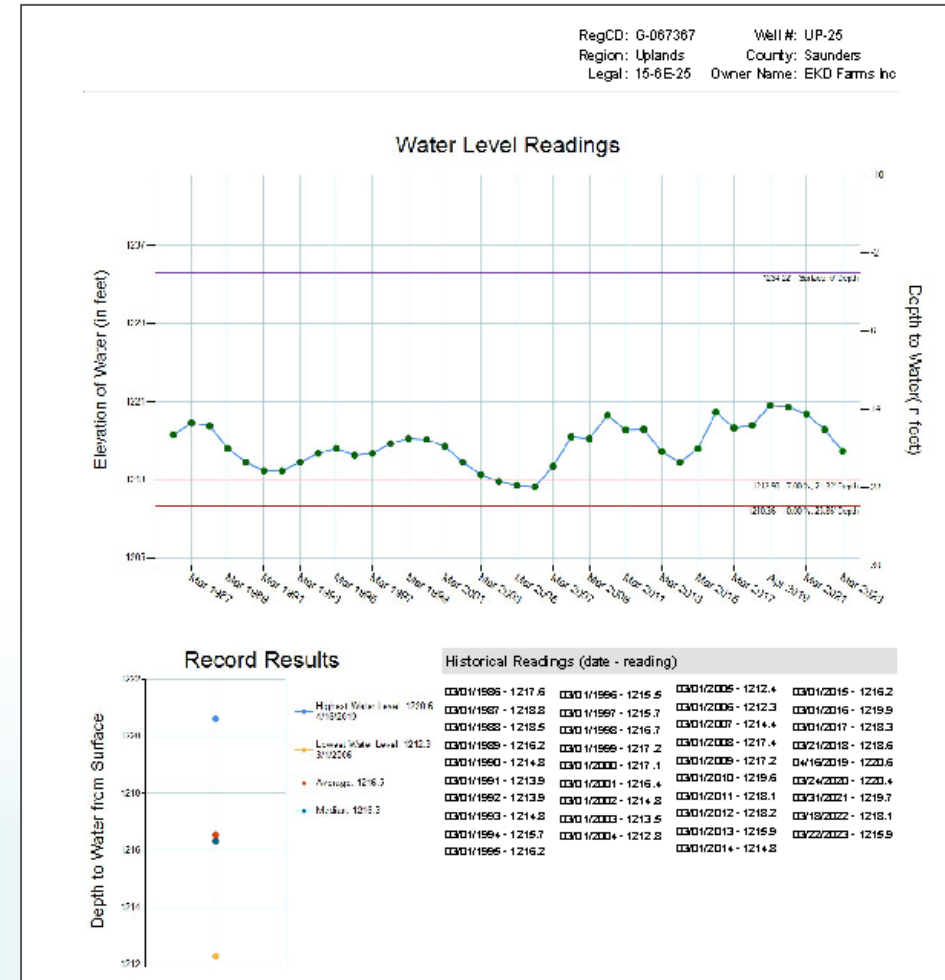
IMP DEVELOPMENT AREAS

- Integrated Management Plan
- Limits development of irrigated acres
- Hydrologically Connected Areas



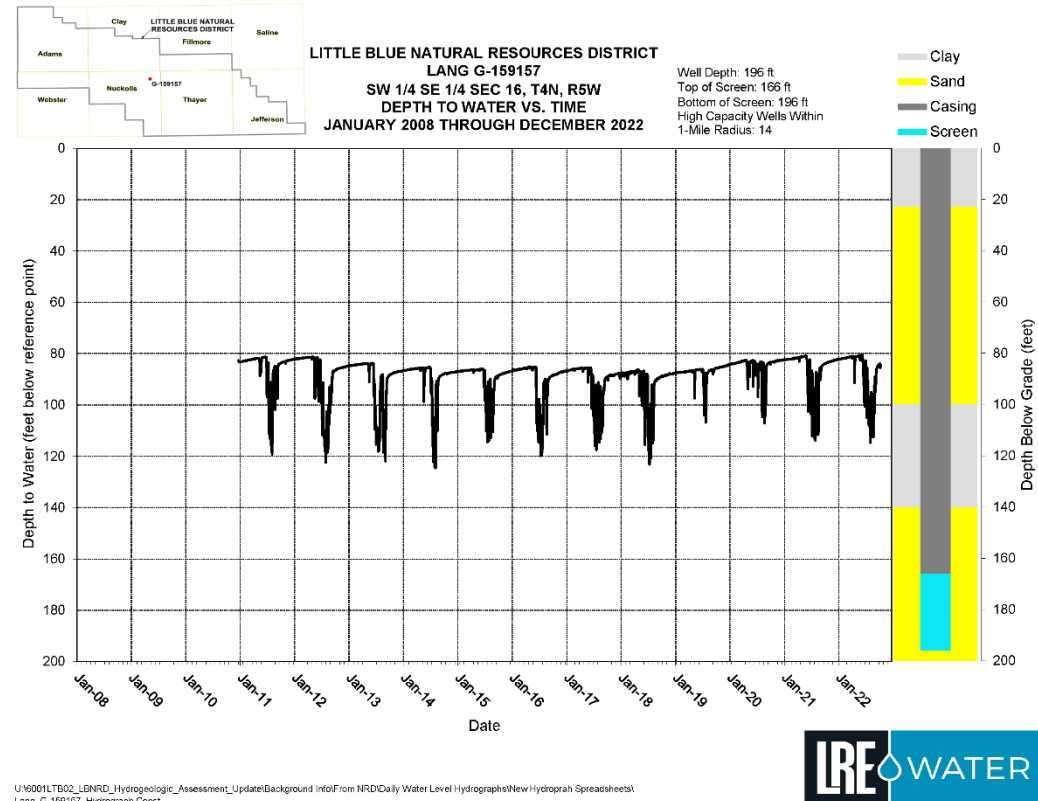
QUANTITY - MONITORING NETWORK

- Tracking trends in water levels tracked using hydrographs
- Triggers based upon percentage of drop within an aquifer over a number of years



QUANTITY - MONITORING NETWORK

- LRE is conducting a review of 200 observation wells
- Consistent-scale hydrographs
- Well density
- Subarea
- Lithology
- Construction information



CONFINED AQUIFER TRIGGERS

| CONFINED AQUIFERS | | | |
|--|--|--|---|
| Rules and Regulations | Level IA 7% drop in potentiometric-aquifer thickness | Level IIA 10% drop in potentiometric-aquifer thickness | Level IIIA 15% drop in potentiometric-aquifer thickness |
| 1. Operators of irrigation, municipal, and industrial well systems must attend education classes and be certified every 4 years. | X | X | X |
| 2. Permits required on all new wells to be drilled which will pump greater than 50 gpm. | X | X | X |
| 3. Well metering program established on all irrigation, municipal, and industrial wells. | Encouraged | Required | Required |
| 4. Adopt acre-inch allocations per crops planted dependant on aquifer. | Encouraged | Required | Required |
| 5. Water Use Report to NRD prior to December 31. | Encouraged | Annually | Annually |
| 6. Require well spacing pursuant to Section 46-673.12. (Will vary with % decline) | | | X |
| 7. Require use of best management practices. | | | X |

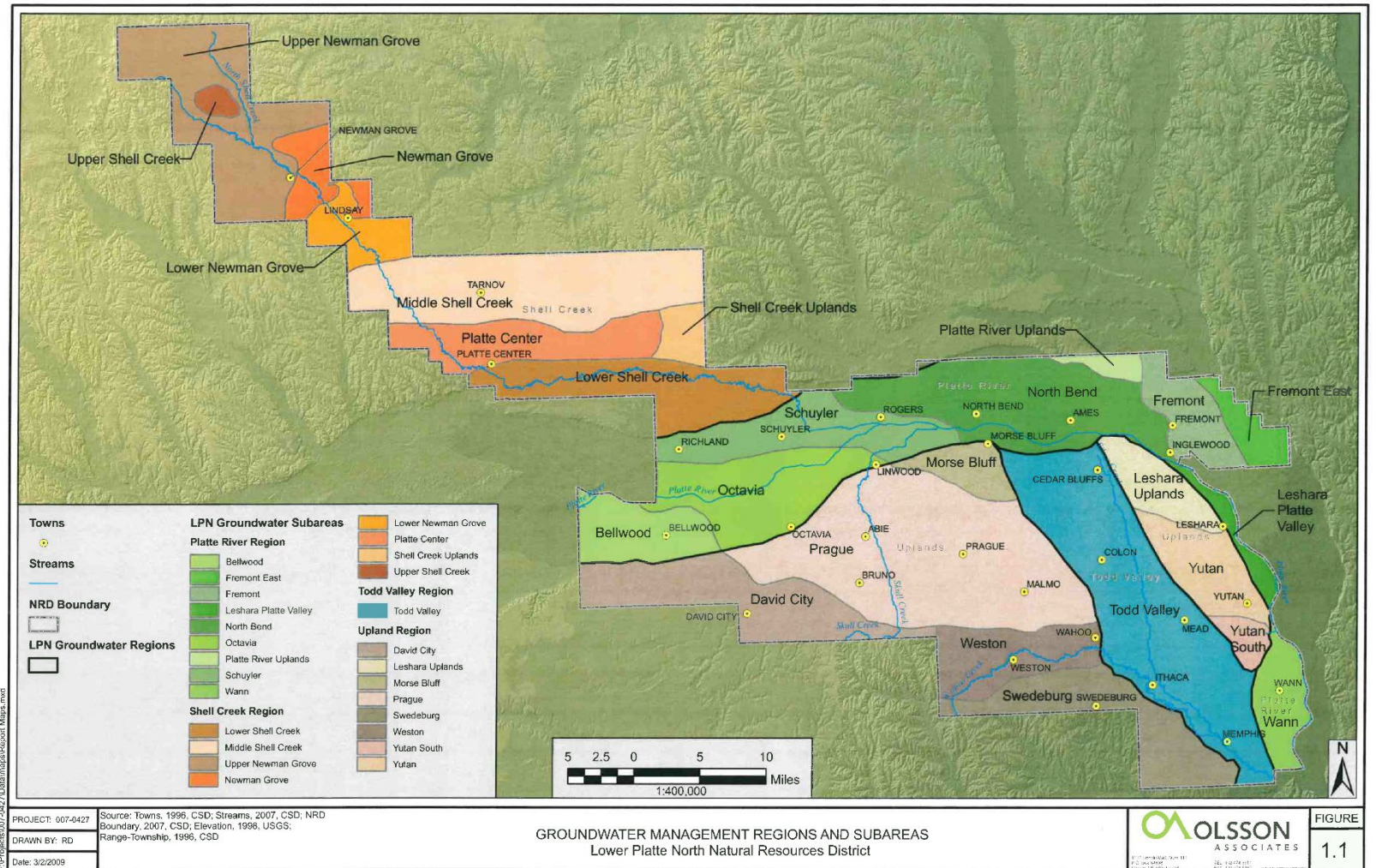
UNCONFINED AQUIFER TRIGGERS

| UNCONFINED AQUIFER | | |
|--|---|--|
| Rules and Regulations | Level I 10% drop in saturated thickness | Level II 15% drop in saturated thickness |
| 1. Operators of irrigation, municipal, and industrial well systems must attend education classes and be certified every 4 years. | X | X |
| 2. Permit required for all new wells to be drilled which will pump greater than 50 gpm. | X | X |
| 3. Well metering established on irrigation, municipal, and industrial wells. | Encouraged | Required |
| 4. Adopt acre-inch allocations per crops planted dependent on aquifer. | Encouraged | Required |
| 5. Water Use Report to NRD prior to December 31. | Encouraged | Annually |
| 6. Require well-spacing pursuant to section 46-673.12 (will vary with % decline) | | X |
| 7. Require use of best management practices. | | X |

PROPOSED SUBAREAS

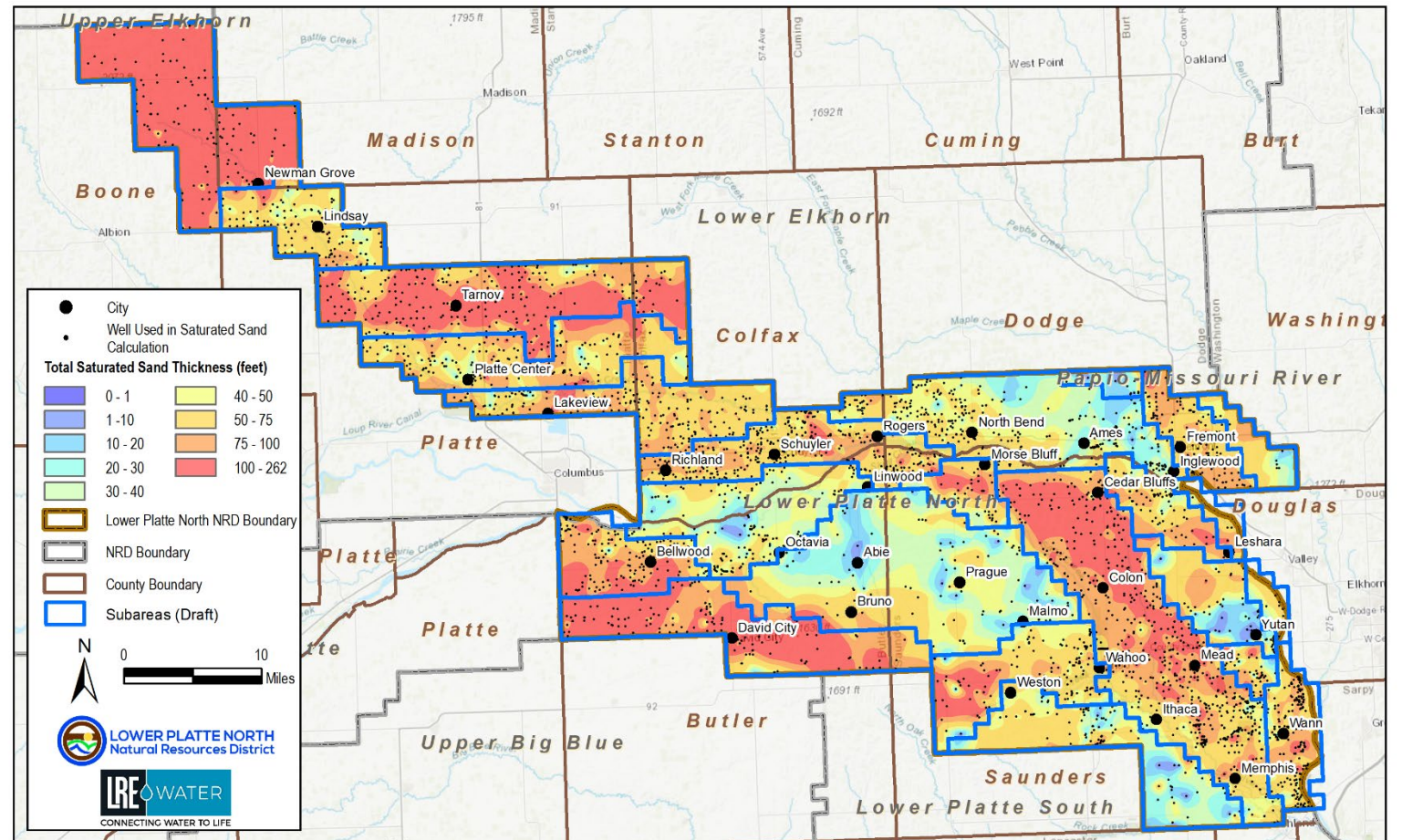
DRAFT SUBAREAS

- First created in 2009
- Based on similar hydrogeology
- Being refined using Hydrogeologic Assessment & AEM data



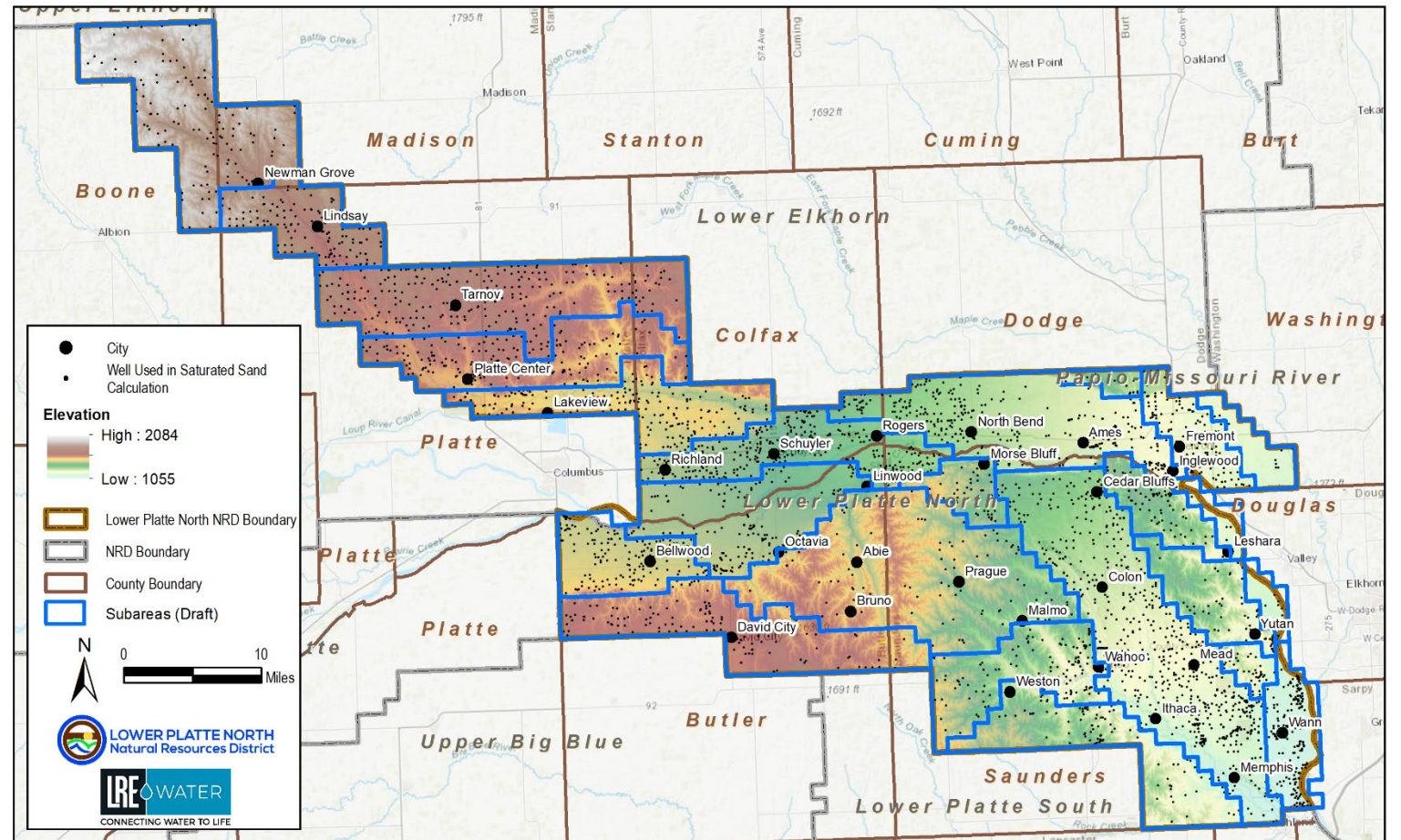
DRAFT SUBAREAS

- Based on consistent aquifer formations
- Saturated sand thickness
- 23 proposed areas



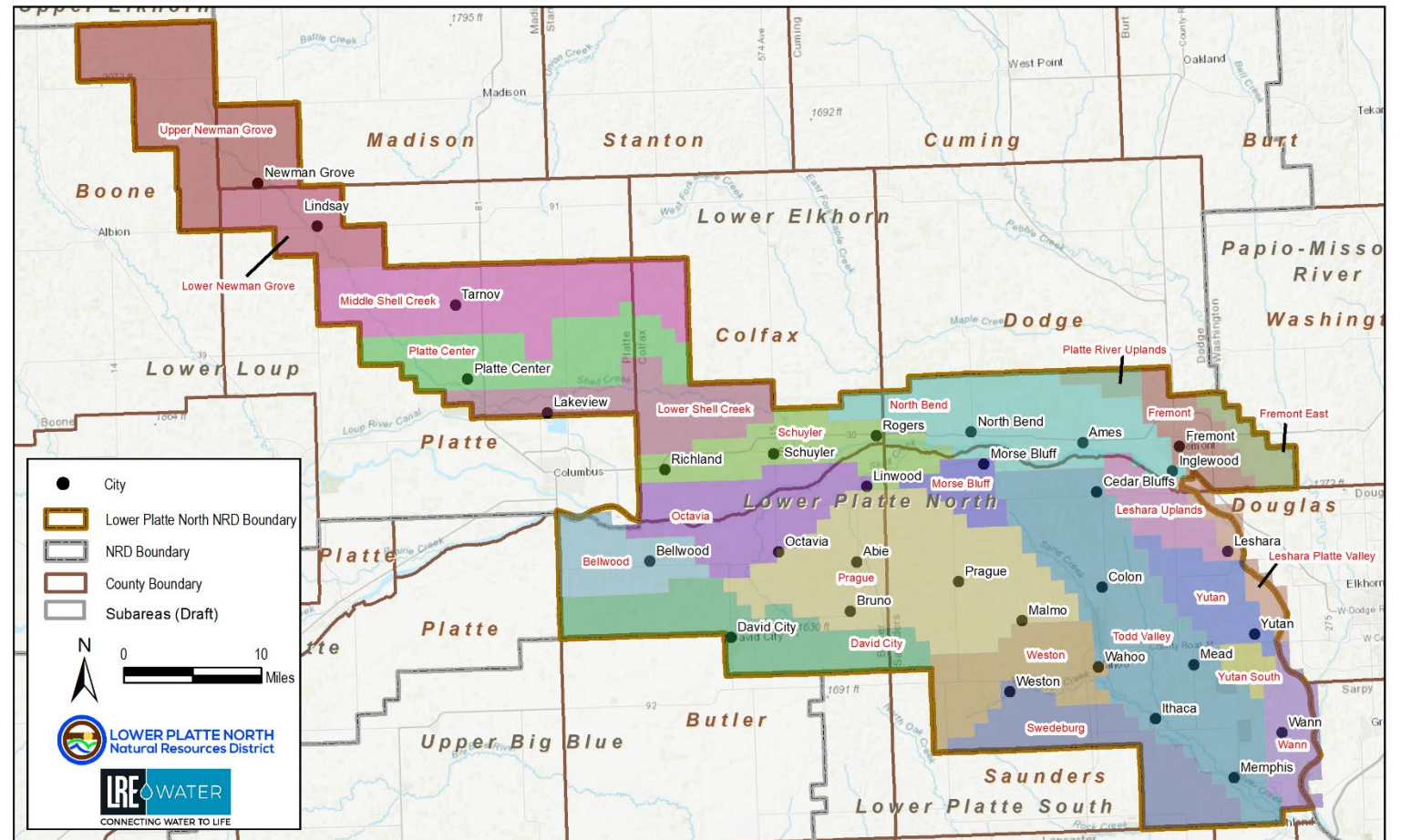
DRAFT SUBAREAS

- Refined further using topography
- Used for quantity, but also can define target areas for nitrate studies



DRAFT SUBAREAS

- Will be reviewed by staff and Board of Directors
- Potentially adopted as part of the GWMP
- Integrated into Rules & Regulations



SCHEDULE

SCHEDULE

- Kickoff – February 10, 2024
- Technical Group Mtg – April 25, 2024
- Stakeholder Meetings
 - June 4 – Platte Center
 - June 6 – Wahoo
- Open House Meetings – August 2024
- Stakeholder Meetings Round 2 – December 2024
- Draft GWMP – December 2024

OPEN DISCUSSION

OPEN DISCUSSION

- 1) Water quality issues and concerns
- 2) Water supply issues and concerns
- 3) Water management
- 4) Feedback and suggestions





CONNECTING WATER TO LIFE



CHEMIGATION - August 2024

TOTAL CHEMIGATION APPLICATIONS IN 2023 (700)

NEW CHEMIGATION APPLICATIONS - 56

(5) Boone (6) Butler (8) Colfax (3) Dodge (1) Madison (6) Platte (27) Saunders

RENEWALS: 652

BOONE COUNTY - 45
BUTLER COUNTY - 80
COLFAX COUNTY - 79
DODGE COUNTY - 120
MADISON COUNTY - 6
PLATTE COUNTY - 116
SAUNDERS COUNTY - 206

RENEWAL INSPECTIONS: 195

(5) Boone (35) Butler (24) Colfax (53) Dodge (4) Madison (33) Platte (41) Saunders

NEW INSPECTIONS: 58

(7) Boone (7) Butler (8) Colfax (3) Dodge (1) Madison (6) Platte (26) Saunders

NEW CANCELLATIONS: 2

(0) Boone (0) Butler (2) Colfax (0) Dodge (0) Madison (0) Platte (0) Saunders

EMERGENCY: 0

Imagery-Based Nitrogen Fertilization with Sentinel Fertigation N-Time®

Study ID: 0211023202301

County: Butler

Soil Type: Muir silt loam rarely flooded; Ovina-Thurman complex 0-6% slopes

Planting Date: 5/1/23

Harvest Date: 10/18/23

Seeding Rate: 34,000

Row Spacing (in): 30

Hybrid: Dekalb® DKC63-90

Reps: 4

Previous Crop: Corn

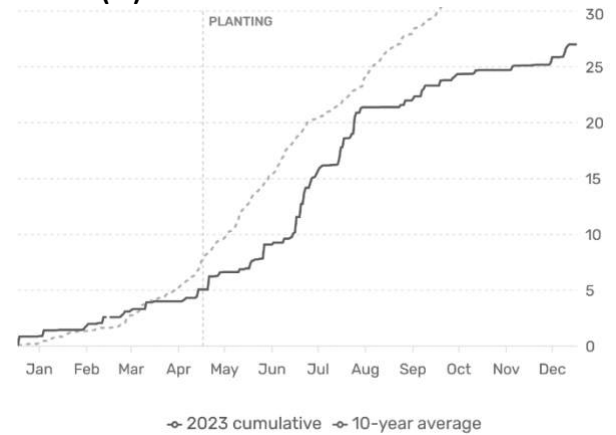
Tillage: Strip-till

Herbicides: **Post:** 3 oz/ac Balance® Flexx and 24 oz/ac Roundup® on 5/17/23

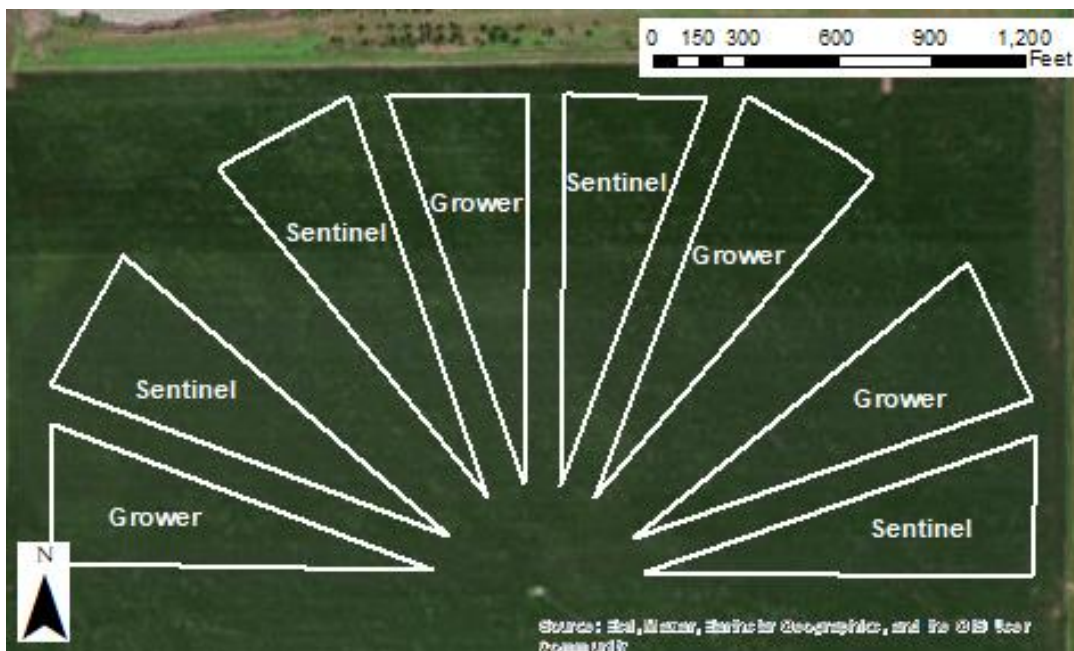
Foliar Fungicides: 13.7 oz/ac Trivapro® on 7/18/23

Irrigation: Pivot

Rainfall (in):



Introduction: Corn nitrogen (N) management may be improved by using sensors or imagery to detect and respond to corn N needs during the growing season. Sentinel Fertigation's N-Time® application analyzes multispectral images to deliver fertigation scheduling recommendations. Indicator sectors (small slices established during the first fertigation event) with higher (+30 lb N/ac) and lower (-30 lb N/ac) N rates were applied in the field using a variable-rate injection pump on June 29, 2023. These indicator sectors were used to determine when additional fertigation is needed throughout the season. If an N application was recommended by N-Time® the N (lb N/ac) applied via fertigation (typically 30 or 60 lb N/ac) is noted in the application table below. Note that different Sentinel sectors of the pivot may receive different recommendations throughout the growing season. This study compared the grower's standard N management to the Sentinel Fertigation N-Time® N management, with four paired sectors (each sector was about 7 acres) of each treatment as shown in the map below.



Application Table: Nitrogen applied throughout the 2023 growing season is included in the table below. N applications (in lb N/ac) are noted by date, along with products applied at those instances. Sentinel N-Time[®] began monitoring and directing N fertigation applications following the June 29, 2023 N application. N applications directed by N-Time[®] are shaded in gray to the right of the double vertical lines in the table below.

| | 4/12 | 6/16 | 6/29 | 7/10 | Total N rate (lb/ac) |
|--|---------------------------|-------------------|-----------------|-----------------|----------------------|
| Treatment | -----lb N/ac applied----- | | | | |
| Grower N Management | 77 ^a | 32.5 ^b | 30 ^b | 34 ^b | 173.5 |
| Sentinel Fertigation N-Time[®] | 77 ^a | 32.5 ^b | 30 ^b | - | 139.5 |

^a Product used was 32-0-0-0 via strip till

^b Product used was 32-0-0-0 applied via fertigation

Results:

| | Total N rate (lb/ac) | Moisture (%) | Yield (bu/ac) [†] | Partial Factor Productivity of N (lb grain/lb N) | lbs N/bu grain | Marginal Net Return [‡] (\$/ac) |
|--|----------------------|--------------|----------------------------|--|----------------|--|
| Grower N Management | 174 | 15.3 A* | 255 A | 82 B | 0.68 A | 1,168 A |
| Sentinel Fertigation N-Time [®] | 140 | 15.1 A | 256 A | 103 A | 0.55 B | 1,190 A |
| P-Value | N/A | 0.156 | 0.929 | 0.0003 | 0.0002 | 0.168 |

*Values with the same letter are not significantly different at a 90% confidence level.

[†]Yield values are from cleaned yield monitor data. Bushels per acre were corrected to 15.5% moisture.

[‡]Marginal net return based on \$5/bu corn and \$0.63/lb N.

Summary:

- The Sentinel Fertigation N-Time[®] management did not recommend additional N applications beyond the grower base rates, which resulted in a 34 lb N/ac reduction in N fertilizer with no impact on yield, resulting in a 26% increase in N use efficiency. There was no difference in marginal net return.
- Soil samples (24" depth) were collected in early December 2023 following harvest. Four grower and four Sentinel sectors were randomly selected for sampling and two composite samples were taken from each sector. Results indicated residual nitrate in the Sentinel sectors (average 9.2 ppm) was comparable to the grower sectors (average 9.7 ppm); the difference was not statistically significant.

This research was partly supported by an award from the USDA-NRCS Conservation Innovation Grants, On-Farm Conservation Innovation Trials, award number NR203A750013G014.

Imagery-Based Nitrogen Fertilization with Sentinel Fertigation N-Time®

Study ID: 1526037202301

County: Colfax

Soil Type: Alda fine sandy loam 0-1% slope

Planting Date: 5/19/23

Harvest Date: 11/3/23

Seeding Rate: 32,000 seeds/acre

Row Spacing (in): 30

Hybrid: Pioneer® P1366AM

Reps: 4

Previous Crop: Soybean

Tillage: Conventional Till

Herbicides: *Pre:* 2.25 qt/ac Lexar®, 17.6 oz/ac DiFlexx®, 56 oz/ac Roundup®, with 5 lb/ac ammonium sulfate in late May *Post:* 40 oz/ac Roundup® with 2.5 lb/ac ammonium sulfate on 6/12/23

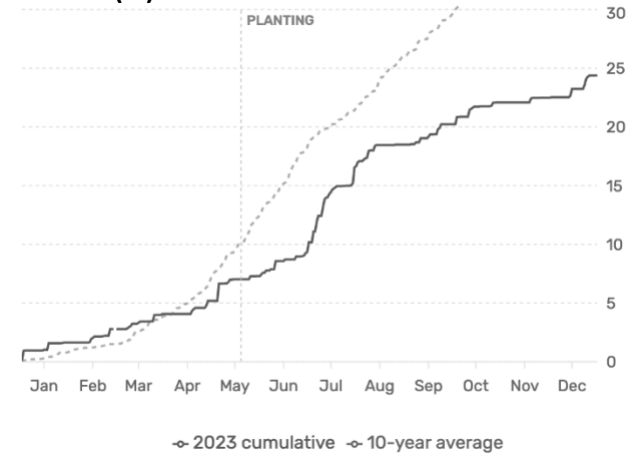
Seed Treatment: Standard Pioneer® treatment

Foliar Insecticides: 6.4 oz/ac Bifenthrin2EC and 13.7 oz/ac Trivapro® in late August

Note: Minor wind damage

Irrigation: Pivot, Total: 13.5"

Rainfall (in):



Baseline Soil Samples 0-6" (May 2023):

| pH | OM LOI % | Nitrate-N ppm N | M3-P ppm P | Sulfate-S ppm S | K ppm | Ca ppm | Mg ppm | Na ppm | CEC me/100g |
|-----|-------------|--------------------|---------------|--------------------|----------|-----------|-----------|-----------|----------------|
| 5.1 | 1.7 | 35 | 63 | 23.2 | 161 | 578 | 80 | 17 | 7.7 |
| 5.6 | 1.8 | 30 | 115 | 20.6 | 227 | 535 | 77 | 17 | 6.7 |
| 5.9 | 1.5 | 16.5 | 43 | 17 | 142 | 677 | 98 | 17 | 6 |

Introduction: Corn nitrogen (N) management may be improved by using sensors or imagery to detect and respond to corn N needs during the growing season. Sentinel Fertigation's N-Time® application analyzes multispectral images to deliver fertigation scheduling recommendations. Indicator sectors (small slices established during the first fertigation event) with higher (+30 lb N/ac) and lower (-30 lb N/ac) N rates were applied in the field (using a variable rate injection pump) on June 23, 2023 to determine when fertigation was needed. If an N application was recommended by N-Time® the N (lb N/ac) applied via fertigation (typically 30 or 60 lb N/ac) is noted in the application table below. Note that different Sentinel sectors of the pivot may receive different recommendations throughout the growing season. This study compared the grower's standard N management to the Sentinel Fertigation N-Time® N management, with four paired sectors of each treatment (each sector was about 4 acres buffered 60 feet internally to reduce sprinkler package overlap between sectors as shown below) on two three-span half-pivots as shown below.



Application Table: Nitrogen applied throughout the 2023 growing season is included in the table below. N applications (in lb N/ac) are noted by date, along with products applied at those instances. Sentinel N-Time[®] began monitoring and directing N fertigation applications following the June 23, 2023 N application; further N-Time[®] directed N applications are shaded in gray to the right of the double vertical lines in the table below.

| | 5/25 | 6/23 | 6/27 | 7/10 | 7/20 | Total N Applied |
|--|---------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Treatment | -----lb N/ac applied----- | | | | | |
| Grower N Management | 50 ^a | 60 ^b | 70 ^c | 25 ^c | - | 205 |
| Sentinel Fertigation N-Time[®] | 50 ^a | 60 ^b | - | - | 30 ^c | 140 |

^a Product used was 32-0-0-4 S via planter

^b Product used was 32-0-0-4 S via fertigation for indicator slice establishment

^c Product used was 32-0-0-4 S

Results:

| | Total N rate (lb/ac) | Moisture (%) | Yield (bu/ac) [†] | Partial Factor Productivity of N (lb grain/lb N) | lbs N/bu grain | Marginal Net Return [‡] (\$/ac) |
|--|----------------------|--------------|----------------------------|--|----------------|--|
| Grower N Management | 205 | 16.6 A* | 233 A | 64 B | 0.88 A | 1,036 A |
| Sentinel Fertigation N-Time [®] | 140 | 16.2 B | 235 A | 94 A | 0.60 B | 1,087 A |
| P-Value | N/A | 0.042 | 0.805 | 0.001 | 0.001 | 0.248 |

*Values with the same letter are not significantly different at a 90% confidence level.

[†]Yield values are from cleaned yield monitor data. Bushels per acre were corrected to 15.5% moisture.

[‡]Marginal net return based on \$5/bu corn and \$0.63/lb N.

Summary: The Sentinel Fertigation N-Time[®] management recommended only one additional nitrogen application beyond the initial base rates. This resulted in a 65 lb N/ac reduction in N fertilizer with no yield penalty. As a consequence, each unit of N applied produced more lb of grain, resulting in a 47% increase in nitrogen use efficiency. There was no statistically significant difference in marginal net return.

This research was partly supported by an award from the USDA-NRCS Conservation Innovation Grants, On-Farm Conservation Innovation Trials, award number NR203A750013G014.

Nitrogen Reduction Incentive Act

Background

LB 1368, the Nitrogen Reduction Incentive Act (NiRIA), established a state program to provide incentives to producers for reducing the use of commercial fertilizers. The requirements of NiRIA are that producers verify a reduction in nitrogen fertilizer application rates as the lesser of 40 pounds per acre or 15% of their baseline application rate.

The Department of Natural Resources (Department) in partnership with local Natural Resources Districts (NRDs) and input from producers and commercial entities have developed this guidance document to define target areas and criteria for this new program. This guidance document will be reviewed annually to determine if program modifications are necessary.

NiRIA will be operative beginning with the 2025 growing season and is scheduled to terminate on December 31, 2029. Total funding currently available for the program is capped at \$1 million.

Priority Areas and Incentive Payments

The Department and NRDs have determined the program will operate under three priority areas (Figure 1) and **will be offered to corn, sugar beet, and potato producers**. **Priority A Area** will be wellhead protection areas and phase II, or higher phase areas established by an NRD for purposes of water quality management. **Priority B Area** will be areas throughout the state that have been certified to irrigate crops. **Priority C Areas** will be all other areas of the state, including dryland. **Contact your local NRD to know which Priority Area you are in.** *Figure 1 data is supplied by NeDNR permitted irrigated lands, wellhead protection areas, and NRD phase areas as of June 28, 2024.*

Priority A Areas: Priority A Areas represent areas of elevated nitrate levels with enhanced management including wellhead protection areas and irrigated lands in phase II or higher areas. Most of these areas currently require establishment of a producer's baseline information and data reporting to NRDs, including nitrogen application rates. NRD crop report data will be used to establish baseline nitrogen application rates for producers in these areas.

Incentive payments in Priority A Areas will be set at \$15 per acre for producers that can demonstrate a reduction in nitrogen fertilizer application rates of the lesser of 40 pounds per acre or 15% of their baseline application rate. **Under no circumstance can**

other nitrogen sources (manure, wastewater, etc.) replace the reduced commercial fertilizer.

Priority B Areas: Priority B Areas represent areas that are not in the Priority A Areas and have acres that are certified to irrigate. To be eligible for participation in NiRIA, producers in Priority B Areas will be required to establish a baseline level of nitrogen application through one or both of the options outlined below.

Option One: Submit all the data required on local NRD phase II or greater reports for the prior 3 growing seasons,

or

Option Two: Complete advanced soil sampling, as established by the NRD, prior to the cropping season for which the incentive payment is requested.

Incentive payments in Priority B Areas will be set at \$12 per acre for producers that can demonstrate a reduction in nitrogen fertilizer application rates of the lesser of 40 pounds per acre or 15% of their baseline application rate. **Under no circumstance can other nitrogen sources (manure, wastewater, etc.) replace the reduced commercial fertilizer.**

Priority C Areas: Priority C Areas encompass all other areas of the state not captured in Priority A or B Area designations. To be eligible for participation in NiRIA producers in these areas will be required to establish a baseline level of nitrogen application through one, or both, of options outlined in Priority B:

Incentive payments in Priority C Areas will be set at \$10 per acre for producers that can demonstrate a reduction in nitrogen fertilizer application rates of the lesser of 40 pounds per acre or 15% of their baseline application rate. **Under no circumstance can other nitrogen sources (manure, wastewater, etc.) replace the reduced commercial fertilizer.**

The method and practice to achieve the nitrogen fertilizer application reduction is at the discretion of the producer, but incentive payments will not be distributed until proper documentation has been submitted to the NRD demonstrating the necessary reduction in application rate before January 15 of the following year. **Producers must have completed the application process and have been approved for program participation by their local NRD to be eligible for reimbursement.**

Application and Payment

Producers participating in NiRIA must be in good standing with the local NRD rules and regulations. Producers participating will be required to file one application per field. Applications must be filed with the local NRD and receive notification that their application has been approved to be eligible to receive incentive payments. Applications are available at: **INSERT LINK** and must be submitted to your local NRD prior to January 15 of each year (or the next business day if January 15 falls on a weekend day).

Each NRD will review and prioritize the applications based on available funding. Methods for application prioritization will be established by each NRD with applicants notified no later than March 15th whether their application has been approved or denied. A higher application ranking will be given to producers who incorporate the new innovative technology into their reduction practices. Those producers implementing new technologies must supply additional information to their NRD including the amount applied and the approved rate.

Documentation to establish the producer's baseline nitrogen application rate, practices that are planned to be used to achieve the application rate reduction, and the current year's nitrogen application rate are required on the application. Incentive payments will be made to participating producers after submitting the necessary documentation to support the decrease in nitrogen application that reflects the lesser of 40 pounds per acre or 15% of their baseline application rate to the NRD.

Steps to be eligible for NiRIA:

1. Submission of completed application for each field of interest to local NRD prior to January 15th of each program year including:
 - a. Necessary documentation to local NRD prior to planting establishing each field's baseline nitrogen application rate:
 - i. Priority A Areas will use previously reported NRD or crop report data.
 - ii. Priority B Areas will need data required on local NRD phase II or greater reports for the prior 3 growing seasons, or complete advanced soil sampling, as established by the NRD, prior to the cropping season for which the incentive payment is requested.
 - iii. Priority C Areas will need one, or both, of options unlined in Priority B Areas.
 - b. Practices that are planned to be used to achieve the application rate reduction.
2. NRD notification to producer that application has been approved or denied by March 15th of current program year and clarify needed field documentation.

3. Prior to January 15th (or next business day if January 15th falls on a holiday or weekend) of next program year, producers must submit all necessary documentation showing application on fields or producer forfeits payments.
4. If the nitrogen application rate reduction achieves the program goals (reduction equivalent to the lesser of 40 pounds or 15%), payment will be made to the producer by the NRD before January 15th of the following program year.

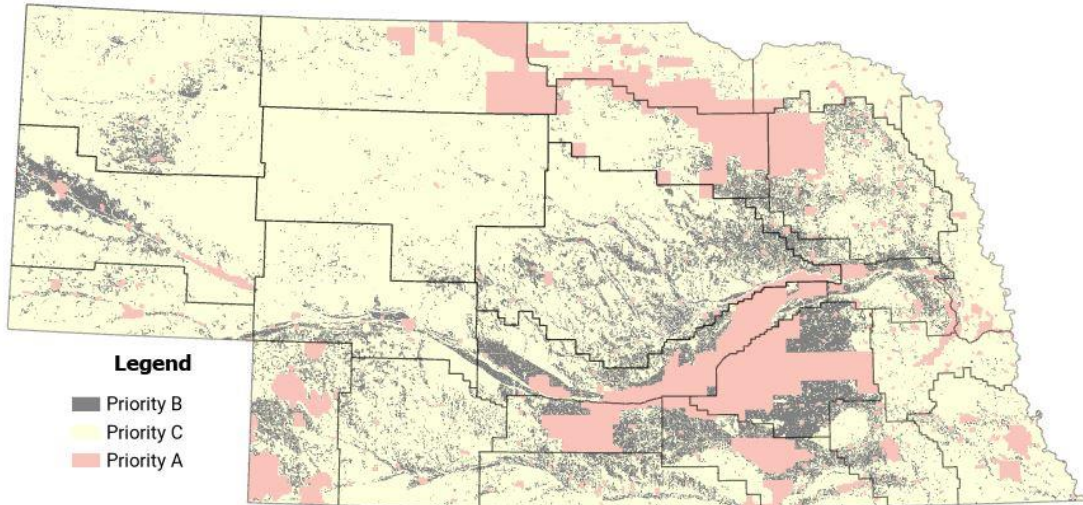


Figure 1. For general purposes only, the current distribution of Priority A, Priority B, and Priority C areas. Priority areas may be updated by each NRD through their rules and regulations. Contact your NRD for questions on which Priority Area you are in.

Additional NiRIA Information for NRDs

7/23/2024

Money for NRDs:

| NRD | PriorityAB_Land | 50Percent_Land | NRD Total |
|----------------------|----------------------|----------------------|----------------------|
| Lower Republican | 12,222.93 | 21,739.13 | \$ 33,962.06 |
| Tri-Basin | 26,979.99 | 21,739.13 | \$ 48,719.12 |
| Little Blue | 34,331.81 | 21,739.13 | \$ 56,070.94 |
| Lower Big Blue | 9,415.70 | 21,739.13 | \$ 31,154.83 |
| Nemaha | 8,796.39 | 21,739.13 | \$ 30,535.52 |
| Middle Republican | 10,317.47 | 21,739.13 | \$ 32,056.60 |
| Upper Republican | 27,275.89 | 21,739.13 | \$ 49,015.02 |
| Lower Platte South | 4,350.51 | 21,739.13 | \$ 26,089.64 |
| Upper Big Blue | 73,392.44 | 21,739.13 | \$ 95,131.57 |
| Central Platte | 54,752.66 | 21,739.13 | \$ 76,491.79 |
| South Platte | 6,222.34 | 21,739.13 | \$ 27,961.47 |
| Twin Platte | 11,234.87 | 21,739.13 | \$ 32,974.00 |
| Lower Platte North | 16,319.60 | 21,739.13 | \$ 38,058.73 |
| Lower Loup | 42,236.27 | 21,739.13 | \$ 63,975.40 |
| North Platte | 17,829.23 | 21,739.13 | \$ 39,568.36 |
| Upper Loup | 2,555.89 | 21,739.13 | \$ 24,295.02 |
| Papio-Missouri River | 4,277.88 | 21,739.13 | \$ 26,017.01 |
| Lower Elkhorn | 34,890.45 | 21,739.13 | \$ 56,629.58 |
| Upper Elkhorn | 34,114.77 | 21,739.13 | \$ 55,853.90 |
| Lewis & Clark | 9,430.24 | 21,739.13 | \$ 31,169.37 |
| Lower Niobrara | 24,916.36 | 21,739.13 | \$ 46,655.49 |
| Middle Niobrara | 24,845.89 | 21,739.13 | \$ 46,585.02 |
| Upper Niobrara-White | 9,290.44 | 21,739.13 | \$ 31,029.57 |
| | | | |
| Total | \$ 500,000.00 | \$ 499,999.99 | \$ 999,999.99 |

Total funding currently available for the program is capped at \$1 million. Each NRD will currently receive half the \$1 million and then a separated allotted amount on top of that based on Priority A and B Areas. This table was created and reviewed with feedback from the NRD Managers Water Resources Subcommittee. Funding not utilized by NRD will be reallocated to a pool for those NRDs with unmet applications.

DRAFT Nitrogen Reduction Incentive Act (NiRIA) Producer Application

Name of Producer: _____

Primary Contact: _____

Primary Contact Phone Number: _____

Primary Contact Email (if available): _____

Name of Natural Resources District: _____

Are you already enrolled in a federal nutrient management plan? No Yes

If yes, list what program(s) _____

Type of Crop: Corn Sugar Beet Potato

Legal Description (Submit one application per field): _____

Total Acres to Be Enrolled: _____ Crop Year

Will you apply manure or lagoon water to this field? Yes No

Please attach documentation with the known amount of nitrogen in manure or lagoon water.

Do you apply nitrogen in the fall? Yes No

Identify the practice(s)/ product(s) you plan to implement to achieve the commercial fertilizer rate reduction.

- Biologicals (Example: *Proven40*)
- Nitrogen use efficiency products (Example: *N-Time*)
- Nitrogen Stabilizers
- Nitrogen Leaching Inhibitors (Example Ingredients: *Dicyandiamide (DCD), Nitrapyrin, and Pronitradine*)
- Chemigation/Fertigation
- Cover Crops
- Reduction in Nitrogen Application
- Other Please Describe _____

Select type of documentation that will be used to determine baseline and to evaluate nitrogen reduction:

- NRD or producer crop reports (required for Priority A Areas),
- Submit all data required on local NRD phase reports for the prior 3 growing seasons (Priority B or C Areas),
- Complete advanced soil sampling, as established by the NRD, prior to the cropping season (Priority B or C Areas).

*Please note that NRDs may require additional information.

Applicant Signature (Receiving 1099): _____ Date: _____

LOWER PLATTE DROUGHT CONSORTIUM MEETING NOTES

August 21st, 2024, 10:00 a.m. (Central Time)

3125 Portia St, Lincoln, NE 68521

Action Items/Next Steps: Highlighted throughout

AGENDA

1. Welcome and Introductions
 - A. Start: 10:10 AM

2. Update from State Climate office
 - A. No update from Dr. Hunt

3. Condition Updates
 - A. NRDs: Static Water Levels Data
 - i. LPS
 1. Down 20 ft in Dwight city area, typical for this time of year. Lower salt creek is within 1 ft, and CPA are within a foot as well. No wells measured yet.
 - ii. LPN
 1. Juan basin will be checked next week.
 - iii. PMT
 1. No live data will be collected when fields start being harvested.
 - iv. Municipalities
 1. LWS
 - a. Better shape than last few years, Operation volumes showed 70% remaining at end of July, compared to last year's low 60s. Electrical outages caused Lincoln to issue brief conservation request due to outages at fields. Looking at how much of reduced demand was due to conservation request vs. rain impact. Discussion of generators for well fields is always in play, at key facilities in case of emergency. Unable to run entire plant of generators, it is too cost prohibitive. Continuing to work LWS Source 2, preferred sites for location and water treatment sites found, in conversation with property owners. Water 2.0 Platte river supply is going well with bulk of ARPA money

LOWER PLATTE DROUGHT CONSORTIUM MEETING NOTES

going that way. Installing redundant line across river and treatment plant.

2. MUD

- a. Well fields are in good shape; Omaha was hit hard by recent storms with significant outages. Standby power was able to cover the network during outages. No permanent damage to system but had one plant out for 5/6 days at one point. On downward side of demand cycle and now looking at maintenance. Peak day this year was around 176 MGD, down from 199 last year. Plant maintenance varying from year to year to address demands and sourcing. There is a cap in place at Platte west, but the Municipality rarely gets close to hitting that cap. There has been a large amount of tree damage persists from recent storms.

B. NeDNR: Dashboard

- i. Looking good at the moment, SPI > -0.9, PDSI: -2.9, but we favor the USDM, with a little bit of D0 conditions in the basin, with a dash of D1.

C. Current conditions / Administration updates

- i. Platte flows are steady, with north bend closing for a short period. Some key markers are showing lower flows, but not unusual for this period. May see a few high demand weeks prior to end of year due to late heat waves. A lot of corn is going into late season stages.

4. Proposed Plan update

A. Summary (Attachment 4A)

- i. A list of significant updates to the plan
- ii. Most of the changes implemented are updated figures with new data or reworked text to indicate the second increment of the plan. Highlights include adding US drought monitor metrics, language referring to PRRIP, updated basin wide plan status, population figures, the projected future water change section to include new climate data.
- iii. The mitigation alternatives section has not been updated yet but will be when an agreement is reached. Previously rejected items will be moved to an appendix.
- iv. Communication language and triggers have been added.
- v. Mike S proposes setting deadlines for the review and comments for the plan updated to be submitted back to the DNR for edits.
 1. First review to be due at the September Meeting.

LOWER PLATTE DROUGHT CONSORTIUM MEETING NOTES

- vi. DNR clarifies that the USDM will be the primary indicator for future decision making, but PDSI is to remain as a metric too look at.
 - 1. Daryl is worried that folks will look at the dashboard and see the constantly negative PDSI value and ask why we aren't doing more in such "drastic" reported conditions.
 - a. DNR will tweak the wording to include PDSI as a factor, but not the key trigger.

B. Mitigation Actions

- i. Mitigation action comments are still pending from majority of consortium members.
- ii. If no more comments are filed, than DNR will put in broad place holder descriptions to qualify for grant funding.
- iii. LWS agrees that items should be considered for that addition, LPN expresses doubt of many options are unfeasible due to timelines.
- iv. PMT puts forward that general descriptions could be better in that it doesn't commit us to a certain action but allows for more room to consider options within each.
 - 1. Daryl asks when items will be thoroughly looked through and questioned.
 - 2. Philip thinks that we should each spend time for folks to assess their ideas of timelines.
- v. Mike mentions that during the first go around we talked through 5 or 6 items that we may want to implement, but decided they would not be implemented. Now that there are new items, is it deluding the actual intention to find drought solutions, and do we want to narrow it down to focus on. Looking at reports from DC, there will be federal funds to create ground water infrastructure for drought management.

C. Steve starts talking about how LWS has become much more resilient since the inception of the LPDC, and since the plan was intended to find a second source for Lower Platte water users. And we are going to be in better shape due to the funding brought by these actions.

- i. Mike brings up that the Platte drying may not be as much of an issue as it was, but it will still be impactful to have a drought and not have that security available.
- ii. This all is to address the feeling that the group hasn't done anything, but it had helped secure funds for current second source projects.
- iii. Ryan asks about room remaining to increase efficiencies in public water systems.

LOWER PLATTE DROUGHT CONSORTIUM MEETING NOTES

- iv. Gene talks about how situations arise where all members will be struggling, drought conditions effect everyone, but continued action is still important to address drought issues.
 - v. Mike talks through how LPS did a study for new structures varying from 100-1200 acres on drought response, LPS could provide 500gpm over the wellfields. Allowing for assistance to the municipalities, but it must be constructed and built that way from the start. The potential structures could be very impactful to drought conditions while still providing flood protection along Salt Creek.
 - vi. Steve mentions the HDR analysis with retiming options, that it has to be big, and close. Some of these options were showing 100 cfs in the river, but that isn't as impactful since it would need to combat losses along the way. 500 cfs is where people get more excited, but where can we put that sort of facility nearby?
 - vii. Mike mentions that 12-16 new res. Could have a larger potential impact to contribute, and we would need to work with the state to make sure that folks don't use all the water from the releases before it gets here.
 - viii. Steve mentions the Fremont dewatering project but would need to study if it would impact their wellfields.
 - 1. Study required.
 - 2. Ryan mentions that local private lakes may have some things to say about lowering GW levels.
 - 3. Daryl wants to include Dewatering on the list
 - ix. Steve mentions that inclusion of importing water from the Missouri.
 - 1. Bell creek county commissioner said that would be a no go for that county.
 - 2. Philip mentions that the major issue for that canal is landowner buy in. Generally anti-gov.
 - 3. Talks of the west pulling water into the Colorado.
 - x. Gray water
 - 1. Steve says that it should remain until it is run to ground, but it is a popular option with certain groups. Some is being used.
- D. Mike mentions that we create a priority list, with other options to remain as possible items.
- i. Philip offers that each meeting we go through three items to consider all factors.
 - ii. The top picks right now are
 - 1. 12-16 reservoirs for salt creek flood protection.
 - 2. Water sense program.
 - 3. Fremont dewatering
 - 4. Graywater use

LOWER PLATTE DROUGHT CONSORTIUM MEETING NOTES

5. Drought education

- iii. LPN has just implemented a water conservation sprinkler program with an outside company Rancho including rebates for installed units. It cuts off sprinklers prior to rains and is available in the shell creek watershed.
 - 1. Valid January 1, 2024 - December 31, 2024 (will likely extend this in annual increments based on demand)
 - 2. Smart predictive controller, soil moisture probes, or rain shutoff
 - 3. \$100 (not to exceed actual costs)
 - 4. email or mail: form, copy of receipt, picture of product installed, W9
 - 5. form: name, address, private well or Public Water Supply, date purchased, cost
 - 6. Withing the Shell Creek watershed (including small areas outside of LPNNRD)
 - 7. Allow up to 45 days for payment and processing
- iv. Discussion of education opportunities to inform about water conservation in partnership with local agencies.
- v. Philip brings up the idea of metering lawns separately to potentially have two different rates for water use, more outside, less inside.
 - 1. Steve: separate meters would be tough logistically. And there is a conservation rate, with a formula used to estimate outdoor water use. And potentially having utilities look increasing incentive-based rates. And expanding it to the commercial users to incentivize water conservation by applying a higher rate for commercial users.
 - 2. Gene: there is a commercial irrigation rate at MUD, many commercial customers will separate production water and irrigation water to save on sewer rates.
 - 3. Philip: with current development around West Omaha, it would be easy to implement in new construction, you could see what the actual split on demand is.
 - 4. Gene: we are talking about EMI and EMR, but the south meters are getting compact enough that it could be easy enough to implement, getting near real time use, adapting to a “drought rate” when in drought conditions.
 - a. Steve is interested in using it as a pilot program but may want to stop short on stating it as a priority in the plan.
 - 5. Gene asks Steve if AMI would be something that LWS is interested in, but as changing rates is a big deal, it may be daunting. But as water systems are so useful to the

LOWER PLATTE DROUGHT CONSORTIUM MEETING NOTES

community, it has shifted to being used to water lawns instead of delivering potable water to homes.

6. Philip thinks that doing a pilot would be helpful in order to assess if it could be a large factor in potential conservation gains. Because expansion is happening so fast, it could contribute to large reductions.
7. Steve: with the AMI system in place, the watering demands should shift towards more overnight use.
8. Car washes are mentioned and how they are popping up everywhere but are a potentially minor load.
9. Steve: commercial should be a greater focus as residential users have been unfairly penalized, and commercial has benefited from using the residential rates for irrigation water.

E. Comments on the plan updates will be back in time for the September meeting.

5. Future meeting dates:

- A. September (Virtual) (17th at 10 AM)
 - i. Comments due back from Consortium members
- B. October
- C. November (ILCA) (19th at 10AM at the DNR)
 - i. Adopting 5 year ILCA
 - ii. Budget
 - iii. Second increment plan

6. Adjourn: 11:35 am

Introduction

The Lower Platte North Natural Resources District (LPNNRD) is one of 23 Natural Resources Districts created in 1969 with the passage of LB 1357 by the Nebraska Unicameral. Since its formation in 1972, the LPNNRD has been assisting people in the Lower Platte River Basin in the development and protection of our soil and water resources. Nebraska Statutes require that Natural Resources Districts develop a Long Range Implementation Plan. The purpose of this plan is to summarize accomplishments by LPNNRD during fiscal year 2023 (July 1, 2023 to June 30, 2024). It will show activities for the current year and the next five years. The plan serves as an implementation tool of the district's Master Plan, which is updated every ten years. This Long Range Implementation Plan was approved by the LPNNRD Board of Directors on date.

Authority and Responsibilities

The Natural Resources Districts have been given statutory responsibility outlined in Sections 2-3229, R.R.S. 1943. In this section it states that "The purposes of the Natural Resources Districts shall be to develop and execute, through the exercise of powers and authorities contained in this act, plans, facilities, works and programs relating to: (1) erosion prevention and control, (2) prevention of damages from flood water and sediment, (3) flood prevention and control, (4) soil conservation, (5) water supply for any beneficial uses, (6) development, management, utilization, and conservation of groundwater and surface water, (7) pollution control, (8) solid waste disposal and sanitary drainage, (9) drainage improvement and channel rectification, (10) development and management of fish and wildlife habitat, (11) development and management of recreational and park facilities, and (12) forestry and range management."

Description of the District

Lower Platte North NRD programs and projects are available to meet the goal of properly developing our water and related land resources.

The Lower Platte North Natural Resources District is located in the Lower Platte River Basin in eastern Nebraska and includes 1,031,000 acres of land. A portion of Saunders, Butler, Platte, Dodge, Colfax, Boone, and Madison Counties are within the district (see Appendix A), which includes twenty-eight cities, towns, and villages. Besides the Platte River, other notable tributaries in the district include: Bone Creek, Clear Creek, Duck Creek, Elm Creek, Loseke Creek, Rawhide Creek, Sand Creek, Shell Creek, Silver Creek, Skull Creek, Taylor Creek, and Wahoo Creek.

The population of the district is approximately 65,000, of which about half is rural and half urban. The Lower Platte North NRD is financed by a tax levy which may be up to four and one-half cents per \$100 valuation for general purposes and another one cent for water programs. The FY 2024 tax levy is 0.025767 cents per \$100 valuation.

Governing Body

The Lower Platte North Natural Resources District (LPNNRD) is governed by a 19-member Board of Directors (see Table 1). The directors are elected at the general election for a term of four years, with half of the members up for election every two years.

The district is divided into nine (9) subdistricts. Two board members are elected from each of the nine subdistricts, and one board member is elected at large every four years.

Table 1. Lower Platte North Natural Resources District Board of Directors

| | |
|----------------|-----------------|
| Sub-District 1 | Lon Olson |
| Sub-District 1 | Kelly Thompson |
| Sub-District 2 | John Goldsberry |
| Sub-District 2 | Bill Saeger |
| Sub-District 3 | Dave Saalfeld |
| Sub-District 3 | Andrew Tonnies |
| Sub-District 4 | Chris Yosten |
| Sub-District 4 | Matt Bailey |
| Sub-District 5 | Mark Seier |
| Sub-District 5 | David Lawrence |
| Sub-District 6 | Joe Birkel |
| Sub-District 6 | Robert Hilger |
| Sub-District 7 | Ryan Engel |
| Sub-District 7 | Ryan Sabatka |
| Sub-District 8 | Jerry Johnson |
| Sub-District 8 | Vacant |
| Sub-District 9 | Duane Johnson |
| Sub-District 9 | Bob Meduna Jr. |
| At Large | Thomas McKnight |

The district operates by a set of bylaws which are kept on file at the district headquarters at Wahoo, Nebraska.

One of the great natural resources of Nebraska is the Platte River. It is the feature that attracted early settlers to our state and guided the wagon trails. Today, we look at the Platte River differently. It is a water source for agriculture and cities like Fremont, Lincoln, and Omaha, a haven for wildlife, and a place for recreation. Issues surrounding the Platte are a top priority at the LPNNRD, since approximately 72 miles of the river flow directly through, or border, the district.

Ice Jam Agreement

In 1994, the LPNNRD entered into an agreement with the Papio-Missouri River NRD, Lower Platte South NRD, and Cass, Douglas, Sarpy and Saunders Counties to more effectively deal with ice jams and their resulting flood damages along the Lower Platte River. This area of concern is primarily from Fremont, Nebraska to the mouth of the Platte River. This group has pooled funds of \$150,000 to retain a contractor to use explosives when needed, to remove ice jams in a timely manner.

During the winter of 2023-2024, there were no ice issues of concern on the lower Platte River.

Rock & Jetty Program

This program was developed to offer cost-share assistance to landowners to construct erosion control devices for stream bank stabilization and to assist Dike and Drainage Districts with maintenance of dikes along the Platte and Elkhorn rivers and perennial streams. In FY23, \$15,000 was budgeted for projects on rivers & streams. We assisted four cooperators on maintenance projects in FY 23-24 at a cost of \$13,107.55.

Platte River Basin Long Range Objectives

- For the current year and the next 5 years administer \$15,000 - \$20,000 for the Bank Stabilization Program to cost-share on priority stream bank stabilization for cooperators on the Platte and Elkhorn Rivers and Perennial streams. Promote riparian buffer zones along the Platte River and other perennial streams This includes assisting cooperators with meeting the regulations of the Clean Water Act through section 404 permits.
- Keep up to date on Clean Water Act and Endangered Species Act regulations.
- Continue as a member of the Joint Water Management Advisory Board, provide leadership and assistance to move forward with exploring flood reduction solutions within Dodge County.
- Continue to participate with the City of Fremont and Dodge County to study potential nonstructural measures to reduce flooding and economic losses from the Lower Platte River.
- Assist the City of Schuyler as they evaluate the need for future federal funding for completing structural and non-structural approaches to reduce flooding and economic losses from the Platte River through the LPNNRD District-Wide Hazard Mitigation Plan.
- Encourage cities and counties within the District to initiate floodplain management planning to promote wise floodplain development.
- Continue to partner & support the Ice Jam Agreement in potentially protecting against ice jams on the Platte River and budget annually, as needed, for the Ice Jam Agreement Fund.
- Assist dike and drainage districts within the LPNNRD to properly repair and maintain levy projects.
- Provide support financially and technically to the Lower Platte Weed Management Area in controlling noxious and invasive weeds.
- Support the Nebraska Land Trust in acquiring easements for the protection and preservation of quality lands throughout Nebraska.
- Continue to support the Lower Platte River Corridor Alliance as an active voting member.

One of the Lower Platte North NRD's major responsibilities is to conserve and protect our ground and surface water resources. To accomplish this goal, the Lower Platte North continues to participate in water quality studies, ground water level monitoring, and water resource educational activities.

Groundwater Management Area

Current rules and regulations and the Groundwater Management Plan (GWMP) are available at the LPNNRD headquarters in Wahoo and on the district website at www.lpnnrd.org.

LPNNRD implemented a District-wide Groundwater Management Area (GWMA) on January 1, 1997, to address both water quality and quantity concerns.

- Spring of 2024 LPN started the process of updating its GWMP.
- In 1997, groundwater quality Phase I (education) regulations became effective for the entire District.

One primary rule in Phase 1 requires certification for fertilizer and water use.

- The District has developed a groundwater program emphasizing a protection-based approach rather than a reactive, corrective approach.
- The District has two Phase groundwater quality control areas, those being Bellwood in 2003 and Richland/Schuyler in 2004.
- A grant was received from the Water Sustainability Fund in November 2022.
- This grant conducted a geological assessment to go with the AEM flights along with offering cost-share for best management practices in the Schuyler - Richland Phase Area.
- In July 2023 a second WSF grant with LLNRD and USGS were approved to determine nitrate legacy from Richland to Fremont.

In June 2018, the District updated its Groundwater Rules and Regulations

- A Phase Four was added for Water Quality
- Water Quantity will manage water by consumptive use or acre feet limitations.
- As of July 1, 2023, the District had 9477 registered active wells with 4625 irrigation wells and 212 wells in the GWEL network.

There are two designated Special Quantity Subareas in Butler-Saunders Counties and Platte-Colfax Counties. The District mandated water flow meters, rolling allocations and annual reports in these areas starting in 2016.

A Lower Platte Basin plan with 7 NRDs and NeDNR was developed starting in 2017.

- An allotment formula in 5-year increments was implemented to determine the acre feet used for new water uses.
- The District completed its V-IMP in June of 2018 by adding an additional rule of requiring municipalities to report yearly water use
- The group updated the plan for next 5-years in 2022 with new allotments until 2027.

A Consortium for drought consideration was developed In 2016, made up of the 3 NRDs, Lincoln Water System (LWS), Metropolitan Utilities District (MUD), and the Nebraska Department of Natural Resources (NeDNR).

- A drought contingency plan was developed to maintain/mitigate sustainable water supplies to the Lower Platte River during drought conditions.
- Projects continue to be considered for supplying water into the Platte River

- A 5-year update will be completed in 2024.

Ground Water Quality Sampling

The Lower Platte North NRD continues efforts to develop a ground water quality inventory. The District has been divided into four primary aquifer regions: Todd Valley, Platte Valley, Shell Creek and the Uplands, and further divided into 26 subareas. These subareas are rotated for water quality sampling throughout the District. Staff samples the same wells called the Statewide Network each summer, weather permitting, to determine long term trends for nitrate-nitrogen. The data collected is provided to the Nebraska Department of Environment and Energy (NDEE). NDEE in turn provides this to the Nebraska Legislature on an annual basis.

In 2023 samples were collected from 52 sites.

| Year | Nitrate-Nitrogen Range | % Nitrate-nitrogen 0-8.0 ppm | % Nitrate nitrogen 8.01-10.0 ppm | % Nitrate nitrogen > 10 ppm |
|------|------------------------|------------------------------|----------------------------------|-----------------------------|
| 2023 | 0 - 20.6 ppm | 67% (35 of 52) | 12% (6 of 52) | 21% (11 of 52) |

Samples for pesticide analysis were collected from ten of these sites (19%). The pesticide analysis was for a suite of 25 parameters, and all results were less than reporting level.

Ground Water Energy Level Monitoring Network

One of the responsibilities of the NRDs in the State is to monitor fluctuations in groundwater levels. With the help of area cooperators, a ground water energy level (GWEL) monitoring network has been established in the LPNNRD. This monitoring network has been established to obtain a better understanding of the groundwater levels throughout the District. As of Spring 2024, the LPNNRD had 212 wells in the GWEL monitoring network. These wells are monitored each spring and fall, with selected wells also measured in late August.

The LPNNRD compares the latest spring reading to the 1987 base-year to determine if a subarea needs to be declared a Level 2 or Level 3 groundwater management area. Level 2 and 3 management areas require flow meters on wells, annual reporting of water use, and establishment of acre-inch allocations. For the 26 sub-areas within the District, 19 subareas are currently at Level 1 management, while the other 2 sub-areas still need additional information before these can be designated. Sub-Areas along the Elkhorn and Platte Rivers are showing some of the wells reaching Level 2 and 3 management. The District prefers at least three years of data before the subarea can be designated as a Level 1, 2, or 3 management area.

Fall readings in 2023 and Spring of 2024 showed a decline from the previous year's measurement. This change was the continuing lack of moisture in the last 2 years. Spring readings in 2024 showed a 1.17 feet lower of the wells measured compared to Spring of 2023. Each aquifer sub area showed a decline from the previous year.

Chemigation

Chemigation is the act of injecting chemicals into the water line of an irrigation system that is then applied onto the crops. It is considered to be one of the most efficient ways of applying essential nutrients in times when the crop is uptaking the most amount of nitrogen through its

growing stages. In order to chemigate, a licensed permit holder must obtain a permit through the Lower Platte North NRD. Special equipment must be installed to protect Nebraska’s groundwater from possible back-flow of chemicals into the groundwater source. To obtain this permit, which is administered through NDEE, you must pass the Chemigation Certification test. This test is conveyed and taught through the University of Nebraska-Lincoln’s certification program. There is an online test option available to producers. The chemigation equipment must be properly equipped, inspected and approved by the NRD before applying any chemicals.

| Chemigation Permits | Total | Renewal | New | Emergency |
|----------------------------|--------------|----------------|------------|------------------|
| July 2023 | 704 | 643 | 61 | 0 |
| July 2024 | 708 | 652 | 56 | 0 |

In 2014, the Legislature approved changes to Title 195 that would allow individual NRDs to set chemigation fees. Chemigation fees for LPNNRD are as follows: \$90 for a New permit, \$30 for a Renewal permit, and \$300 for an Emergency permit. Inspections are required on equipment for new permits. Renewal permits are inspected on a three-year rotation. Failure to renew by June 1st of the following year will cause the permit to lapse. If a renewal permit lapses, the producer must obtain a new permit and an inspection is required.

Decommissioned (Abandoned) Wells

Abandoned wells are a health and safety concern and have been ruled as illegal by the Nebraska Legislature. A well not used for three consecutive years or one which is no longer useful is considered to be abandoned and needs to be properly decommissioned.

The Lower Platte North NRD offers up to 75% cost share assistance to landowners to properly decommission abandoned water wells. In addition, the district will assist with up to 75% of the cost for pump and obstruction removal on domestic and stock wells. To receive cost share assistance, the actual decommissioning must be performed by a certified well driller or pump installer. The landowner has six months from the time of application to accomplish this task unless good cause is shown.

Since 1992 the district has administered local and state cost-share dollars to decommission 749 wells. Through this program in FY 23-24, a total of \$15,117.00 was administered by LPNNRD for the plugging of 15 wells.

Flow Meter Maintenance Program/Readings

Since 2008, the LPNNRD has implemented the requirement of installing a District approved flow meter on any new or replacement well. Thereafter in 2012, the District also required the installation of a flow meter on any expansion of acres from an existing well. This pumping information is invaluable to the District to know what has been pumped during years of extended drought. It is vital that the LPNNRD keeps track of this going forward into the future. In order to know the volume of water within our aquifer systems, we need to know the water that is being extracted.

Along with the irrigation wells, the LPNNRD also records meter readings from all of the municipality wells within the District including MUD, Lincoln and Fremont. Livestock wells and commercial wells are required to report if the well was drilled after the 2012 requirement date. Over 1,200

readings are recorded annually throughout the LPNNRD District. The district provides funding for meter maintenance on approximately 1,150 irrigation well flow meters that are getting routine maintenance once every four years.

Registered Wells and Well Permits

The Nebraska Legislature declared that conservation and the beneficial use of ground water are essential to the future well-being of the State. State Law requires that all water wells in the State of Nebraska be registered with the Department of Natural Resources. Wells that are not registered are illegal and should be registered as soon as possible. A breakdown by decade from 1970 to present shows the growth of active irrigation wells in the District.

*Table of Active Irrigation Wells within LPNNRD
compiled by Completion Date*

| Date | Number of Active Irrigation Wells in the District |
|-------------------|--|
| December 31, 1970 | 1,428 |
| December 31, 1980 | 2,756 |
| December 31, 1990 | 3,241 |
| December 31, 2000 | 3,686 |
| December 31, 2010 | 4,307 |
| December 31, 2020 | 4,554 |
| July 1, 2024 | 4,625 |

From July 1st, 2023 to July 1st, 2024, the District has issued 33 well permits with 30 for new and replacement irrigation wells.

Special Studies

The LPNNRD has done a number of studies within the District. The following is a summary of studies that are currently being conducted within the District.

Aquifer Vulnerability Mapping and Analysis

- To collect and analyze data within the LPN Water Quality Management Areas for nitrates and source of nitrate.
- Vadose soil sampling analysis to assist in determining the amount of nitrates in soil and pore water present in the unsaturated zones above the water table.
- A nitrate tool was developed utilizing the data, along with geological information to assist in determining vulnerability.
- Age dating of groundwater was conducted in 2023 with results at the end of 2024.
- The analysis is now being conducted in the Shell Creek Aquifer Region

3D Airborne Electromagnetic (AEM) Hydrogeologic Framework and Assessment

- Papio-Missouri River NRD, NeDNR and LPNNRD started a study in January 2021 to assess AEM survey information, well logs, and other geological information.
- The data is available for staff to characterize different geological layers and assign variables such as hydraulic conductivity.
- This data is being utilized for groundwater modeling to better understand, assess, and forecast groundwater. Completion of the groundwater model for the Lower Platte River Basin is planned for early 2025.

Lower Platte River Consortium Study

- This study looked at long term water supplies in the Lower Platte River Basin, and the ability to enhance streamflow, especially in drought conditions.
- Sustaining water in the river would also provide a benefit to wildlife and agriculture by lessening the likelihood of a 'call' on the river.
- The plan was completed in Spring 2020 with the group now in the process considering the options from the plan to determine the feasibility of projects.

Eastern Nebraska Resources Assessment

- LPNNRD is a partner in the Eastern Nebraska Water Resources Assessment (ENWRA).
- The ENWRA study has been utilizing Airborne Electromagnetic (AEM) over eastern Nebraska to better model the geology of the glaciated portion of the State.
- The flights and the results can be found on the ENWRA website at (www.enwra.org).

Certifying Acres

In July 2009, the District signed a contract with gWorks (formerly GIS Workshop) to develop a database of county assessor records as the preliminary step to certifying irrigated acres. As of January 2022, the majority of the irrigation in the district has been cataloged. The District is still granting new irrigation development with verification by aerial photography and accurately modeled before entering into the database. Acre certification provides an inventory of the irrigation needs of the District, which is an important part of present and future groundwater management and planning. In addition to cataloging irrigated acres, LPNNRD staff have been actively working with the Nebraska Department of Natural Resources (NeDNR), as well as local landowners, to bring all irrigation wells in LPNNRD into compliance with Nebraska Revised Statute 46-602 (7).

Nebraska Ordnance Plant Water Pollution Clean Up at Mead

During the 1940s, 1950s and 1960s, an Army Ordnance Plant near Mead was used to assemble bombs and served as an early Atlas Missile ICBM site. Over time, the soil and groundwater at the plant site became polluted with various explosive residues and solvents. The cleanup has been divided into three basic project areas: Soils (OU1), Ground Water (OU2), and Building contamination (OU3). This area has been under study by the Army Corps of Engineers (COE) since 1988. An open house was held by the Corp, May 2024, with annual tours and open houses conducted regularly.

Wellhead Protection Program

The LPNNRD implemented a wellhead protection program in FY 2001. The goal of the program is to minimize potential polluting activities on the land surrounding a community's public water supply well(s). The District has identified 22 communities with public supply wells and they have been encouraged to become involved in the program. The Communities of Newman Grove and Platte Center received a Source Water Protection Grants to re-evaluate and approve their wellhead management areas. The LPN is working with these communities along with assessing the nitrate issues along the Shell Creek Region.

Rural Water Districts

In recent years, the District has worked with communities who have had difficulties with water quality and quantity by forming two rural water systems. The Butler County system linked the village of Bruno in 2006, who was having water quality and quantity problems, to David City. Also in 2006, the Saunders County system linked the village of Colon, who was experiencing water quality concerns, to Wahoo. The LPNNRD operates both of these systems. The District

purchases water from the larger communities and delivers it to the smaller communities; RW staff manage and maintain Colon's system and billing while Bruno manages their infrastructure and household billing. Both systems are designed to serve rural customers along each service route. Combined, the two systems serve over 135 households in Saunders and Butler Counties. To address fiscal concerns both RWDs have implemented a phased rate increase strategy to more diligently manage the financial standings of both districts. The District has been in contact with several other communities and anticipates several more communities and rural customers to be serviced by rural water systems in the future as rural communities face an increased burden at providing adequate quantity, and quality, water while maintaining aging infrastructure. Both systems are greater than 10 years old and repairs/replacements of meters is expected to take up RWD staff's time in 2024-25 as a number of meters and components are nearing the end of their expected service life.

The Environmental Protection Agency (EPA) revised the Lead and Copper Rule in 2022 and required all PWS to submit a lead service line inventory. This inventory takes into account all water service line from transmission main to first service connection within households. This has required multiple contacts with homeowners and will be a living document to be updated in perpetuity.

Geographic Information System (GIS)

The District has incorporated the use of Geographic Information System (GIS) technology into most district functions, including the certification of irrigated acres, maintenance, project planning, modeling of groundwater availability, and the movement of contaminants such as nitrates through the soil profile. In addition to in-house GIS activities, LPNNRD GIS staff assist a variety of partners, including projecting FSA aerial photography into Nebraska State Plane Feet coordinates for NeDNR, custom authoring of maps for the Nebraska Land Trust, coordination of helicopter flight lines for invasive species control with the Lower Platte Weed Management Area, and helping other NRDs with GIS questions as they emerge.

LPNNRD's database allows for quick and efficient lookup of any information pertaining to any project or cost share that has been completed for any constituent with land in LPNNRD.

As drone technology continues to evolve, LPNNRD has added a SkyDio2 Autonomous Drone to its inventory.

Ground and Surface Water Long Range Objectives

- Continue groundwater quality sampling throughout the LPNNRD, both the State-wide network and intensive sampling of selected regional aquifers. To work with other agencies on assessing legacy nitrate.
- Continue water quality education programs based on the goals and objectives of the LPNNRD Groundwater Management Area, which includes LPNNRD certification classes for landowners, municipal, and industrial water users.
- If needed, designate further Phase II, III, and IV boundaries for the Groundwater Quality Management Areas.
- Continue with nitrogen application demonstrations and participate with demonstrations on integrated pest management and sustainable agriculture.
- Assist in the proper decommissioning of water wells in the district by administering state and local cost-share funds to decommission abandoned water wells.
- Continue measurement of ground water energy levels in the district and if necessary designate

new Special Quantity Subareas (SQS).

- Continue to cooperate with the United States Geological Survey (USGS) in monitoring surface water levels and the Eastern Nebraska Water Resources Assessment (ENWRA) for groundwater geological assessment including AEM flights.
- Maintain a multi-agency groundwater energy level monitoring network in the Wann Basin of the Platte Valley north of Ashland to pool information from different agencies collecting water level data. This information is being used by the COE and MUD to refine their groundwater modeling efforts.
- Continue to implement the Chemigation Program to inspect safety equipment on permitted irrigation systems in the district. Educate the need for check valves in protecting the aquifer from contamination.
- To finish the development of a groundwater model to assist in management for each sub-area. Additional information on water use from all wells will be needed for accurate information. Initiate additional studies to identify vulnerable aquifers and modify GWMA rules and regulations to protect these aquifers and their long term sustainability.
- Continue using AEM (airborne electromagnetic) information to analyze bedrock aquifers both in water quantity and water quality. Test holes and monitoring wells will have to be installed and sampled to determine these as a possible source of usable groundwater. New management strategies need to be developed for these aquifers such as summer trigger levels for confined bedrock aquifers, especially if these are hydrologically isolated from overlying alluvial aquifers.
- Utilize the completed Lower Platte River Consortium Study for possible locations for recharge and reservoir sites to better convey water downstream in the watershed.
- Continue to update the Groundwater Management Plan to include Integrated Management of surface and ground water and to consider drought concerns.
- Expand the GWEL network wells in criteria subareas and to have continuous recording monitoring and real-time reads wells in each sub-area to better manage the resource.
- Continue to assist District communities who have difficulties with water quality and quantity by helping determine rural water system feasibility including the Saunders County Rural Water System study. .
- Keep abreast of updates and new iterations of neighboring NRD studies.
- Continue working on projects identified and keeping updating quality objectives in the Watershed Quality Plan. Partner with state agencies in conducting these projects.
- Continue with the District's Well Permitting Program and Variance Process throughout the District. Utilize submitted water use data in this process and identify registered and unregistered wells.
- Provide information and education on water conservation, integrated pest management and safe disposal of farm and household chemicals.
- Assist in working with NRD's on activity of State and Federal Agencies, new research, and Legislative issues.
- Continue to install flow meters on irrigation wells that are required by GWMP and obtain grants for cost share for water flow meters,
- Continue with the process of updating the certification of irrigated acres and encourage producer participation in online reporting for entering their data to improve efficiency and quality of data.
- Continue to monitor clean up efforts by the COE at the Former Ordnance Plant at Mead, Nebraska and any other clean up efforts. To work with the COE to establish spacing requirements for future high capacity irrigation, industrial, and/or municipal wells that are requesting to be installed near known contaminant plumes from the Former Ordnance Plant

near Mead, so these wells will not interfere with the COE's clean up efforts.

- Review livestock permits from NDEE.
- Investigate irrigation runoff and groundwater management area complaints as needed.
- Continue to provide equipment and data for localized weather throughout the District.
- Communicate with well drillers and pump installers on water concerns within the District.
- Improve irrigation and nitrogen efficiency by working with UNL Extension and other agencies

In response to the Erosion and Sediment Control Act (LB 474), passed in 1986, the Natural Resources Commission developed the Nebraska Soil and Water Conservation Strategy. This strategy outlines a course of action for efficiently conserving and managing the state's natural resources. A number of significant rain events in 2024 caused an increase in erosion/sedimentation complaints. No violations were filed.

The Lower Platte North NRD administers the Erosion and Sediment Act and has patterned its local program after the state strategy. The district administers state and local cost-share funds through Soil and Water Conservation Programs (SWCP) to offer incentives to producers for installation of land treatment practices. LPNNRD staff also worked with NRCS staff to utilize Farm Bill Programs to repair erosion problems.

Soil and Water Conservation Programs (SWCP)

Under Soil and Water Conservation Programs (SWCP), the LPNNRD allocated \$83,029.99 of state funds (Dept. Natural Resources) for land treatment practices during fiscal year 2024 in cooperation with 12 different landowner projects. In addition, two new Buffer Strip contracts were administered with \$9,587.23 in state funds.

For fiscal year 2025, \$83,058.36 of state funds (from the Nebraska Department of Natural Resources) and \$25,000 of local funds will be allocated for soil and water conservation practices through the LPNNRD Lands for Conservation Program (LFC). The LFC program offers landowners a per/acre payment to set aside production ground to allow for summer construction. This lessens the burden on the fall construction season allowing more conservation work to be implemented.

Wahoo Creek Water Quality Land Treatment Efforts

Wahoo Creek in Saunders County, Nebraska, has resided on the Environmental Protection Agency's (EPA) list of impaired water bodies for decades. To address the impaired status of Wahoo Creek, LPNNRD in partnership with the U.S. Environmental Protection Agency (EPA) and the Nebraska Department of Environment and Energy (NDEE) developed the Wahoo Creek Watershed Water Quality Management Plan in 2013. These plans are updated every 5 years and the District is in the process of completing another update. This plan identifies goals to reduce excess phosphorus, nitrogen, soil sediments, and *E. coli* bacteria in the Wahoo Creek Watershed. This plan meets the EPA's requirement of containing "Nine Elements" of an effective watershed management plan. The plan identifies water quality goals to protect and enhance the quality of all water resources within the Wahoo Creek. Sub-watersheds within the Wahoo Creek Watershed were prioritized for future water quality projects. LPNNRD in partnership with EPA, NDEE, and the Natural Resource Conservation Service (NRCS) identified four Wahoo Creek sub-watersheds as National Water Quality Initiative (NWQI) areas to receive special EQIP and EPA 319 funding for landowners to complete conservation practices to help achieve the numerous identified water quality goals.

The NRD and the local NRCS field office have moved forward with creating a partnership position for a Watershed liaison/Source Water Specialist to help implement BMPs that are inline with the shared agency's water quality mission.

Shell Creek Watershed Water Quality Land Treatment Efforts

Shell Creek is a major tributary of the Lower Platte River. Land use in the approximately 305,000 acre watershed is predominantly row crop agriculture. Portions of Shell Creek are on the Environmental Protection Agency's (EPA) impaired waters list. The most notable impairments include *E. coli* (bacteria) and Atrazine.

The Shell Creek Watershed Improvement Group (SCWIG) is a volunteer committee that formed in 1999 to lead local efforts to identify problems and to promote implementation of conservation practices to improve water quality in Shell Creek. This evolved into an advisory group to LPNNRD continuing to provide local leadership toward reducing erosion and water quality impairments in the watershed. A community-based planning approach was used to gather input from the citizens of the watershed for development of the Shell Creek Watershed Environmental Enhancement Plan that emphasizes combinations of practices that improve water quality.

Over the past 25 years, the Shell Creek Watershed has benefited with over \$2 million in EPA Section 319 funds combined with approximately \$4 million in partnering federal and local funds for assisting landowners in establishing Best Management Practices on their farms. These efforts resulted in Shell Creek becoming the first agricultural watershed in the nation to have a segment delisted for atrazine contamination in FY 2018.

In FY 2023, the NRD secured \$779,000 in grants from EPA/NDEE Section 319 and the Nebraska Environmental Trust (NET). These grant dollars matched with local funds are expected to yield over \$1.4 million of water quality work in the watershed over the next three years.

Erosion and Sediment Complaints

The LPNNRD responds to occasional erosion and sediment complaints. In most cases, these complaints are resolved before going through the formal complaint process. Many cases are drainage issues that are resolved between the District and landowners. During FY2022 NRD staff was subpoenaed on a case between two neighbors that could not be resolved amicably. The case has yet to be resolved as both parties continue to work together. The area received multiple, intense, rain events during the spring/summer of 2024. The NRD was contacted by multiple landowners with complaints. No violations were noted.

Soil Conservation Long Range Objectives

- Use technical assistance from the NRCS in the planning, design, construction, and maintenance of conservation measures applied to the land.
- Use Federal, state, and local funds to promote and implement land and water treatment projects in priority areas of Wahoo Creek Watershed to reduce erosion and improve water quality. The NRD plans to coordinate with local NRCS through the National Water Quality Initiative (NWQI), NDEE's 319 program, and local funding efforts to achieve the goal.
- Continue encouraging the implementation of summer conservation construction utilizing federal funding within the Wahoo Creek Watershed through the Lands for Conservation program
- Administer \$83,058.36 of State NSWCP funds and \$25,000 of local cost-share and grant funds to landowners for the construction of terraces, tile outlets, waterways, diversions, small dams, planting of permanent vegetation, and maintaining water quality.
- Continue to promote conservation tillage measures, pasture & range management, sustainable agriculture, and the Conservation Reserve Program (CRP), through news releases and the district's newsletter.
- Recognize the Outstanding Soil and Water Conservationists.
- Continue to assist landowners in resolving soil erosion and sediment complaints.
- Provide financial support and staff time to conservation education activities.
- Continue to work closely with locally-led conservation groups to promote soil and water conservation throughout the district.
- Partner with the Shell Creek Watershed Improvement Group (SCWIG), EPA/NDEE, NET, and

NRCS toward continuing implementation of Best Management Practices in the Shell Creek Environmental Enhancement Plan Implementation.

- Work with NRCS, NDEE, NET, Saunders County, and the Wahoo Creek locally led Steering Committee in pursuing additional federal and state funds to assist with land treatment practices as defined in water quality objectives in the Wahoo Creek Watershed Water Quality Plan.
- Assist with the formation of local landowner advisory steering committees in the Wahoo and Bone/Skull Creek Watersheds for planning soil & water conservation practices and flood reduction.
- Please combine current year objectives with the projected five year objectives.
- FY 2024-2028 Soil Conservation Long Range Objectives (Sean DONE, Ryan DONE)
- FY 2025-2029 Soil Conservation Long Range Objectives (Sean, Ryan) DONE
- Maintain existing land treatment practices and programs.
- Continue to work with all counties in the district to reduce roadside erosion.
- Administer NET and NDEE/EPA 319 Grant Programs to improve water quality throughout Wahoo Creek, Shell Creek, and the Lower Platte River Corridor Alliance priority watersheds.
- Look for new and innovative soil and water conservation methods.
- Partner with NRCS, UNL Extension, and landowners to improve all aspects of their water and soil quality.
- Continue to support the Land and Range Judging Contests.
- Continue targeting SWCP land treatment program funds for priority watersheds in the District.
- Use existing and new technology and GIS software programs for implementing and promoting soil conservation practices.
- Promote the use of and make available soil surveys and land use information.
- Continue to support Locally Led Landowner Groups to promote and implement soil and water conservation practices.

Projects have been completed in priority areas in the LPNNRD to help reduce flooding and provide grade stabilization. Projects have been completed in Bellwood, Clear Creek, Cottonwood Creek, Sand and Duck Creek, Swedeburg, and Rawhide Creek watersheds. Current high priority flood reduction areas include Bone Creek, Shell Creek, Skull Creek, and Wahoo Creek watersheds. On federal and state projects where the LPNNRD acts as project sponsor, the district obtains land rights and is also responsible for operation and maintenance activities on these projects after they are built.

The LPNNRD offers local assistance for the construction of small dams that can help counties and/or landowners protect county roads, control erosion, and provide water for livestock and wildlife.

Wahoo Creek Flood Reduction Efforts

The NRD is currently in the process of building nine flood reduction dams in Wahoo Creek watershed, estimated to cost \$19.7 million in 2020. Federal (WFPO) and state funds (JEDI) are expected to fund the entire project including planning, design, permitting, land rights, construction, and construction oversight. All necessary land rights, and permits have been acquired for first three sites. Construction will begin in Fall 2025 on sites: 26a, 26b, and 27. Construction is expected to begin in FY2026 on the remaining seven sites: 55, 66, 77, 84, 86, and 86. Completion of all nine dam sites is anticipated by the end of FY28.

Sand Creek Environmental Restoration Project (Lake Wanahoo)

With the invaluable assistance of numerous local, state, and federal partners, 2011 witnessed the completion of construction on Lake Wanahoo's earth embankment. The breakwater feature and the fisheries component were completed a few years prior to the embankment. Recreation components were completed for Lake Wanahoo in FY2011. Construction of seven upstream flood reduction/environmental enhancement structures were completed in FY12-14. In FY19, LPNNRD assumed Lake Wanahoo's recreation management responsibilities from the Nebraska Game and Parks Commission.

Operation and Maintenance

District staff complete annual inspections on 45 watershed structures and special projects in the District.. These inspections help detect problems before they become serious. Annually, noxious weeds and volunteer trees are sprayed, debris removed, fences repaired, on dams & Clear Creek Levee, and the Rawhide Ditch System, and risers unplugged on dams. The District is currently working with NRCS and a Engineer Consultant in the rehabilitation of dam Cottonwood 21-A.

Army Corps of Engineers 205 and GI Flood Studies

Over the past many years, the District has partnered with local entities and the US Army Corps of Engineers to study flood protection alternatives for their areas. In 2004, LPNNRD partnered with Fremont, Inglewood, and Dodge County to look at a potential levee project to remove areas from the Platte River 100-year ice induced floodplain. In FY 2017, the Fremont study evolved into a General Investigation (GI) Study which determined that there is not a feasible structural solution (levee) to the City of Fremont's flood threat from the Platte River. In 2018 the GI Study evolved back to a 205 Non-Structural Study for the City of Fremont and Dodge County. The Non-Structural effort will continue in FY 2025.

In 2005, LPNNRD entered into an interlocal agreement with the City of Schuyler to evaluate levee protection options to protect the city from flooding from the Platte River and Shell Creek. In FY

2012, the Schuyler 205 Study was completed and entered into the project design phase. In FY 2014 the design phase was completed and LPNNRD assisted Schuyler with obtaining needed land rights for the Shell Creek Levee portion of the project which began construction activities in the spring of 2014 and most construction activities were completed in the fall of 2015. LPNNRD continued to assist Schuyler in FY 2018 with closing out the project with the Army Corps of Engineers. Schuyler continues to do a great job in maintaining the levee.

Flood Control and Damage Reduction Long Range Objectives

- Continue with accelerated land treatment efforts and flood reduction opportunities in identified priority watersheds, Shell Creek, Skull & Bone Creek and Wahoo Creek in the District.
- Budget staff time and funds to complete annual and/or biennial inspections and maintenance such as spray noxious weeds & cut and treat trees on 45 dams, Clear Creek Levee, and Rawhide ditch and other project sites.
- Develop a long term plan for Operation and Maintenance costs associated with large structures.
- Continue to be an active partner on the Joint Water Management Advisory Board to explore flood reduction and drainage solutions in portions of Dodge County City of Fremont and complete the Rawhide Watershed WFPO Planning efforts.
- Partner with the City of Fremont, Dodge County, and Papio-Missouri River NRD to fund operation and maintain established USGS cameras at 5 locations and 2 stage-only water gauges along the Lower Platte River.
- Partner with Dodge County and City of Fremont on FEMA Drainage Improvement Projects.
- Continue to educate Cities, Counties and public on watershed management and flood reduction and to accept and implement Floodplain Management Authorities.
- Cooperate with landowners and counties in evaluating small dam sites for cost-share throughout the district.
- Continue to partner with the Army Corps of Engineers, FEMA, City of Fremont, Englewood, and Dodge County on exploring non-structural opportunities for feasible flood control solutions and the Hazard Mitigation Plan Flood Resiliency study.
- Support the City of Schuyler for exploring non-structural opportunities for feasible flood control solutions from the Platte River through the LPNNRD District-wide Hazard Mitigation Plan.
- Work with Communities, Counties, and other entities on projects identified in our District-wide All Hazard Mitigation Plan.
- Commit funds and staff time to complete flood water control/reduction plan and complete easement acquisition for all ten Wahoo Creek Watershed flood reduction dam sites.
- Begin construction on Wahoo Creek Dam Sites 26a, 26b, and 27, complete engineering designs on Wahoo Creek Dam Sites 55, 66, 77, 82, 84, 85, 86 and have them completed by 2028.
- Continue to update LPNNRD's district-wide All Hazard Mitigation Plan and assist District Communities in evaluating future flood protection for their communities
- Partner with NRCS and hired HDR through the Dam Rehabilitation program to rehabilitate dam Cottonwood 21-A.

The district administers several programs designed to enhance the region's forest, range, and wildlife land, including the Tree Planting Program, Wildlife Habitat Programs with Nebraska Game & Parks and Pheasants Forever, SWCP Program, and Mitigation Program.

Tree Program

One of the most visible and popular programs offered by the LPNNRD is the district's tree planting program. As a direct result of this program, begun in 1973, an estimated 890,100 trees and shrubs have been planted in the district. Trees and shrubs may be obtained from the NRD for windbreaks, shelterbelts, wildlife habitat, woodlots, and Christmas tree plantings. Besides providing a planting service, the NRD also designs tree planting plans and offers technical advice on ground preparation for tree sites.

During the spring of 2024, 16,875 trees and shrubs were distributed to District residents. Of this total, 9,886 were planted by the NRD field crew at 10 sites.

Wildlife Programs

Lower Platte North continues to encourage landowners to set aside land for wildlife habitat by using Federal Programs and Programs provided by Nebraska Game & Parks and Pheasant Forever.

Community Forestry Program

In FY 2023-2024 LPNNRD donated 900 tree seedlings for the District's annual Spring Conservation Sensation; the Fremont EcoFair and Newman Grove School. The District budgets \$2,000 for Community tree development projects. The District did not assist a Community during the fiscal year.

Forestry, Range and Wildlife Habitat Long Range Objectives

- Plant and distribute conservation trees and shrubs through the district's Tree Planting Program with hopes of increasing the program each year..
- Continue to include tree planting as an eligible cost-share practice under the SWCP program.
- Offer trees and give staff presentations to elementary students across the district.
- Continue to promote Wildlife Habitat programs in cooperation with the Nebraska Game and Parks Commission and other partnering entities as opportunities arise.
- Assist cooperators with signing up for Wildlife Programs.
- Provide information and education on tree planting, woodland management, grassland management, and proper wildlife habitat enhancement through media, tours, and schools.
- Provide cost-sharing for the conversion of cropland to grassland through the SWCP program.
- Cooperate with Pheasant Forever Chapters to enhance wildlife habitat and establish windbreaks.

Czechland Lake Recreation Area

Czechland Lake Recreation Area is a multipurpose project located one mile north of Prague, Nebraska on Highway 79. Flood control, recreation, and education are the main benefits of the project. Located at a convenient distance from Omaha, Lincoln, Fremont, and Wahoo, the 85 surface acre lake is situated on 265 acres of public access land operated and maintained by the LPNNRD.

State park permits and fees are not required for entrance to the area. Czechland Lake has 11 electrical camper pads at an \$18/night fee for the use of a camping pad. There are also three non-electrical pads. A Nebraska Fishing License is required for anglers. The lake fishery is managed by the Nebraska Game and Parks Commission, which stocks and monitors fish populations.

Originally built as one of twelve floodwater structures in the Cottonwood Creek Watershed, Czechland Lake has developed into one of the area's most popular recreation spots. The reservoir and recreation area development was built at a total cost of \$1.8 million. Funding for the project was shared by the Nebraska Natural Resources Commission, Saunders County, USDA Natural Resources Conservation Service, and LPNNRD. Grant monies from the U.S. Environmental Protection Agency have been used to reduce nonpoint source pollution entering the lake and to provide educational resources.

The Czechland recreation area is extensively used each year generating between \$8,500 - \$10,000 in camping revenue. Mowing, trash removal, repair, and upkeep of park equipment, and thistle control kept LPNNRD park staff very busy during the spring and summer.

Homestead Lake (Skull Creek Site #55)

Construction was completed on Homestead Lake in 2001. The dam offers flood control for nearby communities, and has been developed for public recreation. Recreation facilities include a shelter, restroom, picnic areas, a boat ramp, and hunting areas. FY 2024 proved to be another very popular year for recreationists as the area was extensively used.

Lake Wanhoo

Work was completed on recreation facilities at Lake Wanhoo one mile north of Wahoo in FY 2012. Recreation facilities at the 1,600 acre site straddle the 662-acre lake, with camping and boating access on the west side and a day use area on the east. A rocky hiking/biking trail winds throughout the park, linking the east and west side recreation areas over a breakwater levee one mile north of the dam. Mowed trails north of the levee provide access to undeveloped areas set aside for wildlife habitat.

The camping area contains 75 camper pads, 54 tent camping sites, and 6 primitive cabins. All camper pads are equipped with electrical hookups and are rock surfaced. All sites have fire rings and picnic tables.

The recreation area offers access to two large boat ramps wide enough to accommodate four boats at a time. Boating on the entire lake is no-wake only.

The day use area on the east side of the lake has two large picnic shelters and two smaller ones, all offering scenic views of the lake. In FY 2017 a dump station for RV's was constructed on the east day use area as well as a disc golf course/nature educational trail.

Both the camping and day use areas provide excellent fishing access, with a total of seven fishing jetties. One jetty on each side has an attached handicapped pier. The lake was stocked with largemouth bass, bluegill, blue catfish, crappie, northern pike, and walleye beginning in 2008. Limited hunting opportunities will continue to be available at Lake Wanahoo through the Game & Parks Commission PATH Program, where adults can schedule a time to mentor a youth hunter at designated hunting sites north of the recreation area. An operation and maintenance plan was developed with the assistance of the Nebraska Game and Parks Commission and Pheasants Forever in FY 2014 which identified activities that were implemented in 2015 .

In FY 2019, LPNNRD assumed the responsibilities of administering Lake Wanahoo as a public recreation area from the Nebraska Games & Park Commission.

In FY 2020, the Clint Johannes Education Building was completed on the day use portion of the recreation area. This facility provides a protected outdoor education space for LPNNRD education activities, as well as a public rental facility for the public. Also in FY 2020, six new primitive cabins were installed in the primitive camping portion of the park to give visitors a unique alternative to tent camping.

Recreation Long Range Objectives

- Improve up to 20 additional sites with 50 amp service
- Continue to repair and replace damaged portions of the park from the May, 2024 storm event.
- FEMA has approved disaster relief funding for Saunders County, continuing work with FEMA to repair damages throughout Lake Wanahoo recreation Area.
- Continue to budget funds for maintenance, including grass mowing, tree trimming, grading roads, outhouse cleaning, trash removal, painting, and noxious weed control, at Lake Wanahoo, Czechland, and Homestead Lake Recreation Areas.
- Continue to improve our existing sites and evaluate the development of new outdoor public recreational opportunities as they arise.
- Design and install a 10-14 slip marina on the west side of the lake. Marina will enable campers with boats the opportunity to keep their boats on the water during their stay. Install a fish cleaning station also.
- Continue to assist NE Game & Parks and Pheasant Forever in developing new areas offering public access.

It is the general policy of the LPNNRD not to provide financial assistance for drainage improvement and channel rectification unless a project has public benefit and is sponsored by a County, City, Drainage District, or a group of landowners through an established Improvement Project Area. Under this policy, the district has cooperated on several projects that have provided public benefit.

Drainage Improvement and Channel Rectification Long Range Objectives

- Worked with Colfax County to complete new Shell Creek South Channel Improvement/Benching Projects.
- Partnered with Dodge County and Fremont to support drainage improvements east of Fremont through FEMA.
- Partnered with the North Bend Drainage District, Dodge County, and City of Fremont to support the drainage improvement project for the North Bend drainage ditch through FEMA.
- Continue to oversee the Rawhide Creek West Branch Project to ensure that landowners properly control vegetation.
- Continue providing assistance to Platte Center with stabilizing segments of Elm Creek.
- Evaluate potential technical and funding assistance to counties, cities, and other entities in the district that sponsor sound drainage and channel improvement projects.

Over 30 years ago, vast changes occurred in Nebraska's solid waste regulations. Landfills that weren't properly designed, operated, or sited were required to shut down, as were unauthorized dumps. In order for a landfill to operate, it must be approved by the State and receive a permit. If a permit is not issued, the landfill cannot legally operate. Currently, the only permitted landfill in the Lower Platte North NRD is a facility near David City.

Waste Disposal & Pollution Long Range Objectives

- Promote recycling efforts in the district through education programs, newsletters, and news releases.
- Participate in education efforts to promote the reduction of pollution to our air, water, and soil resources.
- Cooperate and be supportive of other group and agency pollution control efforts, education, and/or regulation.
- Assist and encourage all District communities in establishing collection locations for recyclable wastes.
- Assist District cities and counties in establishing pickup days for hazardous household and farmstead wastes as opportunities arise.
- Promote waste reduction efforts in the district through education and incentives.

A major responsibility of the LPNNRD is to keep the public aware of the district's various projects and programs, and to inform and educate children and adults about the wise use and management of our natural resources.

During fiscal year 2024, the Lower Platte North NRD conducted many activities to help residents learn the importance of our soil and water resources and to stay informed of issues and concerns regarding natural resources. Some of the highlights included the following.

Publications and Marketing

The NRD distributes two newsletters each fiscal year. The Winter issue of "The Viaduct" newsletter includes the Annual Report. In FY 2024, more than 23,000 copies of each newsletter were distributed in eight newspapers, emailed and mailed. Previous newsletters are available on the website at www.lpnnrd.org/downloads.

Various brochures describing LPNNRD programs and services were updated as needed. These brochures are displayed in the office and distributed during NRD sponsored events and exhibit booths. Press releases are distributed to district newspapers, email lists and radio stations.

Numerous ads highlighting LPNNRD programs and upcoming deadlines air on KTIC Radio monthly, and digital ads are displayed on Wahoo newspaper's website monthly.

The NRD continues to maintain information and education outreach for the district through the use of social media outlets on Facebook, X, and YouTube. These outlets are maintained weekly and provide information along with photos and videos about the district's ongoing activities and events.

The NRD's website at www.lpnnrd.org contains information on the district's projects and programs, along with staff information, board of directors information, as well as committee and board meeting minutes, and district publications. Online applications and registration forms for various projects and programs are also available. Additionally, online payment capabilities continue to allow customers to pay for trees, rural water bills, and Lake Wahoo permits.

Promotional videos have been created for the Water Department, Operations & Maintenance department, Projects department, Information and Education department, and the three LPNNRD recreation areas (Czechland Lake, Homestead Lake, and Lake Wahoo). These 30-second and 60-second videos are shown as educational purposes for presentations, on the LPNNRD website, commercials on area television stations, and featured on social media platforms. Past directors, current directors, and current staff have been featured in the videos. The commercials air on News Channel Nebraska and Nebraska Public Media throughout the year.

Education Programs

During FY 2024, the district continued with two year-long programs. The St. Wenceslaus Pre-kindergarten students learn about wildlife, trees, birds, soil and water conservation through books, pictures, stories, and hands-on activities. The students visited Lake Wahoo at the end of the year for a field trip filled with nature hikes, nature crafts, and disc golf. The district teamed up with Wahoo Public middle school students for the Survival Club program, making a total of three school years of the program. LPNNRD staff and other outdoor enthusiasts met monthly with students during the school year to learn about hiking, knot tying, 2-legged predators, 4-legged predators, fishing, first aid, foraging for wild foods, fire building and other outdoor survival skills.

The district continues to participate in the Career Exploration Opportunities (CEO) Program with Wahoo Public Schools. During the fall semester of 2023, LPNNRD staff hosted one high school senior and he rotated between each department to learn about the LPNNRD responsibilities.

The Clint Johannes Education Building is utilized for events of all kinds. Local teachers and other organizations will use it for their students and staff as a meeting space with a great view and amenities. The LPNNRD utilizes the building for educational events each month. The event, Coffee Lakeside, has impacted close to 100 people, who meet in the building once a month. Topics included wildflowers, fireflies, animal adaptations, fall activities, phenology, nature based play, lake ecosystems, water flower identification, fungi, and more. All other NRD related events are also hosted in the building or another location at Lake Wanahoo.

Additional events throughout the year included Wildflowers and Wine, Trivia and Game Night, Back to School Night, Community Fishing Event, and Nocturnal Nights. These events drew in participants of all ages with some returning and some new individuals. Staff also participated in the county-wide, Kid's Summer Institute, that ran all of June. Students participated in dip netting for macroinvertebrates; birding; disc golf; nature journaling; and wild about wildflowers.

The Lower Platte North NRD and Lower Platte South NRD rotate in hosting the East Central Land Judging Contest. Land Judging is a competition for high students that challenges them to gain a better understanding of soil structure and land evaluation. The Lower Platte North NRD works with local NRCS employees to choose a site location and help with site preparation. The Lower Platte North NRD staff and NRCS staff will assist in the preparation, contest monitoring, and scoring efforts during the contest.

The annual LPNNRD Spring Conservation Sensation was held on May 1st at Lake Wanahoo. Fifth and sixth grade students from Saunders, Butler, and Dodge Counties participated in various activities. Hands-on activities were presented by LPNNRD staff, additional personnel from various agencies and organizations, and volunteers to teach students about the environment, natural resources, tree planting, lake ecosystems, wildlife education and more. Nearly 300 students attended the event.

The third annual LPNNRD Natural Resources Camp was held at Lake Wanahoo. For one week, attendees learned how to fish, how to go birding, about the amphibians and reptiles of Nebraska, and insects, both macroinvertebrates they found in the lake and the land dwelling butterflies and moths.

Test Your Well Event is a program that partners with area FFA chapters to host public events, providing nitrate testing of water samples from private wells at no cost to the attendees. The district held 2 events in FY 2024.

District staff provided various presentations and activities during natural resources festivals, field days, out-of-school time programs, school classrooms, online activities on the LPNNRD website, and adult education events. As a result of the district's educational outreach efforts, there was interaction with approximately 3,504 youth and 326 adults in FY 2024.

Information & Education Long Range Objectives

- Publish the district newsletter "Viaduct" biannually in an electronic format and as a printed newspaper insert in 8 area newspapers.

- Send timely news releases to the local media on various LPNNRD programs, projects, and activities.
- Disperse pamphlets and other publications about LPNNRD programs.
- Update the district's website frequently.
- Provide a display at county fairs or agriculture events (up to five major counties) within the district.
- Continue information and education outreach for the district through the use of tools such as local radio stations, local TV stations, and social media outlets.
- Provide district elementary students with free trees, as requested, in the spring.
- Provide LPNNRD staff as requested to speak to community organizations and schools on NRD activities and environmental topics.
- Provide various education programs, events, and activities to area schools and out-of-school time programs.
- Host the East Central Region Land Judging Contest in the fall of 2024.
- Host the annual Spring Conservation Sensation in May 2025.
- Develop new programs and promotional projects to aid in outreach efforts of the district.
- Provide assistance and publications for the students involved in the Shell Creek Watershed Monitoring Program.
- Continue to provide a scholarship for graduating seniors in the Shell Creek Watershed Monitoring Program who plan to pursue higher education relating to science or natural resources.
- Search for new and effective ways to inform and educate the public on the NRD purpose and programs.
- Participate with the Information & Education (I&E) Staff Group to coordinate statewide I&E activities and produce statewide products.
- Increase participation in activities sponsored by other agencies relating to the NRD's responsibilities.
- Seek to have conservation/environmental education as a part of the school curriculum.
- Support environmental education activities and events throughout the district, and neighboring NRDs.
- Assist in the development of an outdoor classroom for a district school.
- Partner with district schools to host Test Your Well Events annually.

The staff of the Lower Platte North NRD includes 21 full-time and 11 part-time/seasonal employees. The NRD administers a full-time field technician, four field office assistants in Natural Resource Conservation Service county offices, and a Recreation Facilitator for Czechland & Homestead Lake Recreation Areas.

Included in the part-time positions, the district employs seasonal conservation technicians to assist in the layout of land treatment structures. There are seasonal summer employees hired to help with Lake Wanahoo, water sampling, tree planting, and maintenance of LPNNRD projects. Personnel positions and assigned responsibilities may increase in the future as increased project and program responsibilities increase.

Current staff as of September 1, 2024:

Sydney Abbott, Education Coordinator

Daryl Andersen, Water Resources Manager

Kaitlyn Barga, Wanahoo Recreation Supervisor/Water Resources Specialist

Brandon Beethe, Grants/GIS Coordinator

Jill Breunig, Bookkeeping Department Head/Administrative Assistant

Ryan Chapman, Assistant General Manager

Sean Elliott, Projects/Rural Water Manager

Carson Euse, Recreation Facilitator Czechland & Homestead Lakes

Eric Gottschalk, General Manager

Bob Heimann, Operations & Maintenance Manager

David Moore, Operations & Maintenance Technician

Russell Oaklund, Lead Water Resources Specialist

Karen Rezac, Department/Administrative Assistant

Lacey Sabatka, Information Coordinator

Jon Speichinger, Operations & Maintenance Technician

Jacob Stover, Water Resources Specialist

Staff Support for NRCS Offices:

Adam Brockman, Conservation Technician

Jessica Marty, NRD/NRCS Field Office Assistant (Dodge County)

Marla Milliken, NRD/NRCS Field Office Assistant (Saunders County)

Kristin Miller, NRD/NRCS Field Office Assistant (Colfax County)

Kimberly Piitz, NRD/NRCS Field Office Assistant (Butler County)

Funding required for the LPNNRD projects and programs for Fiscal Year 2025 requires a general operating budget of \$14,085,234 of which \$3,480,715 is required from the district's local tax levy. The FY 2025 tax levy of .025767 cents per \$100 actual valuation is required from District property. Projected expenses and income for FY 2022-2030 are shown in Appendix F.

A tax levy of .025767 means that an owner of a \$150,000 home will pay \$42.98 in NRD taxes in FY 2024. An owner of farm land valued at \$7,000 per acre will pay \$2.00 an acre/year to the NRD in FY 2025. The LPNNRD levy represents about two percent of the total property tax collected.

Although it is expected that the amount of revenue from all sources will fluctuate during the next few years, it is anticipated that the LPNNRD will operate at a mill levy between \$0.025 and \$0.055 per \$100 actual valuation as the District continues to assist with flood reduction project priorities and to address our responsibilities with groundwater water quality and quantity management.

UNITED STATES DEPARTMENT OF THE INTERIOR
DOWN PAYMENT (BILL) REQUEST

Make Remittance Payable To: U.S. Geological Survey
Billing Contact: Amanda Flynn, Budget Analyst Phone: 402-328-4144,
aflynn@usgs.gov

Bill #: 91177153
Customer: 6000000136
Date: 07/10/2024
Due Date: 09/08/2024

Remit Payment To: United States Geological Survey
P.O. Box 6200-27
Portland, OR 97228-6200

Payer: LOWER PLATTE NORTH NRD
P.O. BOX 126
WAHOO NE 68066

Additional forms of payment may be accepted. Please email GS-A-HQ_RMS@USGS.GOV or call 703-648-7683 for additional information.

To pay through Pay.gov go to <https://www.pay.gov>.

Checks must be made payable to U.S. Geological Survey. Please detach the top portion or include bill number on all remittances.

Amount of Payment: \$ _____

| Date | Description | Qty | Unit Price | | Amount |
|------------|--------------|-----|------------|-----|-----------|
| | | | Cost | Per | |
| 07/10/2024 | 24NRJFA00170 | 1 | 19,010.00 | 1 | 19,010.00 |

Amount Due this Bill: 19,010.00

Accounting Classification:
Sales Order: 116997
Sales Office: GENR
Customer: 6000000136
Accounting #: 11465908

TIN: *****2716

Form 9-1366
(May 2018)

U.S. Department of the Interior
U.S. Geological Survey
Joint Funding Agreement
FOR
Water Resource Investigations

Customer #: 600000136
Agreement #: 25NRJFA00170
Project #: NR00GS1
TIN #: 47-0542716

Fixed Cost Agreement YES[X] NO[]

THIS AGREEMENT is entered into as of October 1, 2024, by the U.S. GEOLOGICAL SURVEY, Nebraska Water Science Center, UNITED STATES DEPARTMENT OF THE INTERIOR, party of the first part, and the LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT, party of the second part.

1. The parties hereto agree that subject to the availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation **streamgages at Shell Creek near Columbus and Wahoo Creek at Ashland**, herein called the program. The USGS legal authority is 43 USC 36C; 43 USC 50, and 43 USC 50b.

2. The following amounts shall be contributed to cover all of the cost of the necessary field and analytical work directly related to this program. 2(b) include In-Kind-Services in the amount of \$0.00

- (a) \$32,185 by the party of the first part during the period October 1, 2024 to September 30, 2029
- (b) \$89,675 by the party of the second part during the period October 1, 2024 to September 30, 2029
- (c) Contributions are provided by the party of the first part through other USGS regional or national programs, in the amount of: \$50,100

Description of the USGS regional/national program:
Federal Priority Streamgages Program

- (d) Additional or reduced amounts by each party during the above period or succeeding periods as may be determined by mutual agreement and set forth in an exchange of letters between the parties.
- (e) The performance period may be changed by mutual agreement and set forth in an exchange of letters between the parties.

3. The costs of this program may be paid by either party in conformity with the laws and regulations respectively governing each party.

4. The field and analytical work pertaining to this program shall be under the direction of or subject to periodic review by an authorized representative of the party of the first part.

5. The areas to be included in the program shall be determined by mutual agreement between the parties hereto or their authorized representatives. The methods employed in the field and office shall be those adopted by the party of the first part to insure the required standards of accuracy subject to modification by mutual agreement.

6. During the course of this program, all field and analytical work of either party pertaining to this program shall be open to the inspection of the other party, and if the work is not being carried on in a mutually satisfactory manner, either party may terminate this agreement upon 60 days written notice to the other party.

7. The original records resulting from this program will be deposited in the office of origin of those records. Upon request, copies of the original records will be provided to the office of the other party.

8. The maps, records or reports resulting from this program shall be made available to the public as promptly as possible. The maps, records or reports normally will be published by the party of the first part. However, the party of the second part reserves the right to publish the results of this program, and if already published by the party of the first part shall, upon request, be furnished by the party of the first part, at cost, impressions suitable for purposes of reproduction similar to that for which the original copy was prepared. The maps, records or reports published by either party shall contain a statement of the cooperative relations between the parties. The Parties acknowledge that scientific information and data developed as a result of the Scope of Work (SOW) are subject to applicable USGS review, approval, and release requirements, which are available on the USGS Fundamental Science Practices website <https://www.usgs.gov/about/organization/science-support/science-quality-and-integrity/fundamental-science-practices>

Form 9-1366
(May 2018)

U.S. Department of the Interior
U.S. Geological Survey
Joint Funding Agreement
FOR
Water Resource Investigations

Customer #: 6000000136
Agreement #: 25NRJFA00170
Project #: NR00GS1
TIN #: 47-0542716

9. Billing for this agreement will be rendered quarterly. Invoices not paid within 60 days from the billing date will bear Interest, Penalties, and Administrative cost at the annual rate pursuant the Debt Collection Act of 1982, (codified at 31 U.S.C. § 3717) established by the U.S. Treasury.

USGS Technical Point of Contact

Name: Jason Lambrecht
Hydrologic Data Section Chief
Address: 5231 South 19th
Lincoln, NE 68512
Telephone: (402) 328-4124
Fax: (402) 328-4101
Email: jmlambre@usgs.gov

Customer Technical Point of Contact

Name: Eric Gottschalk
General Manager
Address: PO Box 126
Wahoo, NE 68066
Telephone: (402) 443-4675
Fax:
Email: egottschalk@lpnrd.org

USGS Billing Point of Contact

Name: Amanda Flynn
Budget Analyst
Address: 5231 South 19th
Lincoln, NE 68512
Telephone: (402) 328-4144
Fax: (402) 328-4101
Email: aflynn@usgs.gov

Customer Billing Point of Contact

Name: Eric Gottschalk
General Manager
Address: PO Box 126
Wahoo, NE 68066
Telephone: (402) 443-4675
Fax:
Email: egottschalk@lpnrd.org

U.S. Geological Survey
United States
Department of Interior

Lower Platte North Natural Resources District

Signature

Signatures

By _____
Name: Jason M. Lambrecht
Title: Acting Director

By _____ Date: _____
Name:
Title:

By _____ Date: _____
Name:
Title:

By _____ Date: _____
Name:
Title:

Table 1. Summary of proposed funding for the period October 1, 2024 -- September 30, 2029 (5 years) for the operation of two streamgages that are currently supported by the Lower Platte North Natural Resources District.

[CMF, USGS, Cooperative matching funds; LPN NRD, Lower Platte North Natural Resources District; FPS, Federal Priority Streamgages Program; USGS, U.S. Geological Survey]

| Station number | Station name | Station funding | | | Total | Footnote Code |
|------------------------|---------------------------|-----------------|----------|----------|-----------|---------------|
| | | USGS FPS | USGS CMF | LPN NRD | | |
| Streamflow Stations | | | | | | |
| 06795500 | Shell Creek near Columbus | \$50,100 | \$730 | \$35,150 | \$85,980 | 1 |
| 06804700 | Wahoo Creek at Ashland | \$0 | \$31,455 | \$54,525 | \$85,980 | |
| Funding partner totals | | \$50,100 | \$32,185 | \$89,675 | \$171,960 | |

1 USGS FPS funds primarily used in place of CMF funds as match with LPN NRD



United States Department of the Interior

U.S. GEOLOGICAL SURVEY
Water Resources Discipline
Nebraska Water Science Center
5231 South 19th Street
Lincoln, NE 68512-1271

August 23, 2024

Eric Gottschalk
Lower Platte North Natural Resources District
PO Box 126
Wahoo, NE 68066

Dear Mr. Gottschalk:

Enclosed is a copy of Joint Funding Agreement No. 25NRJFA00170 for the operation of two streamgages at Shell Creek near Columbus and Wahoo Creek at Ashland, as listed in the enclosed summary of proposed funding. This agreement covers five years of operations and expires on September 30, 2029. The total amount of the agreement is \$121,860 or \$32,185 for the U.S. Geological Survey and \$89,675 for the Lower Platte North Natural Resources District. Funds in the amount of \$50,100 from the Federal Priority Streamgages Program (FPS), which are not included in the above amounts, have been used as a supplement to or in place of Cooperative Matching Funds. Please sign the agreement and return by email to aflynn@usgs.gov. Work cannot be continued until we receive the signed agreement.

Work performed with funds from this agreement will be conducted on a fixed-price basis under the authority of statute 43 USC 36C. Billings will be rendered quarterly. The results of all work under this agreement will be available for publication by the U.S. Geological Survey.

For more information or any questions concerning this agreement, please contact Jason Lambrecht at 402-328-4124.

Sincerely,

Jason Lambrecht, Acting Director
USGS Nebraska Water Science Center

2 Enclosures

USGS UEI No. NJQMLNG5LA5