

Water Committee Meeting  
Wednesday, September 28, 2022 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)

The deadline for applications was September 15. The NRD received 27 new applications and 10 carry-overs from 2021 for a total of 37 applications. Total acres were 2105.14 for a total consumption of 345.769 AF (acre feet) of groundwater. The NRD GW Rules and Regulations allows 200 AF of water per year for new irrigated acres.

The staff have attached the variance list. .

Committee and staff discussed the variances and the drought situation. Staff pointed out that the majority of the variances are in the better aquifers within the District.

2.A.2. Variance Requests in the Non-Hydrologically Connected Area (Normal Development Area)

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

2.A.4. Well Permit Program

2.A.4.a. Scott Sukstorf Well Permit Application

Scott Sukstorf has applied for a new well in the NE1/4 of S3-T16N-R7E, Saunders County, Todd Valley Subarea. He currently irrigates approximately 180 acres under two pivots off of well G-071465 and would like a second well for easier management of the system. If approved, the new well will irrigate 60 acres but will be tied together with the existing well in the event of well failure.

Attached is a map of the system.

2.A.4.b. Norman Kavan Jr Well Permit Application

Norman Kavan Jr has applied for a new well in the S 1/2 of S31-T16N-R8E,

Saunders County, Todd Valley Subarea. They currently irrigate 178.3 acres under two pivots off of well G-052570 and would like a second well for easier management of the system. If approved, the new well will irrigate 40 acres but will be tied together with the existing well in the event of well failure.

Attached is a map of the system.

2.A.4.c. Supplemental Irrigation Well

Paul Thorson representing Todd Valley Farms (Kim and Wayne Thorson) is requesting a new irrigation well for NW SE S26-15N-8E. The property already has 71 certified irrigated acres from G-062082. Paul would like to keep the existing well to irrigate about 5 acres in the corner that the pivot does not reach. He would continue using an irrigation gun from the existing well. He does not plan on increasing irrigated acres and will be contacting the Village of Mead, as this falls within the Village Wellhead Protection Area.

Attachments.

2.A.4.d. Well Permits Approved

2.A.4.e. Wells Permits Approved: #

2.A.4.f. Lan downer	2.A.4.g. Number of Wells	2.A.4.h. Number of New Irrigated Acres
2.A.4.l.	2.A.4.m.	2.A.4.n.
2.A.4.r.	2.A.4.s.	2.A.4.t.
2.A.4.x.	2.A.4.y.	2.A.4.z.
2.A.4.dd.	2.A.4.ee.	2.A.4.ff.
2.A.4.jj.	2.A.4.kk.	2.A.4.ll.

2.A.4.pp.

2.A.4.qq.

2.A.4.rr.

2.A.4.ss.

2.A.4.tt.

2.A.4.uu.

2.A.4.vv. The total number of approved permits for 2022 is #

Location of Approved Well Permits for 2022: Correct as of #####

2.A.4.ww. County	2.A.4.xx. Irrigation - New	2.A.4.yy. Irrigation - Replacement
2.A.4.eee. Butler	2.A.4.fff.	2.A.4.ggg.

2.A.4.mmm. Co lfox	2.A.4.nnn.	2.A.4.ooo.
2.A.4.uuu. Do dge	2.A.4.vvv.	2.A.4.www.
2.A.4.cccc. Bo one	2.A.4.dddd.	2.A.4.eeee.
2.A.4.kkkk. M adison	2.A.4.llll.	2.A.4.mmmm.
2.A.4.ssss. Pl atte	2.A.4.tttt.	2.A.4.uuuu.
2.A.4.aaaa. Sa unders	2.A.4.bbbbb.	2.A.4.ccccc.
2.A.4.iiii. To tal	2.A.4.jjjj.	2.A.4.kkkkk.

2.A.5. Lower Platte Basin Modeling Project

The group of LPS, Papio, NeDNR and LPN met to discuss the progress. Attached is a draft inter-local agreement for all agencies that Papio NRD has completed. If the WSF grant is approved for the modeling project in December, the project could start in January. The plan is to complete the model in the 2024-25 calendar year time frame.

An education component is planned for all parties to learn MODFlow. Each agency will identify staff to attend, so when the model is complete, the potential is to run some basic modeling efforts.

Legal Council reviewed, with changes from the group shown in the updated inter-local agreement (attached). NeDNR left 7.01.2 as is, where it reads "all decisions shall be made by unanimous consensus of the Collective Parties". NeDNR consensus is required on any decision they will disburse money for (contractor hiring and/or model creation/design decisions).

2.A.6. Bellwood Phase 2 Area

2.A.7. 2022 is the twentieth year for this Phase 2 Area.

2.A.8.

2.	2.A	2.A	2.A	2.A	2.A
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		2.A	2.A	2.A	2.A
	2.A		2.A	2.A	2.A
2.		2.A	2.A	2.A	2.A
	2.A		2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A

2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A

2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A

2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A

2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A

2.A.138. All sample results are in from LPN sampling kits.  
 2.A.139. Richland - Schuyler Phase 3 Area

2.A.140. 2021 is the seventh 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.

The committee and staff discussed the nitrate results for this area. Committee asked staff what phase 4 would look like and how big an area? They asked staff to attach Phase 4 rules and a map of what area would be considered at the next GW Committee Meeting. It was pointed out that the results shown in the chart are from producer samples and to develop a management area, NRD staff would have to collect them. This will be a discussion item at the Water Retreat tentatively scheduled for November 30th for all Board members.

2.A.141. Year	2.A.142. Nitrate-nitrogen Range	2.A.143. Percent 2.A.144. Nitrate-nitrogen 2.A.145. 0 to 8.0 ppm	2.A.146. Percent 2.A.147. Nitrate-nitrogen 2.A.148. 8.01 to 10.00 ppm
2.A.155. 2004	2.A.156. 0 to 47 ppm	2.A.157. 30% (42 of 139)	2.A.158. 10% (14 of 139)

2.A.161. 20 05	2.A.162. 0 to 120 ppm	2.A.163. 31.3% (74 of 236)	2.A.164. 10.2% (24 of 236)
2.A.167. 20 06	2.A.168. 0 to 53 ppm	2.A.169. 28% (50 of 181)	2.A.170. 14% (26 of 181)
2.A.173. 20 07	2.A.174. 0 to 99 ppm	2.A.175. 32% (75 of 231)	2.A.176. 10% (22 of 231)
2.A.179. 20 08	2.A.180. 0 to 46 ppm	2.A.181. 28% (53 of 190)	2.A.182. 12% (23 of 190)
2.A.185. 20 09	2.A.186. 0 to 57 ppm	2.A.187. 33% (72 of 216)	2.A.188. 6% (13 of 216)
2.A.191. 20 10	2.A.192. 0 to 57.5 ppm	2.A.193. 31% (70 of 229)	2.A.194. 7% (15 of 229)
2.A.197. 20 11	2.A.198. 0 to 65.8 ppm	2.A.199. 28% (67 of 241)	2.A.200. 9% (21 of 241)
2.A.203. 20 12	2.A.204. 0 to 52.6 ppm	2.A.205. 29% (70 of 241)	2.A.206. 9% (21 of 241)
2.A.209. 20 13	2.A.210. 0 to 94.0 ppm	2.A.211. 25% (63 of 252)	2.A.212. 9% (23 of 252)
2.A.215. 20 14	2.A.216. 0 to 101.0 ppm	2.A.217. 27% (68 of 251)	2.A.218. 9% (22 of 251)
2.A.221. 20 15	2.A.222. 0 to 53.3 ppm	2.A.223. 23% (55 of 238)	2.A.224. 12% (29 of 238)
2.A.227. 20 16	2.A.228. 0 to 50.5 ppm	2.A.229. 25% (58 of 228)	2.A.230. 10% (22 of 228)
2.A.233. 20 17	2.A.234. 0 to 53.4 ppm	2.A.235. 25% (60 of 238)	2.A.236. 6% (1 4 of 238)
2.A.239. 20 18	2.A.240. 0 to 56.9 ppm	2.A.241. 26.5% (50 of 189)	2.A.242. 6.3% (12 of 189)
2.A.245. 20 19	2.A.246. 0 to 39.4 ppm	2.A.247. 25% (53 of 209)	2.A.248. 11% (22 of 209)
2.A.251. 20 20	2.A.252. 0 to 50.8 ppm	2.A.253. 26% ( 69 of 261)	2.A.254. 6% (1 5 of 261)
2.A.257. 20 21	2.A.258. 0 to 43.0	2.A.259. 25.5% (67 of 263)	2.A.260. 8.4% (22 of 263)
2.A.263. 20 22	2.A.264. 0 to 58.5	2.A.265. 23.0% (57 of 248)	2.A.266. 6.45% (16 of 248)

14 water samples for this area have been received in the past week; some of these are at the lab and some ( this week) will be taken to the lab. Three sample kits are outstanding.

**2.B. GROUND WATER QUALITY SAMPLING**  
2022 results from state network wells

The nitrate range was from 0 - 18.7 ppm.

2.C. % Nitrate-nitrogen 0-8.0 ppm	2.D. % Nitrate nitrogen 8.01-10.0 ppm	2.E. % Nitrate nitrogen > 10 ppm
2.F. 69% (36 of 52)	2.G. 15% (8 of 52)	2.H. 15% (8 of 52)

### 3. GROUND WATER PROGRAMS

#### 3.A. DECOMMISSIONED WELL PROGRAM

##### 3.A.1. Well Estimates

3.A.2. # new wells has been reviewed and approved for decommissioning since the last Committee meeting.

3.A.3. Well Owner	3.A.4. Type of Well	3.A.5. Cost Share Estimate	3.A.6.
3.A.7. Randall E Nelson	3.A.8. Stock/Domestic (Unregistered)	3.A.9. \$819.20	3.A.10.
3.A.11.	3.A.12.	3.A.13.	3.A.14.
3.A.15.	3.A.16.	3.A.17.	3.A.18.

##### 3.A.19. Plugged Wells

3.A.20. # wells have been plugged, reviewed, and ready for cost share payment approval this month.

3.A.21. Well Owner	3.A.22. Type of Well	3.A.23. Cost Share Estimate	3.A.24. County
3.A.25.	3.A.26.	3.A.27.	3.A.28.
3.A.29.	3.A.30.	3.A.31.	3.A.32.
3.A.33.	3.A.34.	3.A.35.	3.A.36.

### 3.B. LOWER PLATTE NORTH NRD GROUND WATER STUDIES

#### 3.B.1. Phase Area Update

Staff is planning a couple of meetings with producers to assist in submitting their reports online. The plan is for November 21 or 22 and December 14 or 15.

Attached is a letter to request the phase area data to update UNL dashboard on nitrogen efficiency. LPN had given data to this group prior to 2015 for analysis. In 2015, UNL lost funding and personnel to continue this process. They would like to obtain LPN data from 2016 - 2021 and then give a presentation to the Committee/Board this winter.

#### 3.B.2. Lower Platte River Consortium

The first interlocal has expired and the group would like to extend the agreement. The group meets at least annually and virtually monthly during the summer, discussing drought situations.

Below is some information from the interlocal. No money is outlined in the agreement unless a specific project is brought forward. Each Board then would have to approve the project.

3.01 The Parties hereby create the Lower Platte River Consortium ("Consortium"). The Consortium shall be governed by the terms of this Agreement and the Drought Plan. The Consortium shall carry out the purposes as set forth in Section 5 of this Agreement. The Consortium shall be responsible for the administrative, technical, and financial affairs of the Consortium and the Drought Plan. The Consortium shall not be considered a joint entity separate and distinct from the respective Parties to this Agreement, but rather a collaborative working arrangement of the Parties.

4.01 The duration of this Agreement shall be for a period of one (1) year from the execution date of this Agreement by the last Party. This Agreement may be extended for successive one (1) year terms by the mutual agreement of all Parties hereto. The Parties may only extend this Agreement for ten (10) additional terms.

6.01 The Consortium will be financed by the Parties as needed for certain projects or activities the Consortium decides to pursue. Some years the Consortium will not have a budget because projects will not be pursued in that fiscal year. In years when the Consortium decides to pursue projects or activities, an annual budget will be adopted as described in other portions of Section 6 of this Agreement. Proportions of payments by each Party will be determined at the time the annual budget is adopted.

#### 3.B.3.

#### 3.B.4. Cover Crop Project Update

Attached are a few of the fields that cover crops were planted by a HiBoy in

August and September. One producer will be installing soil moisture sensors over the winter to evaluate soil moisture uptake from cover crops.

Link below shows an excellent video that Lacey put together about the project. Copy the link into a web browser to view.

[https://youtu.be/Zg\\_AqTAWAh0](https://youtu.be/Zg_AqTAWAh0)

3.B.5. Long Range Plan

Attached is draft 2 of the Long-Range Plan.

3.B.6. Soil Moisture Sensors

The graph attached shows a field using Field Climate Soil Moisture Sensors. Staff read the flow meter on this field and the producers put on 4.5722 acres-inches of water.

3.C. NEW MONITORING WELLS

Dvorak Well Drilling drilled the monitoring well on September 23. An invoice received on 10/4/2022 is attached for \$12,360, per quote approved at the October 2021 Board Meeting.

Motion is needed to pay the invoice.

4. SURFACE WATER PROGRAMS

4.A. STATE LAKES, FOR THE WEEK OF

Fremont Lake No 10 (SRA) is on the list for E-coli for the week of September 23. Go to the NDEE website for a complete list of lakes on the Health Alerts.

5. OTHER

GMDA Winter conference will be held January 23-26 at Simons Island, Georgia.

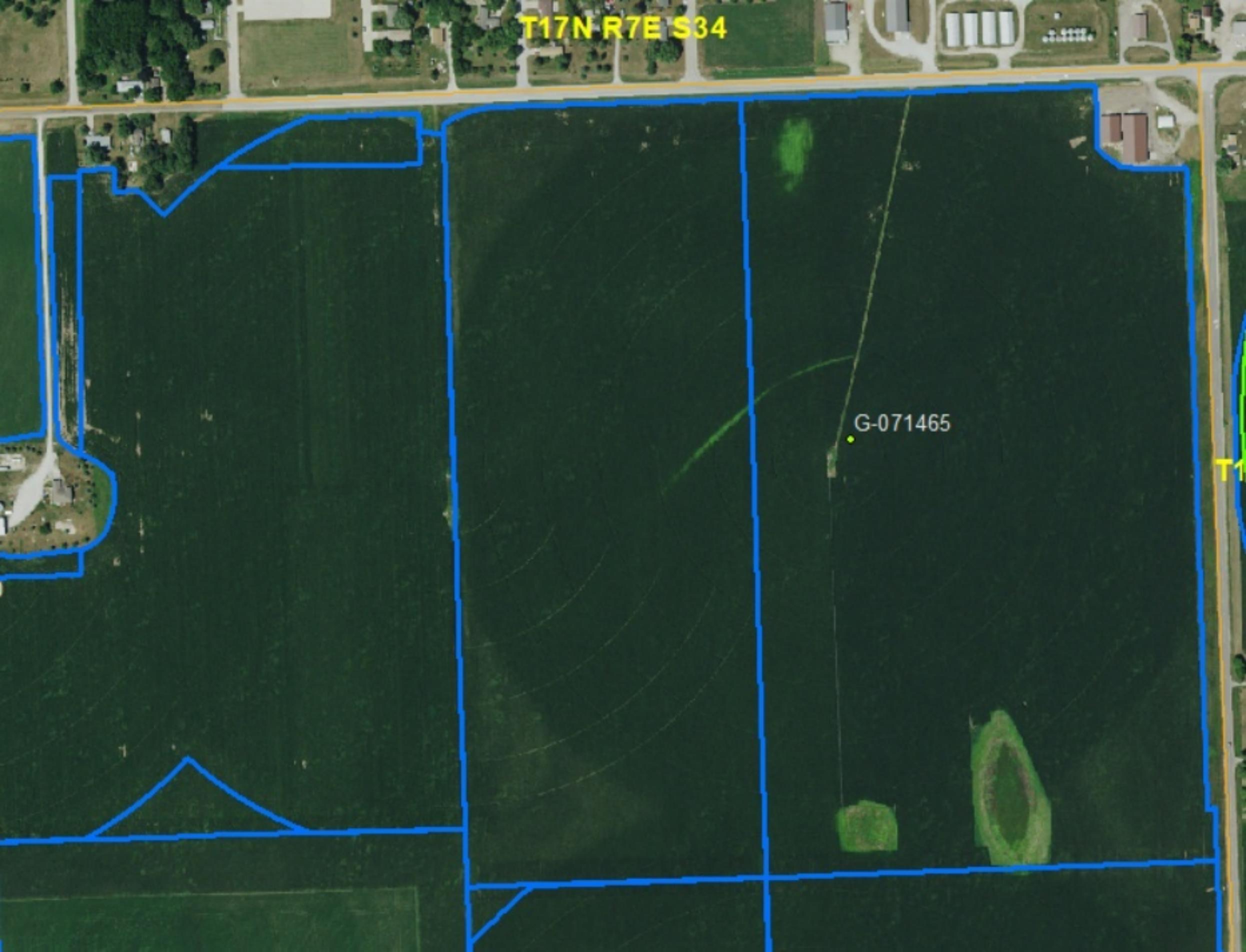
5.A. Land Applications

5.B. COMMENTS FROM THE PUBLIC

VarianceNumber	Applicant	ApplicationType	County	SubArea	RankingScore	Acres	Acre Feet	Twn	Rng	Dir	Section
LPN-V-022-0562	Meduna Family Land LLC	new	Saunders	Todd Valley	520.7	54.34	8.31	16	7 E		27
LPN-V-022-0578	Bruce Williams	expansion	Saunders	Todd Valley	518.4	15	2.52	16	7 E		20
LPN-V-022-0588	Chad Roumph	expansion	Saunders	Todd Valley	504.8	60	9.41	16	7 E		22
LPN-V-022-0569	Albert Lee Kavan	expansion	Saunders	Todd Valley	503.6	20	3.64	16	6 E		13
LPN-V-022-0577	Luke N Beckman	expansion	Boone	Upper Newman Grove	498	21.46	1.8	22	6 W		2
LPN-V-022-0563	Meduna Family Land LLC	new	Saunders	Todd Valley	496.1	59.94	9	16	7 E		27
LPN-V-022-0564	Meduna Family Land LLC	expansion	Saunders	Todd Valley	492.8	57.74	9.05	16	7 E		22
LPN-V-022-0580	Jason Glock	expansion	Saunders	Todd Valley	473.4	20	2.89	16	7 E		10
LPN-V-022-0567	Hywanah Robinson	new	Saunders	Todd Valley	470.6	16	1.92	15	8 E		23
LPN-V-022-0571	Michael Murren	new	Saunders	Todd Valley	466.9	66	11.03	15	7 E		13
LPN-V-022-0584	Dale Nygren	expansion	Saunders	Todd Valley	463.5	33	5.17	15	8 E		34
LPN-V-021-0555	Rolland Otte	new	Saunders	Morse Bluff	455	31.44	5.79	17	5 E		23
LPN-V-022-0565	Benjamin S Deerson	expansion	Saunders	Todd Valley	452.5	7.7	1.07	15	8 E		15
LPN-V-022-0568	Raymond J Kucera Jr	expansion	Saunders	Todd Valley	451.7	20	3.14	16	7 E		15
LPN-V-022-0574	John F. & Cynthia L. Temme	expansion	Boone	Upper Newman Grove	449.5	21	2.1	22	6 W		15
LPN-V-022-0583	Jerry D. & Judy K. Hestekind	expansion	Boone	Upper Newman Grove	443	18	1.57	22	6 W		12
LPN-V-022-0573	Chad Hemmer	new	Platte	Middle Shell Creek	439.7	84.52	9.51	19	2 W		14
LPN-V-022-0579	Austin & Mari Beth Ziegenbein	new	Saunders	Todd Valley	438.4	35	7.07	14	9 E		27
LPN-V-022-0581	David K Deerson	expansion	Saunders	Todd Valley	433.7	15	3.1	14	9 E		6
LPN-V-021-0537	Josh Faltys	expansion	Colfax	Lower Shell Creek	419	91	13.63	18	3 E		27
LPN-V-021-0553	Gary Torczon	new	Platte	Middle Shell Creek	418.4	90	11.22	19	2 W		25
LPN-V-021-0540	Kody Karloff	expansion	Saunders	Yutan South	405	68	12.42	14	9 E		11
LPN-V-022-0572	Mark Wegener	new	Platte	Lower Newman Grove	402.7	35	5.11	20	3 W		36
LPN-V-022-0576	Stella Star Investment Co	new	Boone	Upper Newman Grove	383.7	135	13.07	22	5 W		19
LPN-V-021-0539	Kody Karloff	new	Saunders	Todd Valley	375.4	68	12.701	14	9 E		14
LPN-V-022-0587	Duane A & Sharon L Johnson	new	Saunders	Yutan South	362.5	80	17.28	14	9 E		16
LPN-V-022-0575	Norman A Kavan, Jr	expansion	Saunders	Prague	355	35	7.02	16	6 E		22
LPN-V-022-0586	Randy M. Benson	expansion	Boone	Upper Newman Grove	355	33	5.59	21	5 W		25
					<b>Totals=</b>	<b>1291.14</b>	<b>196.131</b>				
LPN-V-022-0585	Rick L Beranek	new	Saunders	Swedeburg	354	125	16	13	8 E		13
LPN-V-022-0582	Jeanie Trofholz	new	Colfax	North Bend	351.4	130	24.58	17	4 E		2
LPN-V-021-0547	Jeremy Janssen	expansion	Platte	Platte Center	349.7	34	7.158	18	2 W		10
LPN-V-021-0546	Scott Loseke	expansion	Platte	Platte Center	346.2	130	23.29	19	2 W		33
LPN-V-021-0541	Larry D Karloff Tree	new	Saunders	Yutan South	342.5	68	13.79	15	9 E		34
LPN-V-021-0532	Kent Lee	new	Madison	Upper Newman Grove	325.66	133	20.27	21	4 W		17
LPN-V-022-0570	Carolyn A Petersen	expansion	Platte	Platte Center	319.2	70	13.55	18	2 W		8
LPN-V-022-0566	John J Healy	new	Colfax	Schuyler	307.7	50	10.8	17	3 E		24

T17N R7E S34

G-071465



G-16190

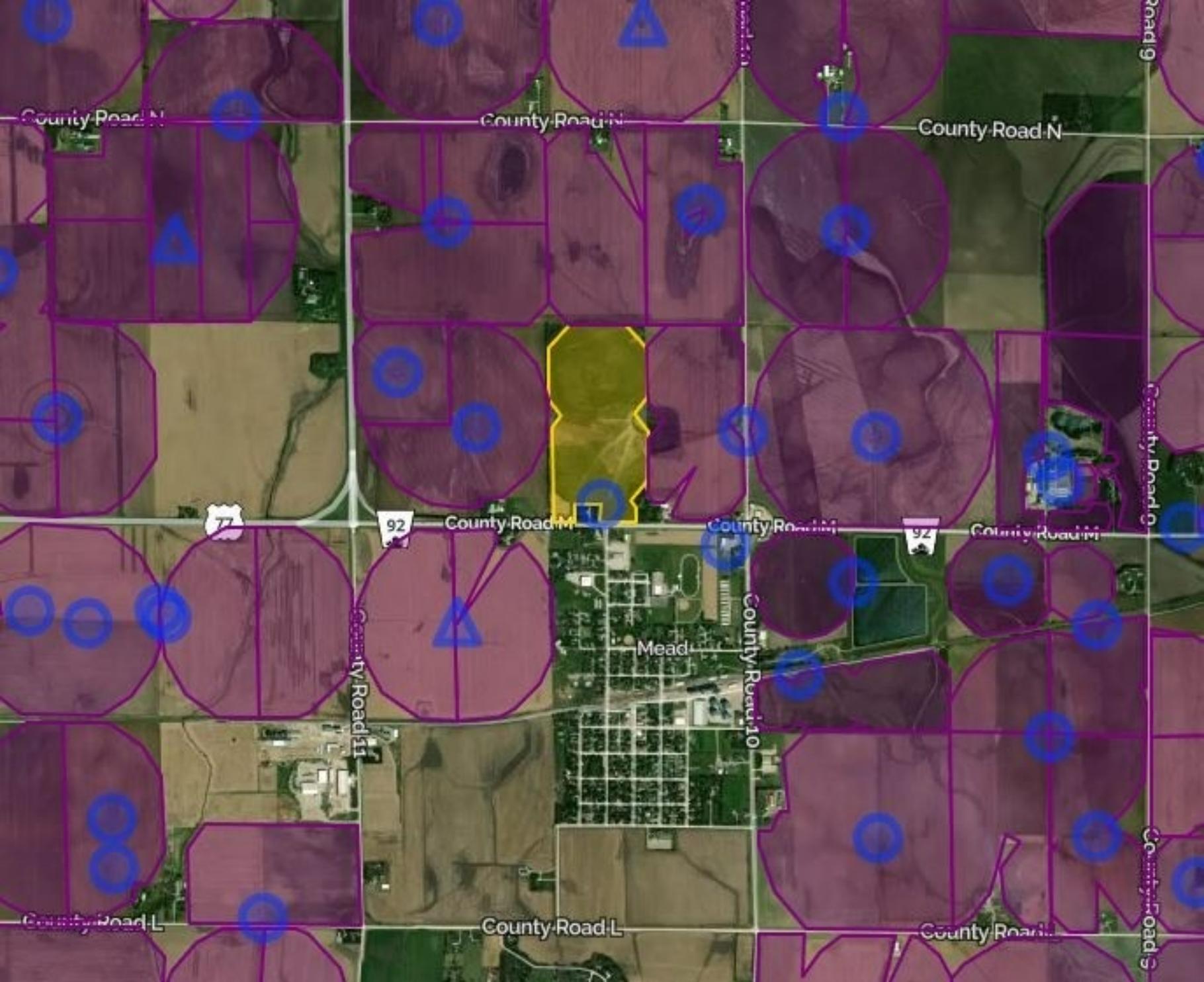
T16N R8E S31

T16N R8E S32

G-052570

IRRIGATION: Edge





County Road N

County Road N

County Road N

77

92

County Road M

County Road M

92

County Road M

County Road L

Mead

County Road O

County Road L

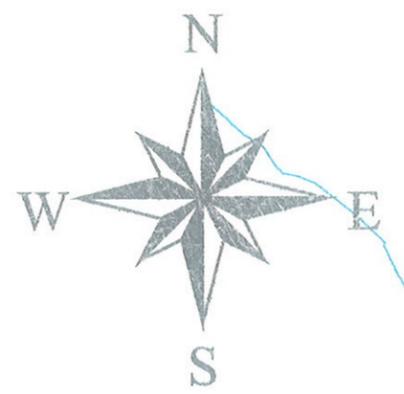
County Road L

County Road L

County Road O

R 8E | R 9E

Time-of-Travel Thresholds Plotted  
Using WhAEM Computer Model



Wellhead Protection  
Area Boundary



State Route 92

State Route 92

Mead

Pacific

Union

T 15N  
T 14N

0.5 0 0.5 1 Miles



**MEAD**  
**SAUNDERS COUNTY**  
Drawn by Nebraska Department of  
Environmental Quality Wellhead  
Protection Program, 2001

## **LOWER PLATTE RIVER BASIN SUB-REGIONAL GROUNDWATER MODELING INTERLOCAL COOPERATION AGREEMENT**

This Lower Platte River Basin Sub-Regional Groundwater Modeling Interlocal Cooperation Agreement (“Agreement”) is entered into by and between the Nebraska Department of Natural Resources (“Department”); Lower Platte South Natural Resources District (“LPSNRD”); Lower Platte North Natural Resources District (“LPNNRD”); and Papio-Missouri River Natural Resources District (“PMRNRD”); all of which are an agency or political subdivisions of the State of Nebraska, each sometimes hereinafter individually referred to as “Party” or collectively referred to as “Parties.” The natural resources districts are sometimes collectively referred to as “NRDs.”

WHEREAS, the Parties desire to work together, under the Interlocal Cooperation Act (“Act”), Neb. Rev. Stat. §§ 13-801 to 13-827, to make the most efficient use of their respective authorities and other powers by enabling them to cooperate with one another on a basis of mutual advantage and thereby to provide services and facilities in a manner and pursuant to forms of governmental organization that will accord best with geographic, economic, population, and other factors influencing the needs and development of each Party; and

WHEREAS, the Parties desire to form a joint agreement under Neb. Rev. Stat. § 13-807 authorized by the governing body of each Party to the agreement, and which shall set forth fully as provided in the Act the purposes, powers, rights, objectives, and responsibilities of the contracting parties; and

WHEREAS, the Department has certain statutory authorities and responsibilities pertaining to the surface water of the State, and also authorities and responsibilities granted under the Nebraska Ground Water Management and Protection Act (“GWMMPA”), Neb. Rev. Stat. §§ 46-701 to 46-754 for integrated management of hydrologically connected ground water and surface water; and

WHEREAS, the NRDs are organized pursuant to Neb. Rev. Stat. §§ 2-3201 et seq. and have certain statutory authorities and responsibilities, particularly pertaining to the ground water in their respective districts of the State, and also authorities and responsibilities granted by the GWMMPA for integrated management of hydrologically connected ground water and surface water; and

WHEREAS, the Lower Platte River Basin (“Basin”) is geographically large and diverse in its geology, land use, ground and surface water supplies, and water uses. Each of the Parties are charged with responsibilities for planning and managing water resources. In furtherance of those responsibilities, each of the Parties has an interest in the development of a baseline sub-regional groundwater flow model of the combined area of the Basin that will help establish groundwater and surface water management criteria for NDNR, the Lower Platte River Basin-wide Plan and each NRD’s Integrated Management Plan; and

WHEREAS, the Department developed the Lower Platte Missouri Tributaries Model in 2018. The existing model is not based on Airborne Electromagnetic (“AEM”) data which has recently been obtained by the NRDs over the last few years; and

WHEREAS, the Parties desire to enter into a new Agreement to contribute financially, provide the necessary data, technical support, and administer contracts necessary to develop the baseline sub-regional groundwater flow model of the Basin.

NOW, THEREFORE, in consideration of the mutual covenants and promises of the Parties, it is agreed by and among the Parties hereto as follows:

1. PARTIES:

1.01 All Parties to this Agreement are public agencies within the meaning of Neb. Rev. Stat. §13-803(2).

2. AUTHORITY:

2.01 Neb. Rev. Stat. § 13-807 authorizes any two (2) or more public entities to enter into agreements with one another to perform any governmental service, activity, or undertaking, which at least one (1) of the public agencies entering into the agreement is authorized by law to perform.

2.02 The Parties enter into this Agreement pursuant to the authority conferred on each of them under the Act.

2.03 No part of this Agreement shall be interpreted as relieving the Department of any obligation or responsibility it may have to regulate water use or to compel compliance with any laws, regulations, interstate compacts or interstate agreements or as a delegation of its responsibilities and obligations to the Parties of this Agreement. No part of this Agreement may be or shall be interpreted as relieving the NRDs of any obligation or responsibility it may have to regulate water use or to compel compliance with any laws, regulations, interstate compacts or interstate agreements or as a delegation of its responsibilities and obligations to the Parties of this Agreement.

3. COLLECTIVE:

3.01 The Parties hereby create the Lower Platte River Groundwater Modeling Collective (“Collective”). The Collective shall be created immediately upon the execution of this Agreement by all Parties. The Collective shall be governed by the terms of this Agreement and applicable law. The Collective shall carry out the purposes as set forth in Section 5 of this Agreement. The Collective shall not be considered a joint entity separate and distinct from the respective Parties to this Agreement, but rather a collaborative working arrangement of the Parties.

4. DURATION:

4.01 The duration of this Agreement shall be for a period ~~of three (3) years~~ from the execution date of this Agreement by the last Party to December 31, 2025. This Agreement may be extended for successive one (1) year terms by the mutual written agreement of all Parties hereto.

5. PURPOSES:

5.01 The purposes of this Agreement pursuant to Neb. Rev. Stat. § 13-804 (3)(c) are: (1) to form a Collective to financially support, provide the necessary data, technical support, and administer contracts necessary to develop the baseline sub-regional groundwater flow model of the Basin.

5.02 This Agreement shall provide the organizational and administrative structure and enumeration of the powers, privileges, and authority of the Collective and the financial cooperative effort necessary to carry out the purposes in Subsection 5.01 of this Agreement. The powers, privileges, and authorities of the Collective shall not be used in a manner that is in violation of any of the Parties' public purposes.

6. MANNER OF FINANCING AND OF ESTABLISHING AND MAINTAINING A BUDGET:

6.01 The manner of financing and expenditure accounting of the Collective pursuant Neb. Rev. Stat. §13-804(3)(d) shall be as follows:

6.01.1 The Collective will be financed by the Parties and a contribution from the Nebraska Natural Resources Commission through a grant from the Water Sustainability Fund ("WSF") as follows:

Department:	\$188,500.00
WSF:	\$282,900.00
LPSNRD:	\$62,866.67 (\$20,956 to be paid annually for three years)
LPNNRD:	\$62,866.67 (\$20,956 to be paid annually for three years)
PMRNRD:	\$62,866.67 (\$20,956 to be paid annually for three years)

There are no other financial obligations of the Parties except those set forth above, unless otherwise consented to by the Parties.

6.01.2 The Collective shall have the authority to authorize applications for financial grants, to include use of Collective funds and in-kind services for match. Such applications shall be made by the Administrator on behalf of the Collective.

- 6.01.3 No bonds will be issued and no taxes will be levied or collected jointly by the Parties. Individual Parties may contribute funds derived from tax levies or bonds but these shall not be considered a tax levy or bond issuance by the Collective.
- 6.02 The manner of establishing and maintaining a budget pursuant to Neb. Rev. Stat. §13-804(3)(d) shall be as follows:
  - 6.02.1 The Administrator as designated in Subsection 7.01.6 of this Agreement shall prepare, establish, adopt, and maintain a budget of revenues and expenditures annually for each fiscal year. Such annual budget shall be adopted by formal resolution on or before April 15th of each year for the upcoming fiscal year by the Board of the Collective. The fiscal year will be July 1 through June 30 of the succeeding year.
  - 6.02.2 Upon completion of each annual budget, the Administrator will determine whether any payments need to be made by each Party for such fiscal year.
    - 6.02.2.1 Each payment obligation of a Party is subject to the availability of government funds which are appropriated or allocated for the payment of the obligations incurred by signing this Agreement. If funds are not apportioned or appropriated and available for the continuance of the obligations incurred, the Agreement may be terminated at the end of the period for which funds are available. A Party shall notify the other Parties at the earliest possible time of the obligations which will or may be affected by a shortage of funds. No penalty shall accrue to any Party if this provision is exercised.

7. ADMINISTRATION:

- 7.01 The Collective shall be composed of one (1) representative from each of the Parties.
  - 7.01.1 Each representative on the Collective shall be entitled to one (1) vote by either the representative or alternate for each Party.
  - 7.01.2 All decisions shall be made by unanimous consensus of the Collective Parties.
  - 7.01.3 A quorum, which shall be the presence of a representative or alternate representative of each Party shall be required to transact any official discussions or business.
  - 7.01.4 All meetings of the Collective shall follow the requirements of the Open Meetings Act.
  - 7.01.5 Meetings of the Collective shall occur when the Collective Chair determines a meeting is necessary and schedules such meeting after input from the

Collective's representatives. The Collective shall meet, at least, once a year.

- 7.01.6 The PMRNRD shall serve as the Administrator as required under Neb. Rev. Stat. § 13-804(4)(a). As Administrator, its responsibilities include: serving as the financial administrator, which includes collecting and holding the contributions from the Parties and other revenues, making the disbursements for expenses related to the Collective activities, and as grant applicant and administrator; serving as contracting member on behalf of the Collective and serving as day-to-day administration for the Collective, including information dissemination to members and the general public, scheduling and organization of meetings, record-keeping, and coordination of Collective activities. The PMRNRD Representative shall serve as Chair for the Collective and as Collective Chair, shall preside at all Collective meetings and shall develop agendas for each meeting.
  - 7.02 The Collective shall have such powers, privileges, and authority as authorized by the Parties, and as necessary to achieve the purposes of the Collective as set forth in this Agreement. Such powers, privileges, and authority shall include but not be limited to the following.
    - 7.02.1 Schedule and conduct meetings to transact business.
    - 7.02.2 Hold public meetings.
    - 7.02.3 Enter into contracts and agreements with other public agencies and private sector vendors.
    - 7.02.4 Undertake studies, investigations, or surveys and do research as may be necessary, and publish and disseminate the results.
    - 7.02.5 Access private land, which will be coordinated with the landowner.
    - 7.02.6 Procure and contract with legal and other professional services.
  - 7.03 Any Party may withdraw from this Agreement and from representation on the Collective upon written notification to the Collective Chair. Such withdrawal shall be effective upon receipt of the written notification. There will be no financial reimbursement of remitted funds unless specifically authorized by the Collective.
  - 7.04 New members can be added to the Collective with a vote of the Collective. Eligible entities shall be limited to political subdivisions or agencies of the State of Nebraska.
8. PROPERTY:

8.01 The manner of acquiring, holding, and disposing of real and personal property pursuant to Neb. Rev. Stat. § 13-804 (4)(b) is as follows.

8.01.1 In the event it becomes necessary for the Collective to purchase any property, either real or personal, the Collective will vote to determine how the property will be disposed of.

9. TERMINATION:

9.01 The permissible method or methods to be employed in accomplishing the complete or partial termination of this Agreement under Neb. Rev. Stat. §13-804(3)(e) shall be as follows.

9.01.1 This Agreement and the Collective created hereby shall be terminated upon the earlier of the completion of its purposes and objectives described herein or upon unanimous vote for the complete or partial termination of the Collective and this Agreement. Upon action to terminate the Collective, all outstanding debts and obligations of the Collective shall be paid and all unused funds and appropriations shall be returned to the remaining Parties in such proportions as represented by the pro rata share paid by each Party.

10. MISCELLANEOUS PROVISIONS:

10.01 All of the Parties' books, records, and documents relating to work performed or monies received or spent under this Agreement shall be subject to audit at any reasonable time after reasonable notice by the NRDs, Department, and the State Auditor or as required by any grant agreements, donations or other source of funds. The Administrator shall maintain all of such records throughout the existence of this Agreement and for a period of ten (10) full years from the date of termination of the Agreement, or until all issues related to an audit, litigation or other action are resolved, whichever is longer. All records shall be maintained in accordance with generally accepted accounting principles and record retention as required by the Secretary of State, Records Management Division.

10.02 Any governing body as defined in Neb. Rev. Stat. § 13-503 which is a Party to this Agreement shall provide information to the Auditor of Public Accounts regarding this Agreement as required in Neb. Rev. Stat. § 13-513.

10.03 No Party may assign its contractual rights or obligations under this Agreement without the prior written consent of all other Parties to this Agreement.

10.04 Each Party shall have taken, prior to the execution of this Agreement by such Party, appropriate action by ordinance, resolution, or otherwise pursuant to the law of the governing body of such Party so that this Agreement may enter into force consistent with the provisions of Neb. Rev. Stat. § 13-804(2).

10.05 This Agreement may be amended in a writing duly executed all of the Parties.

10.06 This Agreement contains the entire agreement of the Parties with respect to the Basin groundwater modeling. All prior and contemporaneous negotiations, discussions, memorandums of understanding and other writings are merged and incorporated herein, it being the intention of the Parties that this Agreement is a final and full expression of their agreement. No representations were made or relied upon by any Party other than those expressly set forth herein.

10.07 This Agreement is governed by the laws of the State of Nebraska.

10.08 This Agreement becomes effective upon execution by all Parties.

10.09 This Agreement may be executed in any number of counterparts, each of which shall be an original, but all such counterparts shall constitute one and the same instrument.

IN WITNESS WHEREOF, the Parties have signed and executed this Agreement on the dates shown next to their respective signatures:

NEBRASKA DEPARTMENT OF NATURAL RESOURCES

BY: \_\_\_\_\_

DATE: \_\_\_\_\_

LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT

BY: \_\_\_\_\_

DATE: \_\_\_\_\_

LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT

BY: \_\_\_\_\_

DATE: \_\_\_\_\_

PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT

BY: \_\_\_\_\_

DATE: \_\_\_\_\_



September 28<sup>th</sup>, 2022

Dear Lower Platte North managers,

We are pleased to share that the Nebraska Corn Board partially funded the further development of the nitrogen and water dashboard to diagnose crop producers and provide management solutions based on 30 years of On Farm Research Data.

As in previous years, we are reaching you out to see if your team can provide us with the most recent years (2016-2021) of yield, water, and N data collected by the Lower Platte North NRD office from the farmers located within the reporting areas in your district. Previous years are not needed as we already have them in our database.

The goal is to update our database and further develop the tools for your NRD use and your reporting farmers. Our projects are funded by NE commodity boards and our aim is to find opportunities for farmers to produce more while reducing the environmental footprint.

We look forward to hearing back from you about our data request.

Best regards,



Dr. Laila A. Puntel  
Assistant Professor

**LOWER PLATTE RIVER CONSORTIUM  
INTERLOCAL COOPERATION AGREEMENT**

This Lower Platte River Consortium Interlocal Cooperation Agreement (“Agreement”) is entered into by and between the Nebraska Department of Natural Resources (“Department”); Lower Platte South Natural Resources District (“LPSNRD”); Lower Platte North Natural Resources District (“LPNNRD”); Papio-Missouri River Natural Resources District (“PMRNRD”); Lincoln Water System (“LWS”); and Metropolitan Utilities District (“MUD”); all of which are an agency or political subdivisions of the State of Nebraska, each sometimes hereinafter individually referred to as “Party” or collectively referred to as “Parties.” The natural resources districts are sometimes collectively referred to as “NRDs.”

WHEREAS, the Parties desire to work together, under the Interlocal Cooperation Act (“Act”), Neb. Rev. Stat. §§ 13-801 to 13-827, to make the most efficient use of their respective authorities and other powers by enabling them to cooperate with one another on a basis of mutual advantage and thereby to provide services and facilities in a manner and pursuant to forms of governmental organization that will accord best with geographic, economic, population, and other factors influencing the needs and development of each Party; and

WHEREAS, the Parties desire to form a joint agreement under Neb. Rev. Stat. § 13-807 authorized by the governing body of each Party to the agreement, and which shall set forth fully as provided in the Act the purposes, powers, rights, objectives, and responsibilities of the contracting parties; and

WHEREAS, the Department has certain statutory authorities and responsibilities pertaining to the surface water of the State, and also authorities and responsibilities granted under the Nebraska Ground Water Management and Protection Act (“GWMPA”), Neb. Rev. Stat. §§ 46-701 to 46-754 for integrated management of hydrologically connected ground water and surface water. In addition, the Department has authority to expend funds from the Water Resources Cash Fund to aid management actions taken to reduce consumptive uses of water or to enhance streamflows or ground water recharge in river basins, subbasins, or reaches which are deemed by the Department overappropriated or fully appropriated pursuant to the GWMPA or are the subject of an interstate compact or decree or a formal state contract or agreement; and

WHEREAS, the NRDs are organized pursuant to Neb. Rev. Stat. §§ 2- 201 et seq. and have certain statutory authorities and responsibilities, particularly pertaining to the ground water in their respective areas of the State, and also authorities and responsibilities granted by the GWMPA for integrated management of hydrologically connected ground water and surface water; and

WHEREAS, MUD pursuant to its authorities provides water for the majority of the Omaha metropolitan area; and LWS pursuant to its authorities provides water to the City of Lincoln; and

WHEREAS, the Lower Platte River Basin (“Basin”) is geographically large and diverse in its geology, land use, ground and surface water supplies, and water uses. Each of the Parties are charged with responsibilities for planning, managing, and/or supplying water resources. The Parties are located and carry out their functions in the lower subbasin of the Basin, but much of

the water supplies that support these functions are derived from the upper subbasins of the Basin; and

WHEREAS, the Parties entered into an Agreement on September 28, 2016 to collaboratively evaluate the water supplies available to the Basin during times of shortage and develop a drought contingency plan for the Basin. As a result of this effort, the Parties developed the Lower Platte River Drought Contingency Plan (“Drought Plan”), which is hereby attached and incorporated into this Agreement by this reference; and

WHEREAS, the Parties desire to enter into a new Agreement to administer and implement the Drought Plan.

NOW, THEREFORE, in consideration of the mutual covenants and promises of the Parties, it is agreed by and among the Parties hereto as follows:

1. PARTIES:

1.01 All Parties to this Agreement are public agencies within the meaning of Neb. Rev. Stat. §13-803(2).

2. AUTHORITY:

2.01 Neb. Rev. Stat. § 13-807 authorizes any two (2) or more public entities to enter into agreements with one another to perform any governmental service, activity, or undertaking, which at least one (1) of the public agencies entering into the agreement is authorized by law to perform.

2.02 The Parties enter into this Agreement pursuant to the authority conferred on each of them under the Act.

2.03 No part of this Agreement shall be interpreted as relieving the Department of any obligation or responsibility it may have to regulate water use or to compel compliance with any laws, regulations, interstate compacts or interstate agreements or as a delegation of its responsibilities and obligations to the Parties of this Agreement. No part of this Agreement may be or shall be interpreted as relieving the NRDs of any obligation or responsibility it may have to regulate water use or to compel compliance with any laws, regulations, interstate compacts or interstate agreements or as a delegation of its responsibilities and obligations to the Parties of this Agreement. No part of this Agreement shall be interpreted as relieving the LWS or MUD of any obligation or responsibility it may have as required by law or regulation.

3. CONSORTIUM

3.01 The Parties hereby create the Lower Platte River Consortium (“Consortium”). The

Consortium shall be governed by the terms of this Agreement and the Drought Plan. The Consortium shall carry out the purposes as set forth in Section 5 of this Agreement. The Consortium shall be responsible for the administrative, technical, and financial affairs of the Consortium and the Drought Plan. The Consortium shall not be considered a joint entity separate and distinct from the respective Parties to this Agreement, but rather a collaborative working arrangement of the Parties.

#### 4. DURATION

4.01 The duration of this Agreement shall be for a period of one (1) year from the execution date of this Agreement by the last Party. This Agreement may be extended for successive one (1) year terms by the mutual agreement of all Parties hereto. The Parties may only extend this Agreement for ten (10) additional terms.

#### 5. PURPOSES

5.01 The purposes of this Agreement pursuant to Neb. Rev. Stat. § 13-804 (3)(c) are: (1) to form a Consortium to evaluate long-term water supplies available to the Basin for enhancing streamflows or aquifer storage to support sustainable public water systems; and (2) to implement the Drought Plan.

5.01.1 The Drought Plan's purpose is to establish a framework for coordination and communication amongst Consortium members to address droughts in the Basin. The Drought Plan will refine the Consortium's collective understanding of drought vulnerabilities while developing more robust monitoring and forecasting tools coupled with timely triggers, new mitigation strategies, and responsive actions to create a sound, operational framework and to improve critical water supply needs of the area through drought periods.

5.02 This Agreement shall provide the organizational and administrative structure and enumeration of the powers, privileges, and authority of the Consortium and the financial cooperative effort necessary to carry out the purposes in Subsection 5.01 of this Agreement. The powers, privileges, and authorities of the Consortium shall not be used in a manner that is in violation of any of the Parties' public purposes.

#### 6. MANNER OF FINANCING AND OF ESTABLISHING AND MAINTAINING A BUDGET

6.01 The manner of financing and expenditure accounting of the Consortium pursuant Neb. Rev. Stat. §13-804(3)(d) shall be as follows:

6.01.1 The Consortium will be financed by the Parties as needed for certain projects

or activities the Consortium decides to pursue. Some years the Consortium will not have a budget because projects will not be pursued in that fiscal year. In years when the Consortium decides to pursue projects or activities, an annual budget will be adopted as described in other portions of Section 6 of this Agreement. Proportions of payments by each Party will be determined at the time the annual budget is adopted.

- 6.01.2 The Consortium shall have the authority to authorize applications for financial grants, to include use of Consortium funds and in-kind services for match. Such applications shall be made by the Administrator on behalf of the Consortium.
  - 6.01.3 No bonds will be issued and no taxes will be levied or collected jointly by the Parties. Individual Parties may contribute funds derived from tax levies or bonds but these shall not be considered a tax levy or bond issuance by the Consortium.
- 6.02 The manner of establishing and maintaining a budget pursuant to Neb. Rev. Stat. §13-804(3)(d) shall be as follows:
- 6.02.1 The Administrator as designated in Subsection 7.02.7 of this Agreement shall prepare, establish, adopt, and maintain a budget of revenues and expenditures annually for each fiscal year. Such annual budget shall be adopted by formal resolution on or before April 15th of each year for the upcoming fiscal year. The fiscal year will be July 1 through June 30 of the succeeding year.
  - 6.02.2 Upon completion of each annual budget, the Administrator will determine whether any payments need to be made by each Party for such fiscal year.
    - 6.02.2.1 Each payment obligation of a Party is subject to the availability of government funds which are appropriated or allocated for the payment of the obligations incurred by signing this Agreement. If funds are not apportioned or appropriated and available for the continuance of the obligations incurred, the Agreement may be terminated at the end of the period for which funds are available. A Party shall notify the other Parties at the earliest possible time of the obligations which will or may be affected by a shortage of funds. No penalty shall accrue to any Party if this provision is exercised.

7. ADMINISTRATION

- 7.01 The Consortium shall administer the Drought Plan in accordance with Section 6 of the Drought Plan and this Agreement.
- 7.02 The Consortium shall be composed of one (1) representative from each of the Parties.

- 7.02.1 Each representative on the Consortium shall be entitled to one (1) vote by either the representative or alternate for each Party.
  - 7.02.2 All decisions shall be made by unanimous consensus of the Consortium members.
  - 7.02.3 A quorum, which shall be the presence of a representative or alternate representative of each Party shall be required to transact any official discussions or business.
  - 7.02.4 All meetings of the Consortium shall follow the requirements of the Open Meetings Act.
  - 7.02.5 Meetings of the Consortium shall be in accordance with the Drought Plan, or at the call of the Consortium Chair.
  - 7.02.6 The LPSNRD shall serve as the Administrator as required under Neb. Rev. Stat. § 13-804(4)(a). As Administrator, its responsibilities include: serving as the financial administrator, which includes collecting and holding the contributions from members and other revenues, making the disbursements for expenses related to the Consortium activities, and as grant applicant and administrator; serving as contracting member on behalf of Consortium; and serving as day-to-day administration for the Consortium, including information dissemination to members and the general public, scheduling and organization of meetings, record-keeping, and coordination of Drought Plan activities. The LPSNRD Representative shall serve as Chair for the Consortium and as Consortium Chair, shall preside at all Consortium meetings and shall develop agendas for each meeting.
- 7.03 The Consortium shall have such powers, privileges, and authority as authorized by the Parties, and as necessary to achieve the purposes of the Consortium as set forth in this Agreement and the Drought Plan. Such powers, privileges, and authority shall include but not be limited to the following.
- 7.03.1 Schedule and conduct meetings to transact business.
  - 7.03.2 Hold public meetings.
  - 7.03.3 Enter into contracts and agreements with other public agencies and private sector vendors.
  - 7.03.4 Undertake studies, investigations, or surveys and do research as may be necessary, and publish and disseminate the results.

- 7.03.5 Take actions as set forth in the Drought Plan.
  - 7.03.6 Access private land, which will be coordinated with the landowner.
  - 7.03.7 Retain legal and other professional services.
  - 7.04 Any Party may withdraw from this Agreement and from representation on the Consortium upon written notification to the Consortium Chair. Such withdrawal shall be effective upon receipt of the written notification. There will be no financial reimbursement of remitted funds unless specifically authorized by the Consortium.
  - 7.05 New members can be added to the Consortium with a vote of the Consortium. Eligible entities shall be limited to political subdivisions charged with responsibilities for planning, managing, and/or supplying water resources for public water systems in the Basin.
8. PROPERTY
- 8.01 The manner of acquiring, holding, and disposing of real and personal property pursuant to Neb. Rev. Stat. § 13-804 (4)(b) is as follows.
    - 8.01.1 In the event it becomes necessary for the Consortium to purchase any property, either real or personal, the Consortium will vote to determine how the property will be disposed of.
9. TERMINATION
- 9.01 The permissible method or methods to be employed in accomplishing the complete or partial termination of this Agreement under Neb. Rev. Stat. §13-804(3)(e) shall be as follows.
    - 9.01.1 This Agreement and the Consortium created hereby shall be terminated upon the earlier of the completion of its purposes and objectives described herein or upon the vote of two-thirds of the then constituted Consortium for the complete or partial termination of the Consortium and this Agreement. Upon action to terminate the Consortium, all outstanding debts and obligations of the Consortium shall be paid and all unused funds and appropriations shall be returned to the remaining Parties in such proportions as represented by the pro rata share paid by each Party.
10. MISCELLANEOUS PROVISIONS
- 10.01 All of the Parties' books, records, and documents relating to work performed or monies received or spent under this Agreement shall be subject to audit at any reasonable time after reasonable notice by the NRDs, Department, LWS, MUD,

and the State Auditor or as required by any grant agreements, donations or other source of funds. The Administrator shall maintain all of such records throughout the existence of this Agreement and for a period of ten (10) full years from the date of termination of the Agreement, or until all issues related to an audit, litigation or other action are resolved, whichever is longer. All records shall be maintained in accordance with generally accepted accounting principles and record retention as required by the Secretary of State, Records Management Division.

- 10.02 Any governing body as defined in Neb. Rev. Stat. § 13-503 which is a Party to this Agreement shall provide information to the Auditor of Public Accounts regarding this Agreement as required in Neb. Rev. Stat. § 13-513.
- 10.03 No Party may assign its contractual rights or obligations under this Agreement without the prior written consent of all other Parties to this Agreement.
- 10.04 Each Party shall have taken, prior to the execution of this Agreement by such Party, appropriate action by ordinance, resolution, or otherwise pursuant to the law of the governing body of such Party so that this Agreement may enter into force consistent with the provisions of Neb. Rev. Stat. § 13-804(2).
- 10.05 This Agreement may be amended in a writing duly executed all of the Parties.
- 10.06 This Agreement and its Attachment, the Drought Plan, contains the entire agreement of the Parties. All prior and contemporaneous negotiations, discussions, memorandums of understanding and other writings are merged and incorporated herein, it being the intention of the Parties that this Agreement is a final and full expression of their agreement. No representations were made or relied upon by any Party other than those expressly set forth herein.
- 10.07 This Agreement is governed by the laws of the State of Nebraska.
- 10.08 This Agreement becomes effective upon execution by all Parties.
- 10.09 This Agreement may be executed in any number of counterparts, each of which shall be an original, but all such counterparts shall constitute one and the same instrument.

IN WITNESS WHEREOF, the Parties have signed and executed this Agreement on the dates shown next to their respective signatures:

NEBRASKA DEPARTMENT OF NATURAL RESOURCES

BY: \_\_\_\_\_

DATE: \_\_\_\_\_

LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT

BY: \_\_\_\_\_

DATE: \_\_\_\_\_

LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT

BY: \_\_\_\_\_

DATE: \_\_\_\_\_

PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT

BY: \_\_\_\_\_

DATE: \_\_\_\_\_

LINCOLN WATER SYSTEM

BY: \_\_\_\_\_

DATE: \_\_\_\_\_

METROPOLITAN UTILITIES DISTRICT

BY: \_\_\_\_\_

DATE: \_\_\_\_\_

All of the following pictures were taken September 15



September 7  
mix planting at  
Larry Capek.  
This is in Larry's  
wetland area.





September 7  
mix planting at  
Larry Chapek.  
Picture on the  
left shows some  
growth with  
more residue.





August 8 cereal rye planting at Matt Bailey.  
Good Growth as row was knocked down.  
Rye was about 12-14 inches in height

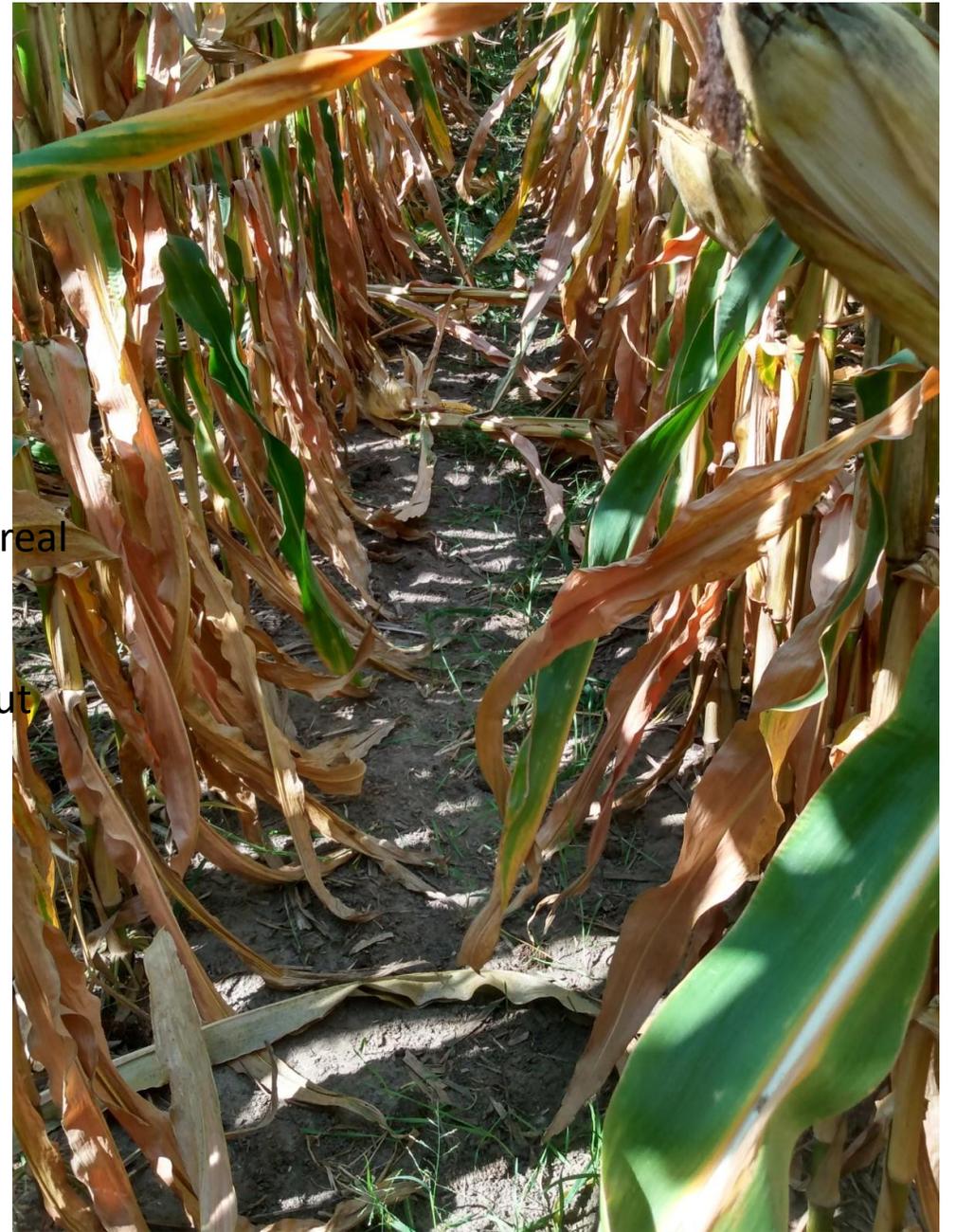


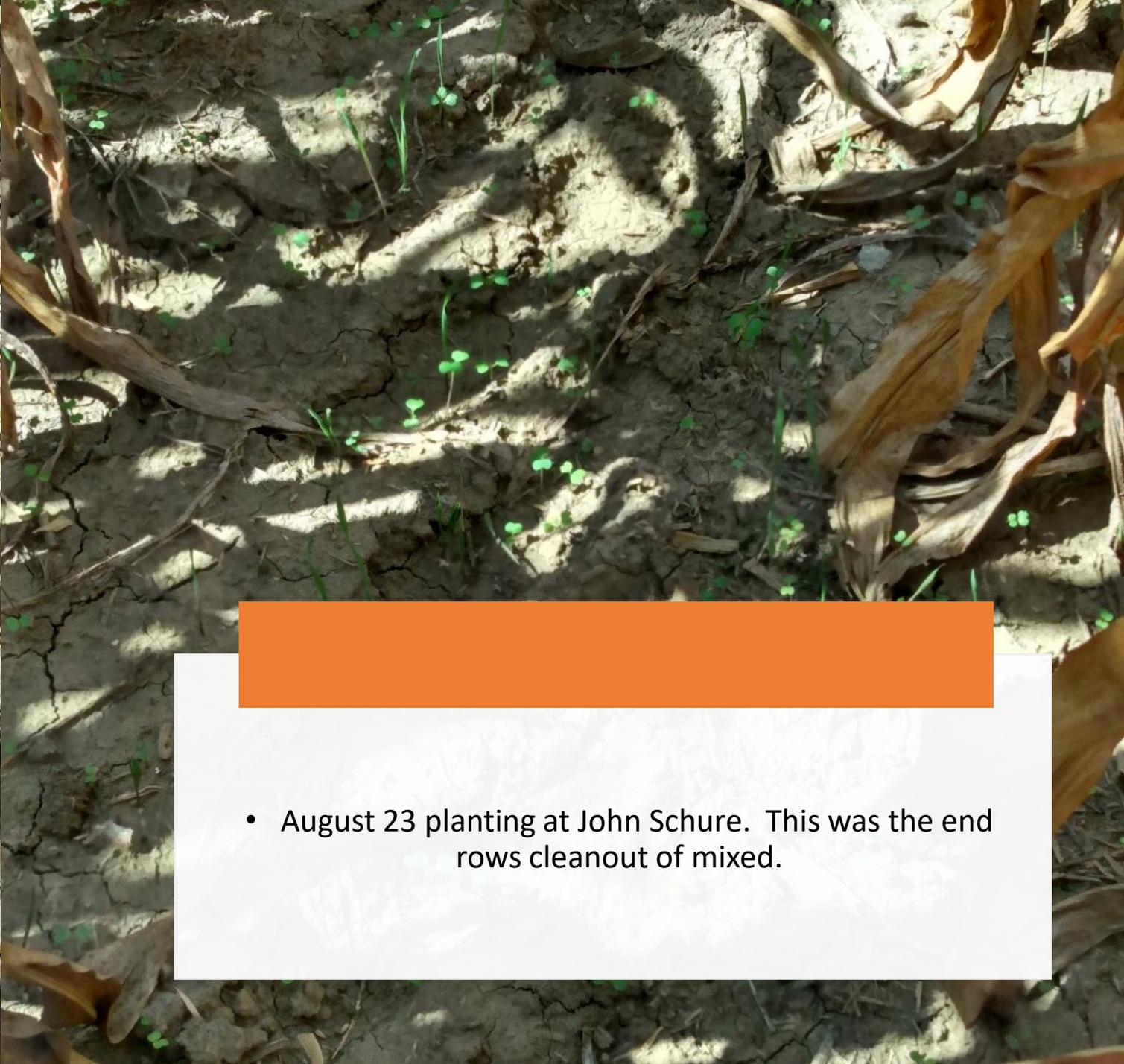
August 8 cereal  
rye planting at  
Matt Bailey.  
Height was about  
10 inches.





September 1 cereal  
rye planting at  
Nat Oehlich.  
Height was about  
3 inches tall.





- August 23 planting at John Schure. This was the end rows cleanout of mixed.



August 23 planting at John Schure. Rye was about 6 inches tall. The other pictures show some rye seed in some dryland parts of the fields with no growth. The middle picture is irrigated.



**LOWER PLATTE NORTH**  
Natural Resources District



# **LONG RANGE IMPLEMENTATION PLAN**

Fiscal Year 2023



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## Introduction

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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 North 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 during fiscal year 2021 (July 1, 2021 to June 30, 2022) and planned District activities for fiscal year 2023. There are also objectives for a five-year period from fiscal years 2024 to 2028. The plan serves as an implementation tool of the district's Master Plan, which is updated every ten years.

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## Authority and Responsibilities

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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."

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

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## Description of the District

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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 Wahoo Creek, Skull Creek, Bone Creek, Loseke Creek, Taylor Creek, Shell Creek, Elm Creek, Clear Creek, Rawhide Creek, Silver Creek, Sand Creek, and Duck Creek.

The population of the district is approximately 62,000, 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 2023 tax levy is .031404 cents per \$100 valuation.

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## Governing Body

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The Lower Platte North Natural Resources District (LPNNRD) is governed by a 19-member Board of Directors. 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.

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



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### **FY 2022 Platte River Basin Activities**

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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 2021-2022, 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 FY21, \$25,000 is budgeted for projects on rivers & streams. We assisted one landowner on a maintenance project in FY 21-22 at a cost of \$4,000.

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### **FY 2023 Platte River Basin Objectives**

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- Administer \$20,000 in the Rock & Jetty Program to assist with priority stream bank stabilization for cooperators on the Platte and Elkhorn Rivers and Perennial streams. This includes assisting cooperators with meeting the regulations of the Clean Water Act through section 404 permits.
- As a member of the Joint Water Management Advisory Board, provide leadership and assistance to move forward with exploring flood reduction solutions for the lower one-third of Dodge County within the District.
- Support the Lower Platte Weed Management Area financially and technically in controlling noxious and invasive weeds.
- Support the Nebraska Land Trust in acquiring easements for the protection and preservation of quality lands.
- Support the Lower Platte River Corridor Alliance by becoming an active voting member.

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### **FY 2024-2028 Long Range Platte River Basin Objectives**

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- Continue to budget cost-share funds for priority bank stabilization along the Platte and Elkhorn rivers and other perennial streams in the district.
- Continue to be an active member on the Joint Water Management Advisory Board.
- Promote riparian buffer zones along the Platte River and other perennial streams.
- Continue to explore new, innovative and cost-effective ways to protect against stream bank erosion.
- Provide education on stream bank protection and regulations.
- Support and budget annually, as needed, for the Ice Jam Agreement Fund.
- Keep up to date on Clean Water Act and Endangered Species Act regulations.

- Continue to participate with the City of Fremont to study potential nonstructural measures to reduce flooding and economic losses from the Lower Platte River.
- Work with 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 to initiate floodplain management planning to promote wise floodplain development.
- Assist dike and drainage districts within the LPNNRD to properly repair and maintain levy projects.
- Budget annually as needed to support the Lower Platte Weed Management group in controlling noxious weeds.
- 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.

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### **FY 2022 Ground & Surface Water Activities**

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#### **Ground Water Management Area**

LPNNRD implemented a District-wide Groundwater Management Area (GWMA) on January 1, 1997, to address both water quality and quantity concerns. This action was based on data gathered since 1985 indicating where groundwater quality conditions have deteriorated beyond those established as health standards, such as nitrate nitrogen. On that date, groundwater quality Phase I (education) regulations became effective for the entire District.

One primary rule in Phase I 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. Since that time, advanced Phase areas have been determined by trigger levels listed in the rules and regulations of the GWMA. The District has two Phase groundwater quality control areas, those being Bellwood and Richland/Schuyler. The Bellwood Phase 2 Area was established in 2003 and presently covers approximately 30 square miles in the western portion of the Platte Valley in Butler County and includes the town of Bellwood. In 2015 nitrate levels decreased to a point that the trigger levels were not being achieved, so this area was decreased to 20 square miles. The Richland/Schuyler Phase 2 Area was established in 2004. In 2015 this area was raised to Phase 3 because of the rising nitrate levels. This area covers approximately

55 square miles in the Platte Valley of Colfax County and includes the towns of Richland and Schuyler. In 2015, 10 additional sections north of the Richland/Schuyler Area became a Phase 2 area and in 2020 raised to Phase 3. Elevated nitrate-nitrogen levels continue to be the major concern in both Phase areas. Emphasis on awareness is a priority to the District with numerous grants being considered.

In June 2018, the District updated its Groundwater Rules and Regulations by adding a Phase Four under Water Quality and managing water by consumptive use or acre feet limitations. As of July 1, 2021, the District had 9155 registered active wells with 4586 irrigation wells and 206 wells in our GWEL network.

In Summer of 2012, the District saw mid-summer declines in the Bruno area and the uplands of Platte and Colfax Counties. These are now designated as the Butler-Saunders and Platte-Colfax Special Quantity Subareas. The District mandated water flow meters, rolling allocations and annual reports in these areas starting in 2016.

In 2012 seven NRD's agreed to develop a Lower Platte Basin plan, which is a cooperative agreement for the Basin Plan. This plan was approved in December of 2017 with each district assigned a depletion allotment within the Basin. The allotment is in 5-year increments starting in 2016 with a formula 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, with an annual report due to NeDNR. The Coalition contracted with the Flatwater Group to analyze the data that will be used in the next 5-year allotment.

In 2016 the Lower Platte River Consortium, made up of the Lower Platte South NRD, the Lower Platte North NRD, the Papio-Missouri River NRD, Lincoln Water System (LWS), Metropolitan Utilities District (MUD), and the

Nebraska Department of Natural Resources (NeDNR), embarked on an effort to develop a drought contingency plan to maintain/mitigate sustainable water supplies to the Lower Platte River during drought conditions. The final report was finalized in the Spring of 2020. The group is in the process of ranking the projects to be considered for supplying water into the Platte River.

Current rules and regulations of the GWMA are available at the LPNNRD headquarters in Wahoo and via the district website at [www.lpnrd.org](http://www.lpnrd.org).

### 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. Staff samples the same wells each summer, weather permitting, to determine long term trends for nitrate-nitrogen. This is referred to as the Statewide Network. 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 2022 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
2022	0 - 18.7 ppm	69% (36 of 52)	15% (8 of 52)	15% (8 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 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 2021, the LPNNRD had 206 wells in the groundwater energy level 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 subareas within the District, 24 subareas are currently at Level 1 management, while the other 2 subareas still need additional information before these can be designated. 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 2021 and Spring of 2022 showed a decline from the previous year's measurement. This change was likely the effects of less rainfall and recharge from snowfall amounts in the winter months of 2021-22. Spring readings in 2022 showed 59% of the wells measured had levels lower in Spring 2022 compared to Spring of 2021. There was a 22% rise in 39 wells from a year ago.

### 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 administered by NDEE, you must pass the Chemigation Certification test 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. The number of chemigation permits continues to slowly rise throughout the district due to chemigation's efficient application rate when the crops are in the most need of nutrients. In sandier soil types, chemigation is extremely effective due to the soil's incapability to hold essential nutrients in the root zone after heavy rainfall events.

Chemigation Permits	Total	Renewal	New	Emergency
November 2021	704	658	46	0
November 2022	733	676	56	1

In 2014, the Legislature approved changes to Title 195 that would allow individual NRDs to set chemigation fees. Chemigation fees for LPNNRD are: \$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 the permit was obtained 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 724 wells. Through this program in FY 21-22, a total of \$13,930.12 was administered by LPNNRD for the plugging of 17 wells. The district will administer approximately \$15,000 of state and local funds to plug additional wells during the current fiscal year.

### **Flow Meter Maintenance Program/Flow Meter 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.

In 2016, the district chose to contract with a private company through the bidding process. The company was scheduled to maintain the flow meters within the LPNNRD's SQS areas for the first four years. Since that was completed the District has chosen to open the flow meter maintenance program district wide in 2020. Maintenance on the flow meters will be performed once every four years. The district is in charge of the labor and site visit at each meter. Each mechanical meter site visit is \$60 and each battery operated site visit is \$75. This maintenance includes the regular greasing

of the mechanical meters and changing the batteries on the digitally read meters. Along with the regular maintenance the private company also ensures that the meter is not damaged from water or vibration. There are approximately 1,100 irrigation well flow meters that are getting routine maintenance once every four years.

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. This Fiscal year the LPNNRD budgeted \$17,500 for the meter maintenance program.

### Registered Wells

The Nebraska Legislature declared that the 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*

<b>Date</b>	<b>Number of Active Irrigation Wells in the District</b>
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, 2022	4,586

### Well Permits

In May of 2008, the LPNNRD placed a flow meter and water reporting condition on well

permits for all permits issued after that date. All well permits require well owners to install a flow meter and report their water use for the calendar year to the LPNNRD by December 15 of each year. This reporting requirement is effective the year the well is drilled and for each year thereafter, until the well is decommissioned. As of July 1st, 2022, the District has issued 18 well permits with 8 new irrigation wells, 8 replacement irrigation wells, 1 stock well and 1 commercial well.

### Special Studies

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

#### *Aquifer Vulnerability Mapping and Analysis*

The Lower Platte North has been working with UNL to collect and analyze data within the LPN Water Quality Management Areas. The first stage involved intensive water sampling of irrigation wells for nitrates. A few isotope nitrate samples were collected for the purpose of determining if the nitrates are from organic or inorganic sources. This was followed-up with 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 this data, along with geological information to assist in determining vulnerability. This project was completed in 2021 with informational meetings in the area.

#### *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 will be used to characterize different geological layers and assign variables such as hydraulic conductivity. This data will be used in a groundwater modeling to better understand,

assess, and forecast groundwater. This study was completed in January 2022.

### ***Lower Platte River Consortium Study***

Municipal wellfields in the Lower Platte River Basin depend on the Platte River to recharge groundwater for their use. This study looked at long term water supplies in the Lower Platte River Basin, and the ability to enhance streamflow, especially in drought conditions, to sustain these municipal water systems. Sustaining water in the river would also provide a benefit to wildlife and agriculture by lessening the likelihood of a 'call' on the river. Due to different hydrologic conditions in the Platte River, such as gaining and losing segments, siting of future reservoirs, groundwater storage projects, etc. becomes important in order to most effectively move water to a desired location downstream. The plan was completed in Spring 2020 with the group now in the process of conducting a desktop exercise on determining which projects are feasible.

### ***Eastern Nebraska Water 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. It has opened several questions concerning bedrock aquifers both in water quantity and water quality such as salinity. New flights were conducted in the summer of 2018 with the final report received in summer 2019. A study is being conducted in the Platte-Colfax Area (SQS#2) utilizing the AEM, additional data loggers and other geologic logs to determine the relationship between confining and unconfining layers along with determining drawdown levels for management decisions. The flights and the results can be found on the ENWRA website at ([www.enwra.org](http://www.enwra.org)).

### ***Elkhorn-Loup Model***

The Elkhorn-Loup Model (ELM) project is

a study of surface water and groundwater resources in the Elkhorn River basin upstream of Norfolk, Nebraska and the Loup River basin upstream of Columbus, Nebraska. Parts of this basin overlap and cover portions of upper Shell Creek.

### **Certifying Acres**

In July 2009, the District signed a contract with GIS workshop to develop a database of county assessor records as the preliminary step to certifying irrigated acres. Using these records, LPNNRD staff mailed out letters to landowners to verify irrigated ground. As of January 2022, the majority of the irrigation in the district has been cataloged. The District is still granting new irrigation development. Those new acres are not entered into the certification database until such time as they show up on aerial photography and can be accurately modeled. In March of 2021, the District went through all the approved new irrigation acres and modeled out all those that had yet to be counted. Acre certification provides a true 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 2022, 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 Cities of David City and Wahoo have completed the re-evaluation and approved their wellhead management areas. Both communities are in the process of decommissioning wells within these areas.

### **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. Both systems are greater than 10 years old and

repairs/replacements of meters is expected to take up RWD staff's time in 2022-23 as a number of meters and components are showing the signs of wearing out.

### **Geographic Information System (GIS) and Global Positioning System (GPS)**

LPNNRD has used Geographic Information System (GIS) technology since 1996. GIS is an automated system combining database information and maps. Features on a map, created with GIS technology, contain attribute or feature descriptions that are referenced by location. The data used by a GIS system consists of Vector and Raster Data. Vector data consists of point (wells), line (roads) and polygon data (irrigation boundaries); with Raster data consisting of pixels, where each pixel on the screen corresponds to a data point. Raster data includes aerial photography and elevation data such as LiDAR (a highly accurate elevation dataset). The District has incorporated the use of GIS 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 entered into an agreement with Phoenix Web Group to create a robust, relational database. GIS will be the backbone of this database and will allow LPNNRD to quickly, and efficiently, look up any information pertaining to any project or cost share that has been completed for any constituent with land in LPNNRD.

The Global Positioning System (GPS) relies on 28 NAVSTAR satellites, which provide world

wide positioning and navigation information around the clock. Receivers acquire signals from satellites to determine precise locations on earth. The data obtained from taking GPS positions can be downloaded and mapped with GIS, making the two technologies complementary. LPNNRD partnered with NRCS on the purchase of a sub-centimeter GPS base station. This allows NRCS and NRD staff to quickly and efficiently perform a variety of tasks in the field with survey level precision.

As drone technology continues to evolve, LPNNRD has added a SkyDio2 Autonomous Drone to its inventory. LPNNRD staff are working towards the completion of a Part 107 license through FAA to fly the drone without the need for waivers, as not all activities fall under a waiver category.

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### **FY 2023 Ground and Surface Water Objectives**

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- Continue to monitor changes in groundwater levels and quality in the district.
- Continue with LPNNRD Groundwater Management Area (GWMA) programs to help avoid the Lower Platte Basin being designated “fully appropriated.”
- Continue to implement Voluntary Integrated Water Management Plan (V-IMP) for the District and basin-wide plan. Utilize acre feet allotments assigned to the District for the benefit of the basin.
- As part of the GWMA, continue with LPNNRD certification classes, demonstration plots, generation of maps indicating problem areas, and evolving the development of a master database.
- Continue to cooperate with the United States Geological Survey (USGS) in monitoring groundwater levels at two sites.
- Continue to cooperate with the United States Geological Survey (USGS) in monitoring surface water levels at four sites and one site for contamination evaluation.
- Use the Subarea Delineation Study to

identify ‘small pocket aquifers’ in the Swedeburg, Prague, Yutan, and Yutan South subareas. Review other aquifer subareas to determine if Stay Management Areas are justified in other portions of our District.

- Continue sampling of approximately 53 wells in our District that are part of the Nebraska State-wide Network.
- Continue to monitor the Phase Areas in Richland-Schuyler and Bellwood for nitrate and elevate these areas as needed.
- Continue implementing extensive sampling of soil and water in the Phase Areas for the purpose of identifying workable best management practices for curbing the rising nitrate trend.
- Implement best management practices within the Phase Areas for the purpose of decreasing nitrate levels.
- Administer \$19,000 of state and local cost-share funds to decommission abandoned water wells, and provide 100% cost-share assistance within Wellhead Protection Areas to communities that are actively doing projects within its management area.
- 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.
- Continue with the District’s Well Permitting Program and Variance Process throughout the District.
- Continue to review water use reports submitted to the LPNNRD as part of the well permitting process from new and replacement wells.
- Provide information and education on water conservation and safe disposal of farm and household chemicals.
- Continue to map registered and

- unregistered wells in the district using GPS.
- Promote and sponsor LPNNRD's Spring Conservation Sensation.
  - Provide information on Integrated Pest Management in news releases and the "Viaduct" newsletter to encourage reduced use of pesticides.
  - Support and promote urban water conservation and chemical disposal throughout the District.
  - Assist in organizing the annual NRD Water Programs Conference held each year to update the NRD's on activity of State and Federal Agencies, new research, and Legislative issues.
  - Continue to install flow meters on irrigation wells that are part of our Ground Water Energy Level (GWEL) Network.
  - Expand the GWEL network to monitor aquifer sub-areas as designated in the 2009 Subarea Delineation Study. This will be done by incorporating additional high capacity wells and the drilling of new monitoring wells.
  - Continue to monitor clean up efforts by the COE at the Former Ordnance Plant at Mead, Nebraska.
  - 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.
  - Continue to monitor clean up efforts by the University of Nebraska at the Eastern Nebraska Research and Extension Center (ENREC) facilities east of Ithaca, Nebraska.
  - Maintain transducers placed in District monitoring wells to record changes in groundwater energy levels and to continue the process of installing real-time remote reads.
  - Implement Level 2 or Level 3 Management areas as warranted caused by declining groundwater energy levels in 50% or more of the monitoring wells reaching their trigger levels after three consecutive spring readings.
  - Review livestock permits from NDEE.
  - Investigate irrigation runoff and groundwater management area complaints as needed.
  - Expand the NeRain program within our District.
  - Continue to be a sponsor member of the Elkhorn-Loup Model (ELM).
  - Continue groundwater studies with the University and NeDNR in the SQS areas. Study will focus on confined and unconfined aquifers and drawdowns within these areas.
  - Communicate with well drillers and pump installers on water concerns within the District.
  - Continue to assist the Eastern Nebraska Water Resources Assessment (ENWRA) with the use of AEM (Airborne Electromagnetic) to study the eastern glaciated portions of Nebraska to provide a geologic framework map.
  - Improve irrigation efficiency by working with UNL Extension on the Nebraska Agricultural Water Management Network (NAWMN) to install Watermark sensors and ET gauges with producers each year in our District.
  - Continue with the process of updating Irrigated Acre Certification within the District.
  - Continue working on projects identified within the Shell Creek Watershed Water Quality Plan.
  - Update water quality objectives as identified in the Wahoo Creek Watershed and the Shell Creek Watershed Water Quality Plans.
  - Continue to increase producer participation in online reporting for entering their data to improve efficiency and quality of data.
  - Analyze the real-time water level measurement network in Special Quantity Areas for in-season management decisions for determining warning triggers.
  - Start the groundwater modeling process

jointly with PMRNRD, LPSNRD and NeDNR within the Lower Platte Basin for updating the Hydrological Connected Area (HCA) and assist in the well permitting process.

- Work with UNL and NDEE on an interseeding cover crop project in the Shell and Wahoo Creek Watersheds.

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### **FY 2024-2028 Long Range Ground and Surface Water Objectives**

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- Continue groundwater quality sampling throughout the LPNDRD, both the State-wide network and intensive sampling of selected regional aquifers.
- Continue water quality education programs based on the goals and objectives of the LPNDRD Groundwater Management Area, which includes LPNDRD 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.
- Educate the need for check valves in protecting the aquifer from contamination.
- 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.
- Continue to use GPS to map registered and unregistered wells within the district.
- If necessary, designate Level II and III boundaries within the district to manage declining groundwater levels.
- If necessary, designate new Special Quantity Subareas (SQS) within the district to manage mid summer declines of groundwater energy levels in aquifers that operate under large pressure swings.
- Continue measurement of ground water energy levels in the district.
- Develop a groundwater model for each sub-area. Additional information on water use from all wells will be needed for accurate information.
- Continued partnership with the Eastern Nebraska Water Resources Assessment (ENWRA) and apply information to the glaciated portions of our District.
- Initiate additional studies to identify vulnerable aquifers and modify GWMA rules and regulations to protect these aquifers and their long term sustainability. Continue geophysical work, installation of monitoring wells and test holes to better define these vulnerable sub-areas. Additional AEM flights with ¼ to ⅓ mile spacing would gratefully assist in defining such areas. Eventually cover the entire District with these detailed AEM investigations.
- 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. This could develop into three dimensional management where aquifers at different depths are treated by a separate set of rules for each one. This could become very complex but will likely be the only way to sustain the use of these aquifers far into the future.
- Install precipitation gauges near monitoring wells in important sub-areas.
- Utilize the completed Lower Platte River Consortium Study for possible locations for recharge and reservoir sites to better convey water downstream to municipal wellfields.
- Complete water quality objectives as identified in the Watershed Quality Plans.
- Continue to update the Groundwater Management Plan to include Integrated Management of surface and ground water. It may be necessary to install additional surface water gauging sites coupled with nearby groundwater monitoring wells as

tools for integrated water management.

- Expand the GWEL network to have continuous recording monitoring wells in each sub-area to better manage the resource with the ability for remote real-time readings. This is especially important in confined aquifers.
- Continue to update the certification of irrigated acres.
- Continue to assist District communities who have difficulties with water quality and quantity by helping determine rural water system feasibility.
- Keep the Saunders County Rural Water System study as an alternative in the event of changing federal regulations governing municipal water supplies.
- Keep abreast of updates and new iterations of the Elkhorn-Loup Model (ELM) to determine which areas in the Shell Creek watershed are in hydrologic connection with the Elkhorn or Loup River basins.

In summary, the LPNDRD needs to focus on five areas in the next five years:

1. Using information from the AEM flights and test holes, establish a monitoring well network in these confined aquifers to record continuous ground water energy levels. It is midsummer declines (late July to mid-August) when large drops in aquifer pressure can cause some wells to run low on water. Map locations of potential recharge sites. More flights, test holes and/or monitoring wells might be necessary in areas to provide the necessary information.

2. Establish ground water management rules to better address confined aquifers. This could involve comparing spring to summer ground water energy levels and comparing this to the potentiometric aquifer thickness and the depth of bedrock. The current management rules for unconfined aquifers should be adequate for future conditions. These controls are based on three consecutive spring readings at or below their trigger levels in at least 50% of the GWEL wells in a given subarea.

3. AEM flights have given a new interest in bedrock aquifers such as the Dakota formation. Monitoring wells in selected areas are needed to determine the water quality and quantity of these bedrock aquifers. Also are these bedrock aquifers in hydrologic connection to any overlying aquifers? If this is the case and new high capacity wells are being established in these bedrock aquifers then management should shift focus to the more vulnerable aquifer to sustain long term viability of both aquifers. If these bedrock aquifers are isolated from the overlying aquifer then "three dimensional management" where wells are managed differently due to their depth may be in order. This could get complex but management needs to take the chemical and physical characteristics of the aquifer in account. For example, what is the salinity of the groundwater and is the bedrock aquifer cemented, unconsolidated, sandstone, limestone, or shale.

4. Horizontal wells. In the immediate future horizontal high capacity irrigation water wells will likely be established in thin aquifers to increase well output or yield. On the plus side, these could replace several vertical wells that are used in series and therefore be a cost savings to the well owner. On the negative side these could quickly dry up thin aquifers less than 20 feet in thickness and affect nearby wells. How do you manage such a system? At the least you could require 600 feet spacing from any point of the lateral to a neighbor's well but again this may not provide much protection in thin aquifers such as the area immediately west of Fremont. Other management options would be to restrict the number of acres irrigated, restrict the length and direction of the laterals, restrict well output such as limit the gallons per minute, establish water allocation, install monitoring wells such as near the end of the laterals to track groundwater levels, etc.

5. Integrated Water Management. Siting of potential recharge sites, storage reservoirs (both surface and groundwater), and potential water reuse projects to enhance the water supply in the District. Additional monitoring wells, streamflow gauging, and precipitation sites will likely be necessary. Effects of climate change will also need to be considered as part of integrated water management.



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.

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 farmers for installation of land treatment practices. LPNNRD staff also worked with NRCS staff to utilize Farm Bill Programs to repair erosion problems.

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## **FY 2022 Soil Conservation Activities**

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### **Soil and Water Conservation Programs (SWCP)**

Under Soil and Water Conservation Programs (SWCP), the LPNNRD allocated \$83,029.99 of state funds for land treatment practices during fiscal year 2022 in cooperation with 15 different landowner projects. In addition, 3 Buffer Strip contracts were administered with \$12,258 in state funds.

For fiscal year 2023, \$86,748.17 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.

### **Wahoo Creek Water Quality Land Treatment Efforts**

Wahoo Creek in Saunders County, Nebraska, has resided on the Environmental Protection Agency's (EPA) Section 319 list of impaired water bodies. 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 completing another update in 2022. 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 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.

Approximately \$36,458 of 319 Grant Funds in FY 2022 were spent in the Wahoo Creek watershed. These cost-share monies helped construct practices including approximately 5,000 linear feet of terraces and 3,000 linear feet of tile outlets. The Wahoo Creek Grant also included approximately 135 acres in the Lands for Conservation program that helps generate Summer work in the watershed.

In FY 2022, the Wahoo Creek Watershed Water Quality Plan Phase II, Part B, was completed, which combined \$177,250 of remaining EPA 319 grant funds and \$43,000 of the remaining Nebraska Environmental Trust grant funds. These funds were used to complete a large Shoreline/Road Stabilization Project at Czechland Lake, Lands for Conservation landowner payments, and for the Wahoo Creek Watershed Plan Update. For example, septic systems that are over 30 years old or have an open discharge are eligible for up to \$15,000

of cost-share assistance to bring the system up to EPA/NDEE code. The NRD cost-shared on two septic system upgrades within the Wahoo Creek Watershed in FY22. To accomplish water quality goals, as outlined in the EPA Water Quality Watershed Plan, is to continue this partnership effort for many years to come. The Railroad Road/Czechland Lake Shoreline Stabilization Project was completed in the Fall of 2021. This was a cooperative effort between LPNNRD and Saunders County.

### **Shell Creek Watershed EPA Section 319 Water Quality Improvement 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. The designated beneficial uses (Primary Contact Recreation and Aquatic Life) of some segments of Shell Creek are impaired by elevated levels of Escherichia coli (E. coli) bacteria, selenium, Atrazine and excessive erosion from storm water flow.

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 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. Efforts have been underway on the plan update to be completed by the end of 2022.

Over the past 22 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 watershed in the nation to be delisted for atrazine contamination in FY 2018.

In FY 2022, in cooperation with Colfax County, the Shell Creek Channel and Bank Stabilization Project near Schuyler south of the Union Pacific Railroad bridge replacement near Colfax County Road 15 was completed. In addition, a large bank stabilization Project was completed in the summer of 2022, in cooperation with a private Platte County landowner. The District is planning with local and state partners for establishing local, state and federal grant assistance for the next five year period.

### **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 FY 2022 NRD staff was subpoenaed on a case between two neighbors that could not be resolved amicably.

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### **FY 2023 Soil Conservation Objectives**

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- 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 the Dunlap Creek, North Branch, and Miller Branch of Wahoo Creek, along with Cottonwood Creek Watershed and Shell Creek Watershed, to reduce erosion and improve water quality.
- Continue encouraging the implementation of summer conservation construction utilizing federal funding within the Wahoo Creek Watershed through the Lands for Conservation program; for FY23 the NRD has approved \$28,800 for the set aside of 150 acres.
- Administer \$86,748.18 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 (SWIG), EPA/NDEE and NET 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.

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### **FY 2024-2028 Soil Conservation Long Range Objectives**

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- 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 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.



## FLOOD CONTROL & DAMAGE REDUCTION ACTIVITIES

Watershed projects have been completed in five of eleven sub-watersheds (see Appendix E) in the LPNNRD to help reduce floodwater and provide grade stabilization. These completed projects include Bellwood, Clear Creek, Cottonwood Creek, Sand and Duck Creek, Swedeburg watersheds, along with Rawhide Creek. Current high priority flood reduction areas include Shell Creek, Wahoo Creek, Skull Creek and Bone Creek watersheds. On federal and state projects where the LPNNRD acts as project sponsor, the district obtains land rights and mitigates for loss of trees, wildlife habitats and fences destroyed by project construction. The LPNNRD 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.

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### FY 2022 Flood Control and Damage Reduction Activities

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#### Wahoo Creek Flood Reduction Efforts

In 2017, the Natural Resource Conservation Service (NRCS) approved \$1.5 million under their Regional Conservation Partnership Program (RCPP) to assist with construction of three Wahoo Creek flood reduction dams, sites 26a, 26b, and 27. These dam sites were originally identified as potential projects in the NRCS Wahoo Creek Watershed Plan completed in 1998. The total estimated cost to complete the three dams is \$4.1 million. In addition to RCPP funding, there is another \$2.3 million of state funds approved through the Nebraska Department of Natural Resources Water Sustainability Fund. It is anticipated that approved funding through LB 406 will assist with the estimated \$1.1 million needed from

local sources.

In the fall of 2017, NRCS approved additional funding for the Wahoo Creek Watershed under the federal Watershed Flood Prevention Operations Program (WFPO), historically referred to as P.L. 566. LPNNRD then entered into a three year agreement with NRCS to use federal funds for watershed planning to include sites 26a, 26b, 27 plus an additional seven remaining Wahoo Creek Watershed flood reduction dam sites (55, 66, 77, 82, 84, 85 & 86). FYRA Engineering was hired to assist LPNNRD with completing the Wahoo Creek Watershed plan which was submitted to NRCS for final review in December 2021. It is anticipated we will receive formal plan approval by the fall of 2022. With the approval of \$22 million from LB 406 funding, LPNNRD has hired Olsson (Engineering) for completing the design, permitting, bid letting, and construction oversight for all ten dam sites by the end of calendar year 2026.

#### 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 FY 2011. Construction of seven upstream flood reduction/environmental enhancement structures were completed in FY 2012 - FY 2014.

In FY19, LPNNRD assumed Lake Wanahoo's recreation management responsibilities from the Nebraska Game and Parks Commission.

#### Operation and Maintenance

District staff completed inspections on

45 watershed structures and special projects in the NRD in FY 22. These inspections help detect problems before they become serious. Also during the 2022 fiscal year, noxious weeds and volunteer trees were sprayed on 45 dams, Clear Creek Levee, and the Rawhide Ditch System. Annual maintenance activities such as removing debris, repairing fences and unplugging risers were completed at many of the dam locations.

### **Army Corps of Engineers 205 Flood Studies**

Over the past few 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. This effort will continue in FY 2023.

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 good job in maintaining the levee.

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## **FY 2023 Flood Control and Damage Reduction Objectives**

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- Continue with accelerated land treatment efforts in identified priority watersheds in the District.
- Complete biennial inspections on 45 watershed structures; spray noxious weeds & cut and treat trees on 45 dams, Clear Creek Levee and Rawhide ditch; complete regular maintenance activities at all sites.
- Continue to be an active partner on the Joint Water Management Advisory Board to explore flood reduction and drainage solutions in the lower one-third of Dodge County within LPNNRD.
- Partner with the City of Fremont, Dodge County, and Papio-Missouri River NRD to fund operation and maintenance of established USGS cameras and water gauges at five locations along the Lower Platte River.
- Partner with Dodge County, City of Fremont, City of North Bend and the North Bend Drainage District toward an eventual FEMA Drainage Improvement Project.
- Partner with City of Fremont, Dodge County and the Fremont Rod & Gun Club on completing the Platte River Levee Breach Repair Project.
- Continue to educate the public on watershed management and flood reduction in LPNNRD newsletters, news releases, and our website.
- 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.
- 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.
- Obtain final formal NRCS approval on the Wahoo Creek Watershed Plan that identifies the future completion of ten flood water reduction dams.
- Complete engineering designs on Wahoo Creek Dam Sites 26a, 26b, and 27.
- Complete engineering designs on Wahoo Creek Dam Sites 55, 66, 77, 82, 84, 85, 86.
- Begin the process using approved federal and state funds for constructing all ten Wahoo Creek flood water reduction dams.
- Begin the process of updating LPNNRD's district-wide All Hazard Mitigation Plan.
- Work with Dodge County and City of Fremont and other JWMAB members toward the completion of the Rawhide Watershed WFPO Planning efforts.

as they become available.

- Assist District Communities in evaluating future flood protection for their communities through updating the District's Hazard Mitigation Plan and assisting with identified projects.
- Construct ten approved Wahoo Creek flood water reduction dams by the end of 2026.
- Continue to work with JWMAB members on the numerous projects identified as flood reduction/drainage improvement projects.

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### **FY 2024-2028 Flood Control and Damage Reduction Long Range Objectives**

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- Continue to commit funds and staff time toward completing flood water control/reduction structures in the Wahoo Creek Watershed.
- Continue to budget staff time and funds to maintain and operate completed flood control structures that are sponsored by the LPNNRD.
- Continue to explore flood reduction opportunities for Shell Creek and Skull Creek Watersheds.
- Continue to encourage cities and counties in the district to accept and implement Floodplain Management Authorities.
- Assist Fremont, Inglewood, and Dodge County with non-structural flood protection projects as identified by the Army Corps of Engineers study and the Hazard Mitigation Plan Flood Resiliency study.
- Assist Schuyler with non-structural Platte River flood protection project opportunities



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. The district also sponsors educational activities such as Range Judging and Land Judging contests, and other school-oriented activities.

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**FY 2022 Forestry, Range, and Wildlife Habitat Activities**

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**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 862,750 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 2022, 17,875 trees and shrubs were distributed to District residents. Of this total, 5,908 were planted by the NRD field crew at 12 sites.

**Wildlife Program**

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. These programs include Corners For Wildlife and Wild Nebraska.

**Community Forestry Program**

In FY 2021-2022 LPNNRD donated 950 seedlings for schools in Fremont, Richland,

Columbus, and Newman Grove; provided trees to the District’s annual Spring Conservation Sensation; and provided trees for the Fremont EcoFair. The District budgets \$2,000 for Community tree development projects. The District did not assist a Community during the fiscal year.

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**FY 2023 Forestry, Range, and Wildlife Habitat Objectives**

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- Plant and distribute conservation trees and shrubs through the district’s Tree Planting Program.
- 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.
- Assist cooperators with signing up for Wildlife Programs.
- Cooperate with the Extension Service and the NRCS in obtaining tree orders from District residents.
- 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.

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**FY 2024-2028 Forestry, Range, and Wildlife Habitat Long Range Objectives**

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- Increase tree and shrub sales and planting each year through the district’s Tree Planting Program for qualified property owners.
- Provide information and education on tree planting, woodland management, grassland management, and proper wildlife habitat enhancement through media,

tours, and schools.

- Continue to administer Wildlife Habitat programs in cooperation with the Nebraska Game and Parks Commission and other partnering entities as opportunities arise.



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## FY 2022 Recreation Activities

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### 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. Catfish, Bluegill, Northern Pike, and Largemouth Bass were initially stocked in Czechland Lake.

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 non-point source pollution entering the lake and to provide educational resources.

The Czechland recreation area was used extensively during FY 2022 generating approximately \$20,000 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 2022 proved to be another very popular year for recreationists as the area was extensively used.

### Lake Wanahoo

Work was completed on recreation facilities at Lake Wanahoo 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 rocked 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.

The Lake Wanahoo Recreation Area was opened to the public in spring 2012. 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 rentable event 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.

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## **FY 2024-2028 Recreation Long Range Objectives**

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- Continue to evaluate the development of new outdoor public recreational opportunities as they arise.
- Continue to assist NE Game & Parks and Pheasant Forever in developing new areas offering public access.

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## **FY 2023 Recreation Objectives**

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- 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 Lake, and Homestead Lake Recreation Areas.
- LPNNRD will continue managing all recreation at the Lake Wanahoo recreation area.



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.

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**FY 2023 Drainage Improvement & Channel Rectification Objectives**

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- Work with Colfax County to complete new Shell Creek South Channel Improvement/Benching Projects.
- In partnership with Dodge County, and Fremont, support drainage improvements east of Fremont through FEMA.
- In partnership with the North Bend Drainage District, Dodge County and City of Fremont, support the drainage improvement project assessment of the North Bend drainage ditch through FEMA.
- Continue to oversee the Rawhide Creek West Branch Project to ensure that landowners properly control vegetation.
- Provide continued assistance to Platte Center with stabilizing segments of Elm Creek.

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**FY 2024-2028 Drainage Improvement & Channel Rectification Long Range Objectives**

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- Evaluate potential technical and funding assistance to counties, cities, and other entities in the district that sponsor sound drainage and channel improvement projects.



## WASTE DISPOSAL & POLLUTION CONTROL

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.

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### **FY 2023 Waste Disposal & Pollution Objectives**

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- 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.

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### **FY 2024-2028 Waste Disposal & Pollution Long Range Objectives**

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- 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 Lower Platte North NRD 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.

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## **FY 2022 Information & Education Activities**

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During fiscal year 2022, 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:

### **Publications and Marketing**

The NRD distributes two newsletters each fiscal year. The Winter issue of "The Viaduct" newsletter includes an additional page that contains the Annual Report. In FY 2012, the district switched distribution of "The Viaduct" newsletter from direct mail subscriptions to inserts in area newspapers. In FY 2022, more than 21,000 copies of each newsletter were distributed in area newspapers and via email.

Various brochures describing LPNNRD programs and services were updated as needed in FY 2022. These brochures are displayed in the office and distributed during LPNNRD sponsored events and exhibit booths. A fact sheet for use with the Nebraska Association of Resources District's public relations campaign at public events is updated yearly.

Press releases are distributed to district newspapers, email lists and radio stations. Numerous ads spotlighting different NRD programs and upcoming deadlines air on KTIC Radio throughout the year. Digital ads on the Wahoo newspaper website continued in FY 2022. In FY 2020, the LPNNRD began airing 30-second program commercials on News

Channel Nebraska. With the success of these videos, the NRD continued airing the Lake Wahoo video, the Projects video, Operations and Maintenance video, and newly produced Information and Education video.

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

### **Website**

The NRD's website at [www.lpnrd.org](http://www.lpnrd.org) contains information on nearly all of the district's projects and programs, along with staff and director information, committee and board meeting minutes, and more. Online application and registration forms for various projects and programs are available as well. Online payment capabilities continue to allow customers to pay for trees, rural water bills, and Lake Wahoo permits. In 2019, the district began tracking the activity on the website including which pages are viewed to help keep current information available online. The website continues to be updated to allow for different types of viewing devices – desktop, mobile, and tablet devices.

### **Video Promotion**

During FY 2018, the district created a 60-second, and 30-second video that promotes the conservation efforts of the district. A past director, current director, and current staff are featured in the video. The children of a current employee and a current director were also featured in the video.

In FY 2019, the district created a promotional video for the Lake Wahoo NRD Recreation Area. An additional video was produced to promote LPNNRD's water conservation efforts. The video featured LPNNRD Water

Department staff and various water quality and quantity efforts.

During FY 2020, a promotional video was created for the duties and responsibilities of the Operations & Maintenance department, and a video to promote the activities of the Projects department. The videos featured current staff, and the video was narrated by a current LPNNRD director.

In FY 2022, the LPNNRD created a video for the Information and Education department. This video focuses on the district's information outreach efforts and environmental education. Some of the footage was taken throughout the year from education events. The video features current staff and was narrated by the Information Coordinator.

With the completion of the Information and Education video, clips from all of the department videos are combined to create one video that features all of the programs at the LPNNRD. These videos are shown as educational purposes for presentations, the LPNNRD website, commercials through area television stations, and featured on social media platforms.

## **Education Programs**

During FY 2022, the district continued with two year-long programs. The St. Wenceslaus Pre-kindergarten students learn about wildlife, trees, birds, recycling and water conservation through books, pictures, stories, and hands-on activities. The students visited Lake Wanhoo 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 8th Grade 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. Unfortunately, student involvement was very low and didn't end up finishing out the school year. Efforts to renew

and rejuvenate the survival club are being made for the upcoming school year.

The district continues to participate in the Career Exploration Opportunities (CEO) Program with Wahoo Public Schools. During the Spring semester of 2022, LPNNRD staff hosted one high school senior and he rotated between each department to learn about the LPNNRD responsibilities. The district will host another student during the fall of FY 2023.

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 monthly event, Coffee Lakeside, has impacted over 100 people. Topics included shorebirds, migration, frogs and toads, prairie plant ID walk, wetlands, and more. Six new events were also held at the LPNNRD with two of them repeating. The first annual Wildflowers and Wine event discussed prairie ecosystems, cost-share programs available, and ended with sampling from a local winery. This event brought in 42 people. Two rain barrel workshops were held, one in August and one in April. Eight attendees and then eighteen attendees respectively, attended the 'make and take' event where they learned about conserving water and then constructed a full sized rain barrel. The January Bees and Brews workshop brought in 65 people. This workshop was an informational night on honeybees and starting your own beehives. A Nebraska brewery partnered with the LPNNRD to create a locally sourced Honey and Lavender Saison specifically for the event; it was rightfully named "Honey Momma". Presenters also came from UNL Master Beekeepers. Science and Scenes was a night of learning about the science of pollination and then a step by step, acrylic landscape painting lesson. Fifteen people attended this event led by a local studio art student. LPNNRD partnered with UNL Extension Staff, to hold a lawn care, composting, and greenhouse event; 18 people attended. This event showcased water conservation

and species selection for lawn care needs; learning to compost; and an introduction to greenhouses. Nocturnal nights were held in May and August with 50 attendees and 22 attendees respectively. Families attending this event could learn all about nocturnal animals by dissecting owl pellets, listening to night time sounds, identifying tracks and more. A night time nature walk around the lake and s'mores to end the night made this event a highlight of attendees' summers.

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 East Central Land Judging Contest will be held by Lower Platte North NRD on October 5th, 2022.

The annual LPNNRD Spring Conservation Sensation was held on May 4th 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. 231 students attended the event.

The first 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 and their life cycles. Four boys ages 7, 10, 10, and 11 attended the week long camp. The hands-on activities were the students favorite parts per their evaluations and they are looking forward to returning next summer. The goal for FY 2023 is 3 consecutive weeks of camp for 3 different age ranges.

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 4 events in FY 2022 that involved 40 students (East Butler, Platte Center, Schuyler, and Mead), and over 50 wells sampled.

Staff at the LPNNRD visited 11 different schools with 27 classroom visits. Every single grade except 2nd, was visited for a natural resources lesson or activity. All day field trips for 1st and 3rd graders were conducted at Lake Wanahoo and in partnership with Live Well Go Fish. The LPNNRD has a great partnership with Live Well Go Fish.

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 1531 youth and 371 adults in FY 2022.

### **Awards, Contests, and Events**

In addition to marketing efforts, the Lower Platte North NRD provides a physical presence with exhibit booths at local county fairs, agriculture expos and other events across the district. The NRD provided an exhibit booth in the Spring along with the Dodge County USDA/NRCS at the Fremont Eco Fair. The NRD dispersed Ponderosa Pine tree seedlings for 4th grade students in attendance. The NRD also provided an exhibit booth at the Butler County Fair and a parade during the Saunders County Fair. Promotional materials at the events included brochures of the NRD's projects and programs, information about Nebraska's NRDs, career opportunities in natural resources, magnets, stickers, frisbees and coasters filled with wildflower seeds. The LPNNRD plans to provide displays at up to five area county fairs, and agriculture related events in the district in the future.

Nebraska's NRDs celebrated their 50 Year

Anniversary in July of 2022. The Lower Platte North NRD held an open house at the office to celebrate.

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### **FY 2023 Information & Education Objectives**

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- Publish the district newsletter “Viaduct” biannually in an electronic format and as a printed newspaper insert in 10 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.
- Continue to 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 (Facebook, Twitter, YouTube, etc.).
- Continue with the annual awards and recognition program.
- 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 2022.
- Host the 32nd Spring Conservation Sensation in May 2023.
- Develop new programs and promotional projects to aid in outreach efforts of the district.
- Develop a video for the three recreation areas in 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.

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### **FY 2024-2028 Information & Education Long Range Objectives**

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- Search for new and effective ways to inform and educate the public on the NRD purpose and programs.
- Participate with the Information & Education 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.
- Provide assistance for the East Central Region Land Judging Contest in the fall of 2023, hosted by Lower Platte South NRD.
- Assist in the development of an outdoor classroom for a district school.
- Partner with district schools to host Test Your Well Events annually.




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## LPNNRD Staff

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The staff of the Lower Platte North NRD includes 17 full-time and part-time employees stationed at the district office in Wahoo. 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.

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

### Current staff as of September 1, 2022:

Sydney Abbott, **Education Coordinator**  
 Daryl Andersen, **Water Resources Manager**  
 Tyler Benal, **Water Resources Specialist**  
 Jill Breunig, **Bookkeeping Department Head/Administrative Assistant**  
 Will Brueggemann, **Water Resources Specialist**  
 Ryan Chapman, **Assistant General Manager**  
 Duke Dokulil, **Operations & Maintenance Technician**  
 Sean Elliott, **Projects/Rural Water Manager**  
 Noah Franzen, **Water Resources Technician**  
 Eric Gottschalk, **General Manager**  
 Bob Heimann, **Operations & Maintenance Manager**  
 David Moore, **Operations & Maintenance Technician**  
 Russell Oaklund, **Lead Water Resources Specialist**  
 Dave Odvody, **Recreation Facilitator**  
 Chris Poole, **Grants/GIS Department Head**  
 Karen Rezac, **Department/Administrative Assistant**  
 Lacey Sabatka, **Information Coordinator**  
 Bret Schomer, **Wanhoo Recreation Supervisor/Water Resources Specialist**

### Staff Support for NRCS Offices:

Vacant, **Conservation Technician**  
 Kimberly Piitz, **NRD/NRCS Field Office Assistant (Butler County)**  
 Kristin Miller, **NRD/NRCS Field Office Assistant (Colfax County)**  
 Vacant, **NRD/NRCS Field Office Assistant (Dodge County)**  
 Marla Milliken, **NRD/NRCS Field Office Assistant (Saunders County)**  
 Melissa Foreman, **Shell Creek Watershed Coordinator (LPN & SCWIG Volunteer)**



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### **FY 2023 Financial Objectives**

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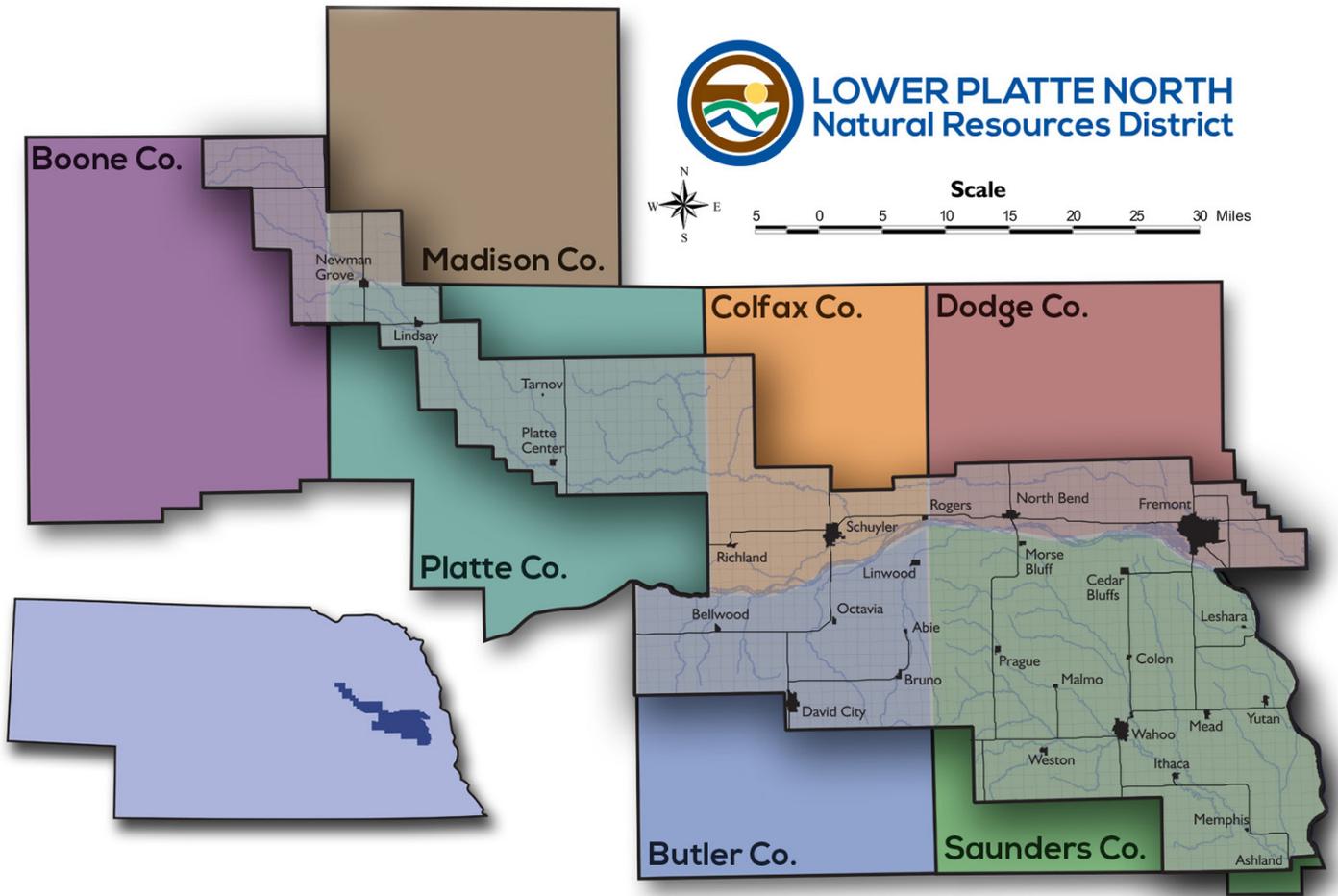
- Funding required for the LPNNRD projects and programs for Fiscal Year 2023 requires a general operating budget of \$8,177,500 of which \$3,480,715 is required from the district's local tax levy. The 2022 tax levy of .033457 cents per \$100 actual valuation is required from District property. Projected expenses and income for FY 2022-2027 are shown in Appendix F.
- A tax levy of .031404 means that an owner of a \$150,000 home will pay \$47.11 in NRD taxes in FY 2022. An owner of farm land valued at \$7,000 per acre will pay \$2.20 an acre/year to the NRD in FY 2022. The LPNNRD levy represents about two percent of the total property tax collected.

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### **FY 2024-2028 Financial Long Range Objectives**

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- 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 \$0.035 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.





## APPENDIX B – Estimated Population by County

COUNTY	% OF COUNTY IN DISTRICT	ACRES IN DISTRICT	RURAL POPULATION IN DISTRICT	URBAN POPULATION IN DISTRICT	TOTAL
Boone	12.78	56,175	173	--	173
Butler	44.38	167,700	1,812	3,766	5,578
Colfax	40.76	108,582	1,060	6,708	7,768
Dodge	31.96	111,147	2,988	28,829	31,817
Madison	6.25	22,998	162	660	822
Platte	37.78	165,401	2,194	670	2,864
Saunders	81.39	395,098	4,706	11,719	16,425
TOTAL		1,027,101	13,095	52,352	65,447

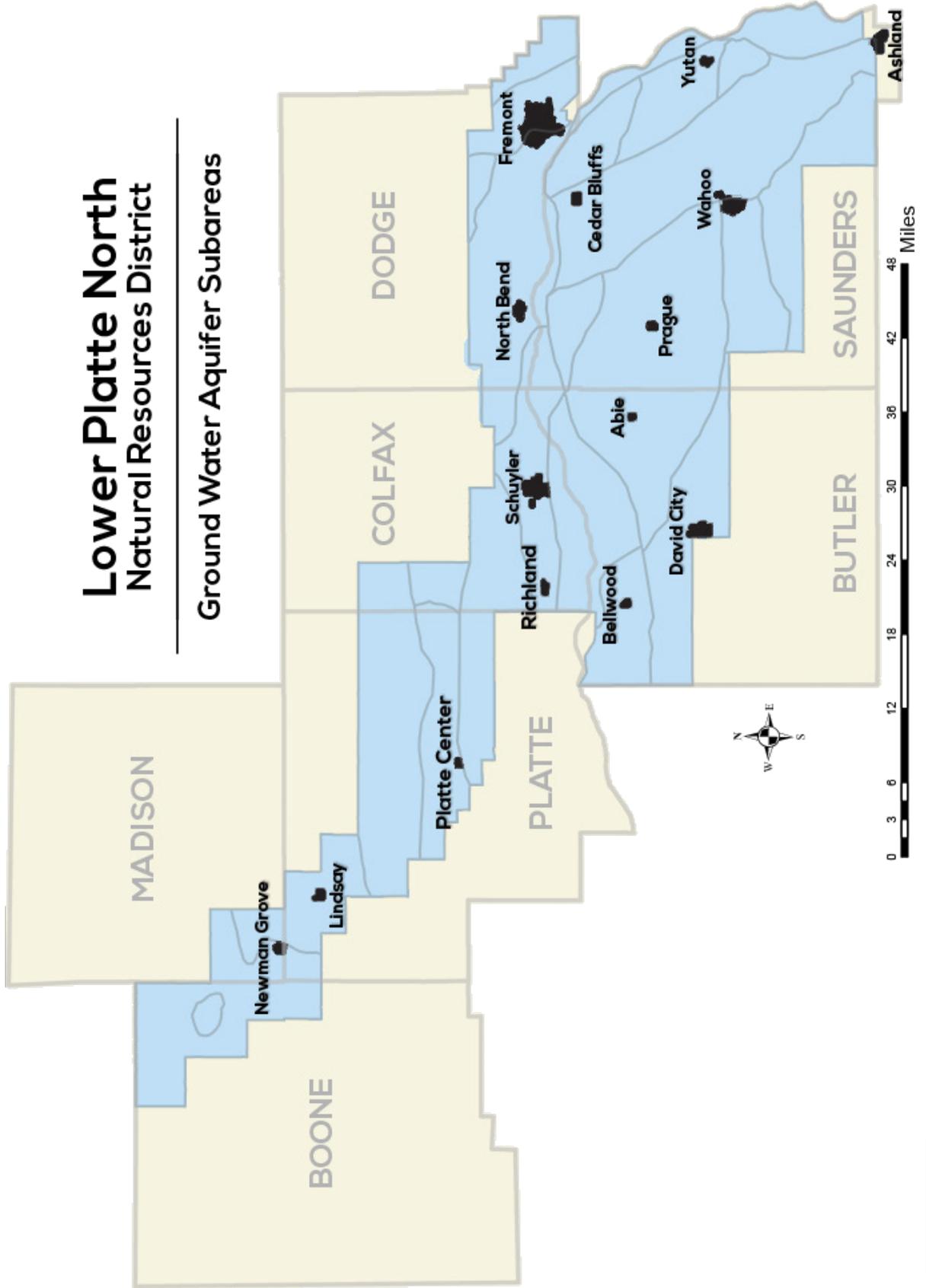
Twenty-eight cities, towns and villages are located within the Lower Platte North NRD, listed below with their populations (according to 2020 United States Census):

Abie .....	65	Memphis.....	109
Ashland .....	3,087	Morse Bluff .....	116
Bellwood.....	406	Newman Grove.....	660
Bruno .....	97	North Bend.....	1,267
Cedar Bluffs .....	614	Octavia .....	107
Colon.....	107	Platte Center .....	335
David City.....	2,999	Prague .....	290
Fremont .....	27,182	Richland .....	74
Inglewood.....	380	Rogers.....	82
Ithaca .....	160	Schuyler .....	6,552
Leshara .....	108	Tarnov .....	51
Lindsay .....	284	Wahoo .....	4,813
Linwood .....	92	Weston .....	248
Malmo .....	94	Yutan.....	1,353
Mead.....	620		



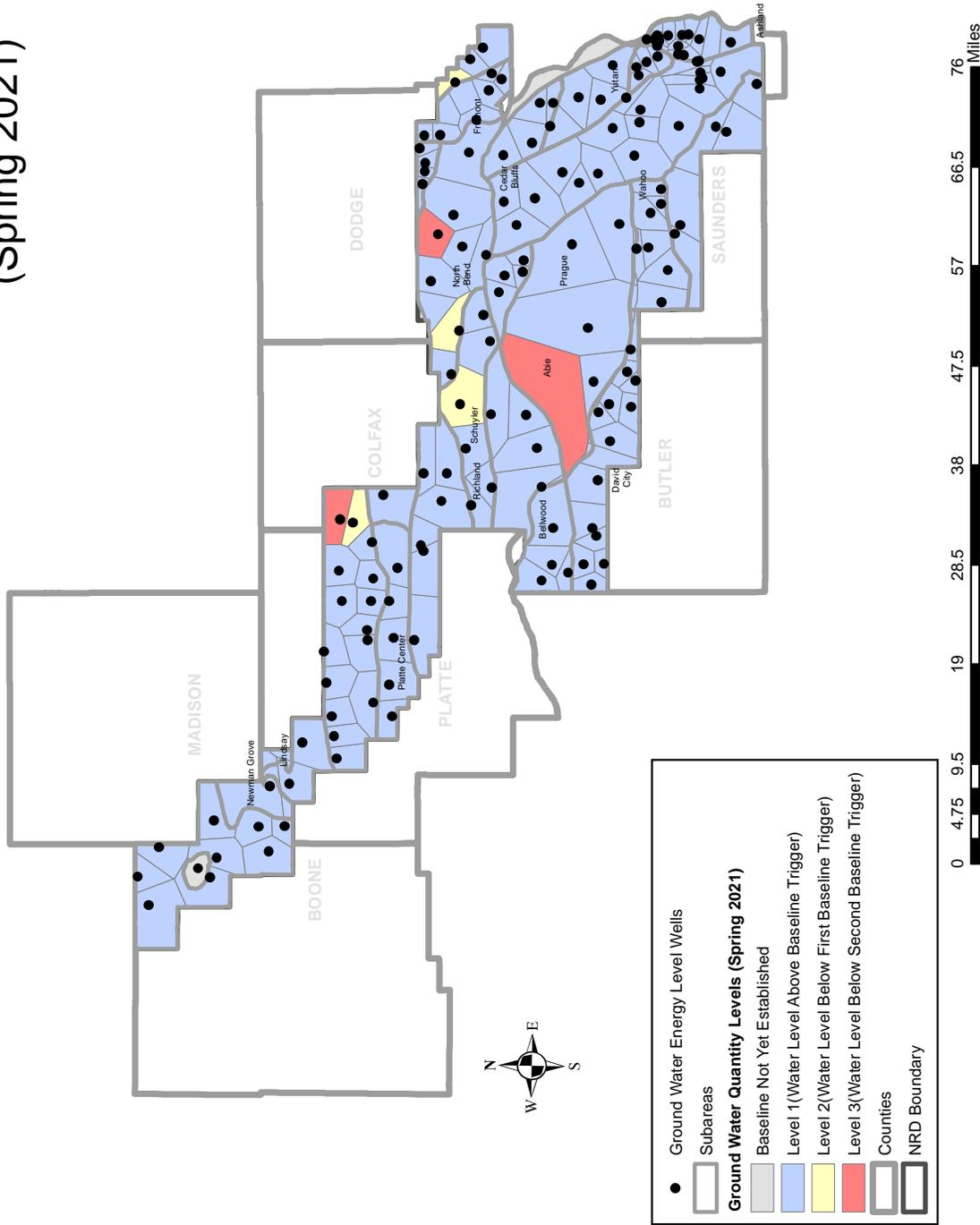
# Lower Platte North Natural Resources District

Ground Water Aquifer Subareas



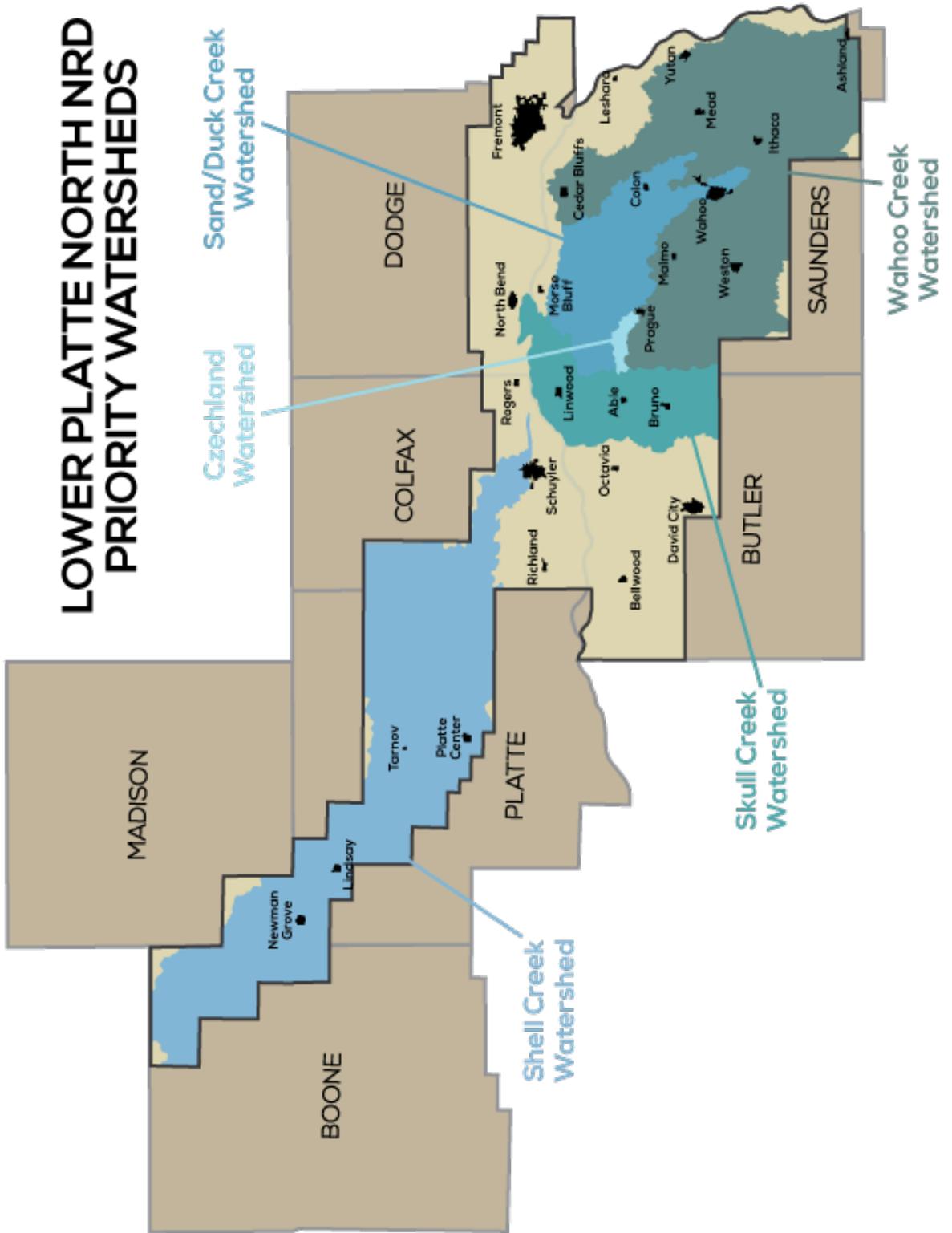


# Lower Platte North Natural Resources District Ground Water Energy Level Network (Spring 2021)





# LOWER PLATTE NORTH NRD PRIORITY WATERSHEDS





## APPENDIX F – Projected Budget (Income), Fiscal Years 2023-2028

Description	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
<b>AVAILABLE CASH (Sinking Funds, etc.)</b>	\$304,410	\$812,848	\$869,898	\$1,643,754	\$1,573,537	\$1,626,374
<b>FEDERAL INCOME</b>						
NRCS (WFPO & RCPP)	\$499,610	\$24,650	\$24,650	\$24,650	\$24,650	\$0
FEMA (Stilling Basin)	\$2,709,600	\$0	\$0	\$0	\$0	\$0
FEMA (Flood Funds)	\$392,500	\$0	\$0	\$0	\$0	\$0
NDEE (EPA 319)	\$567,730	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000
<b>STATE INCOME</b>						
NE Buffer Strip Program	\$38,000	\$38,000	\$38,000	\$38,000	\$38,000	\$0
Decommissioned Well Fund	\$3,500	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000
Natural Resource WQ Fund	\$52,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Shell Creek Implementation	\$43,829	\$10,000	\$10,000	\$0	\$0	\$0
Water Sustainability Fund	\$133,031	\$500,075	\$500,075	\$500,075	\$0	\$0
Sand Creek - NRDF	\$20,000	\$0	\$0	\$0	\$0	\$0
Lake Wanahoo Other	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
Wild NE	\$3,820	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000
Motor Vehicle Prorate	\$8,400	\$8,400	\$8,400	\$8,400	\$8,400	\$8,400
<b>OTHER INCOME</b>						
Rural Water Income	\$134,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
Property Tax	\$3,476,233	\$3,476,233	\$3,476,233	\$3,476,233	\$3,476,233	\$3,476,233
Investment Income	\$3,645	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000
Equipment, Rent, Parks, Salaries, Etc.	\$625,192	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
Local Income	\$118,940	\$130,000	\$130,000	\$130,000	\$130,000	\$130,000
<b>TOTAL</b>	<b>\$9,154,440</b>	<b>\$5,932,206</b>	<b>\$5,989,256</b>	<b>\$6,753,112</b>	<b>\$6,182,820</b>	<b>\$6,173,007</b>

# APPENDIX G – Projected Budget (Expenses), Fiscal Years 2023-2028



<b>ADMINISTRATION</b>						
	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>
<b>Bonds</b>	\$100	\$100	\$100	\$100	\$100	\$100
<b>Dues &amp; Memberships</b>	\$38,000	\$39,000	\$40,000	\$41,000	\$43,000	\$44,000
<b>Fees &amp; Licenses</b>	\$11,024	\$11,465	\$11,924	\$12,401	\$12,897	\$13,200
<b>GIS</b>	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000
<b>Insurance</b>	\$73,244	\$	\$122,221	\$127,110	\$132,194	\$137,482
<b>Interest Expense</b>	\$0	\$0	\$0	\$0	\$0	\$0
<b>Legal Notices</b>	\$2,704	\$2,812	\$2,925	\$3,042	\$3,163	\$3,290
<b>Maintenance Contracts</b>	\$5,150	\$5,356	\$5,570	\$5,793	\$6,025	\$6,266
<b>Office Supply &amp; Expense</b>	\$11,804	\$12,276	\$12,767	\$13,278	\$13,809	\$14,361
<b>Computer Supply &amp; Expense</b>	\$31,000	\$32,000	\$33,000	\$34,000	\$35,000	\$36,000
<b>Postage</b>	\$6,760	\$7,030	\$7,312	\$7,604	\$7,908	\$8,225
<b>Professional Services</b>	\$138,000	\$140,000	\$142,000	\$144,000	\$146,000	\$148,000
<b>Rent Expense</b>	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000
<b>Support to Organizations</b>	\$1,200	\$1,300	\$1,400	\$1,500	\$1,600	\$1,600
<b>Telephone</b>	\$19,864	\$20,659	\$21,485	\$22,344	\$23,238	\$24,168
<b>Utilities</b>	\$8,840	\$9,194	\$9,561	\$9,944	\$10,342	\$10,755

<b>INFORMATION &amp; EDUCATION</b>						
	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>
<b>Education</b>	\$11,960	\$12,438	\$12,936	\$13,453	\$13,992	\$14,551
<b>Information</b>	\$31,148	\$32,394	\$33,690	\$35,037	\$36,439	\$37,896
<b>Scholarships &amp; Grants</b>	\$3,120	\$3,245	\$3,375	\$3,510	\$3,650	\$3,796
<b>Other</b>	\$10,140	\$10,546	\$10,967	\$11,406	\$11,862	\$12,337

<b>OPERATION &amp; MAINTENANCE</b>						
	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>
<b>Auto &amp; Truck Expense</b>	\$22,880	\$23,795	\$24,747	\$25,737	\$26,766	\$27,837
<b>Building Maintenance</b>	\$9,672	\$10,059	\$10,461	\$10,880	\$11,315	\$11,767
<b>Community Forestry Program</b>	\$2,000	\$2,500	\$2,500	\$3,000	\$3,000	\$3,000
<b>Operation &amp; Maintenance</b>	\$298,220	\$310,149	\$322,555	\$335,457	\$348,875	\$362,830
<b>Project Repairs</b>	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
<b>Stream Bank Stabilization</b>	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
<b>Wildlife Habitat</b>	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
<b>Other</b>	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000

<b>PERSONNEL</b>						
	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>
<b>Directors Expense</b>	\$40,248	\$41,858	\$43,532	\$45,274	\$47,084	\$48,968
<b>Directors Per Diem</b>	\$38,000	\$38,000	\$38,000	\$38,000	\$38,000	\$38,000
<b>Employee Benefits</b>	\$481,520	\$500,781	\$520,812	\$541,645	\$563,310	\$585,843
<b>Payroll Taxes</b>	\$96,720	\$100,589	\$104,612	\$108,797	\$113,149	\$117,675
<b>Personnel Expense</b>	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
<b>Salaries</b>	\$1,303,767	\$1,342,880	\$1,383,166	\$1,424,661	\$1,467,401	\$1,490,000



## APPENDIX G – Projected Budget (Expenses), Fiscal Years 2023-2028

<b>PROJECTS</b>						
	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>
<b>Inter-governmental</b>	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
<b>Special Projects</b>	\$33,500	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000
<b>Wanahoo</b>	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
<b>Other Projects</b>	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000

<b>PLATTE RIVER CORRIDOR ALLIANCE</b>						
	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>
<b>WQ Monitoring</b>	\$7,000	\$7,000	\$7,000	\$7,000	\$7,000	\$7,000

<b>WATER</b>						
	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>
<b>Groundwater Management Plan</b>	\$40,000	\$50,000	\$60,000	\$65,000	\$70,000	\$75,000
<b>Groundwater Programs</b>	\$188,396	\$195,932	\$203,769	\$211,920	\$220,397	\$229,213
<b>Regulatory</b>	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000
<b>Surface Water Programs</b>	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000
<b>Special Projects</b>	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
<b>Land Treatment</b>	\$750,000	\$750,000	\$750,000	\$750,000	\$750,000	\$750,000

<b>RURAL WATER DISTRICT</b>						
	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>
<b>Rural Water District</b>	\$140,000	\$140,000	\$140,000	\$140,000	\$140,000	\$140,000

<b>CAPITAL IMPROVEMENTS</b>						
	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>
<b>Wanahoo Stilling Basin &amp; Oversight</b>	\$0	\$0	\$0	\$0	\$0	\$0
<b>Wanahoo Fish Station &amp; Store</b>	\$0	\$0	\$0	\$0	\$0	\$0
<b>Wahoo Creek Dams</b>	\$1,277,500	\$1,277,500	\$3,500,000	\$2,450,000	\$2,100,000	\$0
<b>Land Rights (Wahoo Creek)</b>	\$547,500	\$547,500	\$1,500,000	\$1,050,000	\$900,000	\$0
<b>Cottonwood 21A Spillway</b>	\$50,000	\$0	\$0	\$0	\$0	\$0
<b>Buildings</b>	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
<b>Large Structure O&amp;M Sinking Fund</b>	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
<b>Flood Reduction Sinking Fund</b>	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000

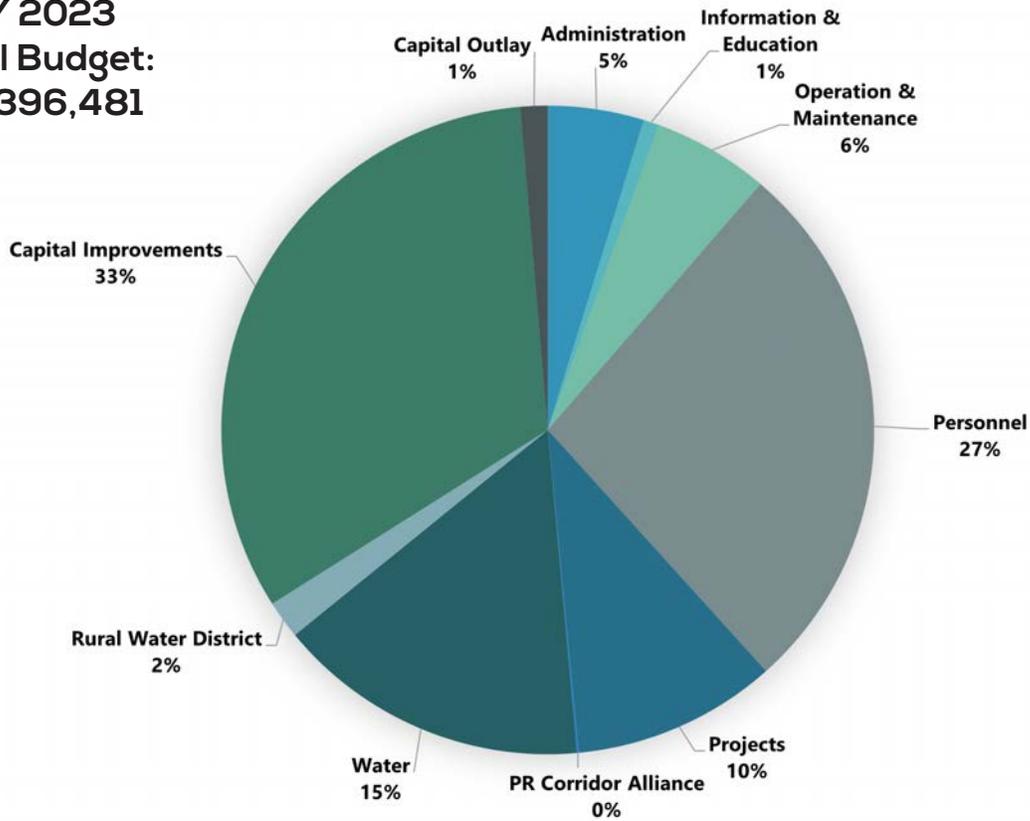
<b>CAPITAL OUTLAY</b>						
	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>
<b>Capital Outlay</b>	\$417,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000

<b>BUDGET TOTAL</b>						
	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>
<b>BUDGET TOTAL</b>	<b>\$7,396,481</b>	<b>\$7,453,531</b>	<b>\$10,738,387</b>	<b>\$9,347,170</b>	<b>\$8,960,007</b>	<b>\$6,053,790</b>

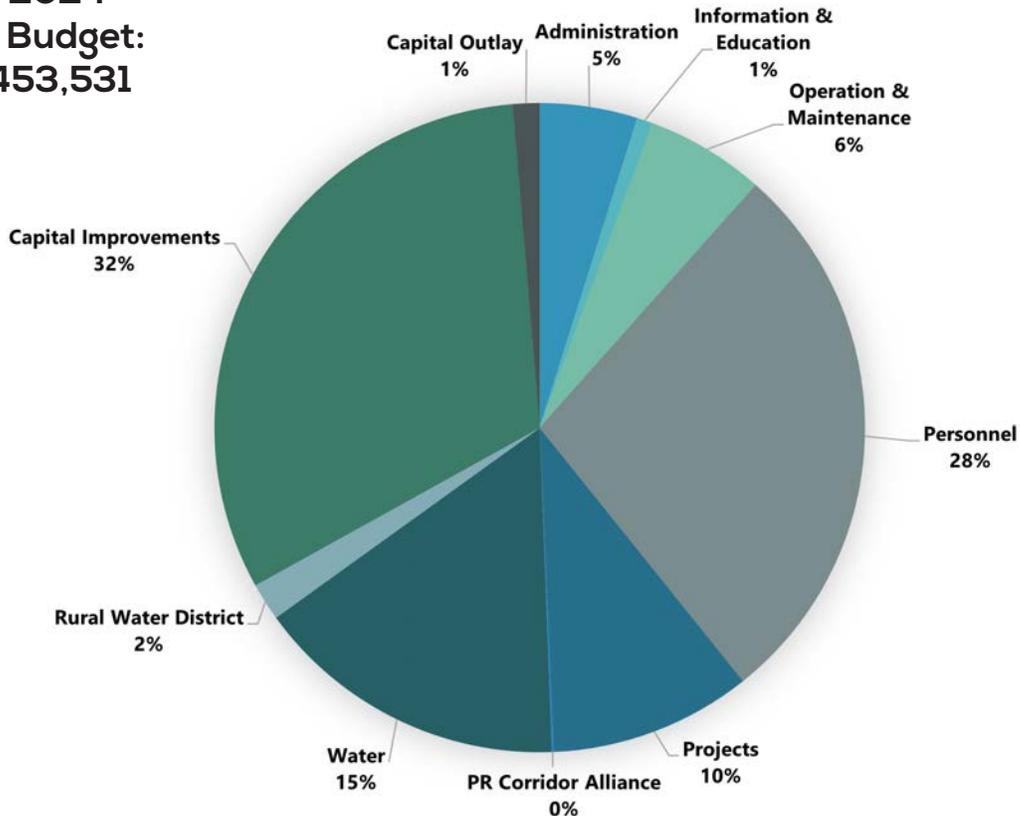
# APPENDIX H – Projected Expenses Breakdown



**FY 2023**  
**Total Budget:**  
**\$7,396,481**



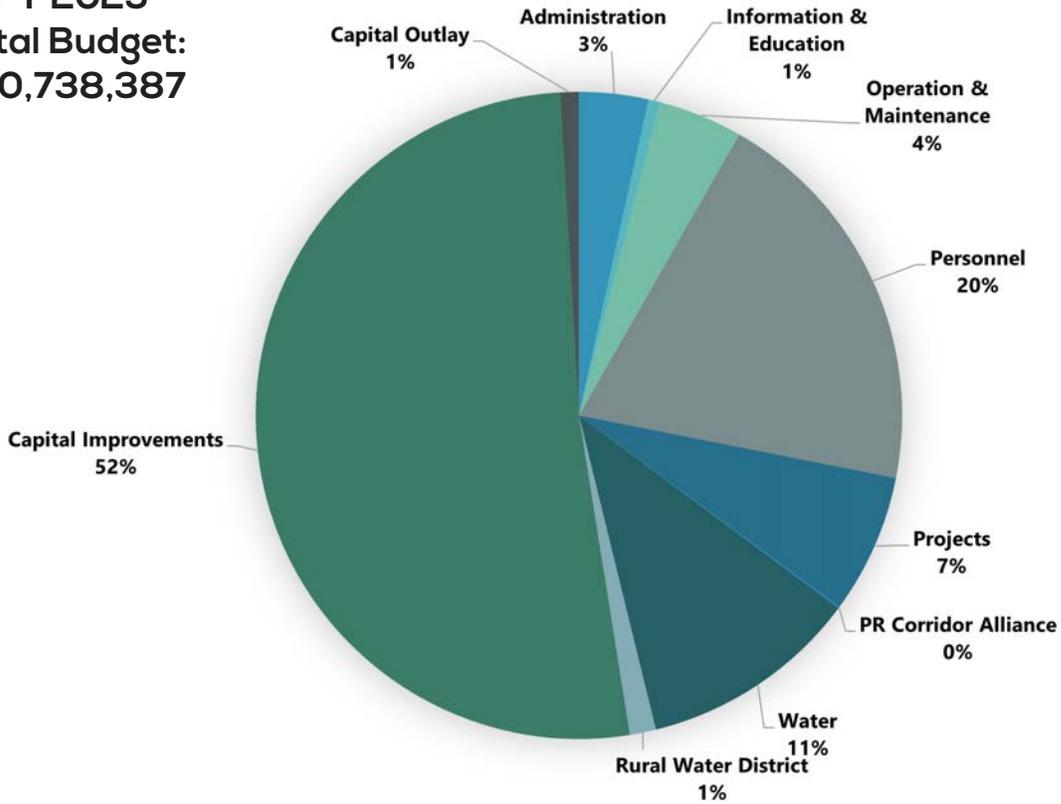
**FY 2024**  
**Total Budget:**  
**\$7,453,531**



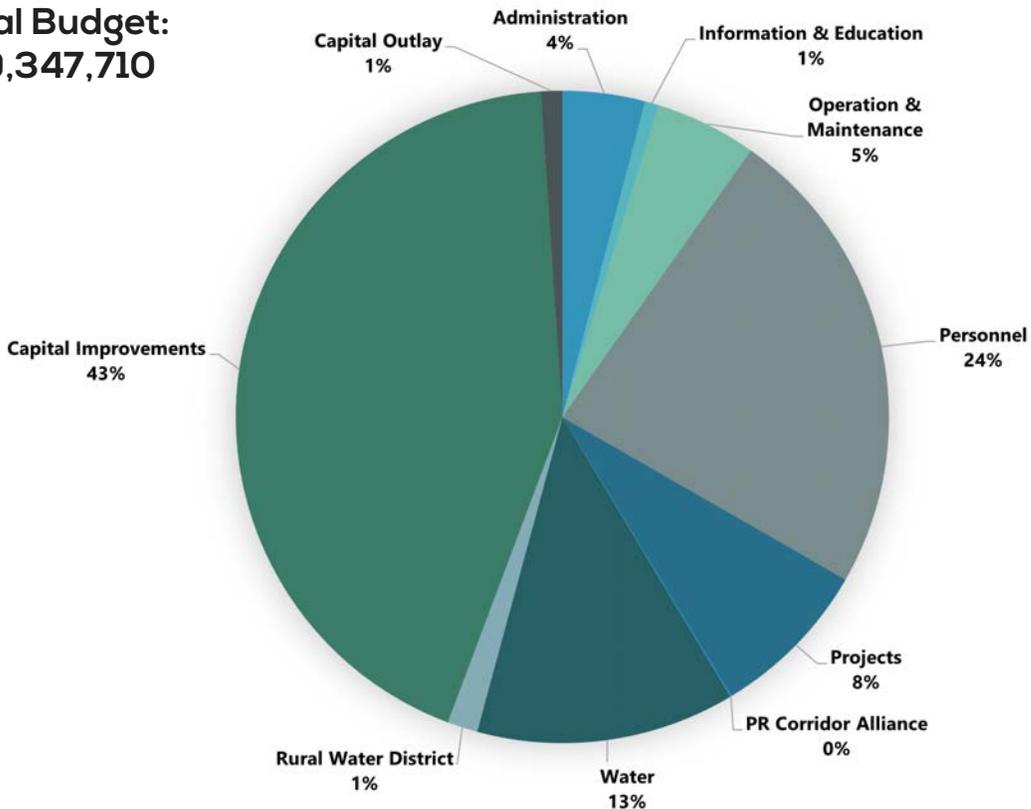


## APPENDIX H – Projected Expenses Breakdown

**FY 2025**  
**Total Budget:**  
**\$10,738,387**



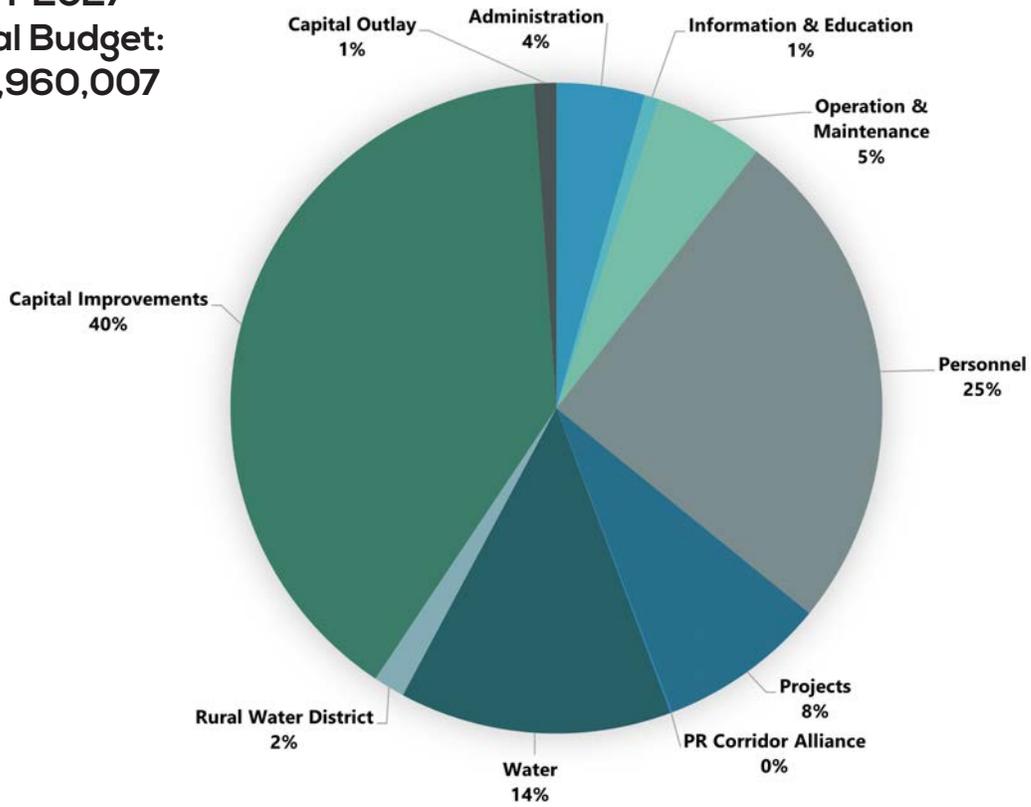
**FY 2026**  
**Total Budget:**  
**\$9,347,710**



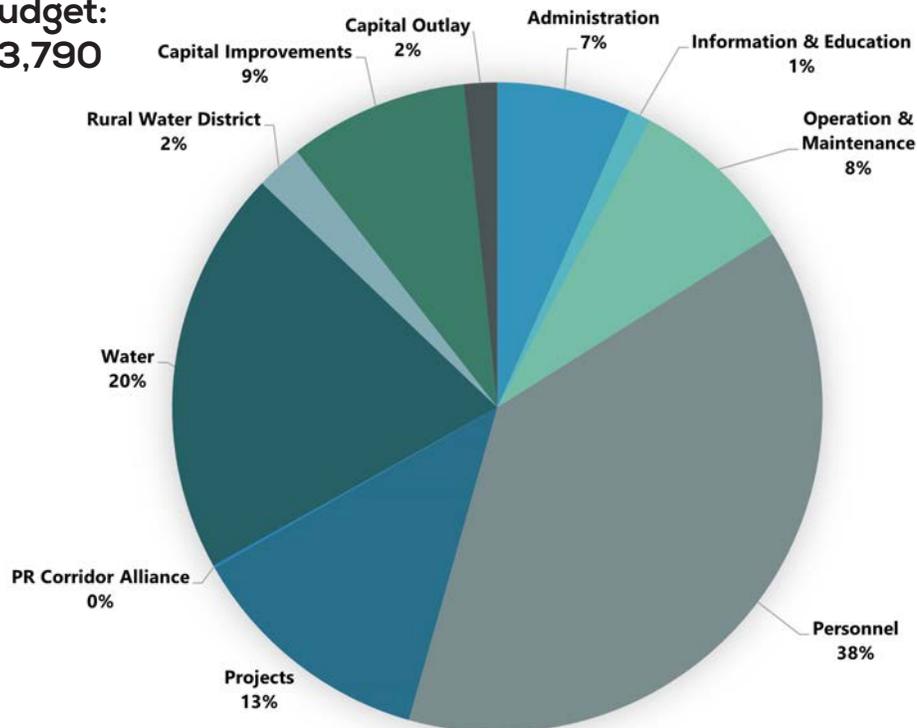
# APPENDIX H – Projected Expenses Breakdown

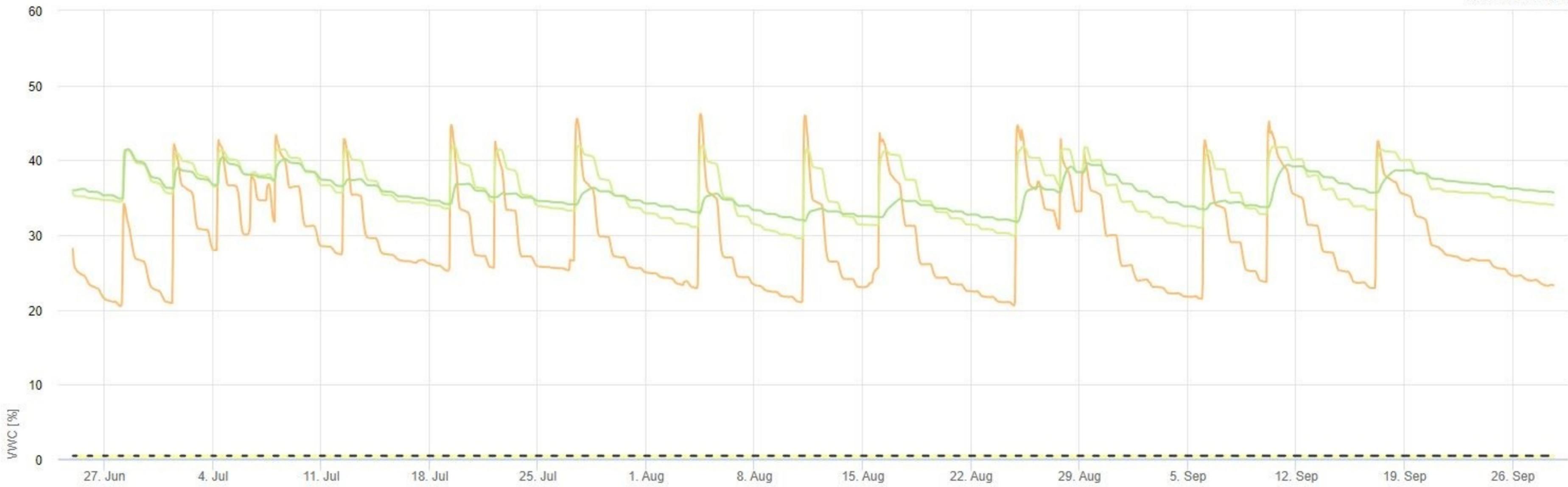


**FY 2027**  
**Total Budget:**  
**\$8,960,007**



**FY 2024**  
**Total Budget:**  
**\$6,053,790**





EAG Soil moisture 1 [%] EAG Soil moisture 2 [%] EAG Soil moisture 3 [%] EAG Soil moisture 4 [%] EAG Soil moisture 5 [%] EAG Soil moisture 6 [%] EAG Soil moisture 7 [%] EAG Soil moisture 8 [%] EAG Soil moisture 9 [%]



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**January 23-26, 2023**

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*More information to come*

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YAZOO MISSISSIPPI DELTA JOINT WATER  
MANAGEMENT DISTRICT**





**Table 1: Maximum Land Application Rates for Active Ingredients**

Analyte	Loading Threshold*	Aqueous Concentration**		Maximum Water Application Rate		
	grams/acre	µg/L	Detected?	Liters Per Acre	Gallons Per Acre	Acre Inches
<i>Abamectin</i>	2.2	0.39	Yes	5.6E+06	1.5E+06	55
<i>Azoxystrobin</i>	22.6	0.19	Yes	1.2E+08	3.1E+07	1,157
<i>Chlorantraniliprole</i>	8.9	12	Yes	7.4E+05	2.0E+05	7.2
<i>Clothianidin</i>	5.0	0.35	Yes	1.4E+07	3.8E+06	139
<i>Fluoxastrobin</i>	16.3	0.03	No	5.4E+08	1.4E+08	5,286
<i>Imidacloprid</i>	13.4	0.03	No	4.5E+08	1.2E+08	4,345
<i>Glyphosate</i>	124.9	26	Yes	4.8E+06	1.3E+06	47
<i>Metalaxyl***</i>	28.4	1.5	Yes	1.9E+07	5.0E+06	184
<i>Prothioconazole</i>	3.7	0.05	No	7.4E+07	2.0E+07	720
<i>Sedaxane</i>	1.0	0.57	Yes	1.8E+06	4.6E+05	17
<i>Tebuconazole</i>	9.3	3.3	Yes	2.8E+06	7.4E+05	27
<i>Thiabendazole</i>	0.52	4.8	Yes	1.1E+05	2.9E+04	1.1
<i>Thiamethoxam</i>	5.0	0.03	No	1.7E+08	4.4E+07	1,621

**Notes:**

\*Annual threshold based on small fraction of registered uses, see Table 1 of NDEE-approved Land Application Proposal.

\*\*Composite sample collected December 16, 2021 from all treated water tanks. Where the analyte was not detected, 1/2 the reporting limit is shown as the concentration.

\*\*\*Combined concentration of metalaxyl and mfenoxam, which the laboratory could not quantify separately.

Gray Highlighting = Controlling factor for land application in Spring 2022.

**Table 1: Soil Concentrations Calculated from Registered Product Uses  
Land Application Program, AltEn Facility  
Spring 2022**

Focused Analytes List	Maximum Annual Application Rate <sup>1</sup>		Soil Bulk Density <sup>2</sup> (pounds per cubic foot)	Depth of Soil Sampling (inches)	Calculated Soil Concentrations <sup>3</sup> (mg/kg)	Mean Soil Results, January 2022 Samples (mg/kg)
	(grams per acre)	(pounds per acre)				
Abamectin	17.3	0.038	90	8	0.015	ND
Azoxystrobin	908	2.00	90	8	0.765	ND
Chlorantraniliprole	90.8	0.200	90	8	0.077	ND
Clothianidin	90.8	0.200	90	8	0.077	0.015 to 0.061
Fluoxastrobin	163.4	0.360	90	8	0.138	ND
Glyphosate	3308.5	7.29	90	8	2.788	ND<0.017 to 0.029
Imidacloprid	227	0.500	90	8	0.191	0.015 (one detection)
Mefenoxam	283.8	0.625	90	8	0.239	ND
Propiconazole	37.2	0.082	90	8	0.031	ND
Prothioconazole	12	0.026	90	8	0.010	ND
Tebuconazole	92.8	0.204	90	8	0.078	ND
Thiabendazole	68	0.150	90	8	0.057	0.032 (one detection)
Thiamethoxam	56.8	0.125	90	8	0.048	ND

**Notes:**

mg/kg = milligrams per kilogram

ND = Not Detected

1. From Table 1 of Land Application Approach approved January 2022 by NDEE

2. Typical bulk density for agricultural soil

3. Soil concentrations calculated based on Maximum Annual Application Rate assuming typical soil bulk density and depth of soil consistent with the depth range sampled (0 to 8 inches), with appropriate unit conversions. Equation is shown below.

$$\text{Soil Concentration} = \text{Maximum Annual Application Rate} / (\text{Soil Bulk Density} \times 43,560 \text{ square feet per acre} \times \text{Depth of Soil}) \times (1,000,000 \text{ mg} / 1 \text{ kg})$$