

Regular Board of Directors Meeting  
Monday, January 12, 2015 1:30 PM  
Lower Platte North NRD Office  
P.O. Box 126  
Wahoo, NE 68066

1. Call to Order

**NOTE: The agenda is on file at the LPNNRD office and may be changed up to 24 hours prior to the meeting as scheduled.**

- 1.A. Meeting Notice

- 1.B. Inform Public on Location of Copy of "Open Meeting Act"

- 1.C. Pledge of Allegiance

2. Roll Call

- 2.A. Introductions

3. Approval of Agenda

4. Comments - Advisors/Guests

- 4.A. Guest Comments

- 4.B. NRCS Report

- 4.C. NARD Report

- 4.D. NRC Report

- 4.E. Managers Report

- 4.F. Education Program

5. Approval of Minutes

6. Report of Standing Committees

- 6.A. Executive Committee - Action as Required

6.A.1. MEETINGS

6.A.1.a. Pending

6.A.1.a.1. NARD Washington DC Conference

The annual NARD Washington DC Conference is March 21-25. In the past we have sent two directors and two staff to the event.

6.A.1.a.2. NARD Legislative Conference

The NARD Legislative Conference will be January 27-28 at the Embassy Suites in Lincoln. The following Directors are registered to attend: Kavan, Hilger, McDermott, Hannah, Johannes and Clausen. Registration deadline is January 12th, Please let Breunig know if you would like to attend.

6.A.1.b. Reports

6.A.2. MANAGEMENT ITEMS

6.A.2.a. Directors Absence

Attached find Director Gibney's excuse of absence from the November Board Meeting.

6.A.2.b. Bob Weaver

6.A.2.b.1. Monthly Conference Call and Update

The December Weaver Report is attached to the Executive Committee to the minutes.

The December Weaver conference call will be held Friday, January 9th.

6.A.2.b.2. Monthly Bill

6.A.2.c. Monthly Education Program

6.A.2.d. CCEI Lawsuit

No new information.

6.A.2.e. Election of 2015 LPNNRD Officers

Election of our four officers (Chair, Vice-Chair, Secretary and Treasurer) and NARD representative will take place at our January 12 Board Meeting. Chair Hilger has appointed a Nominating Committee that includes all past Chairs. For each office the Nominating Committee will nominate at least one candidate, then the Chair will open the floor for additional nominations. If only one candidate is nominated voting may occur by roll call. If more than one nomination is made then voting will take place by written ballot.

6.A.2.f. E-Meeting Software

At the December board meeting our E-Meeting software did not keep up with the speed of the meeting. Our internet provider has asked that he be

contacted during the meeting if it occurs again this month so he can see where the bottleneck is occurring.

6.A.2.g. Accounting Software Upgrade

Attached find a bill from the Summit Group in the amount of \$2,200 this if for our yearly upgrade on our accounting software.

6.A.3. EQUIPMENT

6.A.3.a. Board Room Microphone System

Chair Hilger has asked that we discuss purchasing a Microphone system for the boardroom. We looked at this over 10 years ago and decided the cost was too high. Since that time digital technology has made quality sound systems more affordable.

6.A.4. PERSONNEL

6.A.4.a. Rural Water Manager Position

We have advertised for the Rural Water Manager position with resumes being due by close of business on December 29. As of noon on December 28 we have five applicants. As directed at last month's board meeting the Executive Committee needs to look at options for filling the position. A handout has been prepared that looks at:

Filling the position as it currently is

Filling the position with an operator rather than a manager

Contracting or hiring part-time management of the system and adding an O&M technician

Considerable discussion occurred during the committee meeting. Director Ruzicka strongly felt we needed a Rural Water Manager that would have ownership of the system and be responsible for the 24-7 coverage that the system requires.

6.A.5. FINANCE

6.A.5.a. Approval of Financial Reports

The November Financial Statements have been distributed to all Directors.

6.A.5.b. Approval of Managers Time and Expense Sheets

6.A.5.c. Accounts over 90 Days

The committee reviewed the accounts receivable that are more than 90 day old. A copy of the list is attached to the Executive Committee Minutes.

6.B. Education, Operations & Rural Water Systems Committee - Action as Required

6.B.1. WILD NE/CREP REPORT

6.B.1.a. Wildlife & CREP Payments

6.B.2. OPERATION & MAINTENANCE & OTHER ITEMS

6.B.2.a. O & M Crew

The O & M Crew continues to do maintenance on equipment, vehicles and the office building. Also burned more tree piles on recreation sites.

6.B.2.b. Tractor Rental 2015

The District should rent a tractor from Dinkel Implement via the State contract at the \$11.80/hr rate w/ the minimum hours of usage at 300 for 2015.

Dinkel Implement informed the District via email that they are unable to provide the District with a tractor next season due to cutbacks in New Hollands program.

6.B.2.c. Czechland Lake Improvements

On the Czechland Lake Improvements project we are currently advertising for three weeks. JEO is handling the distribution of the Plans, Specifications and Bid Documents. Bids are due by contractors on January 7, 2015 at 1:00 pm at which they will be opened. Bids will be reviewed and taken to the Board at the regular meeting January 12, 2015.

6.B.2.d. Fremont 205 Feasibility Study

The \$24,753 received from the NRD will be used to scope the completion of the study and prepare the FCSA. We plan to provide the scope and cost estimate to complete the Feasibility Study to you for your review in the spring.

The bulk of the work to complete the feasibility study and transition to design and construction will begin in 2016, based on our current information on the arrival of new Federal Funding designated for the Fremont Project. The present project funding remaining does not allow us to move forward to complete the feasibility study until then, so the majority of the work in 2015 will be setting the stage for that work yet to come. Most of the work will be directed towards developing the scopes of work and cost estimates needed to secure the Federal funds and matching funds from our local sponsors. The scoping work will include meetings with all partners to verify that we are on the same page with the scope and cost of the effort to finish feasibility, which is needed to advance the project to design. (From Mark Nelson, COE)

6.B.2.e. Grass Drill Saunders County

Rezac Seed sent the District \$895.56 for the grass drill rental for the second half of 2014.

6.B.2.f. Wanahoo SRA

A spreadsheet with the 2014 Wanahoo SRA NRD expenses is attached, made available by Mike Almond.

A meeting is scheduled between the District and Game & Parks on Tuesday, February 17th at 10:00 a.m. at the NRD office. Discussion will involve finances and potential improvements for the Wanahoo SRA.

6.B.3. ROCK AND JETTY

6.B.3.a. Rock & Jetty

The City of North Bend has submitted invoices for work accomplished on the North Bend levee totaling \$5,435. The work accomplished were tree and brush removal and dirt work on the levee. The City is requesting Dodge County assist at \$2,000 which will make the difference \$3,435. The District can cost-share at 50% making the assistance to North Bend \$1,717.50.

6.B.4. EROSION & SEDIMENT RULES & REGULATIONS

6.B.4.a. Erosion & Sediment Rules & Regs

Heimann has looked into two drainage complaints, one in the Swedeburg area and the other near Linwood. We are being assisted by the NRCS and Saunders County. Both sites involve the drainage exiting into county road ditches.

6.B.5. INFORMATION AND EDUCATION

6.B.5.a. Information

6.B.5.a.1. Newspaper & Website Ads

This month we'll be running ads on the Nitrogen/Water certification classes starting in January.

6.B.5.a.2. Long Range Plan

A draft copy of the Long Range Plan (attached) was emailed to all directors earlier this month and will be on the agenda for all December committee meetings for directors to provide input.

6.B.5.b. Education

6.B.5.b.1. Land Judging

October 7 has been set as the date for the 2015 East Central Land Judging Contest. Lower Platte South will host and our office will assist.

The State Land Judging Committee annual meeting is being held today (Dec. 29) in Grand Island. it was a very successful year for Land Judging with record overall participation and a record number of teams at the state contest.

6.B.5.c. Computer

6.B.5.c.1. eMeeting Invoice

Attached is the invoice for the eMeeting service for 2015. The cost is \$2,500 for the year.

6.B.5.c.2. Rec Areas and NRD Trees App Updates

The 2.0 versions of the NRD Rec Areas and NRD Trees apps for iOS have been beta tested and submitted to Apple for approval. They should be available on the App Store by New Year's Day or shortly after.

6.B.5.c.3. Great Plains Upgrade

Our Great Plains accounting software was upgraded to a new version earlier this month.

6.B.5.c.4. Computer Repair

The hard drive in Mike Almond's computer failed in mid-December and was replaced. No data was lost.

6.B.6. RURAL WATER SYSTEMS

6.B.6.a. Bruno/David City Rural Water

Sampling and meter reading will be performed on December 29th, sampling results should be known by board meeting.

6.B.6.b. Colon/ Wahoo Rural Water

Sampling and meter reading will be completed on December 29th. Sampling results will be known by board meeting.

Staff has spent a considerable amount of time this month with request to help find leaks and phone calls dealing with collecting monies.

Three customers are due for receiving their \$100 deposit back. These customers are John Ell, Dennis Else, and Brian Kucera. Recommendation is needed.

6.B.6.c. Brainard/Dwight Study

The Brainard/Dwight Study has been completed and is attached. A joint meeting between LPNNRD, LPSNRD, LBBNRD, Village of Brainard, and the Village of Dwight will be scheduled in January to discuss the report.

A breakdown of cost can be seen for various projects below.

Description	Capital Cost	Debt Service (\$/yr.)
Existing system	\$0	\$0
Brainard/Dwight RWD	\$3,272,085	\$251,623
Brainard RWD	\$1,570,335	\$120,759
Trans. Main and Well field	\$2,373,520	\$182,524
Trans. Main and WTP	\$3,259,120	\$250,626

6.C. Water Committee - Action as Required

6.C.1. REGULATORY

6.C.1.a. GROUND WATER MANAGEMENT AREA

6.C.1.a.1. Variance Request in the Hydrologically Connected Area (Limited Development Area)

No new updates.

6.C.1.a.2. Variance Requests in the Non-Hydrologically Connected Area (Normal Development Area)

No new updates

6.C.1.a.3. Variance Requests in the Restricted Development Areas

No new updates

6.C.1.a.4. Well Permit Program

6.C.1.a.4.A. Supplemental Well Permit for Ralph Diffey

Mr. Diffey has submitted a supplemental irrigation well application for 80 acres in the W $\frac{1}{2}$ SW $\frac{1}{4}$  of Section 5-T17N-R6E Dodge County (North Bend Subarea). These acres are currently irrigated with two registered wells using gated pipe. Diffey plans to purchase a center pivot and wipe  $\frac{1}{2}$ -circle. The two current wells would be used to irrigated the “corners”. Due to the gas lines that are located beneath a portion of this “80” and their easements it is too costly to trench an underground line from one of the existing wells to the proposed pivot point location. Neither Ralph Diffey nor Harold Diffey has a Nitrogen & Water Management (NRD) certification and Oaklund told Harold Diffey that the well permit could not be approved until the certification is obtained. Harold Diffey related that he intends to go to the first certification class on January 8, 2015, in Fremont, following the Corn Expo. This would be prior to the January 12, 2015 Board meeting.

6.C.1.a.4.B. Well Permits Approved

Wells Permits Approved: Six as of December 29, 2014

Landowner	Number of Wells	Number of New Irrigated A
Robert Newsham	1	130
Timothy Mueller	1	38
Jane Stara Revocable Trust	1	0
Douglas Ritthaler	1	125
Goedeken Farms	1	0
Gary Nelson	1	155

The total number of approved permits for 2014 is 75. This does not count the Ralph Diffey request.

6.C.1.a.5. Potential Violation of Expanded Irrigation

Liberty Livestock has been contacted by phone concerning their irrigation of acres that were not approved by the LPNNRD. They plan to attend either the upcoming Board meeting or the next Water Committee meeting.

They will be contacted again after the holidays.

6.C.1.a.6. Special Quantity Subareas

6.C.1.a.6.A. GWMA R&R Changes

Updates to the GWMA Rules and Regulations are presented for Water Committee review (see attached). The goal is to get these approved at the January Board meeting and hold a Public Hearing before the February Board meeting.

6.C.1.a.6.B. LPNNRD SQS Operator Certification Classes

Two educational classes have been scheduled for producers in the Butler-Saunders SQS:

-Wednesday, January 14, 2015, at 2:00 p.m. (afternoon)

-Tuesday, February 17, 2015, at 7:00 p.m. (evening)

Both classes will be held at Hruska Library in David City.

Attendance will be required for all irrigators in this SQS.

6.C.1.a.7. Lower Platte River Basin Water Management Plan Coalition (LPRBC)

- A special Lower Platte Basin meeting is being planned for January 27th at 1:00 pm at the next NARD Legislative Conference in Lincoln.
- The next meeting of the Technical Committee is scheduled for February 2, 2015 at the LLNRD office in Ord at 10:00 am.

6.C.1.a.8. Voluntary Integrated Water Management Plan - LENRD and LPNNRD

The next Stakeholders meeting is scheduled for February 3, 2015 at the LPNNRD office at 2:00 pm.

6.C.1.a.9. Cost Share Programs

6.C.1.a.9.A. Irrigation Well Sample Kits

A total of 369 kits have been requested and sent (two of these were in mid-December). The results from 359 of these kits have been received from HHS/Lincoln and sent to the producers; nitrate-nitrogen range is 0.00 to 101.0 ppm.

6.C.1.a.9.B. Domestic Well Sample Kits

No new updates since the last Water Committee

6.C.1.a.10. Bellwood Phase 2 Area

2014 is the twelfth year of this Phase 2 Area. 108 producer sample results have now been received (nitrate-nitrogen range of 0.00 to 22.3 ppm). Two additional sample results since last meeting were 4.63 and 11.8 ppm. and have updated in the table below.

	Nitrate-nitrogen Range	Percent Nitrate-nitrogen 0 to 8.0 ppm	Percent Nitrate-nitrogen 8.01 to 10.00 ppm	Percent Nitrate-nitrogen greater than 10 ppm
	0 to 25 ppm	46.3% (44 of 95)	8.4% (8 of 95)	45.3% (43 of 95)
	0 to 25 ppm	47% (44 of 94)	15% (14 of 94)	38% (36 of 94)
	0 to 24 ppm	41% (29 of 71)	14% (10 of 71)	45% (32 of 71)
	0 to 31 ppm	48% (48 of 100)	9% (9 of 100)	43% (43 of 100)
	0 to 28 ppm	53.75% (43 of 80)	7.5% (6 of 80)	38.75% (31 of 80)
	0 to 22 ppm	45.5% (41 of 90)	15.5% (14 of 90)	39% (35 of 90)
	0 to 35.7 ppm	48.65% (54 of 111)	11.71% (13 of 111)	39.64% (44 of 111)

	0 to 26.6 ppm	51% (56 of 110)	6% (7 of 110)	43% (47 of 110)
	0 to 28.9 ppm	57% (61 of 107)	9% (10 of 107)	34% (36 of 107)
	0 to 25.8 ppm	50% (53 of 107)	9% (10 of 107)	41% (44 of 107)
	0 to 22.3 ppm	51% (55 of 108)	13% (14 of 108)	36% (39 of 108)

6.C.1.a.11. Richland - Schuyler Phase 2 Area

2014 is the eleventh year of this Phase 2 Area. 251 producer sample results have now been received (nitrate-nitrogen range of 0.00 to 101.0). One additional result has been received since the last meeting at 8.20 ppm. and has been updated in the table below.

	Nitrate-nitrogen Range	Percent Nitrate-nitrogen 0 to 8.0 ppm	Percent Nitrate-nitrogen 8.01 to 10.00 ppm	Percent Nitrate-nitrogen greater than 10 ppm
	0 to 47 ppm	30% (42 of 139)	10% (14 of 139)	60% (83 of 139)
	0 to 120 ppm	31.3% (74 of 236)	10.2% (24 of 236)	58.5% (138 of 236)
	0 to 53 ppm	28% (50 of 181)	14% (26 of 181)	58% (105 of 181)
	0 to 99 ppm	32% (75 of 231)	10% (22 of 231)	58% (134 of 227)
	0 to 46 ppm	28% (53 of 190)	12% (23 of 190)	60% (114 of 190)
	0 to 57 ppm	33% (72 of 216)	6% (13 of 216)	61% (131 of 216)

	0 to 57.5 ppm	31% (70 of 229)	7% (15 of 229)	62% (142 of 229)
	0 to 65.8 ppm	28% (67 of 241)	9% (21 of 241)	63% (153 of 241)
	0 to 52.6 ppm	29% (70 of 241)	9% (21 of 241)	62% (150 of 241)
	0 to 94.0 ppm	25% (63 of 252)	9% (23 of 252)	66% (166 of 252)
	0 to 101.0 ppm	27% (68 of 251)	9% (22 of 251)	64% (161 of 251)

6.C.1.a.12. LPNNRD Certification

6.C.1.a.12.A. LPNNRD Operator Certification Classes

No on-line tests have been completed since the last committee meeting. Staff of LPNNRD met with UNL County Extension Educators on Monday, December 1st, to set up classes. Eleven classes have been scheduled (class schedule attached) and mailed to about 500 producers.

6.C.1.a.13. Certifying Acres in Saunders and Dodge Counties

No new updates.

6.C.1.b. CHEMIGATION

At the end of 2014, the District had a 456 chemigation permits.

Attached are updates to the LPNNRD Chemigation Rules, which includes our new fee schedule. This is to be reviewed at the Board meeting in January and then advertise for three weeks for review (and hopefully) approval at the February Board meeting.

6.C.1.c. LIVESTOCK WASTE PERMITS

The LPNNRD has received one new livestock permit application from DEQ since the last Water Committee meeting.

Name	Livestock	Type of Permit
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Raikes Farm Enterprises	Cattle 10,000 head 10,000 A.U.	Expansion of existing Permit	SW1/
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Raikes Farm Enterprises wants to modify an existing operation of 6, 000 head (6,000 A.U.) with an addition of 4,000 head for a total of 10,000 head of cattle (10,000 A.U.).

6.C.2. GROUND WATER PROGRAMS

6.C.2.a. DECOMMISSIONED WELL PROGRAM

6.C.2.a.1. Well Estimates

One new well has been reviewed and approved by Gottschalk for decommissioning since the last Committee meeting.

Well Owner	Type of Well	Cost Share Estimate
Philip & Jeana Buhman	Irrigation	\$666.95

6.C.2.a.2. Plugged Wells

Three wells have been plugged, reviewed, and ready for cost share payment approval this month (see attached spreadsheet).

Well Owner	Type of Well	Cost Share Estimate
Don Yindrick	Irrigation	\$870.96
Jamie Yindrick	2 x Domestic	\$854.59

6.C.2.b. LOWER PLATTE NORTH NRD GROUND WATER STUDIES

6.C.2.b.1. Elkhorn Loup Model (ELM)

The last training session was held on December 4 and 5, 2014 at the LLNRD in Ord. Training involves using the completed USGS ground water flow model with GIS applications to develop maps. The next training session has not yet been scheduled.

6.C.2.b.2. Eastern Nebraska Water Resources Assessment (ENWRA)

Data from the latest helicopter flights (AEM) will be presented at the next NARD conference near the end of January 2015. The next round of helicopter flights are scheduled for the spring of 2015 and one of these flight lines will go over the Prague subarea.

We have received an invoice from ENWRA for our 2015 dues of \$30,000 (invoice is attached).

6.C.2.c. GROUND WATER ENERGY LEVELS

Staff have been working on updating the hydrographs from the data loggers placed in several of our monitoring wells. Staff will place several of these in our upcoming SQS and NRD operator certification classes that are to be held over the winter.

6.C.3. OTHER

6.C.3.a. LPNNRD Long Range Plan

Draft copy of LPNNRD Long Range Plan is attached. This will be voted on at the January 12, 2015 Board meeting.

6.C.3.b. GMDA ANNUAL CONFERENCE

GMDA Annual Conference will be held January 6 - 8, 2015 in Scottsdale, Arizona. Directors Lon Olson, Don Veskerna, and Gene Ruzicka plan to attend. Staff members Bret Schomer and Larry Angle will also attend.

6.C.3.c. COMMENTS FROM THE PUBLIC

Simone Rock of HDR attended the Water Committee.

6.D. Projects Committee - Action as Required

6.D.1. SWCP

Gottschalk presented the attached list and status of our SWCP allocations and payments.

6.D.1.a. SWCP Application Approvals

<u>75%</u>		
Herman Ostry	Terraces/Tile with Basins	Butler Co.
\$ 13,207.44		

This project is located directly above Homestead Lake and would be constructed in conjunction with our basin clean-out project. Because of the needed protection this project will provide to our Homestead Lake Recreation Area, the committee felt that exceeding our normal policy of approving up to \$12,500 per landowner project would be justified.

6.D.1.b. SWCP Payments

<u>APPROVED</u>	<u>ACTUAL</u>		
14-C-51 Shirley Johannes Rev. Trust		W/S Basins	\$ 10,337.86
\$ 10,329.00			
14-P-5 Eugene Wiese		Flow Meter	
\$ 625.00	\$ 565.00		
14-P-30 Roger Gehring		Flow Meter	
\$ 625.00	\$ 625.00		
14-P-28 Wilma Loseke		Flow Meter	
\$ 625.00	\$ 575.00		
14-S-45 BRT Farms/ Robert Bartek		Flow Meter	
\$ 625.00	\$ 625.00		
14-B-37 Lloyd From		Flow Meter	
\$ 625.00	\$ 597.50		

SAND & DUCK PAYMENT:

<u>25%</u>	<u>15%</u>
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Jerry Soukup	Terraces/Tile w/Basins & Waterway
\$ 3,109.20	

6.D.1.c. Jones Family Trust Cost Share Payment Request

We received a \$2,051.73 cost share payment request from John Jones, Jones Family Trust, for conservation work completed in conjunction with a federal EQIP contract located in both the Miller Branch-Wahoo Creek and Cottonwood Creek sub-watersheds. While an SWCP application was completed at the NRCS office in 2012, the application did not get submitted to our office for consideration. Jami Thoene, NRCS, was present and provided information surrounding the project. Looking at our 2012 records and policy, this project would have been regarded as high priority for approval. We did find the Jones Family Trust name and project estimate on a list of anticipated applications for approval, but paperwork was never submitted. The committee felt that this landowner project payment is warranted based on facts presented.

6.D.1.d. SWCP Cancellations

No cancellations for approval this month.

6.D.1.e. Cottonwood Creek Payments

COTTONWOOD CREEK PAYMENT:	<u>APPROVED</u>
<u>ACTUAL</u>	

Kenneth Polacek Terraces/Tile w/Basins \$ 7,566.50 \$  
7,211.62

- 6.D.1.f. Sand/Duck Creek Approvals  
No applications for approval this month.
- 6.D.1.g. Sand/Duck Cost Share Payment

25% 15%  
Jerry Soukup Terraces/Tile w/Basins and Waterways \$  
5,204.40

- 6.D.1.h. Wahoo Creek Cost Share Approvals  
No applications for approval this month.
- 6.D.2. WATERSHEDS

- 6.D.2.a. Shell Creek - Watershed Plan  
NDEQ is putting the final touches on their review of the Shell Creek Watershed Water Quality Plan and will send it to EPA for comment in January.

- 6.D.2.b. Wahoo Creek Watershed - Water Quality Plan (PIP) Phase I  
We have worked with landowners to allow JEO to inspect and evaluate Dunlap Creek on their property (landowner letter attached). JEO has submitted their most recent invoice for contract work completed as attached.

6.D.3. LOWER PLATTE RIVER CORRIDOR ALLIANCE

- 6.D.3.a. LPRCA Monthly Report  
Meghan will give the Board an update on recent LPRCA activities at the January 12th Board Meeting.

6.D.4. OTHER

- 6.D.4.a. Army COE 205 Projects

- 6.D.4.a.1. Fremont 205  
Heimann gave an update that was presented at the O, E & RW Committee (refer to those minutes for details).
- 6.D.4.a.2. Schuyler 205

Attached is the status report from the Omaha District's Construction Division as of Monday, 15 December 2014.

Earthwork is rated at 90 - 98% complete, however the Contractor has missed the completion milestone of 8 December and is now being assessed Liquidated Damages until Substantial Completion is reached. Substantial Completion is reached when all that remains is seeding, gates and ROW Markers.

Final seeding may be completed in the spring, dependent upon winter weather, but will be done prior to the Final Inspection and payment to the Contractor.

6.D.4.b. Shell Creek Landowner Levee Project Update

6.D.4.c. All Hazard Mitigation Plan Update- JEO Progress Report and Invoice

Jeff Henson with JEO sent out the attached December 9th e-mail to participating committees outlining the timeline for completing the plan update and to submit projects for future consideration. JEO is winding down community contacts and despite our best efforts, a very few have not responded so will not be included in the plan update. JEO has submitted an invoice for \$10,849.50 for work contract work completed as attached.

JEO has identified potential HMP projects (see attachment) which will be reviewed at the January 29th Projects Committee meeting. The committee will be asked to select and prioritize projects for further evaluation and analysis. We have \$50,000 of available NEMA/FEMA grant funds to allocate toward project analysis.

6.D.4.d. Grass Waterway Stabilization Checks - Jeremiah Schutz, NRCS  
Jeremiah Schutz, NRCS, is requesting LPNNRD to purchase some erosion control fabric to use on existing and new grass waterway construction. While there is not a large demand for grass waterways in our NRD, when they are installed, initial erosion can be a problem until the grass is established (see attachments) A 3' by 600' of this fabric costs \$150 plus tax. The intent is for LPNNRD to purchase this fabric that will be housed at the Dodge County NRCS for landowners to purchase for their grass waterway projects.

6.D.4.e. Long Range Plan Review/Input

Directors have been asked to give input to the Long Range Plan (attached), particularly on areas that their committee is responsible. The O, E & RW Committee is recommending that the Board approve the plan including any changes on January 12.

6.D.4.f. Review of Projects Financial Statement

Attached are financials for Project Activities as of 11-30-14. At that time we spent 23.81% of the Projects Budget and 21.54% of the land treatment budget (listed in the Water Financials).

6.D.5. SAND CREEK ENVIRONMENTAL RESTORATION PROJECT REPORT

6.D.5.a. Lake Wanhaoo Paving Project

The NRD has received \$8,000 from the Saunders County Tourism Grant. This money will be used to help defray the costs of the entrance road to the Park.

6.D.5.b. Upstream Structures

6.D.6. WESTERN SARPY/CLEAR CREEK LEVEE REPORT

Work has resumed on Monday, December 29th. Segment 4B is about 45% complete. Winter work will continue as weather allows.

Pre-Construction Meeting for Segment 5 on December 23rd. Contractor will start after January 1st.

Attached find an update on the WS/CC Project that was in the PMRNRD Newsletter.

7. Additional Action Items

7.A. Annual and Sick Leave Payout to Mike Sousek

When an employee terminates service with the district there is a payout on leave balances. Attached find a worksheet for annual and sick leave payouts for Mike Sousek. The total includes 81.06 hours of annual leave and 229.68 hours (589.68 - 360 = 229.68) of sick leave minus tuition reimbursement that must be returned to the district (any tuition payments received by an employee of the district with-in one year of separation must be returned to the district).

8. Approval of Bills Pending

9. Consent Agenda Adoption

10. Comments from Directors/Guests

11. Meeting Establishment/Adjournment

**NOTE: The agenda is on file at the LPNNRD office and may be changed up to 24 hours prior to the meeting as scheduled.**



United States Department of Agriculture

## Lower Platte North NRCS/NRD Report for January 2015

**Mark Walkenhorst, District Conservationist**

**Wahoo Field Office**

District Secretary, Marla Milliken  
Resource Conservationist, Jami Thoene  
Civil Engineering Technician, Kenneth Kotera  
Soil Conservation Technician, Mark Young  
Soil Conservation Technician, Sean Elliott  
NRD Technician, Kelly Bartek  
Compliance Specialist, Becky Pieper

**Fremont Field Office**

District Secretary, Jenny Campbell  
Resource Conservationist, Jeremiah Schutz  
Soil Conservationist Technician, Brian Hagerbaumer

**Columbus Field Office**

District Secretary, Ona Foland  
Resource Conservationist, Eric Smith  
Soil Conservation Technician, Bill Bos  
NRD Technician, Ed Drozd  
Shell Creek Coordinator, Melissa Foreman  
WRP Team 6 Coordinator, David Bichlmeier

**David City Field Office**

District Secretary, Susan Leu  
Resource Conservationist, Brach Johnson  
Soil Conservation Technician, Greg Havlovic  
Soil Conservationist, Jenna Kampschnieder

**Schuyler Field Office**

District Secretary, Patty Holmberg  
Resource Conservationist, Bryan Euse  
Wildlife Biologist, Brian Teeter

**FY 2015 EQIP**; 158 EQIP applications will be ranked and process in the few weeks. Of the 158 applications 99 applications are for practices dealing with soil erosion and soil quality degradation concerns, 18 applications dealing with insufficient and excess water concerns and 5 applications for degraded plant condition concerns. January 30 is still the deadline to preapproving many of these applications.

**Conservation Compliance and Crop Insurance Program**. Relinking the eligibility for premium subsidy paid by the Federal Crop Insurance Corporation to an insured’s compliance with the Highly Erodible Land Conservation (HELIC) and Wetland Conservation (WC) provisions of the Food Security Act of 1985 starts in 2015. NRCS field staff will be assisting producers revising HEL plans and wetland compliance regulations starting in 2015.

In the meantime;

- The Agriculture Act of 2014 doesn’t change any of the compliance provisions for producers who currently participate in USDA programs covered by compliance.
- Re-linking crop insurance to compliance will impact producers who either; 1) will become subject to compliance for the first time or; 2) limit their participation in USDA programs solely to crop insurance. These producers have been provided additional time to meet their compliance responsibilities. They also could be eligible for new exemptions and implementation alternatives.
- Crop insurance participants are being advised that they need to fill out form AD-1026 with FSA by June of 2015. A revised form was issued on 6/30/2014 and contains a check-box for producers to indicate if they are “subject for the first time” to conservation compliance due to premium subsidy recoupling.
- Changes were made to the native sod (or “sodsaver”) provisions, requiring a reduction in premium subsidy benefits on acreage which is tilled and planted to an agricultural commodity for the first time after February 7, 2014 in the states of Iowa, Minnesota, Montana, Nebraska, North Dakota and South Dakota. Affected producers may be requesting copies of HEL determinations on CPA-026e forms as a means of documenting that fields have been tilled prior to 2014.

<u>Program Deadlines</u>	<u>Date</u>
<u>2016 EQIP</u>	<u>Ongoing</u>
<u>2015 ACEP (WRP, GRP)</u>	<u>Ongoing</u>
<u>2015 CSP-SIGNUP</u>	<u>Ongoing</u>
<u>2015 NWQI Wahoo Creek</u>	<u>Ongoing</u>

**Current progression of fall construction in the five county areas:**

185 projects are listed on the LPNNRD job tracking spreadsheet for 2015.

As of 1/12/2015; 40 projects have been completed since Oct 1 within all five counties.



**Managers Report**  
**John Miyoshi**  
**January 12, 2015**

## **Meetings**

DNR held public meetings on changing the method for determining the “**Appropriation Status**” for all river basins in Nebraska. Staff and directors attended the meetings at Norfolk on December 10 and December 15 in Lincoln.

The **Lower Platte River Basin Water Plan** managers met in O’Neil on December 12. Materials were reviewed in preparation of the meeting for directors and staff at the NARD Legislative Conference. The session will occur from 2:00 – 3:00 p.m. on January 27.

The **Basin Caucus** for the Lower Platte River Basin will occur on Friday January 16 at 9:30 a.m. at the LPSNRD office in Lincoln. Besides election of our NRC Representative, updates will be given on our Basin Water Plan and large projects. At last weeks board meeting LPSNRD decided that their nominee for the Basin NRC Representative would be Karen Amen. Directors are encouraged to attend the Basin Meeting.

## **Item of Interest**

We begin the New Year with **election of officers**. This is the year that our leaders are term limited so change will occur. The Officer Nominating Committee will bring a name forward for each of our elected offices and nominations may also come forward from the floor.

Our one new elected board member **Mark Seier** takes his oath of office tonight. New director orientation occurred December 11 for Seier and Bob Meduna Jr.

The 2015 **Legislative Session** began January 7. Dave Schnoor was appointed by Governor Heineman to fill Charlie Janssen’s vacated seat for District 15, which includes all of Dodge County.

The contractor for the **U.S. 77 Bridge at Fremont** completed removal of the old bridge on December 12. Some of us feel that a good effort was not made to remove more of the old pilings that remain in the river from the bridge two generations ago.

Lausterer has brought to our attention **LARMs denial** of a city request for coverage on an E&O claim. LARM took the position that E&O coverage (even defense coverage) will not be provided unless there is a request for economic damages included within the claim (said claim has to be the primary rather than a secondary claim). He feels we either need to (1) budget for additional legal expenses as a result of the risk of exposure; or (2) take this into consideration the next time we issue an RFP for liability insurance coverage.

The NARD Wellness Committee is planning to hold an annual **5K Run** for awareness of NRDs and to raise funds for the NARD Foundation. The plan is to conduct this event at a different NRD

recreation site each year. The inaugural event is scheduled as “Run-A-Who at Wanahoo” on April 11. Our staff is assisting the NARD Wellness Committee in planning the event.

Last month we reported that **Brian Dunnigan** was stepping down as director of DNR. Dunnigan has accepted a position at Olsson Associates as leader of their Water Resources Department and began work with them in December.

**Stan Staab** retired as General Manager of the Lower Elkhorn NRD on January 9. Mike Murren and I attended the retirement reception along with Directors Don Kavan (and Karen) and Clint Johannes (and Shirley). We congratulate Staab for his 28 years as general manager of the NRD.

**Mike Sousek** has assumed the duties as Lower Elkhorn NRD’s General Manager beginning today. We look forward to continuing the close relationship we have with Lower Elkhorn and congratulate Sousek on the promotion.

# NRD's 2015 Legislative Conference ~ Tentative Agenda

## Monday, January 26<sup>th</sup>

- 9:00 a.m. – 12:00 p.m. NRD Employee Benefits Committee Meeting, Embassy Suites - Lincoln
- 12:00 – 5:00 NRD Staff Information & Education Meeting, Lower Platte South NRD
- 1:00 – 5:00 NRD Managers Meeting, Embassy Suites - Lincoln (Meeting is open to NARD Executive and Legislative Committees)
- NRD Administrative Support Committee Meeting, Embassy Suites – Lincoln
- 3:00 – 6:00 NARD Legislative & Executive Committee Meetings, Embassy Suites - Lincoln

## Tuesday, January 27<sup>th</sup> ~ Embassy Suites, Lincoln

- 7:30 a.m. NARD Fiscal Planning & Budget Committee Breakfast Meeting  
NARD Program & Planning Committee Breakfast Meeting
- Registration desk opens
- 8:45 Opening Remarks
- 9:00 General Session – Republican River
- 10:00 Framing Legislative Issues and Discussion of Proposed Legislation of Interest
- 12:00 p.m. Luncheon
- 1:30 Caucus
- NRD Administrative Support Committee Meeting
- 3:00 Action on Proposed Legislation
- 5:00 – 7:00 Reception with Senators

## Wednesday, January 28<sup>th</sup> ~ Embassy Suites, Lincoln

- 7:30 a.m. NARD and NRD Staff Information & Education Committee Breakfast Meeting  
Native Vegetation and Forestry Committee Breakfast Meeting
- 8:00 Registration desk opens
- 8:30 – 11:55 ***Concurrent sessions - a few topics of interest may include:***
- In stream Flows
  - Urban Storm Water/Flooding
  - Rural Water Discussion
  - Social Security and Retirement
  - Understanding Nebraska's Open Meetings Act
  - Forestry Interests
  - UNL Research
  - Public Relations
  - Conservation Programs Update
  - Agency Updates
  - Helicopter Flights to Study Groundwater
  - NRD Director Responsibilities
  - Conflict of Interest, Accountability and Disclosure
- 12:00 p.m. Luncheon
- 1:30 NARD Board of Directors Meeting

# NARD Legislative Conference

January 27-28, 2015

Name	Full	1 Day	Dinner w/Senators	Room Mon/Tue
Angle	X		1	
Murren	X		1	
Mountford	X		1	
Miyoshi	X		2	
Breunig	X		0	
Oaklund	X		1	
Almond	X		1	
Thompson	X		0	
Gottschalk		WED		
LENRD				
L&CNRD				
UENRD				
LNNRD				
Olssons				
Janssen				
Johnson				
Schumacher				
Larsen-UENRD	Yes			
Hilger	X		1	Mon/Tue
Kavan	X		1	Mon/Tue
Johannes	X		0	No Room
Hannah	X		1	Mon/Tue
McDermott	X		1	Tue
Clausen	X		1	Tue
			12	

Gibney

REQUEST FOR EXCUSE OF  
ABSENCE FROM MEETING  
(LB 569, 1985 LEGISLATURE)

Chairman, Board of Directors  
Lower Platte North NRD  
PO Box 126  
Wahoo, NE 68066

I hereby request that the Board of Directors excuse my  
absence at the Regular Meeting of the Board scheduled on  
10<sup>th</sup> day of November, 2014, for  
the following reason:

Out of town  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Dated this 10 day of Dec, 14.

[Signature]  
Board Member  
Lower Platte North NRD

**KELLY & WEAVER**

*A Professional Corporation*  
1601 Connecticut Avenue, N.W.  
Suite 500  
Washington, D.C. 20009  
202 797-7100, fax 939-6969  
[weaver@kellyweaver.com](mailto:weaver@kellyweaver.com)

To: Glenn Johnson, John Miyoshi, John Winkler, Marlin Petermann,  
Paul Zillig, Tom Mountford, Mike Murren and Meghan Sittler

From: Bob Weaver

Date: January 7, 2015

Subject: Washington Report for December 2014

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**Report on Federal Legislation, Appropriations, Other Washington  
Developments**

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- The new Congress convened this week with talk in Washington of considering infrastructure legislation in the form of a highway and mass transit bill. The House Transportation and Infrastructure Committee has jurisdiction over the transportation bill which requires extension to continue highway construction after September 2015. The committee also has jurisdiction over the Clean Water Act's State Revolving Fund Program which has not been reauthorized since the first authorization ended in 1992. (The Drinking Water SRF program is under the jurisdiction of the House Energy and Commerce Committee.) Both SRFs are under jurisdiction of the Environment and Public Works Committee in the Senate.
- The Federal government's FY 2015 appropriations bill was enacted into law before adjournment except for that of the Department of Homeland Security. That Department's appropriation ends in February 2016 and must be extended for the balance of FY 2015 in order to keep that agency open.
- The Administration's FY 2016 Budget continues under preparation and is expected to be submitted sometime in February 2015.
- The FY 15 Omnibus Appropriations bill repealed the Environmental Protection Agency and Corps of Engineers interpretive rule for agriculture applicable to the Section 404 Permit Program.
- The Administration's proposed Waters of the United States rule that changes the Section 404 Dredge and Fill Permit Program has not been finalized. The proposal would the federal jurisdiction to a wider group of "waters of the United States" based on significant nexus concept. Opposition to the proposal in the Congress and throughout the United States is strong.

### **December, 2014 Accomplishments**

- Monitored completion of FY 2015 Energy and Water Development Appropriations process for the Corps of Engineers as part of the Omnibus Appropriations bill.
- Continued to monitor developments with the Administration's proposed Waters of the United States rule proposal.
- Reviewed, revised and conferred on the LPR NRD fact sheet on project funding requests for FY 2016.
- Reviewed reports on federal water resource issues.
- Prepared correspondence and fact sheet in support of strengthening the Missouri River levee system south of Omaha including Offutt Air Force Base.
- Monitored Congressional and Executive Branch developments on FEMA's National Flood Insurance Program. The Administration is said to be preparing a national standard for flood plains under the National Flood Insurance Program to reduce financial exposure for the NFIP.
- Conferred with LPRNRD managers and prepared reports to the NRDs.
- Continued to search for potential funding opportunities for the LPR NRDs.

### **January 2015 Planned, Anticipated and Potential Actions**

- Pursue FY 2016 funding requests for Lower Platte River NRD projects.
- Continue to monitor development of the Administration's FY 2016 budget for USACE.
- Confer on programs and issues related to implementation of the Water Resources Reform and Development Act ("WRRDA") of 2014 including an increase in the federal share for Section 205 planning, design and construction.
- Continue to seek support within the Administration and Congress for inclusion of funding for strengthening the Missouri River levee in the FY 2016 Military Construction Appropriations bill.
- Further monitor and report on developments for the National Flood Insurance Program
- Confer with USACE contacts for converting Section 205 projects to other USACE program authorities.
- Prepare reports to, and confer with management of, the LPR NRD's.
- Continue to look for federal funding opportunities and report to LPR NRDs.

**KELLY & WEAVER***A Professional Corporation*

1601 Connecticut Avenue, N.W., Suite 500

Washington, D.C. 20009

202 797-7100; FAX: (202) 939-6969

weaver@kellyweaver.com

November 7, 2014

To: John Miyoshi, General Manager  
Lower Platte North Natural Resource District  
5100 Wahoo Commercial Park  
Wahoo, Nebraska 68066

Glenn Johnson, General Manager  
Lower Platte South Natural Resources District  
3125 Portia Street  
Lincoln, Nebraska 68501-3581

John Winkler, General Manager  
Papio-Natural Resources District  
8901 South 154<sup>th</sup> Street  
Omaha, Nebraska 68138

## Statement for Services to the Lower Platte River NRDs for December, 2014

Date	Atty.	Description	Hours
12.4.14	RCW	Prepared November report to the LPRNRDs.	1.0
12.5.14	RCW	Prepared for and conferred with LPR NRDs on monthly call. Reviewed and revised fact sheet and transmittal letter. Prepared draft letter on Missouri River levee to Administration. Conferred with USACE on Corps issues and future. (6.0)	4.5
12.17.14	RCW	Prepared draft letter to the Air Force on Missouri River levee. Prepared for delegation staff meetings on FY 2016 projects funding requests.	3.0
12.18.14	RCW	Conferred with staff for the delegation on the LPRNRD FY 2016 projects request for the Corps of Engineers Energy and Water appropriations bill and the Military Construction bill.	4.0
12.21.14	RCW	Reviewed and revised draft letter to the Air Force and prepared email to PMRNRD.	1.5
12.22.14	RCW	Conferred with PMRNRD and reviewed and revised letter to Air Force on funding.	1.5
12.23.14	RCW	Conferred with PMRNRD on letter to Air Force. Reviewed and revised letter and resent for final review. Prepared report to PMRNRD on levee project.	2.0
12.29.14	RCW	Prepared report to PMRNRD. Prepared fax to Air Force. Developed next steps for Missouri River levee project. Prepared further report to PMRNRD on levee improvement. Reviewed FEMA document.	3.0
12.30.14	RCW	Prepared report to PMRNRD on next steps in gaining Air Force support for levee funding. Conferred with PMRNRD on meeting with Corps District Commander and obtaining support for design. Prepared followup memorandum to J. Winkler.	2.5

Total: 23 hours at \$185.00 per hour = \$4,255.00

Agreement amount for this statement: \$3,300.00

Thank you for the opportunity to serve the Lower Platte River Natural Resources Districts.

Very truly yours,

/s/

Robert C. Weaver  
For the Firm



\*\*\*REMIT TO ADDRESS\*\*\*  
 1405 Prairie Parkway, Suite A  
 West Fargo, ND 58078

Page	1 of 1
Invoice	INV0021690
Date	12/15/2014

**Bill To:**

Lower Platte North Natural Resources  
 District  
 PO Box 126  
 Wahoo, NE 68066-0126

**Ship To:**

Lower Platte North Natural Resources  
 District  
 PO Box 126  
 Wahoo, NE 68066-0126

For billing questions, please contact your assigned account manager.

Customer ID	Purchase Order No.	Account Manager	Payment Terms	Invoice Delivery Method
LOWERPLATTENO		JFRITEL	Net 15	MAIL EMAIL

Quantity	Item Number	Description	Discount	Unit Price	Ext. Price
1.00	CONSULTING	GP 2013 Upgrade	\$0.00	\$2,200.00	\$2,200.00

Subtotal	\$2,200.00
Misc	\$0.00
Trade Discount	\$0.00
Freight	\$0.00
Tax	\$0.00
<b>Total</b>	<b>US\$ 2,200.00</b>

**Processed in US Dollars**

Please Circle One

Visa     
  MasterCard     
  Discover     
  AMEX

Card Number \_\_\_\_\_

Credit Card Billing Address \_\_\_\_\_

Expiration Date \_\_\_\_\_ Security Code \_\_\_\_\_

Signature \_\_\_\_\_

Fax completed Credit Card payment information to 877-865-1566  
 Or Email: [billing@summitgroupsoftware.com](mailto:billing@summitgroupsoftware.com)

FEIN: 20-4023979  
 GST No. 84136 9069 RT0001

Date rec'd \_\_\_\_\_

Approved by \_\_\_\_\_

Date entered \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\$(amount) \_\_\_\_\_

Income acct \_\_\_\_\_

## **Rural Water Manager Duties**

### Contract/Part Time Position

- Read Meters
- Prepare Billings
- Testing
- All Compliance Requirements
- 24-7 Coverage for Emergencies
- Review Meter Report

### Other Duties

- One Call Response
- Assist Communities with-in LPNNRD
- Bill Collection
- Tap Mains and Install Meters
- Presentations – Prepare and Present
- Attend City Meetings when asked (Bruno, David City, Colon and Wahoo)
- Correspondence – Local, State, National
- Operate Equipment
- Work with Funding Partners at State Level
- Contract New Construction
- Review Plans
- Bid Projects
- Hire Engineering Firms
- Wellhead Protection Program
- Customer service, complaints and leak detection
- Review monthly financials, answer audit questions
- Develop financial policies for RW
- Develop operational policies
- ACH transactions and monitor credit card payments
- Update and continue to develop RW app
- Create pamphlets and information materials for RW systems
- Develop easements and negotiate deals to occupy private land
- Maintain and develop personal connections with Fed and State agencies dealing with rural water and public health
- Budget and Financial analysis of NRD and RW
- Backflow prevention program (compliance requirement)
- Consumer Confidence reports (compliance requirement)
- Assist in any legal proceedings
- Order and maintain proper inventory
- Work directly with GM on any correspondence with Washington DC when needed
- Educate school children on drinking water and water careers
- Review all invoices related to RW and approve
- Maintain software updates for billing and meter reading systems

	Rural Water Position					
1	Rural Water Manager		57,485			57,485
2	1/2 RW - 1/2 O&M Tech					
		RW	57,485	0.5	28,743	
		O&M	36,018	0.5	18,009	
						46,752
3	Contract/ PT for RW	RW Management	500	25	12,500	
	O&M Tech				36,018	
						48,518

**Week #1**

**Lower Platte North NRD Time Sheet**

Name John Miyoshi

Period Covered 11/15/14 to 11/21/14

*You must enter "pm" for times after 12:59 or the form will not calculate correctly!*

	Date	Start Time	Stop Time	Work Hours	Other Hours	Duties Performed	Miles	Meals	Other Exp.
Sat	11/15								
Sun	11/16								
Mon	11/17				6.00	Annual Leave			
Tues	11/18	7:21 am	12:05 pm	8.82		Ithaca - FSA Information Meeting Email Work Visa Changes - Union Bank Review Time Sheets			
		12:55 pm	5:00 pm						
Wed	11/19	7:44 am	12:00 pm	7.77		Mail and Email Work / O'Reilly - Performance Jovan - Renew Retainer / Sousek - Departure List Meet with Water Staff on SQS Areas Swenson - Wanahoo entry Road			
		12:00 pm	3:30 pm						
Thurs	11/20	7:30 am	12:00 pm	8.58		Personnel Review with Heimann and Sousek Lincoln - Olssons, IMP Meeting Office work and Email			
		12:30 pm	4:35 pm						
Fri	11/21	7:32 am	12:00 pm	8.80		Prep for Executive Committee District Flex Benefit Form Line of Credit Renewal with Baumert Lincoln - Jack Daniels Retirement / DNR - Dunnigan			
		12:30 pm	4:50 pm						
<b>Week #1 Totals</b>				<b>33.97</b>	<b>6</b>		<b>0</b>	<b>\$0.00</b>	<b>\$0.00</b>

Supervisor \_\_\_\_\_ Manager \_\_\_\_\_ Assistant Manager \_\_\_\_\_ Treasurer \_\_\_\_\_

Date \_\_\_\_\_ Date \_\_\_\_\_ Date \_\_\_\_\_ Date \_\_\_\_\_

**Expenses**

Mileage x.56	\$0.00
Meals	\$0.00
Other Exp.	\$0.00
<b>Total</b>	<b>\$0.00</b>

I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT

  
Signature of person filing form

11-2-14  
Date

**Week #2**

**Lower Platte North NRD Time Sheet**

Name John Miyoshi

Period Covered 11/22/14 to 11/28/14

*You must enter "pm" for times after 12:59 or the form will not calculate correctly!*

	Date	Start Time	Stop Time	Work Hours	Other Hours	Duties Performed	Miles	Meals	Other Exp.
Sat	11/22								
Sun	11/23								
Mon	11/24	7:53 am	12:10 pm	10.53		O, E & RW Committee Meeting LARM on Insurance Coverage Mail and Email / Executive Committee Attachments Meet with Stork and Kremlacek (well) / Water Committee Meeting			
		12:50 pm	7:05 pm						
Tues	11/25	7:33 am	12:00 pm	8.20		Projects Committee Meeting Executive Committee Meeting Timesheet PDF Problems Payroll / In-box Work / RW Manager Ad			
		12:00 pm	3:45 pm						
Wed	11/26	7:51 am	11:30 am	3.65	1.75	RW Job Description Email			
Thurs	11/27				8.00	Thanksgiving			
Fri	11/28				8.00	Office Closed (float Columbus Day)			
<b>Week #2 Totals</b>				22.38	17.75		0	\$0.00	\$0.00
<b>Totals Week #1</b>				33.97	6		0	\$0.00	\$0.00
<b>Two Week Totals</b>				56.35	23.75		0	\$0.00	\$0.00

**Annual Leave & Sick Leave**

	Previous Balance	Earned This Pay Period	Used This Pay Period	New Balance
<b>Annual Leave</b>	240.00	8.00	7.75	240.25 *
<b>Sick Leave</b>	812.00	4.00	0.00	816.00

*\* Maximum Carry over*

**RESET FORM**

This will delete ALL data on form, including name, AL/SL values and Program Areas labels.

#	Program Areas	Hours
11	Administration	14.00
14	District Management	22.00
15	Personnel	6.00
31	I&E Administration	
41	O&M Administration	1.00
42.9	Wanahoo Recreation O&M	1.00
51	Projects Administration	2.00
56	Sand Creek Project	
56.1	COE Assistance	
57	Western Sarpy/Clear Creek	
59.1	Fremont South	
59.4	Schuyler	
61	Water Administration	10.00
71	Rural Water Administration	

**Total: 56**

**Week #1**

**Lower Platte North NRD Time Sheet**

Name John Miyoshi

Period Covered 11/29/14 to 12/5/14

*You must enter "pm" for times after 12:59 or the form will not calculate correctly!*

	Date	Start Time	Stop Time	Work Hours	Other Hours	Duties Performed	Miles	Meals	Other Exp.
<b>Sat</b>	11/29								
<b>Sun</b>	11/30								
<b>Mon</b>	12/1	7:44 am	12:00 pm	9.27		Management Meeting / Gil Frey - RW Position RW Job Description Final Updates Review all Committee Minutes Review Insurance Coverages with Bob			
<b>Tues</b>	12/2	7:42 am	12:00 pm	8.80		Treasurers Bond, Move to LARM LARM Board Member Mail and Email Work / NRC Member with Clint WS CC Map / Review All Timesheets			
<b>Wed</b>	12/3	7:25 am	12:30 pm	5.08		Update Staff and Board Calendar Nominating Committee Prep and Meeting Greater Wahoo Development Luncheon			
<b>Thurs</b>	12/4	7:45 am	12:00 pm	8.75		Turn over Planner / Email Work LARM Insurance Lincoln - Legislative Planning NARD/NWRA/NSIA			
<b>Fri</b>	12/5	7:45 am	12:00 pm	7.50		Weaver Conference Call / Review Letter for Delegation Managers Report for Board Meeting Universal Surety For Commercial Contractors			
<b>Week #1 Totals</b>				39.4	0		0	\$0.00	\$0.00

Supervisor \_\_\_\_\_ Manager \_\_\_\_\_ Assistant Manager \_\_\_\_\_ Treasurer \_\_\_\_\_

Date \_\_\_\_\_ Date \_\_\_\_\_ Date \_\_\_\_\_ Date \_\_\_\_\_

I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT

*John Miyoshi*  
Signature of person filing form

12-23-14  
Date

**Expenses**

Mileage x.56	\$0.00
Meals	\$0.00
Other Exp.	\$0.00
<b>Total</b>	<b>\$0.00</b>

**Week #2**

Name John Miyoshi

**Lower Platte North NRD Time Sheet**

Period Covered 12/6/14 to 12/12/14

*You must enter "pm" for times after 12:59 or the form will not calculate correctly!*

	Date	Start Time	Stop Time	Work Hours	Other Hours	Duties Performed	Miles	Meals	Other Exp.
<b>Sat</b>	12/6								
<b>Sun</b>	12/7								
<b>Mon</b>	12/8	7:35 am	12:08 pm	9.60		Prep for Board Meeting E-meeting Work / Mail and Email Monthly Board Meeting			
		12:30 pm	5:33 pm						
<b>Tues</b>	12/9	7:38 am	12:30 pm	7.02		Monthly Staff Meeting Sign Checks / Renew Line of Credit Payroll / Prep for New Director Orientation Board Meeting Follow-up			
		2:21 pm	4:30 pm						
<b>Wed</b>	12/10	7:06 am	12:00 pm	9.40		Norfolk - DNR Public Meeting on Basin Determinations Water Education Meeting at LE NRD			
		12:30 pm	5:00 pm						
<b>Thurs</b>	12/11	7:26 am	12:03 pm	8.62		Finish New Director Materials Finish Board Meeting Follow-up Retainer Agreement with Jovan / USGS Stream Guage Agreement New Director Orientation			
		1:15 pm	5:15 pm						
<b>Fri</b>	12/12	7:36 am	12:00 pm	11.00		O'Neil - Lower Platte Basin - Managers Meeting SQS Letter and Office Catchup Work			
		12:00 pm	6:36 pm						
<b>Week #2 Totals</b>				45.64	0		0	\$0.00	\$0.00
<b>Totals Week #1</b>				39.4	0		0	\$0.00	\$0.00
<b>Two Week Totals</b>				85.04	0		0	\$0.00	\$0.00

**Annual Leave & Sick Leave**

	Previous Balance	Earned This Pay Period	Used This Pay Period	New Balance
<b>Annual Leave</b>	240.00	8.00	0.00	240 <del>248.00</del>
<b>Sick Leave</b>	816.00	4.00	0.00	820.00

*Maximum leave time*

**RESET FORM**

This will delete ALL data on form, including name, AL/SL values and Program Areas labels.

#	Program Areas	Hours
11	Administration	17.00
14	District Management	44.00
15	Personnel	2.00
31	I&E Administration	
41	O&M Administration	
42.9	Wanahoo Recreation O&M	
51	Projects Administration	3.00
56	Sand Creek Project	
56.1	COE Assistance	
57	Western Sarpy/Clear Creek	
59.1	Fremont South	
59.4	Schuyler	
61	Water Administration	19.00
71	Rural Water Administration	

**Total: 85**

**Week #1**

**Lower Platte North NRD Time Sheet**

Name John Miyoshi

Period Covered 12/13/14 to 12/19/14

*You must enter "pm" for times after 12:59 or the form will not calculate correctly!*

	Date	Start Time	Stop Time	Work Hours	Other Hours	Duties Performed	Miles	Meals	Other Exp.
Sat	12/13								
Sun	12/14								
Mon	12/15				8.00	Annual Leave			
Tues	12/16				8.00	Annual Leave			
Wed	12/17				8.00	Annual Leave			
Thurs	12/18				8.00	Annual Leave			
Fri	12/19	7:55 am	10:23 am	7.00	1.00	Email Work RW Position Options			
		11:39 am	12:00 pm						
		12:30 pm	4:41 pm						
<b>Week #1 Totals</b>				7	33		0	\$0.00	\$0.00

Supervisor \_\_\_\_\_ Manager \_\_\_\_\_ Assistant Manager \_\_\_\_\_ Treasurer \_\_\_\_\_

Date \_\_\_\_\_ Date \_\_\_\_\_ Date \_\_\_\_\_ Date \_\_\_\_\_

I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT

  
Signature of person filing form

\_\_\_\_\_  
Date

**Expenses**

Mileage x.575	\$0.00
Meals	\$0.00
Other Exp.	\$0.00
<b>Total</b>	<b>\$0.00</b>

**Week #2**

Name John Miyoshi

**Lower Platte North NRD Time Sheet**

Period Covered 12/20/14 to 12/26/14

*You must enter "pm" for times after 12:59 or the form will not calculate correctly!*

	Date	Start Time	Stop Time	Work Hours	Other Hours	Duties Performed	Miles	Meals	Other Exp.
Sat	12/20								
Sun	12/21								
Mon	12/22	7:38 am	10:51 am	3.22	4.75	Mail and Email work Review Board Minutes Annual Leave 4.5			
Tues	12/23	7:22 am	1:12 pm	8.32		Meet with Glewen - Research Proposal Griffin and Dunnigan - Olsson Introduction Review Time Sheets Email Work			
		2:15 pm	4:44 pm						
Wed	12/24	7:52 am	12:29 pm	4.62	3.25	Education Proposal - Snell, UBBNRD Close out 2014 Timesheets and Prep 2015 Filing			
Thurs	12/25				8.00	Christmas - Office Closed			
Fri	12/26				8.00	Office Closed			
<b>Week #2 Totals</b>				16.16	24				
<b>Totals Week #1</b>				7	33		0	\$0.00	\$0.00
<b>Two Week Totals</b>				23.16	57		0	\$0.00	\$0.00
						<i>19.25 Holiday 37.5 Annual Leave</i>	0	\$0.00	\$0.00

**Annual Leave & Sick Leave**

	Previous Balance	Earned This Pay Period	Used This Pay Period	New Balance
<b>Annual Leave</b>	240.00	8.00	37.50	<b>210.50</b>
<b>Sick Leave</b>	820.00	4.00	0.00	<b>824.00</b>

**RESET FORM**

This will delete ALL data on form, including name, AL/SL values and Program Areas labels.

#	Program Areas	Hours
11	Administration	14.00
14	District Management	9.00
15	Personnel	
31	I&E Administration	
41	O&M Administration	
42.9	Wanahoo Recreation O&M	
51	Projects Administration	
56	Sand Creek Project	
57	Western Sarpy/Clear Creek	
59.1	Fremont South	
59.4	Schuyler	
61	Water Administration	
71	Rural Water Administration	
<b>Total:</b>		<b>23</b>

LOWER PLATTE NORTH NRD  
 OUTSTANDING ACCOUNTS RECEIVABLE OVER 90 DAYS  
 AS OF 12/30/2014

DESCRIPTION	CUSTOMER NAME	AMOUNT	
<b>7 UPSTREAM SITES</b>			
	USACE	\$ 1,943,622.98	Settle at the end of the project
<i>7 UPSTREAM SITES TOTAL</i>		\$ 1,943,622.98	
<b>CLERK REIMBURSEMENT SALARIES</b>			
	LENRD	\$ 8,349.36	
	LPSNRD	\$ 4,905.13	
	UBBNRD	\$ 3,566.06	
<i>CLERK SALARY TOTAL</i>		\$ 16,820.55	
<b>FREMONT 205</b>			
	INGLEWOOD	\$ 1,014.87	
<i>FREMONT 205 REIMBURSEMENT TOTAL</i>		\$ 1,014.87	
<b>HAZARD MITIGATION</b>			
	NEMA	\$ 2,712.60	
<i>HAZARD MITIGATION REIMBURSEMENT TOTAL</i>		\$ 2,712.60	
<b>NAWMDN CUSTOMER SALES</b>			
	WATERMARK SENSORS LANDOWNER	\$ 1,757.50	
<i>WATERMARK SENSORS TOTAL</i>		\$ 1,757.50	
<b>RURAL WATER SALES</b>			
	DANIELLE WOODBURY	\$ 700.68	
<i>RURAL WATER TOTAL</i>		\$ 700.68	
<b>SHELL CREEK WQ 319 SALES</b>			
	SHELL CREEK IMPROVEMENT GROUP	\$ 615.00	
	DEQ	\$ 922.50	
<i>SHELL CREEK 319 TOTAL</i>		\$ 1,537.50	
<b>WANAHOO</b>			
	USACE	\$ 3,596,139.43	Settle at the end of the project
	DEPARTMENT OF NATURAL RESOURCES	\$ 3,948,570.62	Receive Quarterly payments
<i>WANAHOO TOTAL</i>		\$ 7,544,710.05	
<b>GRAND TOTAL</b>		\$ 9,512,876.73	



## Bid Tab

**PROJECT** | 2014 Czechland Lake Improvements for Lower Platte North Natural Resources District

**JEO PROJECT NO.** | 130501.00

**LOCATION** | Prague, Nebraska

**LETTING** | January 7, 2015 @ 1:00 PM

**OPINION OF PROBABLE COST** | \$165,000

Bidder	Total Group A	Total Group B	Total Group C	Total Groups A, B, & C	Start Date
Sibbernsen Excavating Omaha NE	\$44,443.50	\$23,765.00	\$33,580.00	\$101,788.50	February 1, 2015
Kohl Construction, Inc. Schuyler NE	\$43,055.50	\$30,070.00	\$34,867.00	\$107,992.50	April 1, 2015
Thompson Construction, Inc. Arlington NE	\$44,607.00	\$28,455.00	\$35,468.00	\$108,530.00	February 1, 2015
Gana Trucking & Excavating, Inc. Martell NE	\$44,546.17	\$26,888.75	\$42,879.67	\$114,314.59	
Pruss Excavation Company Dodge NE	\$57,822.70	\$27,600.00	\$40,783.80	\$126,206.50	April 1, 2015
W. Theisen Grading & Equipment Co. Norfolk NE	\$56,047.87	\$48,690.95	\$51,882.70	\$156,621.52	March 16, 2015
Valley Corporation Valley NE	\$65,308.99	\$42,642.89	\$57,175.16	\$165,127.04	February 16, 2015
M.E. Collins Contracting Co., Inc. Wahoo NE	\$71,224.50	\$44,887.50	\$52,976.50	\$169,088.50	Spring 2015
B-D Construction, Inc. Columbus NE	\$72,169.00	\$58,465.00	\$66,675.00	\$197,309.00	February 2, 2015



# Tab Sheet

**PROJECT** | 2014 Czechland Lake Improvements for Lower Platte North Natural Resources District

**JEO PROJECT NO.** | 130501.00

**LOCATION** | Prague, Nebraska

				Sibbersen		Kohl	
<b>GROUP A - North Pier</b>							
Item	Qty.	Unit	Description	Unit Price	Total	Unit	Total
1	1	LS	Mobilization		\$7,000.00		\$3,000.00
2	770	TN	Riprap	\$44.00	\$33,880.00	\$46.00	\$35,420.00
3	27	TN	Gabion Rock	\$38.00	\$1,026.00	\$40.00	\$1,080.00
4	13.5	TN	Crushed Rock	\$25.00	\$337.50	\$53.00	\$715.50
5	10	TN	Crushed Fines	\$25.00	\$250.00	\$50.00	\$500.00
6	390	SY	Geo Grid TriAx TX140	\$5.00	\$1,950.00	\$6.00	\$2,340.00
<b>TOTAL GROUP A</b>					\$44,443.50		\$43,055.50

<b>GROUP B - Bank Revetment</b>							
Item	Qty.	Unit	Description	Unit Price	Total	Unit	Total
1	1	LS	Mobilization		\$4,000.00		\$3,000.00
2	55	TN	Riprap	\$44.00	\$2,420.00	\$46.00	\$2,530.00
3	785	TN	Placing Stored Riprap	\$17.00	\$13,345.00	\$24.00	\$18,840.00
4	1	LS	Shoreline Grading		\$3,000.00		\$4,200.00
5	0.5	AC	Seeding & Mulching	\$2,000.00	\$1,000.00	\$3,000.00	\$1,500.00
<b>TOTAL GROUP B</b>					\$23,765.00		\$30,070.00

<b>GROUP C - East Pier</b>							
Item	Qty.	Unit	Description	Unit Price	Total	Unit	Total
1	1	LS	Mobilization		\$1,500.00		\$3,000.00
2	450	TN	Riprap	\$44.00	\$19,800.00	\$46.00	\$20,700.00
3	50	TN	Gabion Rock	\$38.00	\$1,900.00	\$40.00	\$2,000.00
4	25	TN	Crushed Rock	\$25.00	\$625.00	\$53.00	\$1,325.00
5	335	SY	Geo Grid TriAx TX140	\$5.00	\$1,675.00	\$6.00	\$2,010.00
6	42	SY	Concrete	\$125.00	\$5,250.00	\$64.00	\$2,688.00
7	22	EA	Parking Stops	\$100.00	\$2,200.00	\$120.00	\$2,640.00
8	42	SF	Remove and Replace Sidewalk	\$15.00	\$630.00	\$12.00	\$504.00
<b>TOTAL GROUP C</b>					\$33,580.00		\$34,867.00

<b>TOTAL GROUPS A, B, &amp; C</b>					\$101,788.50		\$107,992.50
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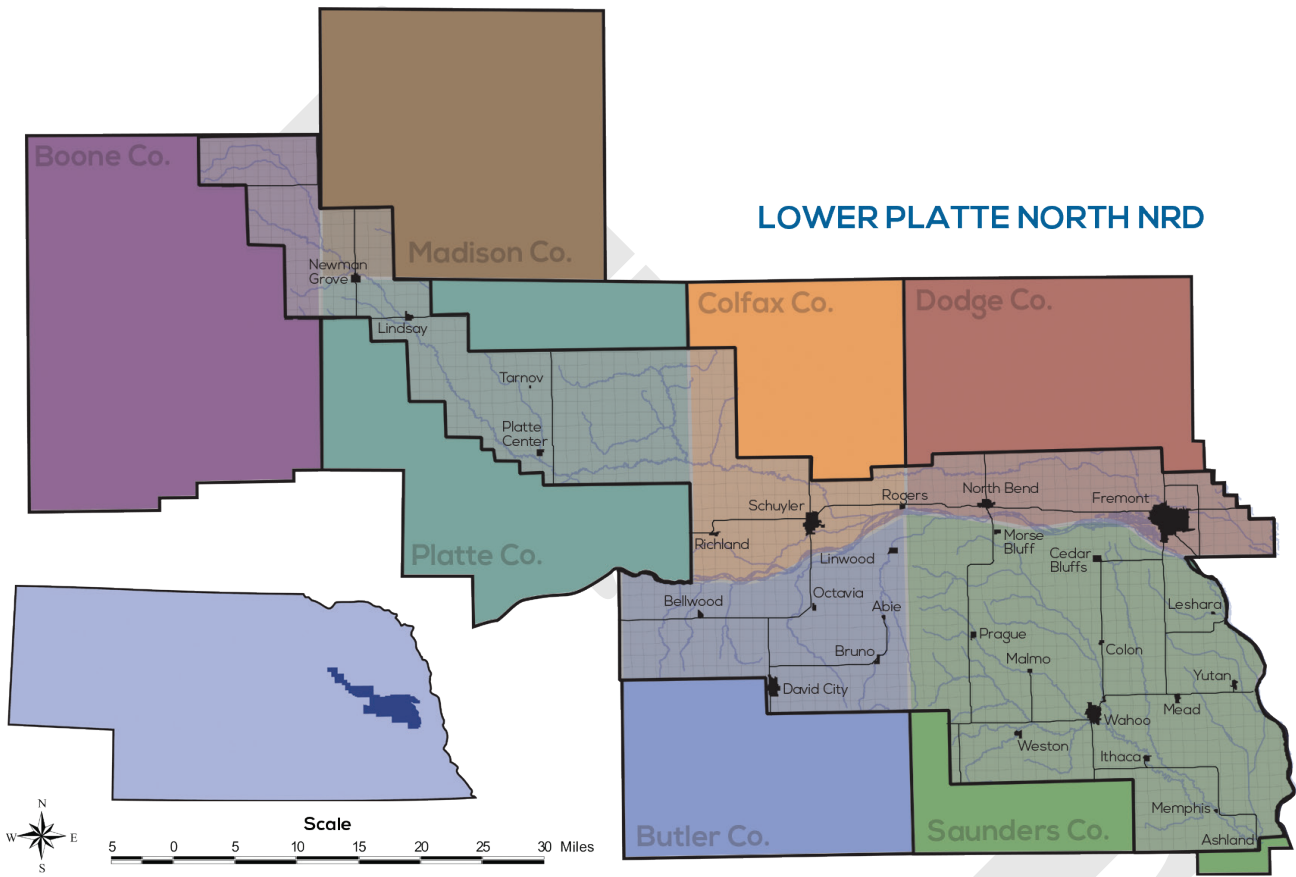
LOWER PLATTE NORTH NRD  
 CALENDAR YEAR 2014  
 FOR MONTH ENDED NOVEMBER 30, 2014  
 WANAHOO REC EXPENSES

Date	Vendor	Description	Amount	TYPE OF EXPENSE
1/8/2014	COLON RW CUSTOMERS	WANAHOO CAMPGROUND RW PMT	\$ 267.00	UTILITIES
1/16/2014	BOMGAARS	DEC/JAN BOMGAARS REC SIGNS SUPPLIES	\$ 4.12	CONSTR MAINT SUPPLIES
1/31/2014	FREMONT SANITATION	WANAHOO REC GARBAGE-JAN	\$ 59.36	GARBAGE
2/14/2014	COLON RW CUSTOMERS	WANAHOO CAMPGROUND RW PMT	\$ 267.00	UTILITIES
2/28/2014	NEBRASKA GAME & PARKS COMMISSION	DEFICIT INCOME PMT. 2013-REC	\$ 30,462.69	DEFICIT PAID TO G&P
3/11/2014	COLON RW CUSTOMERS	WANAHOO CAMPGROUND RW PMT	\$ 267.00	UTILITIES
3/31/2014	FREMONT SANITATION	WANAHOO REC GARBAGE-MARCH	\$ 42.64	GARBAGE
4/2/2014	COLON RW CUSTOMERS	WANAHOO CAMPGROUND RW PMT	\$ 267.00	UTILITIES
4/30/2014	FREMONT SANITATION	WANAHOO REC GARBAGE APRIL	\$ 45.00	GARBAGE
4/30/2014	BUTLER PUBLIC POWER DISTRICT	4/8-5/7/14 WANAHOO SHED	\$ 41.59	UTILITIES
5/8/2014	COLON RW CUSTOMERS	WANAHOO CAMPGROUND RW PMT	\$ 267.00	UTILITIES
5/31/2014	FREMONT SANITATION	WANAHOO REC GARBAGE-MAY	\$ 45.81	GARBAGE
5/31/2014	OTTE OIL	ROUND UP POWER MAX 2.5 GALLON	\$ 74.20	AGRICULTURAL EXPENSES
5/31/2014	BUTLER PUBLIC POWER DISTRICT	5/7-6/8/14 WANAHOO SHED	\$ 38.58	UTILITIES
6/6/2014	COLON RW CUSTOMERS	WANAHOO CAMPGROUND RW PMT	\$ 267.00	UTILITIES
6/9/2014	OTTE OIL	WANAHOO REC POWERMAX	\$ 74.20	AGRICULTURAL EXPENSES
6/20/2014	H&H TRUCKING	LIMESTONE ROADS WANAHOO	\$ 2,885.99	CONSTR MAINT SUPPLIES
6/20/2014	H&H TRUCKING	LIMESTONE ROADS WANAHOO	\$ 363.82	CONSTR MAINT SUPPLIES
6/20/2014	STOCKING TOWNSHIP	BLADING/Dragging Roads WANAHOO	\$ 200.00	ROAD MAINTENANCE
6/30/2014	FREMONT SANITATION	WANAHOO REC GARBAGE-JUNE	\$ 22.46	GARBAGE
6/30/2014	BUTLER PUBLIC POWER DISTRICT	6/8-7/7/14 WANAHOO SHED	\$ 42.28	UTILITIES
7/8/2014	COLON RW CUSTOMERS	WANAHOO CAMPGROUND RW PMT	\$ 267.00	UTILITIES
7/31/2014	FREMONT SANITATION	WANAHOO REC GARBAGE-JULY	\$ 378.00	GARBAGE
7/31/2014	BUTLER PUBLIC POWER DISTRICT	7/7-8/8/14 WANAHOO SHED	\$ 42.71	UTILITIES
7/31/2014	OTTE OIL	OTTE OIL ROUND UP 7/31	\$ 95.10	AGRICULTURAL EXPENSES
8/13/2014	COLON RW CUSTOMERS	WANAHOO CAMPGROUND RW PMT	\$ 267.00	UTILITIES
8/31/2014	FREMONT SANITATION	WANAHOO REC GARBAGE AUGUST	\$ 138.00	GARBAGE
8/31/2014	BUTLER PUBLIC POWER DISTRICT	8/8-9/8/14 CAMPGROUND RW PMT	\$ 41.42	UTILITIES
9/11/2014	COLON RW CUSTOMERS	WANAHOO CAMPGROUND RW PMT	\$ 267.00	UTILITIES
9/30/2014	FREMONT SANITATION	WANAHOO REC GARBAGE SEPTEMBER	\$ 313.00	GARBAGE
9/30/2014	BUTLER PUBLIC POWER DISTRICT	9/8-10/8/14 CAMPGROUND RW PMT	\$ 38.93	UTILITIES
10/9/2014	COLON RW CUSTOMERS	WANAHOO CAMPGROUND RW PMT	\$ 267.00	UTILITIES
10/31/2014	BUTLER PUBLIC POWER DISTRICT	10/8-11/8/14 CAMPGROUND RW PMT	\$ 27.23	UTILITIES
11/14/2014	VOBORILS	WANAHOO REC TRAILER TIRE REPAIR	\$ 65.00	MOTOR VEH & REPAIR/MAINT.
11/19/2014	FRONTIER COOP COMPANY	PASTUREGUARD WANAHOO REC	\$ 312.50	AGRICULTURAL EXPENSES
11/19/2014	COLON RW CUSTOMERS	WANAHOO CAMPGROUND RW PMT	\$ 267.00	UTILITIES
11/30/2014	FREMONT SANITATION	WANAHOO REC GARBAGE NOVEMBER	\$ 35.00	GARBAGE
<b>CALENDAR YEAR 2014 WANAHOO REC EXPENSES</b>			<b>\$ 38,826.63</b>	



# Lower Platte North Natural Resources District

Long Range Implementation Plan  
Fiscal Year 2015



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# LOWER PLATTE NORTH NRD

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## LONG RANGE IMPLEMENTATION PLAN

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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 2013 (July 1, 2013 to June 30, 2014) and planned District activities for fiscal year 2015 (July 1, 2014 to June 30, 2015). There are also objectives for a five-year period from fiscal years 2016 to 2020. The plan serves as an implementation tool of the district's Master Plan.

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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, Loeske 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 61,000, 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 2015 tax levy is 4.7231 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. Also, 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.



## LOWER PLATTE RIVER BASIN

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 top priority at the LPNNRD, since approximately 72 miles of the river flow directly through or border the district.

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### FY 2014 Platte River Basin Activities

---

#### Platte River Alliance

The Lower Platte River Corridor Alliance entered its twentieth year in FY 15. The Alliance members are the Lower Platte North NRD, Lower Platte South NRD, and several state entities dedicated to working with people to protect the long-term vitality of the lower Platte River Corridor. One primary focus has been on building a coalition including counties, cities, businesses and individuals concerned with the preservation and proper use of the river.

The Alliance is primarily concerned with the lower portion of the Platte River. This stretch of the river runs from Columbus to Plattsmouth. It winds past or through towns and cities such as Bellwood, Schuyler, North Bend, Fremont, Waterloo and Louisville. In FY 14, the Alliance was involved with many activities and projects that included: Environmental Suitability Assessment, Cumulative Impact Study, River Obstruction Removal, hosted a PRCA Summit, River Tours and educational events.

#### Ice Jam Agreement

In 1994, the LPNNRD entered into an agreement with two other NRDs and four counties to more effectively deal with ice jams and their resulting flood damages along the Lower Platte River. This area of concern is primarily south of the city limits of Fremont, Nebraska. Besides the Lower Platte North NRD, other partners include the Pappio-Missouri River NRD, Lower Platte South NRD, and Cass, Douglas, Sarpy and Saunders Counties. This group has pooled funds to use explosives, when needed, to remove ice jams in a timely manner.

During the winter of 2013-14, no ice jams caused any adverse flooding.

#### 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 FY 14, this program provided \$8,228 to 3 cooperators.

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### FY 2015 Platte River Basin Objectives

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- Administer \$10,000 in the Rock & Jetty Program to assist with priority stream bank stabilization for a potential 40 cooperators. This includes assisting cooperators with meeting the regulations of the Clean Water Act and 404 permits.
- Participate with LPSNRD, PMRNRD and other partners and provide up to \$150,000 for the Western Sarpy/Clear Creek Levee Project and continue work with Nebraska's Delegation for obtaining additional federal funding to complete the Clear Creek Levee portion of the project.
- Assist the City of Schuyler with the construction of the Shell Creek Levee Project (Army COE 205 Project).
- Provide leadership assistance to the City of Fremont to continue moving forward with exploring flood control solutions as a result of the completed Army COE 205 feasibility study.
- Support the Lower Platte Weed Management Area financially and technically in controlling noxious weeds.
- Support the Nebraska Land Trust in acquiring easements for the protection and preservation of quality lands.
- Assist the City of Schuyler to obtain federal funding for completing a levee system to reduce flooding and economic losses from the Platte River.

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### FY 2016-2020 Long Range Platte River Basin Objectives

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- Continue to support the Platte River Corridor Alliance and continue to seek available federal and state funds to assist with Alliance objectives.
- Continue to budget cost-share funds for priority bank stabilization along the Platte and Elkhorn rivers and other perennial streams in the district.
- 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.

- 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 Fremont to study potential structural and nonstructural measures to reduce flooding and economic losses on the Lower Platte River.
- Assist the City of Schuyler to obtain federal funding for completing a levee system to reduce flooding and economic losses from the Platte River.
- Encourage cities and counties to join the Lower Platte River Corridor Alliance and initiate floodplain management planning to promote wise floodplain development.
- Assist dike and drainage districts to certify and properly maintain levy projects.
- Budget annually, if in need, to support the Lower Platte Weed Management group in controlling noxious weeds.





One of the Lower Platte North NRD's major responsibilities is to conserve and protect our ground and surface water supplies. 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 2014 Ground & Surface Water Activities

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#### Ground Water Management Area

The LPNDRD implemented a District-wide Ground Water Management Area (GWMA) on January 1, 1997, to address both water quality and quantity concerns. Data gathered since 1985 indicates where ground water quality conditions have deteriorated beyond those established as health standards, such as nitrate nitrogen. On that date, ground water quality Phase I (education) regulations in effect for the entire District. One primary rule in Phase I requires certification for fertilizer use. The District has developed a ground water program emphasizing a protection-based approach rather than a reactive, corrective approach.

As of 2011, the District has two Phase 2 groundwater quality control areas, those being Bellwood and Richland/Schuyler. The Bellwood Phase 2 Area was established in 2003. This area covers approximately 30 square miles in the western portion of the Platte Valley in Butler County and includes the town of Bellwood. The Richland/Schuyler Phase 2 Area was established in 2004. This area covers approximately 55 square miles in the Platte Valley of Colfax County and includes the towns of Richland and Schuyler. Elevated nitrate-nitrogen levels continue to be the major concern in both Phase 2 areas.

Due to the drought from 2000 to 2006 and heavy water demand, several of the District's aquifers declined to the point where several wells have reached or exceeded their trigger levels. If more than 50% of the subarea, as measured in our GWEL network wells reach those trigger levels then a management area maybe declared. Due to three consecutive years (2004, 2005 & 2006) of groundwater declines in the Butler County Uplands aquifer, the Lower Platte North NRD declared a "Level One Management Area" for the David City area effective in 2007. Due to changes in the District's rules and regulations the remainder of the district has also been declared a Level One management area. By the spring of 2009, the David City aquifer had recovered for two consecutive spring readings, therefore the

District has changed the status of the David City subarea on October 8, 2009 from a potential Level 2 to a Level 1 ground water management area.

As 2007 progressed, the district noted increased ground water demands for irrigation, due in part to good commodity prices. Expansion in the Uplands portion of Saunders and Butler Counties raised concerns that small pocket aquifers in the glaciated areas may not be able to accommodate even one or two additional high capacity wells. On May 14, 2007 the Board of Directors declared these areas as a 'Temporary Stay Management Area.' A second Temporary Stay Management Area was declared on November 12, 2007. The District completed a Subarea Delineation Study to identify aquifer subareas and to help determine if the two consecutive stays should be made permanent in all or portions of the Uplands or be allowed to expire. In 2008, the LPNDRD revised its rules and regulations to take into account glaciated portions of our District, effects of the recent drought and new information from our Subarea Delineation Study. This revision included declaring a Level One District-wide management area for ground water quantity, different classes of water well permits based on annual usage, and adoption of Stay Management Areas. The temporary stay became a Permanent Stay Management Area in May 2008 for the Swedeburg, Prague, Yutan, and Yutan South subareas. Other subareas are being monitored and may be placed in future Stay Management Areas if needed.

In August of 2008, our office received four phone calls from domestic well owners all in or adjacent to the Platte River Uplands subarea northwest of Fremont, that they were running out of water. Following a survey of all well owners in the area, this subarea was declared a temporary Stay Management Area on December 8, 2008. A second temporary stay was declared on June 6, 2009 and was under review to make this a permanent stay or let the temporary stay lapse. On December 3, 2009 this area was declared a permanent Stay Management Area.

In December 2008, the Nebraska Department of Natural Resources (NDNR) declared the Lower Platte River Basin as "fully appropriated". This designation would mean that no new additional irrigation acres would be allowed in the hydrologically connected area unless offsets were provided. After an intense review of the model that NDNR used, it was discovered that there were errors that lead to this declaration. NDNR reversed their preliminary decision in April 2009 and declared that the basin was not fully appropriated at this time. With the passage of LB 483, the District along with other NRD's completed an

update of our rules and regulations, which were approved by NDNR on August 21, 2009, to help avoid becoming fully appropriated in future years. The District will be able to expand new irrigated acres by an additional 2,500 acres per year for four years in this hydrologically connected area. To assist with providing the best science for future fully appropriated decisions, the District has teamed with NDNR, UNL, and neighboring NRD's to complete special studies to provide assessments and modeling to provide the best information in determining groundwater effects to the Lower Platte River. These studies include Elkhorn Loup Model, The Eastern Nebraska Water Resources Assessment, and the Platte River Modeling Study. From October 2009 to October 2012 the District has issued 10,000 new irrigated acres in the hydrologically connected or limited water development area (LDA) of the District, as allowed under LB 483. In addition, the District has agreed to limit expansion to 2,500 acres in the LDA for future years. These acres for 2013 were awarded on October 15, 2012 and will be issued in January 2013. The drought of 2012 has also intensified the interest in irrigation and we received twice as many requests for new irrigated acres than could be granted by October 15, 2012. The drought of 2012 also intensified the number of well interference complaints. These were recorded and mapped to learn more about the long term sustainability of area aquifers and aid future management decisions.

As of December 18, 2012, the District had 4,445 active registered irrigation wells and 165 wells in our GWEL network. The Metropolitan Utilities District (MUD) well field became operational in the summer of 2008. The MUD well field has 26 high capacity municipal wells in Saunders County (LPNNRD) and 16 municipal wells in Douglas County (PMRNRD). This well field has a Corps of Engineers 404 permit to produce a maximum annual average of 52 Million Gallons per Day (MGD) and a maximum daily yield of 104 MGD. Of the four bio-fuels plants planned for our District, none of them are currently in operation.

At the July 2011 Board meeting, the LPNNRD Directors voted to start the process for a voluntary Integrated Water Management Plan (V-IMP). In the fall of that year, LPSNRD, LPNNRD, and Papio-Missouri River NRD met to discuss working together to develop an IMP for the Lower Platte River basin. LPSNRD has already started the process, while the Board for Papio-Missouri River NRD has not yet voted on the proposal. The four other NRD's in the basin (LENRD, UENRD, LLNRD, and ULNRD) are still undecided.

For 2012 all seven NRD's have agreed to develop a Lower Platte Basin plan, but only LPN, LPS, Papio, and LE NRDs have also decided to develop an IMP. All Districts

are presently drafting the cooperative agreement for the Basin Plan. The summer of 2012 also turned out to be a strong drought year with high temperatures and very light rain. Many parts of our District during the month of July received no rain at all. Starting in early July the District started receiving numerous well interference complaints (~35) that continued into early September. Usually we receive no complaints over the course of the summer. These complaints were scattered over the District, except no complaints were received from the Todd Valley. The only limitation in the Todd Valley was for the community of Mead which was on voluntary water restrictions due to limitations of their facilities, not lack of water.

The year 2013 proved to be a very active year concerning ground water management in LPNNRD and the entire Lower Platte River basin. The year started with cool temperatures and timely rains into the summer months. The exception was mid July and late August with temperatures in the 90's and low 100's and no rain. In late August we started receiving several complaints from the Bruno to Brainard area within LPNNRD and LPSNRD. This area has confined aquifers existing in many different layers and when area high capacity wells all run at the same time this can cause large pressure drops in these aquifers. During the fall and winter of 2013 the LPNNRD was looking at modifications to our ground water management Rules to address more of these in-season declines. The District is also working with LENRD on 'Request for Proposals' from consulting firms to help develop our Voluntary Integrated Water Management Plan in conjunction with DNR, with the goal to finish this Plan by the summer of 2015. The seven Lower Platte Basin NRD's are also working on a Basin-wide Plan with the first step to develop Goals and Objectives. This work began in earnest during the fall of 2013.

In February 2014, the Board approved our updated GWMA Rules and Regulations that primarily addressed the 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. Contact was awarded to Olsson Associates for development of a Voluntary Integrated Water Management Plan (V-IMP) for the LPNNRD to direct and organize Stakeholder and Coordination meetings and provide updates to the LPNNRD Board of Directors. Deadline for completion for this contract and completion of this phase of the V-IMP is set for June 1, 2015. The contract for the Lower Platte River Basin Coordination Plan (LPRBC) was awarded to HDR in early summer 2014 to develop a basin-wide approach to managing the water. Seven NRD's and DNR are involved in this process

and three committees were formed: Board, Managerial, and Technical.

Current rules and regulations of the GWMA are available at the LPNNRD headquarters in Wahoo and via the district website at [lpnnrd.org](http://lpnnrd.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. Due to current staff limitations the District is focusing on the State-wide ground water quality network, where staff sample the same 53 wells each summer to determine long term trends for nitrate-nitrogen. This information is provided to the Department of Environmental Quality and the Department in turn provides this to the Nebraska Legislature on an annual basis.

Samples were collected from 52 of 53 sites in 2013 (~ one sample per township).

Year	Nitrate-Nitrogen Range	% Nitrate-nitrogen 0-8.0 ppm	% Nitrate nitrogen 8.01-10.0 ppm	% Nitrate nitorgen > 10 ppm
2013	0 - 25.5 ppm	78.9% (41 of 52)	11.5% (6 of 52)	9.6% (5 of 52)

Samples for pesticide analysis were collected from eight of these sites (15%). The pesticide analysis was for a suite of 25 constituents. A pesticide was detected at three sites and a plasticizer at one. The detections were at a very low level, less than the Maximum Contaminant Level (MCL).

### Ground Water Energy Level Monitoring Network

One of the responsibilities of the NRDs in the State is to monitor fluctuations in ground water 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 ground water levels throughout the District. As of November 2013, the LPNNRD had 168 wells in the ground water 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 ground water 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 25 subareas within the District, 17 subareas are currently at Level 1 management, while the other 8 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.

Due to three consecutive years (2004–2006) of ground-water declines in the Butler County Uplands aquifer, the Lower Platte North NRD declared a “Level Management Area” for the David City area effective Jan. 15, 2007. This was the district’s first management area for ground water quantity. Changes in the district’s rules and regulations in 2008 have placed the entire District in a Level One management area. The David City subarea ground water levels have recovered above its designated trigger levels for two consecutive years (2008–2009), therefore this subarea was not placed into a Level Two management area, but reverted back to a Level One.

Subsequent years (2007 to 2011) showed adequate rainfall across the entire District, which allowed recharge to all of the District’s aquifers. The spring readings of 2012 indicated that levels had recovered almost to the pre-drought conditions of 2000 to 2006. The drought of 2012 seem to come on fast and strong starting in mid June. Daily temperatures in the mid to upper 90’s with very little or no rain caused all water users to pump more frequently in an effort to keep up with crop and other water demands. As a consequence the 2012 fall readings showed a dramatic decline in ground water levels, especially in the confined aquifers of the Shell Creek watershed and the Uplands of Butler and Saunders Counties. Aquifers recharge and/or pressure equalize at different rates, therefore it will not be until the spring readings of 2013 that a true assessment of aquifer levels will be possible. The water levels in 166 wells were measured in the spring of 2013. Of the 166 wells measured, one well showed an increase, three wells were unchanged, and 162 wells decreased. Hydrographs in several of our confined aquifers have shown a one year decline that is equivalent to several years of decline noted in the previous drought of 2000 to 2006.

Spring readings in 2014 showed some improvement over the spring readings from 2013. In part this was due to near normal annual rainfall in 2013 and the flash flooding that occurred near Boulder, Colorado on September 12, 2013. While this flooding was very detrimental in Colorado, it had some benefits to Nebraska. Minor flooding on the Platte River occurred from the Colorado border down to Kearney, but from Grand Island to the mouth of the Platte River at Plattsmouth the river remained in its banks. Nebraska diverted some of the flood waters into the Tri-County Canal to recharge reservoirs that were depleted due to the drought of 2012. Other canal systems did the same. The LPNNRD also believes this helped to recharge several of our aquifers near the Platte River that are in hydrologic connection. The spring readings for

2014 had the following subareas at the second consecutive year were 50% or more of the subarea is below its Level 2 trigger level: Fremont East, Octavia, David City, and Prague subareas.

Monitoring wells with continuous reading data-loggers also showed mid-summer declines in the uplands of Platte-Colfax SQS. An additional monitoring well with a data-logger was also installed in 2013 in the Butler-Saunders SQS.

The District has also established, with the help of Lincoln Water System, Metropolitan Utilities District of Omaha, US Geological Survey, US Army Corps of Engineers, University of Nebraska, Lower Platte South NRD, and Saunders County, a network of monitoring wells to track changes in ground water levels in the Wann Basin area, which is in the Platte River valley north of Ashland. This area has two major municipal well fields and the ongoing cleanup efforts of a former ordnance plant south of Mead, Nebraska. This network was established in the fall of 2003. Readings are taken three times per year in late March, late August, and late October.

### Chemigation

Chemigation is the practice of applying fertilizers or other agricultural chemicals to land or crops through an irrigation system. To protect Nebraska's ground water from possible back-flow of chemicals into irrigation wells, the Legislature enacted LB 284, the Chemigation Act in the 1980s. The Act requires the operator of a chemigation system to obtain a permit prior to use. To obtain this permit, 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 in the District with each recent successive year setting a new record. In 2014 heavy rains in June caused a large increase in the number of chemigation requests due to fertilizer being washed out of the root zone.

Chemigation Permits	Total	Renewal	New
November 2013	405	377	28
November 2014	465	381	84

In 2011 the Legislature though LB28 proposed some changes to Title 195 – the Chemigation Regulations. Most of these changes were simple house-keeping changes, except for the addition of rules for sub-surface drip irrigation. Maintenance of sub-surface drip irrigation systems is exempt from the chemigation permits provided 1) the system has an inline check valve and 2) the system has an Underground Injection Control Permit. This is only applicable for one maintenance event each year.

For 2014 the Legislature approved LB272 for additional changes to Title 195 that would let the individual NRD's set their own chemigation fees. At the October 13, 2014 Board meeting the future chemigation fees for LPNNRD will be: \$60 for a New permit, \$30 for a Renewal permit, and \$250 for a Emergency permit.

### Decommissioned (Abandoned) Wells

Decommissioned (Abandoned) wells are a health and safety concern and have been ruled as illegal by the Nebraska Legislature. It is estimated that there are approximately one-thousand improperly abandoned wells within the Lower Platte North Natural Resources District boundaries. 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.

Since 1992 the district has administered local and state cost-share dollars to decommission 598 wells. During FY13-14, 36 wells were plugged with this program. The district will administer approximately \$15,000 of state and local funds to plug additional wells during the current fiscal year.

### Precipitation Gauging Network

The Lower Platte North NRD has a District-wide precipitation gauging network, which consists of six sites maintained by cooperation landowners. Precipitation information is useful when merged with other District water programs including: ground water quality sampling, ground water energy levels, and surface water/ground water correlations, among others.

Our normal yearly precipitation is 28 inches per year and for 2010, some parts of the District were over that amount and others less. Upper Shell Creek had the least rainfall with 26 inches, while the Prague area had the most with over 33 inches.

In March 2011 the forecast for the rest of year appeared that we maybe coming back into a dry cycle. The District average precipitation for 2011 was 27.0 inches or slightly under our normal amount of 28.0 inches. Most of the precipitation came during the months of April through August, with the fall again being very dry as in 2010.

For 2012 the spring months through May were slightly less than normal precipitation. However, June through

the rest of the summer were very dry and temperatures in the mid to upper 90's almost every day. In the Fall of 2012 most of Nebraska is listed as extreme to exceptional drought conditions by NOAA.

For 2013 the year started with cool temperatures and timely rains into the summer months. The exception was mid July and late August with temperatures in the 90's and low 100's and no rain. The US Drought Monitor website has our District as 'Abnormally Dry'.

For 2014 the spring was relatively dry but in June the District received substantial amounts of rain in excess of 10 inches. Wahoo itself received 10 inches of rain in a one week period, which resulted in lowland flooding. In late August to mid September the southern part of our District again received substantial rainfall, but this was not reflected in the counties of Platte, Madison, and Boone of our District. The US Drought Monitor website has our District (and most of Nebraska) as no longer in drought.

### 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 Water Resources. Wells that are not registered are illegal and should be registered as soon as possible. It is estimated that 15% of the total irrigation wells in the District are not registered. A breakdown by decade from 1970 to present shows the growth of active irrigation wells in the District.

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

Date	Number of Active Irrigation Wells in the District
December 31, 1970	1,428
December 31, 1980	2,756
December 31, 1990	3,241
December 31, 2000	3,686
December 31, 2010	4,307
November 12, 2014	4,579

### 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 will require the owner of that well to install a flow meter and report the total water pumped from the well during the calendar year to the LPNNRD by January 31 of the following year. This reporting requirement is effective the year the well is drilled and for each year thereafter, until the well is decommissioned. With the onset of the drought in 2012,

the number of requests for new well permits across the District has increased dramatically, especially in the Normal Development Area where further development is allowed. Some of these are in areas where the NRD has received well interference complaints. For 2012, the District issued 78 well permits with 59 new irrigation wells and 16 replacement irrigation wells.

### Special Studies

#### *Elkhorn Loup Model*

The LPNNRD is a partner in the Elkhorn Loup Model Study, as this basin overlaps and covers portions of upper Shell Creek. 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. The study will assist the Nebraska Department of Natural Resources and the Natural Resources Districts within the study area by characterizing the groundwater system and by providing a regional groundwater flow model that could be used to evaluate surface water/groundwater interaction in the study area. The study will also provide data and interpretations that could serve as the basis for future management of the regional water resources. This study is well underway and some of the reports have been completed and are available online at <http://ne.water.usgs.gov/projects/elm.html>. The ELM model is currently in Phase 3 with emphasis on developing a two layer model to more accurately reflect observed changes in ground water levels.

In early 2011, the ELM project learned that funding from IWMPPF was being reduced due to budget cuts from DNR and the Nebraska Legislature. Further test holes and geophysical work was delayed or eliminated. At subsequent technical meetings the group discussed which scenarios had the highest priority to run by the model once it is completed.

In 2013 the USGS converted the ground water model from a one layer to a two layer model and has now been completed. For 2014 USGS is training NRD personnel on the use of GIS to generate maps using batch files and the completed ELM MODFLOW model.

#### *Eastern Nebraska Water Resources Assessment*

LPNNRD is a partner in the Eastern Nebraska Water Resources Assessment study. In order to better understand and manage this resource, several Natural Resources Districts, State and Federal Agencies have formed the Eastern Nebraska Water Resources Assessment group (ENWRA) and are proposing to do a geologic framework study at three locations. These pilot studies will evaluate different

methods and techniques to characterize and map the subsurface. One of these methods will use Helicopter Electromagnetic (HEM) surveys, which is a geophysical method that can quickly map the subsurface geology over a fairly large area. HEM has been used successfully in other parts of the United States. A separate study funded by the Nebraska Department of Natural Resources will look at other geophysical methods to test their effectiveness, such as Direct Current Resistivity survey. Information from that study will be incorporated into this project. Test holes and monitoring wells will also be installed to verify these different geophysical methods and will be used as long-term ground water quantity and quality monitoring sites in the future. If successful, geophysical techniques could provide a rapid assessment technique to characterize other glaciated areas of eastern Nebraska. This project will lay the groundwork for future studies (including ground water modeling efforts) and improving on existing water management plans.

In the fifth year of the study (2011), the focus shifted to publication of existing C&SD data and updating of the DNR database. C&SD has numerous drilling logs and studies that need to be digitized for publication. Also publication of test results for the three study areas and evaluation of the HEM and Time Domain geophysical methods are being developed. These reports were presented in the spring of 2011.

The latest ENWRA study is looking to fly long Airborne Electromagnetic (AEM) transects over eastern Nebraska to better model the geology of the glaciated portion of the State. ENWRA coordinator Katie Cameron has applied to the Nebraska Environmental Trust (NET) for \$198,000 to help fund the study, while ENWRA will contribute \$381,000 and NDNR will contribute \$500,000. A new AEM method will be used called SkyTEM 508 which is expected to see to a depth of 800 to 1,200 feet below the surface. This will provide information on deep geologic formations, such as aquifers and bedrock, that were previously little known.

#### *Platte River Modeling Study*

The University of Nebraska is conducting this ground water modeling effort of the Platte River in the LPNNRD. The purpose of this project is to develop a regional groundwater flow model that will be used to analyze the interactions of aquifer-stream-well systems and to determine the 10-50 boundary line for wells that are hydrologically connected to rivers and streams. The model will focus on the analysis of wells in the following counties: Saunders, Butler, Colfax, and Dodge, which are administered by the Lower Platte North NRD. This project consists of two phases: phase I – development of model framework; phase

II – hydrologic data collection and groundwater-stream model development.

In 2008 & 2009, phase 1 of the project were generally completed:

- Aquifer tests (pumping and recovery) were conducted at two sites – south of the Platte River [Butler County] northwest of Octavia, and north of the Platte River [Colfax County] northeast of Schuyler.
- Collected geo-probe samples (soil cores and electro-conductivity) from sandbars along the banks of the Platte River at ten locations – one in Colfax County, three in Butler County, two in Dodge County, and four in Saunders County. Two more sites still need to be done, but high flows in the Platte River have caused delays.
- Permeameter testing at seven sites in the Platte River.

In the fall of 2010, Dr. Chen (chief investigator) reports that calibration of the model is in progress and hopes to begin actual simulations in the spring of 2011. Grant funding for this project comes from the Nebraska Environmental Trust.

For 2011, Dr. Chen asked for a six month extension to complete the model by the end of the year. This was completed and Dr. Chen presented that information in 2012. The hydrologically connected areas to the Platte River seemed quite extensive south of the river, but with the completion of the Subarea Delineation Study this information was forwarded to Dr. Chen. He has revisited the model and submitted a second iteration in September 2012. The model was completed in early 2013.

#### *Eastern Nebraska HEM Aquifer Mapping (Swedeburg Area)*

Grant funding for this project comes from the Nebraska Environmental Trust. In April 2009 portions of the Swedeburg subarea aquifers were mapped using electromagnetic sensors mounted on a helicopter (HEM). This was followed in October 2010 with the installation of three test holes by C&SD to ground truth the HEM data. As an additional measure to assist with ground truthing, LPNNRD GPS selected irrigation and domestic wells in this same area that currently do not have footage or lat. – long. coordinates for their well logs. In the fall of 2011, three additional test holes were drilled by C&SD which fulfilled the contract with the University. Dana Divine (Project Coordinator) gave a presentation on the HEM data at the September 28, 2011 Water Committee, but due to limitations in the NET grant, the comparison of the HEM data with the test hole data had to be cut. Staff will review the cost of ground truthing the HEM data for further discussion by the Board.

For 2012, the correlation of the HEM data to the test holes has been completed and Dana Divine gave a pre-

sentation of those results at the December 2012 Board meeting. The HEM worked well to define upper resistive materials (sands and gravels) but had mixed results at deeper formations greater than 80 feet deep. Divine also presented information contrasting an estimate of the thickness of the upper resistive unit vs. the estimated saturated thickness of this same formation. A final report was delivered to LPNNRD in February 2013.

#### *Farm Process Package (FMP) of MODFLOW Groundwater Modeling Software*

The Farm Process Package is an application to the MODFLOW software program that looks at consumptive use of water based on precipitation, crop type, and maturity of crop to assist in future management decisions. The FMP can be an important new refinement to MODFLOW to allow the NRD's to more accurately account for water use by irrigated agriculture. This is a cooperative study between the Papio-Missouri River NRD, LPNNRD, and LPSNRD and the USGS who did the actual modeling for this project. The study area included land within the three NRD's and focused primarily on the Todd Valley and the Platte River Valley north of Ashland, Nebraska. This two year study ran from 2010 to 2011 with a possible report to be written in 2012, if additional funding becomes available.

#### **Certifying Acres**

In July 2009, the District signed a contract with GIS workshop to develop a GIS database and obtain county assessor records as the preliminary step to certifying irrigated acres. Using those assessor records LPNNRD staff in early 2010 mailed out letters to landowners in Madison County to verify which fields are irrigated or not. As of September 2010 mass mailings to landowners in Butler, Boone, and Platte counties have also been completed. The assessor records in Saunders and Dodge counties lack an active GIS database, which means obtaining accurate records will be more of a challenge. FSA records also have been shown to be of limited use in Saunders and Dodge as well because for FSA procedures the field is irrigated or not. They don't differentiate for the pivot corners. Therefore, the LPNNRD has gone to using its own records on aerial overflight information to determine if corners are being irrigated. As of November 2014, staff have sent letters to landowners in our final County, Dodge. When certifying acres has been completed, this will provide a true inventory of the irrigation needs in the District, which will be an important part for future ground water management and planning.

#### **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 ground water 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.

The Soils cleanup was completed in 1998. Sixteen thousand tons of soil contaminated with RDX (an explosive residue) were incinerated. As part of the cleanup efforts for OU3, the COE demolished the load line buildings and storage bunkers in 1998. Approximately 900 cubic yards of soil contamination (antimony may be from a former paint shop) was also removed near Load Line 4 in 2007. Other significant developments included the continued search for the Mustard Gas Agent from Offutt Air Force, which was disposed at the landfill area below the NRD reservoir.

The cleanup of the ground water (OU2) involved drilling 11 wells at the leading edge of the current contaminant plumes to halt their further advance. Water from these wells is treated and then discharged to Wahoo Creek or Clear Creek, or used for beneficial reuse. The time frame for OU2 cleanup is estimated at 90 to 140 years, extracting up to approximately 3.7 million gallons of water per day. More recent modeling efforts indicate that the majority of the contaminants could be cleaned up within 30 years. The containment wells and constructed water treatment plant were completed in 2002. Additional containment and monitoring wells plus additional treatment plants have since been established to assist with the cleanup effort and to contain the contaminant plumes. Beneficial reuse of the clean up water is currently being used by the University of Nebraska-Lincoln Agricultural Research and Development Center (ARDC) south of Mead, and by two landowner/producers for irrigation, livestock water, and for filling a pond.

The groundwater cleanup has involved modeling efforts to determine the impact of the proposed Omaha Metropolitan Utilities District (MUD) (located in the Platte Valley, two and a half miles northeast of the edge of one of the contaminant plumes) on containment of the contaminant plumes. The COE Omaha office approved a construction permit for MUD in 2003 for this well field and operations began in 2008. The LPNNRD has and will continue to play a vital role in working with the Army COE, MUD and area landowners to help insure containment of the

contaminant plumes and eventual cleanup without severe impact to the underground aquifer supplying the area.

At a public meeting on October 19, 2011 the Army COE had the following update:

- TCE total removed = 19,690 pounds from the ground water by the four treatment plants.
- RDX removed by the main treatment plant = 211 pounds
- 2010 ground water model evaluation has modified the use of some containment wells. EW-2, EW-5, EW-8, EW-10, and EW-13 have been turned off since these were causing the contaminate plumes to move further south than expected. New wells FEW-11, FEW-14, FEW-15, EW-16 are now in operation and better placed to contain the contaminate plumes.
- MW-116 on two sampling events had 'detects' of TCE and a new irrigation well in the area is the likely influence of these results. Pump test done on EW-1 shows the capture zones of this well will normally keep this TCE in containment. In the future the COE will likely pump EW-1 harder during the irrigation season to compensate for this irrigation well.

Major focus on the cleanup efforts during 2012 were: the drop in pressure in the discharge line to Wahoo Creek, since this will affected the long term beneficial use of the cleanup water for irrigation; a plan to inject the cleanup water instead of discharge it, but a ground water model stills needs to be developed to determine the best hydrologic sites that could help speed up the cleanup efforts; HEM flights were conducted by the COE in early October 2012 to further evaluate the geology of the area that will assist in cleanup efforts; the COE is recommending 'No Further Action for OU3', which deals with landfills and other burial sites, as well as, miscellaneous clean-up efforts.

Some of the highlights for 2013 included:

- Three extraction wells have been shut off (EW-3, EW-6, and EW-16) since the cleanup goal of less than 2 ppb of RDX has been obtained at these sites since 2009. FEW-14 will be pumped at a slightly higher rate of 250 pgm to keep the leading edge of LL3 plume in containment. A new extraction well (EW-17) was installed and will pump at 275 gpm. This well will supplement EW-12 and both are designed to contain the LL1 plume. With EW-17, nine containment wells are running.
- At Pilot Study site 1 (PTA-1) a zero valent iron barrier was installed in the aquifer to chemically treat the TCE and change it to a more harmless form. Lactic acid is also being injected into the aquifer as

a carbon source to stimulate bacterial growth that will also break down the TCE.

- At Pilot Study site 2 (PTA-2) sodium acetate is being injected into the aquifer to help break down RDX. Both studies are scheduled to take 14 months. If these methods work this could be up scaled to large areas to help shorten the clean up time.
- Results from the HEM flights (that were flown in October 2012) were completed in the fall of 2013. Buried power lines interfered with the study and only limited new geologic information was obtained.
- The COE has announced that the Restoration Advisory Board (RAB) will be dissolved, but that the quarterly public informational meetings will continue. It has been three or four years since the last RAB meeting was held.
- Monitoring well MW-116 had a detection for TCE above the cleanup goals during the August 2012 sampling event but during the March, May, and November 2012 sampling events TCE was below the cleanup goals. This also happened in 2011 and the likely cause was heavy pumping of a nearby irrigation well. The COE has adjusted their pumping rate of a nearby containment well to compensate. MW-116 is at the lower end of the Atlas Missile Area Plume (LL-4 plume).
- A new contractor has been hired by the USACE to work on the cleanup efforts. HydroGeologic (HGL) will replace the current contractor of Environmental Chemical Corporation (ECC) who have worked 10 years at the site.

Updates for 2014 include:

- The 2013 Containment Evaluation has been completed with the recommendation to install an additional extraction well (EW-18) at the leading edge of the LL2 plume that will be placed between EW-7 and EW-9. To date several extraction (EW wells) and focussed extraction wells (FEW) have been shut off, primarily due to these wells pulling the contaminant plumes away from other extraction wells. The wells shut down are EW-8 (LL1), EW-10 (LL2), EW-6, EW-5, EW-16, EW-3, (all LL3), EW-2 (LL4). Extraction wells still operating include EW-12 and EW-17 (LL1), EW-9 and EW-7 (LL2), FEW-14 and EW-4 (LL3), FEW-15 and EW-1R (LL4).
- The highest RDX (explosives) concentrations are in LL2, while the highest TCE concentrations are in LL1 and LL4.

- The second 5 Year review has been completed. This is required by the Corps to take a fresh look at the clean-up efforts and evaluate any new technology that could shorten the cleanup time or cut cost.
- On site UV treatment systems have been installed on several extraction wells (EW-4, 7 and 9, FEW-11 and 14) to the point that the main treatment plant is no longer needed and therefore has been shutdown since April 30, 2014. Reuse of the cleanup water is still available on the existing discharge lines, but users have had to install booster pumps to increase the pressure for use in center pivots.
- Public availability meetings have gone from quarterly to semi-annual.
- The Pilot Studies for in-situ treatment within the aquifer for RDX and TCE are still on-going.

### **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 town of Lindsay is experiencing higher nitrate levels in some of their municipal wells and in 2010 applied to DEQ to develop a wellhead protection area for the town. If a wellhead protection area is established by the community, the LPNNRD may become involved in sampling area wells and the possible establishment of a Phase 2 or 3 ground water management area. No new updates for 2014.

### **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. Both systems are designed to serve rural customers along each service route. 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. In FY 2014, LPNNRD continued involvement in a joint study that will eventually

determine the feasibility of a rural water district for the villages of Brainard and Dwight.

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

The LPNNRD has been using Geographic Information System (GIS) technology since 1996. GIS is an automated system that combines an information system with mapping capabilities. Features on a map created with GIS technology contain attributes or features descriptions that are referenced by location. Initially, a series of base maps were created and coverages included counties, townships, sections, major streams, and major roads with the District. Later, new coverages were generated using Digital Elevation Models (DEM's), Digital Orthophoto Quarter Quadrangles (DOQQ's), and the NRCS Soil Survey, among other sources. The District has incorporated the use of GIS to greatly enhance program and project activities. The LPNNRD brought the NRD MapMaker system online in 2002. The system was developed in cooperation of several neighboring NRD's, the UNL Conservation and Survey Division and the Lower Platte River Corridor Alliance. The system allows the delivery of GIS information over the Internet. Continuing efforts will be made to create and update the metadata for the District's geographic data coverages. The District also plans to continue updating GIS data layers and publishing appropriate material on the NRD MapMaker system.

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

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## **FY 2015 Ground and Surface Water Objectives**

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- Continue with LPNNRD Ground Water Management Area (GWMA) programs to help avoid the Lower Platte Basin being designated "fully appropriated."
- Continue work on a Voluntary Integrated Water Management Plan (V-IMP) for the District.
- Work with the Lower Platte River Basin NRD's and the DNR to develop a basin-wide integrated water management plan.
- As part of the GWMA, continue with LPNNRD certification classes, demonstration plots, generation of maps indicating problem areas, and development of a landowner database using spreadsheets and GIS.

- Continue to cooperate with the United States Geological Survey (USGS) in monitoring groundwater levels at two sites.
- 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.
- Following intensive ground water sampling of the Bellwood Phase 2 area in 2010 and 2011, evaluate continuation of this Phase 2 area and/or modifications of its boundaries.
- Following intensive ground water sampling of the Richland-Schuyler Phase 2 area in 2013 and 2014, evaluate continuation of this Phase 2 area and/or modification of its boundaries.
- Administer \$15,000 of state and local cost-share funds to decommission abandoned water wells, and provide 100% cost-share assistance within Wellhead Protection Areas.
- Continue to manage the Phase II Ground Water Management Areas in the Bellwood region of Butler County and the Richland-Schuyler region in Colfax County.
- Maintain a multi-agency ground water 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 ground water modeling efforts.
- Continue to implement the Chemigation Program to inspect safety equipment on permitted irrigation systems in the district.
- Update the District’s Chemigation rules and regulations to reflect an increase in permit fees and non-compliance issues.
- Continue with the district’s Well Permitting Program and review of Variances in Stay Management Areas (Hydrologically Connected Areas (Limited Development) or Restricted Development areas).
- 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 site registered and unregistered wells in the district using GPS.
- Promote and sponsor “Spring Conservation Sensation” at Czechland Lake in May 2015.
- Provide information on Integrated Pest Management in news releases and the “Viaduct” newsletter to encourage reduced use of pesticides.
- Support “Landscape Connection” event in Lincoln to promote the wise use of chemicals in urban areas.
- 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 Monitor changes in ground water levels and quality in the district.
- 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 subareas as designated in the Subarea Delineation Study. This will be done by incorporating additional high capacity wells and the drilling of new monitoring wells.
- Maintain a homepage for the Groundwater Management Districts Association (GMDA). GMDA is composed of Management Districts in Nebraska, Kansas, Colorado, Texas, Oklahoma, Louisiana and Mississippi.
- 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 ARDC facilities east of Ithaca, Nebraska.
- Maintain transducers placed in District monitoring wells to record changes in ground water energy levels.
- Declare Level 2 or Level 3 Management areas as warranted caused by declining ground water energy levels in 50% or more of the monitoring wells reaching their trigger levels after three consecutive spring readings.
- Declare Special Quantity Subareas (SQS) due to mid-summer declines in aquifers that are vulnerable to large pressure drops caused by heavy pumping of large capacity wells at the same time.
- Develop informational classes for well operators in the SQS as to proper installation of flow meters, set acre inch allocations and reporting annual pumpage to the LPNNRD.
- Review livestock permits from DEQ.
- Investigate irrigation runoff and groundwater management area complaints as needed.
- Continue to administer the Precipitation Gauging Network established by the district.
- Expand the NeRain program within our District.

- Continue to be a sponsor member of the Elkhorn – Loup Model (ELM)
- Continue ground water modeling efforts with the University on the Platte Valley. Study will focus on determining hydrologic connection between surface water and ground water and determination of the 10/50 boundary.
- Contact well drillers and pump installers to further define areas that are experiencing well inference problems.
- 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. Flightlines are proposed that are to be flown in the fall of 2014 and the spring of 2015.
- Improve irrigation efficiency by working with UNL Extension on the Nebraska Agricultural Water Management Network (NAWMN) to install Watermark sensor's and ET gauges with 20 producers each year in our District.
- Continue with the process of Irrigated Acre Certification within the District.
- Complete the Shell Creek Watershed Water Quality Plan.
- Complete water quality objectives as identified in the Wahoo Creek Watershed and the Shell Creek Watershed Water Quality Plans.
- Complete the Brainard/Dwight Rural Water System Feasibility Study.
- Assist in the projected decommissioning of 1,000 water wells in the district.
- Continue to use GPS to site registered and unregistered wells within the district.
- Keep the Saunders County Rural Water System study as an alternative in the event of changing federal regulations governing municipal water supplies.
- If necessary, designate Level II and III boundaries within the district to manage declining ground water levels.
- If necessary, designate new Special Quantity Subareas (SQS) within the district to manage mid summer declines of ground water energy levels in aquifers that operate under large pressure swings.
- Continue measurement of ground water energy levels in the district.
- Develop a ground water model for each sub-area.
- Complete Platte Valley modeling efforts and submit information to the Department of Natural Resources for their review of the 10/50 boundary line.
- Complete Elkhorn – Loup Model (ELM) to determine which areas in the Shell Creek watershed are in hydrologic connection with the Elkhorn or Loup River basins.
- Complete Eastern Nebraska Water Resources Assessment (ENWRA) and apply information to the glaciated portions of our District.
- Additional studies to identify vulnerable aquifers and modify GWMA rules and regulations to protect these aquifers. Continue geophysical work, installation of monitoring wells and test holes to better define these vulnerable sub-areas.
- Expand GWEL network to have wells in each sub-area to better manage the resource.
- Initiate new ground water studies to further define aquifers and their long term sustainability in the LPNNRD.
- Install at least one monitoring well in each sub-area with continuous recording of ground water energy levels.
- Install precipitation gauges near monitoring wells in important sub-areas.
- Complete the certification of irrigated acres and incorporate this into our Ground Water Management Plan and rules and regulations.
- Complete water quality objectives as identified in the Wahoo Creek Watershed and the Shell Creek Watershed Water Quality Plans.
- Continue to assist District communities who have difficulties with water quality and quantity by helping determine rural water system feasibility.

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## **FY 2016-2020 Long Range Ground and Surface Water Objectives**

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- Update the Ground Water Management Plan to include Integrated Management of surface and ground water.
- Continue ground water quality sampling throughout the LPNNRD, 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 LPNNRD Ground Water Management Area, which includes LPNNRD certification classes for landowners, municipal and industrial water users.
- If needed, designate further Phase II & III boundaries for the Groundwater Quality Management Areas.
- Continue with nitrogen application demonstrations and participate with demonstrations on integrated pest management and sustainable agriculture.



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. Strategy objectives include completing 80% of the 1987 land treatment needs by the year 2010 and reducing soil loss on all lands to soil levels ("T") by 2025. The LPNNRD updated the district's Erosion and Sediment Control Program in FY 96 to include provisions for sediment runoff control in urban areas. 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.

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## FY 2014 Soil Conservation Activities

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### Soil and Water Conservation Programs (SWCP)

Under Soil and Water Conservation Programs (SWCP), the LPNNRD administered \$107,976.46 of state funds and \$33,000 of local funds for land treatment practices during fiscal year 2013. Approximately \$9,200.00 in 319 Grant Funds have been spent in the Sand & Duck Creek watersheds. These cost-share monies helped construct practices including approximately 20,500 linear feet of terraces, 5,687 linear feet of tile outlets, 31 risers and 14 basins. In addition, 8 Buffer Strip contracts were administered with \$11,882 in state funds. The district also administered one new planned grazing project that affected approximately 57 acres of grazed pasture land as well as 51 irrigation flow meter applications.

For fiscal year 2014, approximately \$109,558.42 of state funds (from the Nebraska Department of Natural Resources) and \$23,000 of local funds will be allocated for soil and water conservation practices.

### 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 14 the district received no formal complaints, but two minor drainage issues.

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## FY 2015 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 Duck Creek Watershed to reduce soil erosion and improve water quality.
- 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, to reduce erosion and improve water quality.
- Administer \$109,558.42 of State NSWCP and \$23,000 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 Conservationist, at the Annual LPNNRD Recognition Banquet.
- 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 Group (SWG) and NDEQ toward completing the Shell Creek Watershed Water Quality Plan.
- Work with NDEQ and the Wahoo Creek locally led Steering Committee in pursuing additional grant funds to assist with land treatment practices as defined in water quality objectives in the completed Wahoo Creek Watershed Water Quality Plan.

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## FY 2016-2020 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 the NDEQ/EPA 319 Grant Program to improve water quality throughout Wahoo Creek, Shell Creek 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.





Watershed projects have been completed in five of eleven sub-watersheds (see Appendix E) in the LPNNRD to help control floodwater and provide grade stabilization. These projects include Bellwood, Clear Creek, Cottonwood Creek, and Swedeburg watersheds, along with Rawhide Creek. Future flood control priority areas include Shell Creek, Skull Creek and Wahoo Creek watersheds. On federal and state projects where the LPNNRD acts as project sponsor, the district obtains land rights and 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 2014 Flood Control and Damage Reduction Activities

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### Sand Creek Environmental Restoration Project (Lake Wanahoo)

In 1993, the Lower Platte North NRD, City of Wahoo and Saunders County began investigating the possibility of constructing a multipurpose dam site on Sand Creek, one mile north of Wahoo. A feasibility study was completed to look at soil types, water budget and benefits derived from the possible construction of the lake. The report gave a positive benefit cost ratio should the lake be constructed. The study identified reduction in storm damages and recreation as two major benefits, with no fatal flaws identified. A later study by the U.S. Army Corps of Engineers identified Lake Wanahoo and seven smaller upstream dams as the preferred alternative for environmental restoration and flood control in the watershed.

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 have also been completed. Recreation components were also started for Lake Wanahoo in FY 2011 and landrights were secured for five of the seven upstream sediment/nutrient trap structures. Construction of the five upstream structures were completed in FY 2012 and the final two structures were completed in FY 2014.

### Operation and Maintenance

District staff completed inspections on 50 watershed structures and special projects in the NRD in FY 13/14. These inspections help detect problems before they become serious. Also during the 2014 fiscal year, noxious weeds were sprayed on 50 structures and along Rawhide Ditch 8. 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 2005, LPNNRD entered into a 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 2014, there was very little activity associated with the Fremont 205 Study, the existing study will continue and transform to a General Investigation (GI) Study, hopefully gaining federal funding in March 2015. 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 landrights for the Shell Creek Levee portion of the project which began construction activities in the spring of 2014 and is scheduled to be completed this fall.

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## FY 2015 Flood Control and Damage Reduction Objectives

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- Continue with accelerated land treatment efforts in Sand Creek, Shell Creek, Wahoo Creek, Bone Creek, Skull Creek and other priority watersheds in the District.
- Complete biannual inspections on 50 watershed structures; spray noxious weeds on 50 dams and 10 miles of ditch; complete regular maintenance activities at all sites.
- Continue to educate the public on watershed management and flood control in LPNNRD newsletters and news releases.

- Cooperate with landowners and counties in evaluating small dam sites for cost-share throughout the district.
- Continue to pursue funding opportunities for the Sand Creek Environmental Restoration Project.
- Continue with the Army Corps of Engineers 205 study efforts and move toward feasible flood control projects for Fremont.
- Partner with the City of Schuyler to complete construction on the Shell Creek levee project and budget \$125,000 in FY 2015 for the project.
- Support the City of Schuyler with efforts to move forward with the levee designs to reduce flooding and economic losses from the Platte River.
- Assist District Communities in evaluating future flood protection for their communities through the District's Hazard Mitigation Plan.
- Work with Communities, Counties and other entities in updating our District-wide All Hazard Mitigation Plan.

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## **FY 2016-2020 Flood Control and Damage Reduction Long Range Objectives**

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- Commit funds and staff time toward obtaining funds for floodwater control 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 investigate flood control structure opportunities for Wahoo Creek, Shell Creek and Skull Creek.
- Continue to support the efforts of the Platte River Alliance to encourage cities and counties in the district to accept and implement Floodplain Management Authorities.
- Continue to explore cost-effective projects to reduce flooding within the Wahoo Creek and Shell Creek Watersheds.
- Assist Schuyler with pursuing federal assistance for completing construction of the Platte River Levee flood protection project as identified and preliminarily designed as a result by the Army Corps of Engineers 205 study.
- Assist Fremont with flood protection projects as identified by the Army Corps of Engineers 205 study.
- Assist District Communities in evaluating future flood protection for their communities through updating the District's Hazard Mitigation Plan and assisting with identified projects.



The district administers several programs designed to enhance the region's forest, range, and wildlife land, including the Tree Planting Program, Wildlife Habitat Program, 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 2014 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 800,000 trees and shrubs have been planted in the district. Trees and shrubs may be obtained from the NRD for windbreaks, shelter belts, wildlife habitat, woodlots, and Christmas tree plantings. Besides providing a planting service, the NRD also designs tree plans and offers technical advice on ground preparation for tree sites.

During the spring of 2014, 14,000 trees and shrubs were distributed to District residents. Of this total, approximately 3,400 were planted by the NRD field crew at 13 sites.

**WILD Nebraska Program**

WILD Nebraska is intended to encourage landowners to set aside land for wildlife habitat, but payment rates and acceptable practices have been adjusted in the new program to make it more flexible.

The new program bases its payments on average county rental rates. There are numerous habitat practices eligible for funding in three major categories: Woodlands, Wetlands and Grasslands. Funding for the program is split between the Nebraska Game and Parks Commission (75%) and the NRD (25%).

The district did not receive any new applications for the program in FY 13/14.

**Community Forestry Program**

In FY 2013/14, the LPNNRD donated 1,000 seedlings to Conservation Sensation, and schools for educational purposes. The District received two request for assistants from communities to plant trees during the year, spending \$1,017. The District budgets \$2,000 for such projects.

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**FY 2015 Forestry, Range and Wildlife Habitat Objectives**

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- Plant and distribute conservation trees and shrubs through the districts 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.
- Sign cooperators into the district's WILD Nebraska Program and assist with funding from the CREP program.
- Cooperate with the Extension Service and the NRCS in obtaining tree orders from District residents.
- Recognize a cooperator for outstanding tree planting efforts at the Annual Recognition Banquet.
- 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.
- Cooperate with Pheasant Forever Chapters to enhance wildlife habitat and establish windbreaks.

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**FY 2016-2020 Forestry, Range and Wildlife Habitat Long Range Objectives**

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- Sell between 20,000 and 30,000 trees and shrubs each year through the district's Tree Planting Program, and to plant at least half of the trees ordered.
- Provide information and education on tree planting, woodland management, grassland management, and proper wildlife habitat enhancement through the media, tours, and schools.
- Continue to administer the WILD Nebraska program in cooperation with the Nebraska Game and Parks Commission.



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## **FY 2014 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. The District installed electrical service to 8 camper pads and established an \$18/night fee for the use a camping pad. 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 areas 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.

In FY 01 the district received grants from DEQ (EPA Section 319) and the Nebraska Environmental Trust to construct a silt dam with a sediment pumping station to route excess silt downstream around Czechland Lake to prevent it from being deposited in the lake. The Czechland recreation area was used extensively during FY 14. 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.

### **Lake Wanahoo**

Work was completed on recreation facilities at Lake Wanahoo one mile north of Wahoo in FY 2012. Recre-

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

The camping area contains 74 camper pads and 60 tent camping sites. All camper pads are equipped with electrical hookups and 50 of them are hard surfaced, with the remainder on grass. All tent sites have fire rings and picnic tables.

The camping area also offers access to a large boat ramp that's wide enough to accommodate three boats at a time. Boating at the lake will be 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.

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 popular 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.

### **Wildlife Habitat Public Access Areas**

Under the WILD Nebraska program, administered jointly with the Nebraska Game & Parks Commission, the LPNNRD encourages landowners to allow public access on habitat lands signed up under the program. The NRD currently has a total of 15 habitat acres in the CREP program, none of which offer public access.

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## **FY 2015 Recreation Objectives**

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- Continue to budget funds for maintenance, including grass mowing, painting, tree trimming, road grading, outhouse cleaning, trash removal, and noxious weed control, at Lake Wanahoo, Czechland Lake and Homestead Lake Recreation Areas.

- Acquire additional acres of wildlife habitat lands which allow public access under the WILD Nebraska program.

---

### **FY 2016-2020 Recreation Long Range Objectives**

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- Continue to evaluate development of new outdoor public recreational facilities as opportunities arise.
- Continue to administer the WILD Nebraska programs and pursue developing new areas offering public access.





## **DRAINAGE IMPROVEMENT AND CHANNEL RECTIFICATION**

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 or city. Under this policy, the district has cooperated on several projects that have provided public benefit. In FY 2010, the District assisted Colfax County to study the 5-mile Hughes/Payzant drainage ditch east of Schuyler. With the help of a community block grant, this drainage system will be improved in FY 2012 to help move local drainage off public and private land.

---

### **FY 2015 Drainage Improvement & Channel Rectification Objectives**

---

- Continue to oversee the progress of the Rawhide Creek West Branch Project to ensure that landowners control vegetation on Rawhide Creek to help it stay clean.

- Provide continued assistance to Platte Center with stabilizing a segment of Elm Creek.
- Work with local landowners and Colfax County to improve Shell Creek flows east of Schuyler.

---

### **FY 2016-2020 Drainage Improvement & Channel Rectification Long Range Objectives**

---

- Continue to assist counties and cities in the district that sponsor sound drainage and channel improvement projects.



In recent years, vast changes have 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. Now, 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.

---

### **FY 2015 Waste Disposal & Pollution Objectives**

---

- Promote recycling efforts in the district through education programs, newsletters, and news releases.

- Participate in education efforts to promote the reduction of pollution to our air, water, and soil resources.
- Cooperate and be supportive of other group and agency pollution control efforts, education, and/or regulation.

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### **FY 2016-2020 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.
- 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.

---

### FY 2014 Information & Education Activities

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During fiscal year 2014, the Lower Platte North NRD conducted many activities to help residents learn the importance of our soil and water resources and keep abreast of natural resource issues and concerns. Some of the highlights included:

#### Education Programs

The district once again sponsored the "Spring Conservation Sensation" activities held at the Czechland Lake Recreation Area in May 2014. During this all-day event, nearly 400 fifth- and sixth-grade students from Saunders, Butler, Platte, Colfax and Dodge Counties participated in various activities. Hands-on activities were presented by agency personnel and volunteers to teach the students about the environment and their natural resources. Students visited stations demonstrating tree planting, fishing, soil erosion, water sampling and more.

The district hosted the East Central Land Judging Contest in October 2014 for area FFA chapters, with nearly 200 students and a record number of schools participating.

District staff presented various activities at natural resources festivals, field days, and school classrooms.

District staff helped maintain the website for NACEE, the Nebraska Alliance for Conservation and Environmental Education.

#### Awards, Contests, and Events

The district issued awards recognizing outstanding accomplishments, including: Conservationist of the Year, NRCS Employee of the Year, Educator of the Year, and Volunteer of the Year, among others.

Free materials were distributed to churches to honor Soil and Water Stewardship Week.

The LPNNRD also attended five county fairs.

#### Publications

In FY 2012, the district switched distribution of the "The Viaduct" newsletter from direct mail subscriptions to inserts in area newspapers. In FY 2014, more than 58,000 copies of two issues of the newsletter went out in

area papers and via email. The spring issue included the district's 2013 Annual Report, which was previously a separate publication.

Various brochures describing LPNNRD programs and services were updated as needed in FY 2014. A Fact Sheet for use with the NARD's public relations campaign was updated.

News releases were mailed to district papers and radio stations, and numerous ads spotlighting different NRD programs were aired on KTIC Radio. In FY 14 the district also began running digital ads on the Wahoo newspaper website.

#### Web Site

The NRD's website at [www.lpnrd.org](http://www.lpnrd.org) contains information on nearly all of the district's projects and programs, as well as 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. In FY 2008, online payment capabilities were added to the site to allow customers to pay for trees and rural water bills.

The district also maintains websites and mobile apps for two statewide NRD programs: Conservation Trees for Nebraska ([www.nrdtrees.org](http://www.nrdtrees.org)) and NRD Outdoor Recreation Areas ([www.nrdrec.org](http://www.nrdrec.org)). Mobile app versions are available for iPhone/iPad and the Android operating system. The district also has a custom-built Rural Water app for in-house use.

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### FY 2015 Information & Education Objectives

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- Publish the district newsletter "Viaduct" biannually in an electronic format and as a printed newspaper insert in 8 area newspapers, and produce supplemental electronic issues on an as-needed basis.
- Send timely news releases to the local media on various LPNNRD programs, projects and activities.
- Assist in development of an outdoor classroom for a District school.
- Continue with the annual Award Program.
- Provide District elementary students free trees, as requested, in the spring.
- Disseminate pamphlets and other publications about LPNNRD programs.
- Provide LPNNRD staff as requested to speak to community organizations and schools on NRD activities and environmental topics.

- Continue to provide a display at county fairs (up to five major counties) within the district.
- Promote Soil & Water Stewardship Week and distribute free materials to churches throughout the NRD.
- Sponsor the Spring Conservation Sensation in spring 2015.
- Co-sponsor the area Range Judging Content in fall 2015.
- Assist with the area Land Judging Contest in fall 2015.
- Participate in Nebraska Alliance for Conservation and Environmental Education.
- Update the district's web site regularly.
- Continue social networking outreach for the district through use of tools such as Facebook, Twitter, etc.
- Maintain and update NRD Trees and NRD Rec Areas websites and mobile apps as needed.

---

## **FY 2016-2020 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.
- Increase participation in activities sponsored by other agencies related to NRD responsibilities.
- Seek to have conservation/environmental education as a part of the school curriculum.
- Support environmental education activities and events.
- Participate with the Information & Education Staff Group to coordinate statewide I&E activities and produce statewide products.



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**NRD Staff**

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The staff of the Lower Platte North NRD includes 16 full-time and part-time employees at the district office in Wahoo. The NRD also staffs a full-time field technician, four clerks in Natural Resource Conservation Service county offices, and a Recreation Facilitator for Czechland Lake Recreation Area. Current staff as of December 1, 2014 was:

- Mike Almond, **Accountant**
- Larry Angle, **Water Resources Manager**
- Tyler Benal, **GIS Assistant**
- Jill Breunig, **Administrative Manager**
- Duke Dokulil, **Operations & Maintenance Technician**
- Eric Gottschalk, **Projects Coordinator**
- Bob Heimann, **Operations & Maintenance Supervisor**
- John Miyoshi, **General Manager**
- Tom Mountford, **Assistant Manager**
- Mike Murren, **Large Projects Coordinator**
- Russell Oaklund, **Lead Water Resources Specialist**
- Dave Odvody, **Recreation Facilitator**
- Mitch O'Reilly, **O&M/Rural Water Specialist**
- Chris Poole, **GIS/Computer Specialist**
- Karen Rezac, **Secretary/Receptionist**
- Bret Schomer, **Water Resources Specialist**
- Mike Sousek, **Rural Water Manager**
- Troy Thompson, **Information & Education/Computer Specialist**

**Staff Support for NRCS Offices:**

- Kelly Bartek, **Conservation Technician**
- Susie Leu, **NRD/NRCS Secretary (Butler County)**
- Patty Holmberg, **NRD/NRCS Secretary (Colfax County)**
- Jenny Campbell, **NRD/NRCS Secretary (Dodge County)**
- Marla Milliken, **NRD/NRCS Secretary (Saunders County)**

In addition to the listed full-time and part-time positions, the district employs part-time and seasonal conservation technicians to assist in the layout of land treatment structures. There are also seasonal employees hired to help with water sampling, tree planting and maintenance of NRD projects.

---

**FY 2016-2020 Personnel Needs**

---

Personnel positions and assigned responsibilities could increase as increased project and program responsibilities increase.

Funding required for the LPNNRD projects and programs for Fiscal Year 2015 requires a general operating budget of \$11,115,098. A tax levy of .047231 cents per \$100 actual valuation is required from District property. Projected expenses and income for FY 2015-2020 is shown in Appendix F.

A tax levy of .052603 means that an owner of a \$150,000 home will pay about \$71 in NRD taxes for FY 2015. An owner of farm land valued at \$7,000 per acre will pay about \$3.31 an acre/year in FY 2015. The LPNNRD levy represents about 1.5 percent of the total property tax collected.

---

### **FY 2016-2020 Long Range Financial Objectives**

---

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 \$0.045 and \$0.055 per \$100 actual valuation as the District continues to pay down past project indebtedness, assists with new project requests, and increases activities in groundwater management.

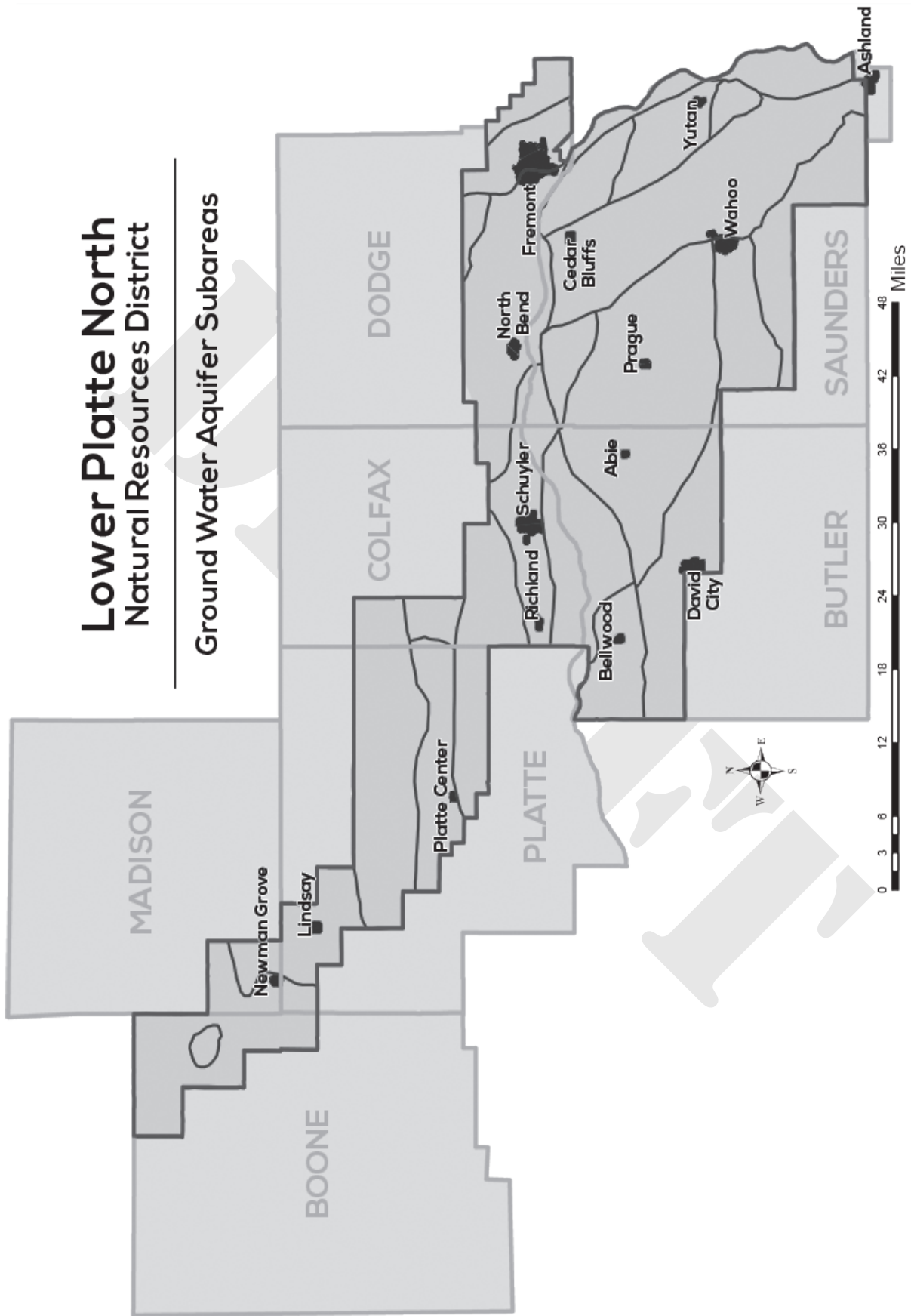


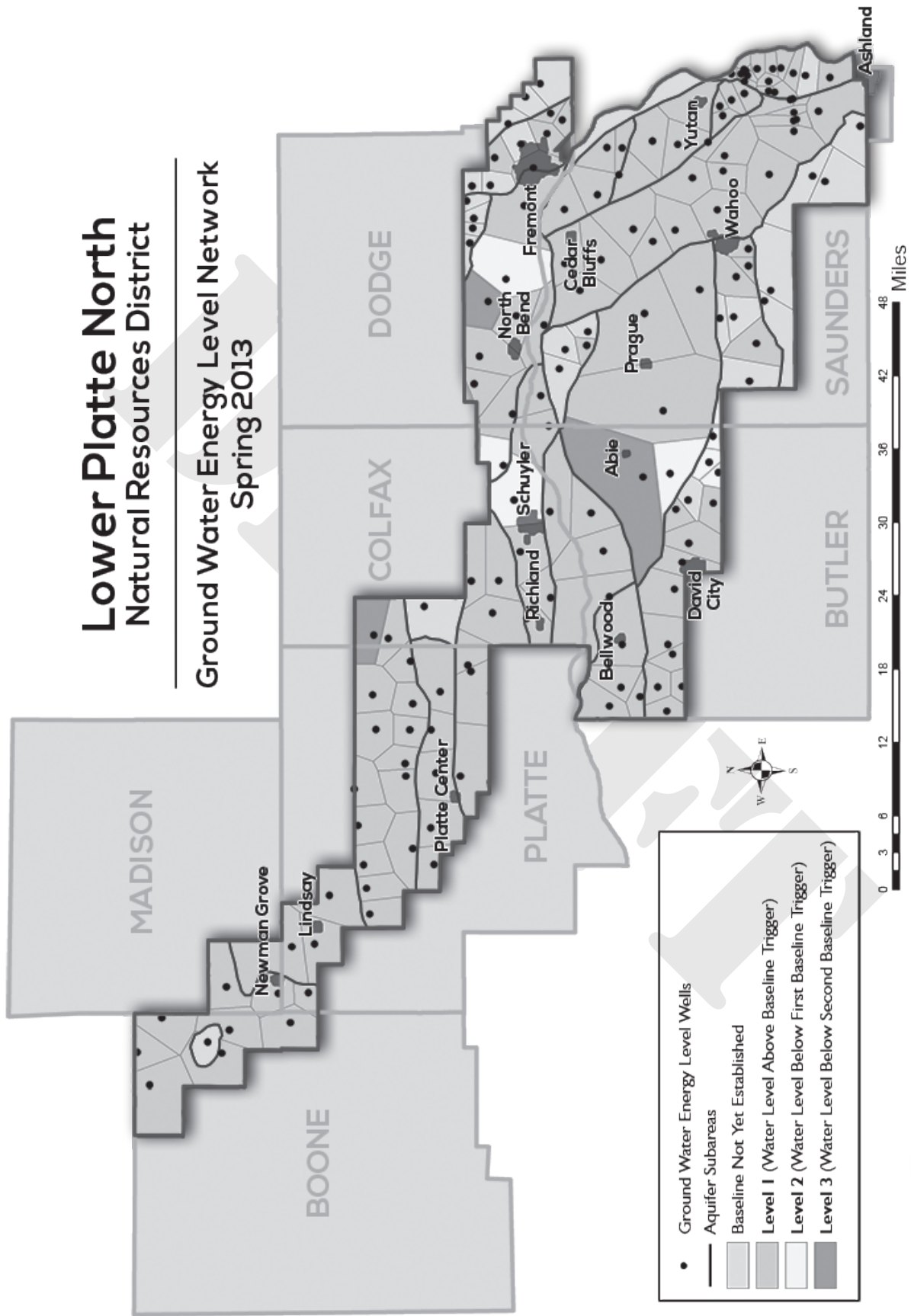
## APPENDIX A - Estimated Population by County

COUNTY	% OF COUNTY IN DISTRICT	ACRES IN DISTRICT	RURAL POPULATION IN DISTRICT	URBAN POPULATION IN DISTRICT	TOTAL	% OF FISCAL INPUT
Boone	12.6	54,473	362	--	362	2.3
Butler	44.3	165,476	2,022	3,387	5,409	11.0
Colfax	41.9	111,528	1,414	4,237	5,651	10.0
Dodge	30.2	104,245	3,100	25,215	28,315	35.7
Madison	6.3	23,086	194	770	964	1.5
Platte	38.5	169,432	2,878	723	3,571	10.5
Saunders	81.5	401,234	6,698	6,949	13,647	29.0

Twenty-eight cities, towns and villages are located within the Lower Platte North NRD, listed below with their populations:

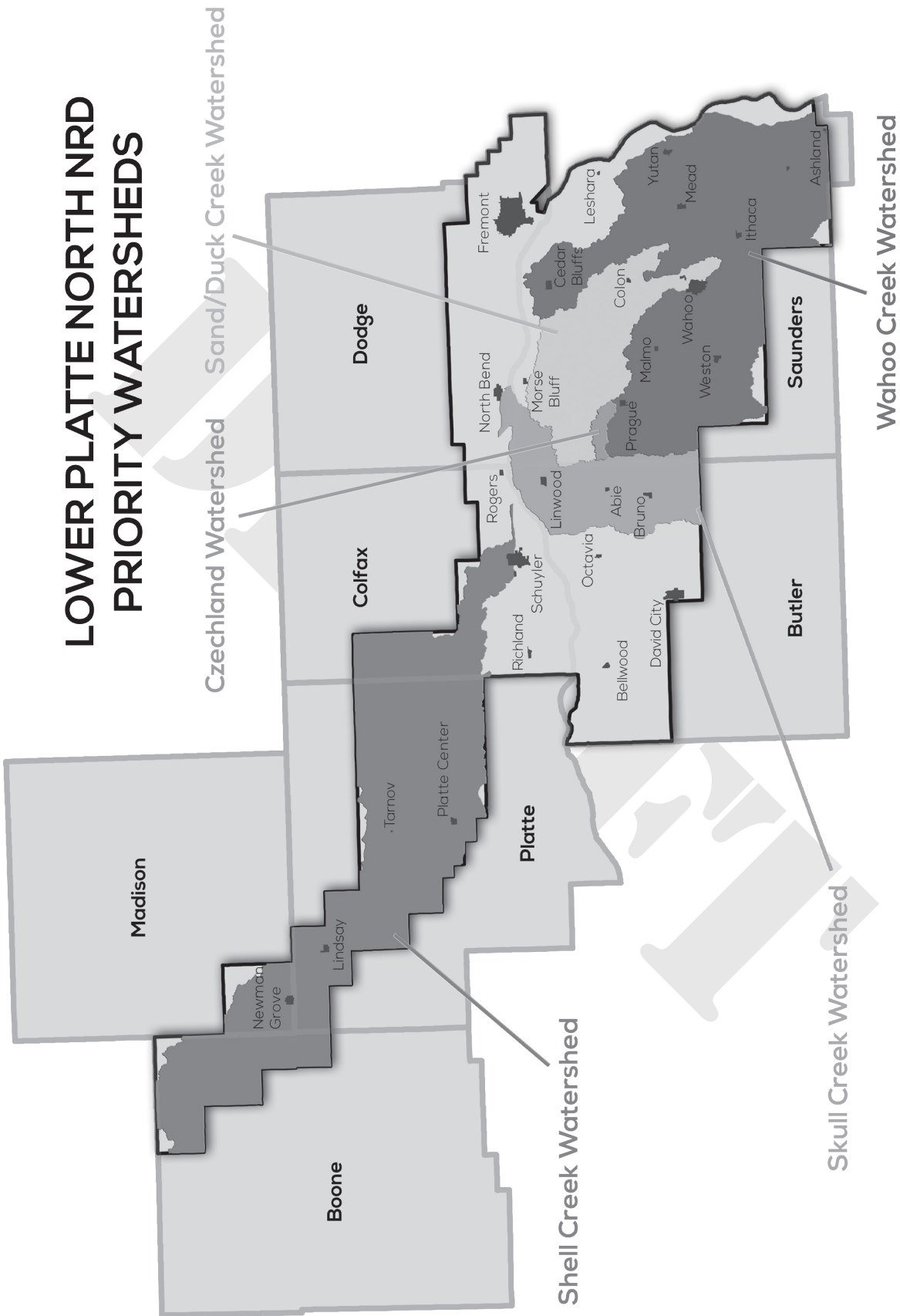
Fremont.....	23,680	Inglewood .....	286
Wahoo .....	3,681	Prague .....	282
Schuyler.....	4,052	Weston .....	299
David City.....	2,522	Morse Bluff .....	128
North Bend.....	1,249	Malmo .....	114
Ashland.....	219	Tarnov.....	141
Newman Grove .....	770	Colon.....	128
Cedar Bluffs .....	591	Leshara .....	118
Yutan.....	626	Richland.....	96
Ithaca .....	133	Linwood.....	91
Mead .....	513	Octavia .....	132
Platte Center .....	341	Rogers .....	117
Lindsay.....	321	Memphis.....	117
Bellwood .....	395	Abie .....	106







# LOWER PLATTE NORTH NRD PRIORITY WATERSHEDS





## APPENDIX E - Projected Budget (Expenses), Fiscal Years 2015-2020

Description	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
<b>ADMINISTRATION</b>						
Bonds	415	430	450	470	490	510
Dues and Membership	28,787	29,000	29,870	30,766	31,689	32,639
Fees & Licenses	8,750	9,100	9,464	9,843	10,236	10,646
GIS	2,000	2,500	3,000	3,500	4,000	4,500
Insurance	45,946	47,784	49,695	51,683	53,750	55,900
Interest Expense	10,000	10,000	10,000	10,000	10,000	10,000
Legal Notices	4,000	4,160	4,326	4,499	4,679	4,867
Maintenance Contracts	6,800	7,004	7,284	7,576	7,879	8,194
Office Supply & Expense	9,600	9,984	10,383	10,799	11,231	11,680
Computer Supply & Expense	24,400	18,000	18,720	19,469	20,248	21,057
Postage	7,000	7,280	7,571	7,874	8,189	8,517
Professional Services	83,750	84,000	84,250	84,500	85,000	85,250
Rent Expense	600	625	650	675	700	725
Support to Organizations	1,000	1,200	1,300	1,400	1,500	1,600
Telephone	13,000	13,520	14,061	14,623	15,208	15,816
Utilities	8,000	8,320	8,653	8,999	9,359	9,733
<b>INFORMATION &amp; EDUCATION</b>						
Education	2,400	2,496	2,596	2,700	2,808	2,920
Information	19,240	20,010	20,810	21,642	22,508	23,408
Scholarships & Grants	2,600	2,704	2,812	2,925	3,042	3,163
Other	3,900	4,100	4,300	4,500	4,700	4,900
<b>OPERATION/MAINTENANCE</b>						
Auto & Truck Expense	22,500	23,400	24,336	25,309	26,322	27,375
Building Maintenance	8,650	8,996	9,356	9,730	10,119	10,524
Comm. Forestry Program	2,000	2,000	2,500	2,500	3,000	3,000
Operation and Maintenance	80,550	83,772	87,123	90,608	94,232	98,001
Project Repairs	7,000	10,000	10,000	15,000	15,000	15,000
Stream Bank Stabilization	10,000	10,000	10,000	10,000	10,000	10,000
WHIP/CREP	3,155	3,000	3,000	3,000	3,000	3,000
Other	33,100	34,000	35,000	36,000	37,000	38,000
<b>PERSONNEL</b>						
Directors Expense	50,500	52,520	54,621	56,806	59,078	61,441
Directors Per Diem	40,000	41,000	42,000	43,000	44,000	45,000
Employee Benefits	351,390	365,446	380,063	395,266	411,077	427,520
Payroll Taxes	87,200	90,688	94,316	98,088	102,012	106,092
Personnel Expense	37,000	37,500	38,000	38,500	39,000	39,500
Salaries	1,127,415	1,161,238	1,196,075	1,231,957	1,268,915	1,306,983
<b>PROJECTS</b>						
Inter-governmental	126,537	50,000	50,000	50,000	50,000	50,000
Special Projects	500	25,000	25,000	25,000	25,000	25,000
Wanahoo (Includes interest)	155,000	65,000	10,000			
Other Projects (205 Projects, ect.)	355,000	350,000	350,000	350,000	350,000	350,000
<b>PR CORRIDOR ALLIANCE</b>	47,367	50,000	50,000	50,000	50,000	50,000
<b>WATER</b>						
Ground water Management Area	380,000	300,000	300,000	300,000	300,000	300,000
Ground water Programs	33,950	35,308	36,720	38,189	39,717	41,305
Regulatory	500	500	500	500	500	500
Surface Water Programs	18,000	18,000	18,500	19,000	19,500	20,000
Special Projects	86,600	100,000	100,000	100,000	100,000	100,000
Land Treatment	480,970	500,000	500,000	500,000	500,000	500,000
<b>RURAL WATER DISTRICT</b>	83,945	85,000	86,000	87,000	88,000	89,000
<b>CAPITAL IMPROVEMENTS</b>						

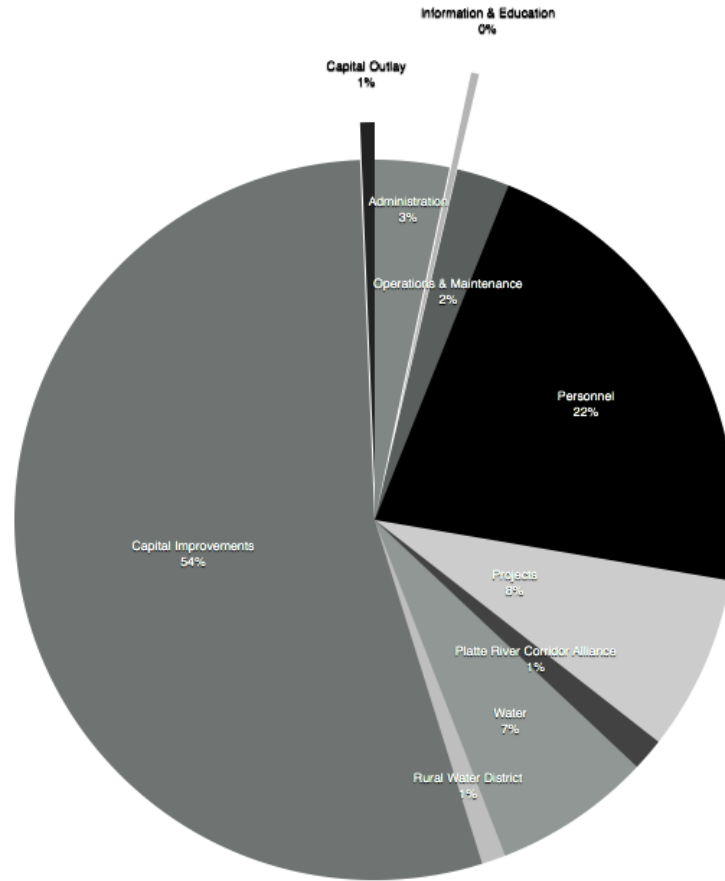
## APPENDIX F - Projected Budget (Income), Fiscal Years 2015-2020

Description	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
<b>BEGINNING CASH BALANCE</b>	806,628	800,000	800,000	800,000	800,000	800,000
<b>PROPERTY TAX</b>	3,650,000	3,600,000	3,000,000	3,000,000	3,000,000	3,000,000
<b>FEDERAL INCOME</b>						
Czechland Fisheries	20,000					
Cottonwood 319	75,000					
Water Meter Grant	215,592					
Sand & Duck Creek 319	150,000					
Shell Creek 319	47,970	50,000	50,000	50,000	50,000	50,000
Wahoo Creek 319	90,000	100,000	100,000	100,000	100,000	100,000
<b>STATE</b>						
Decommissioned Well Fund	2,200	2,000	2,000	2,000	2,000	2,000
Hazard Mitigation Update	80,000					
Natural Resource WQ Fund	40,000	36,000	36,000	36,000	36,000	36,000
NE Buffer Strip Program	12,000	12,000	12,000	12,000	12,000	12,000
NRDF - Wanahoo	5,103,081	1,175,471	219,539			
Sand Creek - Entry Road	120,000					
Wahoo Creek ET Grant	90,000	25,000				
<b>LOCAL</b>						
Chemigation	5,000	5,000	5,000	5,000	5,000	5,000
Czecland Camping	5,700	5,500	5,500	5,500	5,500	5,500
Director/Employee Reimb.	5,000	5,000	5,000	5,000	5,000	5,000
Equipment Rent	7,000	7,000	7,000	7,000	7,000	7,000
Fremont South 205	75,000					
Gain/Loss sale of assests	7,500	10,000	10,000	10,000	10,000	10,000
Game & Parks Sales	250	250	250	250	250	250
Interest	750	750	750	750	750	750
Misc. Income	45,000	70,000	70,000	70,000	70,000	70,000
NRD/NRCS Clerks	67,000	68,000	70,000	72,000	74,000	76,000
Other Sales	9,000	9,000	9,000	9,000	9,000	9,000
Rural Water Admin. Fee	3,490	3,500	3,500	3,500	3,500	3,500
Tree Sales	11,000	12,000	12,000	12,500	12,500	12,500
Wanahoo Borrow Dirt Sales	10,000					
Wanahoo Hay Sales	18,400	15,000	15,000	15,000	15,000	15,000
Water Mark Sensors	500	500	500	500	500	500
Water Reimbursements	1,830	2,000	2,000	2,000	2,000	2,000
Well Permits	5,000	5,000	5,000	5,000	5,000	5,000
W.Sarpy/Clear Creek	700,000					
Rural Water Income	86,000	90,000	90,000	90,000	90,000	90,000
<b>TOTAL</b>	<b>11,565,891</b>	<b>6,108,971</b>	<b>4,530,039</b>	<b>4,313,000</b>	<b>4,315,000</b>	<b>4,317,000</b>

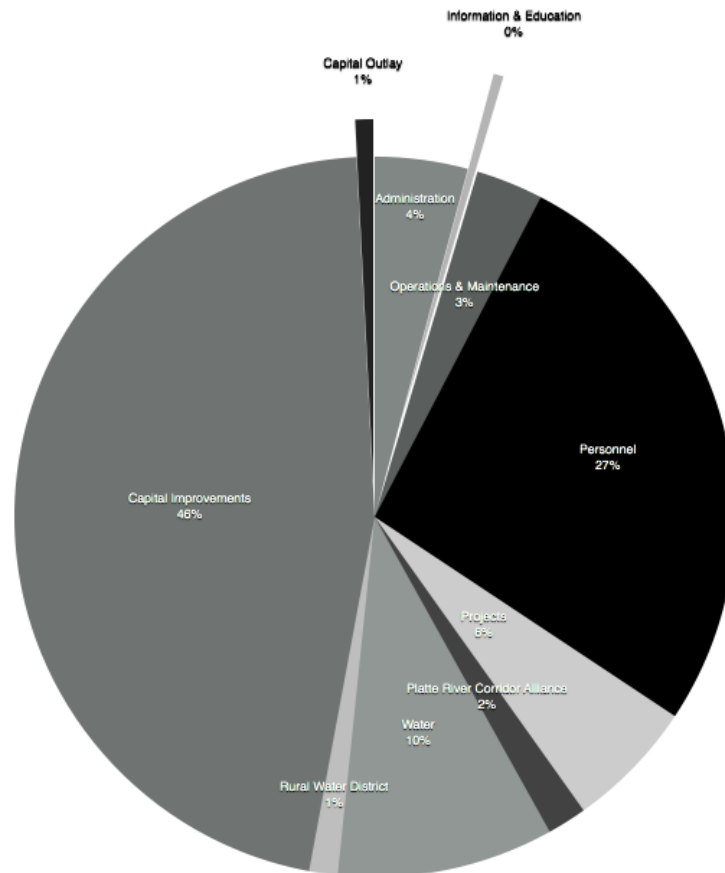


# APPENDIX G - Projected Expenses Breakdown, Fiscal Years 2014-2019

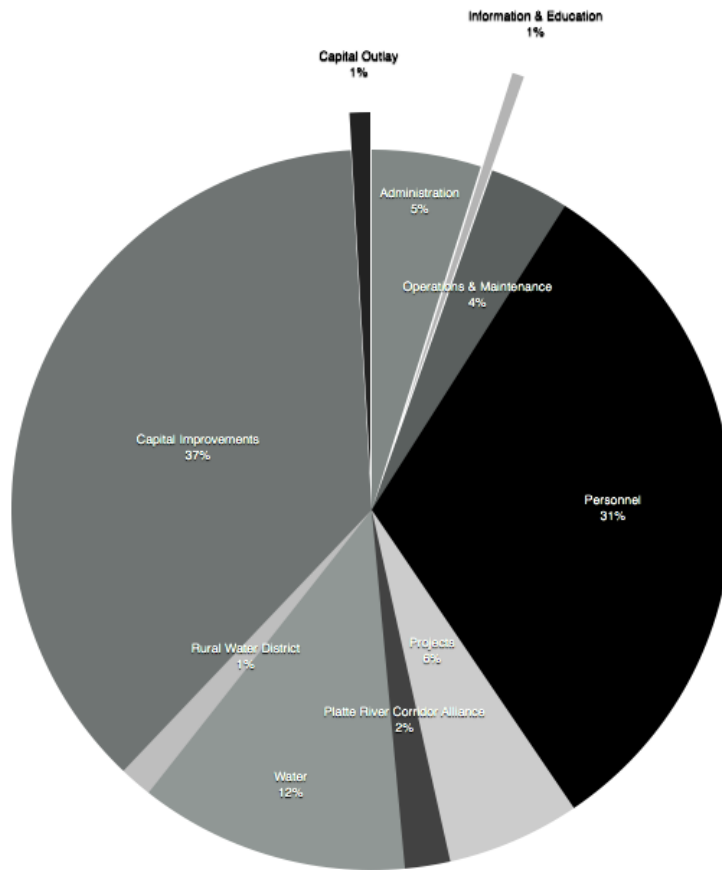
**FY 2014**  
Total Budget:  
\$7,563,504



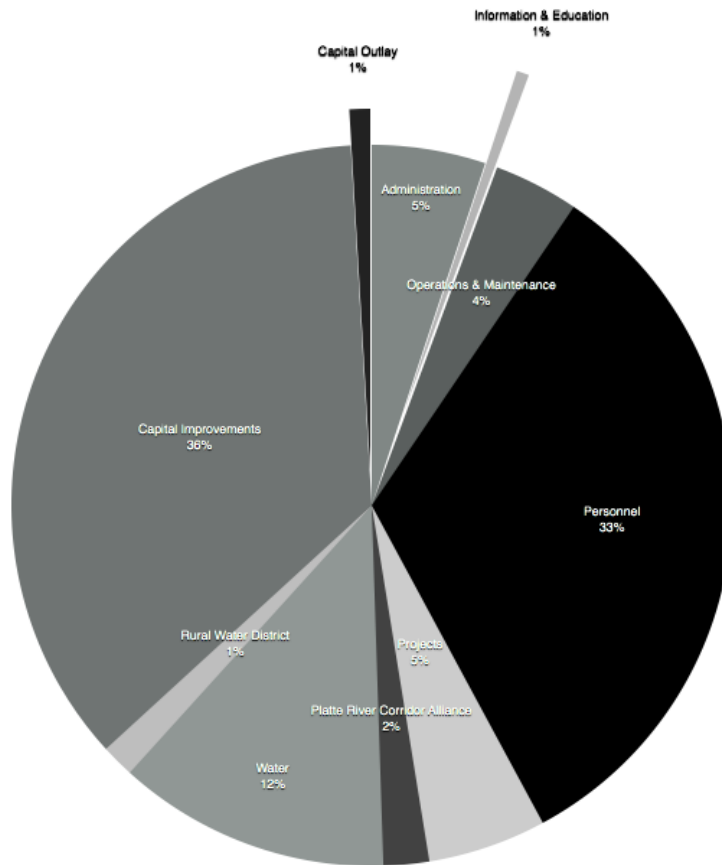
**FY 2015**  
Total Budget:  
\$6,228,057



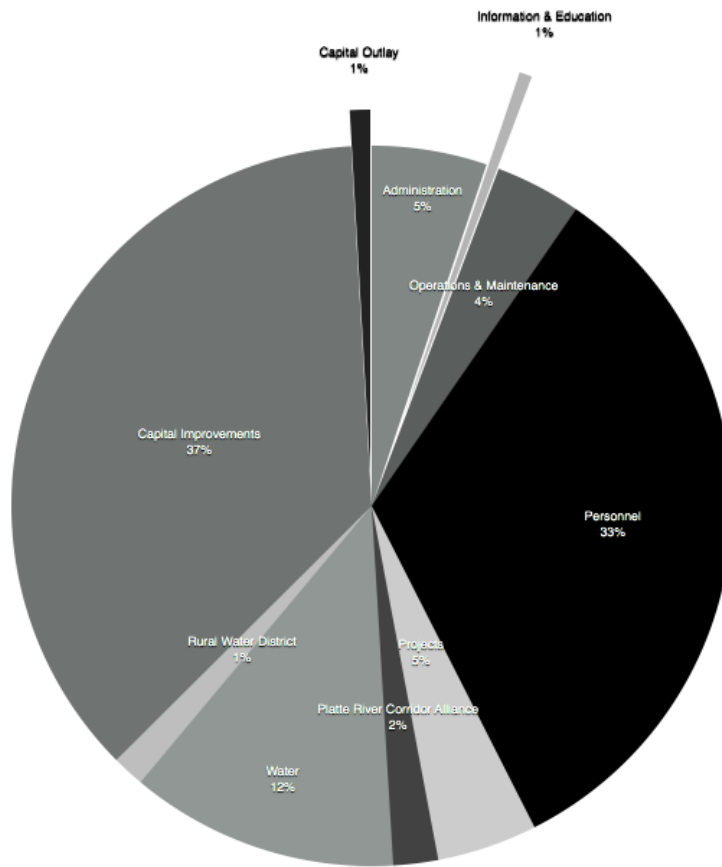
**FY 2016**  
Total Budget:  
\$5,428,713



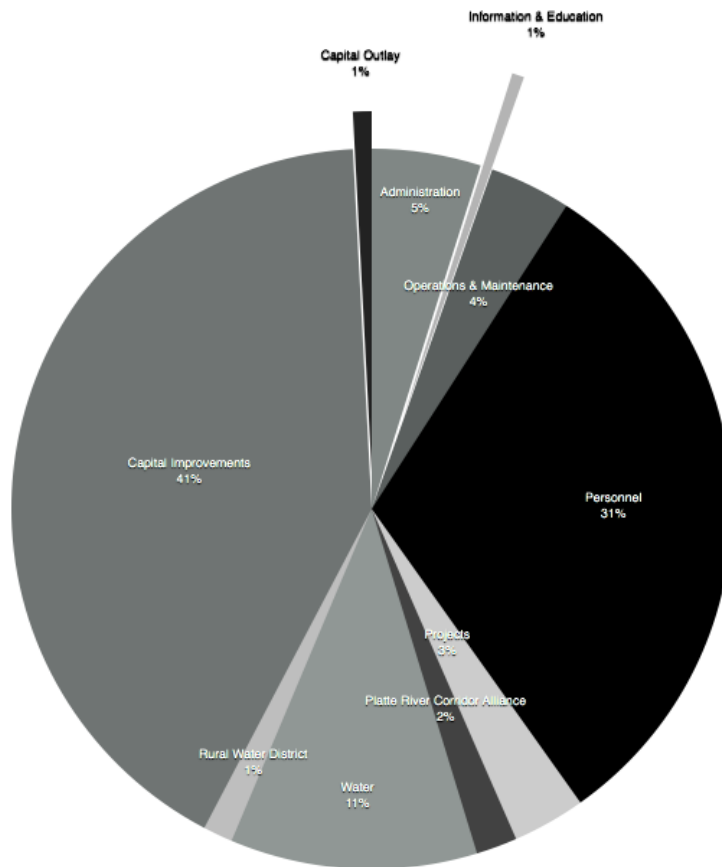
**FY 2017**  
Total Budget:  
\$5,386,477

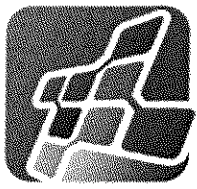


**FY 2018**  
Total Budget:  
\$5,491,442



**FY 2019**  
Total Budget:  
\$5,985,171





# NETS

Nebraska Education Technology Services

For Internal Use

Date \_\_\_\_\_  
 Check # \_\_\_\_\_  
 Amount \_\_\_\_\_

1311 Stockwell  
 Lincoln, NE 68502

Phone: (402) 423-4951

**Bill To:**

Lower Platte North NRD  
 PO Box 126  
 Wahoo, NE 68066

**Invoice Number:** Emeeting 2015 #55  
**Invoice Date:** 12/12/14  
**Purchase Order Number:**

Quantity	Unit Price	Description For Sales	Amount
		January 1, 2015 - December 31, 2015 Annual Emeeting Membership	2500.00
Date rec'd <u>12/15/14</u> Approved by <u>[Signature]</u> Date approved <u>12/16</u> Expense _____ Funding src _____ % (amount) _____ Income acct _____			

**Paid with Check Number:**

**Total Invoice Amount:** 2500.00  
**Less Payment Received:**  
**TOTAL DUE:** 2500.00

# ***Village of Brainard, Nebraska & Village of Dwight, Nebraska 2014 Regional Water System Preliminary Engineering Report***

*Prepared :*

*December 15, 2014*

*By:*

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Lincoln Ne, 68504  
Office: 402.435.3080

Offices in:  
Nebraska and Iowa

JEO Project No. 130948.00

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## Abbreviations

AO – Administrative Order  
ACS – American Community Survey  
CDBG – Community Development Block Grant  
DHHS – Department of Health and Human Services  
DNR – Nebraska Department of Natural Resources  
DWSRF – Drinking Water State Revolving Fund  
EPA – Environmental Protection Agency  
GPDPC – Gallons per Day per Capita  
GPD – Gallons per Day  
GPM – Gallons per Minute  
LMI – Low and Moderate Income  
LPNNRD – Lower Platte Nouth Natural Resources District  
MCL – Maximum Contaminant Level  
MG – Million Gallons  
MGD – Million Gallons per Day  
MHI – Median Household Income  
NDEQ – Nebraska Department of Environmental Quality  
NDHHS – Nebraska Department of Health and Human Services  
NeDED – Nebraska Department of Economic Development  
O&M – Operations and Maintenance  
PWS – Public Water System  
RWD – Rural Water District  
SMCL – Secondary Maximum Contaminant Level  
SOC – Synthetic Organic Compound  
SRF – State Revolving Fund  
TDS – Total Dissolved Solids  
UBBNRD – Upper Big Blue Natural Resources District  
USDA – United States Department of Agriculture  
USGS – United States Geological Survey  
VOC – Volatile Organic Compound  
WTP – Water Treatment Plant  
WWAC – Water & Wastewater Advisory Committee  
WWDLG – Water and Waste Disposal Loan and Grant

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**SECTION 1**

**1 General**

**1.1 Introduction**

The following report provides an evaluation of the public water supplies in the Village of Brainard and the Village of Dwight regarding their existing condition and viability for the future. This report includes an inventory of certain components of the existing water systems and a review of their ability to serve both the current and projected future needs of the communities compared to their historical performance. Finally, this report provides recommendations for improvements, opinions of probable construction cost(s) and opinions of added operational and maintenance (O&M) costs (if significantly different than the current O&M expenses), for the improvements to assist the Villages in planning and budgeting.

Recommendations for water system improvements will meet the Villages' projected water needs for a 20-year planning period through the year 2035.

**1.2 Elements of a Public Water System**

A public water supply system (PWS) is defined as a system that provides piped water for human consumption to at least 15 service connections or regularly serves at least 25 individuals. All public water supplies are required, by the Safe Drinking Water Act and Nebraska law, to be tested on a scheduled basis for potentially harmful contamination. There are specific requirements for which contaminants must be checked and the frequency of testing.

A public or municipal water system consists of numerous components that are combined to provide a community with water at the pressure, quantity, and quality necessary to meet the user's needs and the standards established by the Nebraska Department of Health and Human Services (DHHS). The primary components consist of a water source, storage tank, and distribution system.

A municipal water system provides two essential services to the community. The service that is most commonly associated with the municipal water system is providing domestic, commercial and industrial water for everyday use by the consumers. This function requires that water be chemically and bacteriologically safe for consumption. Also, the supply, pumping, distribution and storage facilities must be capable of delivering sufficient quantities of water to meet the user's demands at an acceptable pressure.

Another extremely important, but less commonly used function of the water system, is fire protection. Fire protection requires that the supply, pumping, distribution and storage facilities be capable of delivering large volumes of water to a specific site in the system, at an acceptable pressure. Even though the annual total volume of water that is required for firefighting is small, the instantaneous fire flow demand may be very large during periods of need and often governs the design of some of the components of a water system.

The main focus of this report will be to evaluate each Village's existing water supply, storage and other components with an emphasis on identifying an acceptable drinking water source for the foreseeable future. Fire flow requirements will not be considered as part of the evaluation.

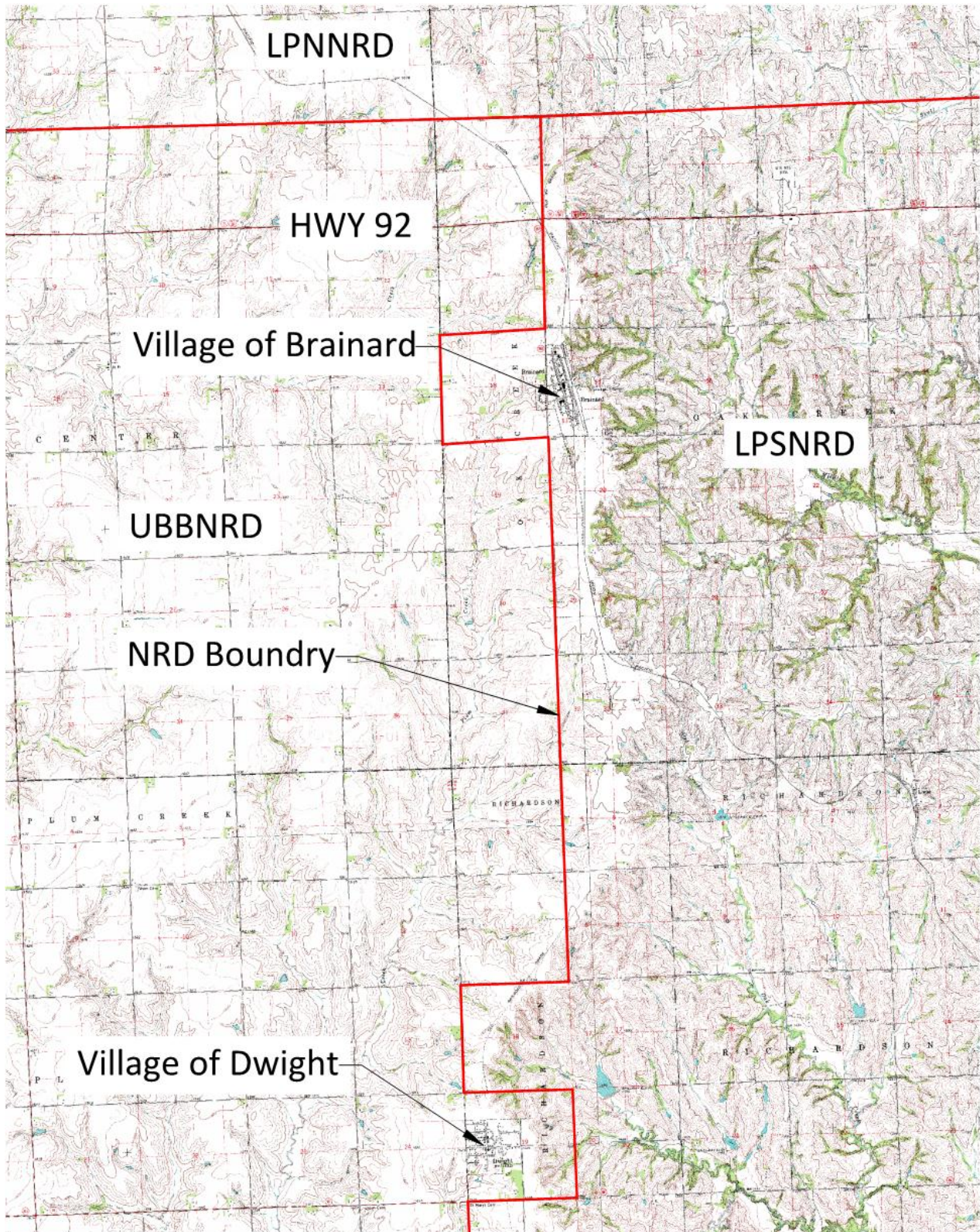
### 1.3 Geographical Location

The Villages of Brainard and Dwight are located in southeastern portion of Butler County, which is in eastern Nebraska.

The terrain in the vicinity is generally flat to the west with hills to the east with USGS elevations of approximately 1600 feet. **Figure 1-1: USGS Topoquad** illustrates a portion of the USGS Topoquad that includes the Villages and the surrounding area. As can be seen in **Figure 1-1**, surface drainage generally flows to the east.

The Village of Brainard is located in the Lower Platte North (LPNNRD) and the Village of Dwight is located in the Upper Big Blue NRD (UBBNRD).

Figure 1-1: USGS Topoquad



**Figure 1-2: Aerial Photograph** is also provided for visual reference of the area. The area is a predominantly agricultural area.

**Figure 1-2: Aerial Photograph**

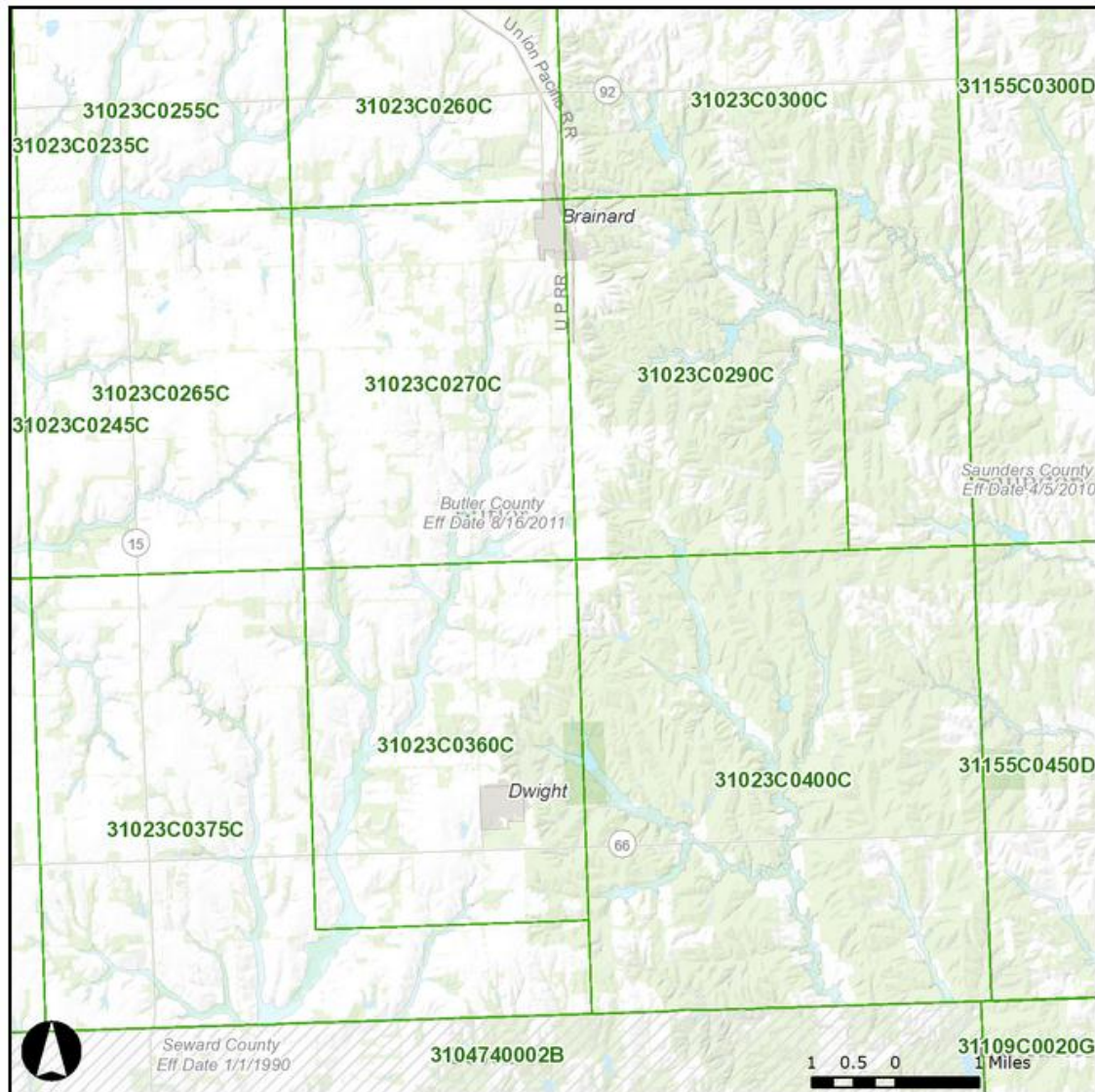


### 1.4 Environmental Resources Present & Environmentally Sensitive Areas

#### 1.4.1 Floodplain Considerations

The available floodplain map is shown below. Neither Village is located within a flood zone.

**Figure 1-3: Floodplain Map**



Panel Index and Letter of Map Revision (LOMR)

- Digital FIRM
- Paper FIRM
- Digital FIRM with LOMR
- Paper FIRM with LOMR

Effective Flood Zones

- A
- AE
- AO, AH

Effective Flood Zones (continued)

- Floodway
  - 0.2 PCT Annual Flood Chance
  - X Protected by Levee
  - 1 PCT Future Condition
- Preliminary Flood Zones
- A, AE, AO, AH
  - Floodway
  - 0.2 PCT Annual Flood Chance
  - X Protected by Levee

Effective Map Date

- Effective FIRM Date
- Community (MapIndex & FIS)
- Community

If any structures are developed in an existing floodplain or floodway, they shall meet the “Minimum Standards for Floodplain Management Programs” as prescribed by the Nebraska Department of Natural Resources (DNR). If the construction of structures within the existing floodway is performed, it will not be permitted without showing that there will be no increase in water surface elevations along the floodway profile during the occurrence of a base flood. Since both communities are not located in the floodplain, it is not expected that any structures will be constructed in the floodplain.

## 1.5 Population Trends

### 1.5.1 Historical Village Population

Reviewing historical populations for the communities is completed to identify population trends and help aid in projecting future growth. For this report, projected populations are also used to estimate future water demands, which will then help to determine whether the existing water systems are prepared to serve the future demands of the users. This will be discussed more in depth in a later section.

Gathered from a combination of both the Nebraska Department of Economic Development (NeDED) and U.S. Census, the historical populations for the Villages and County are shown in the following tables and figures.

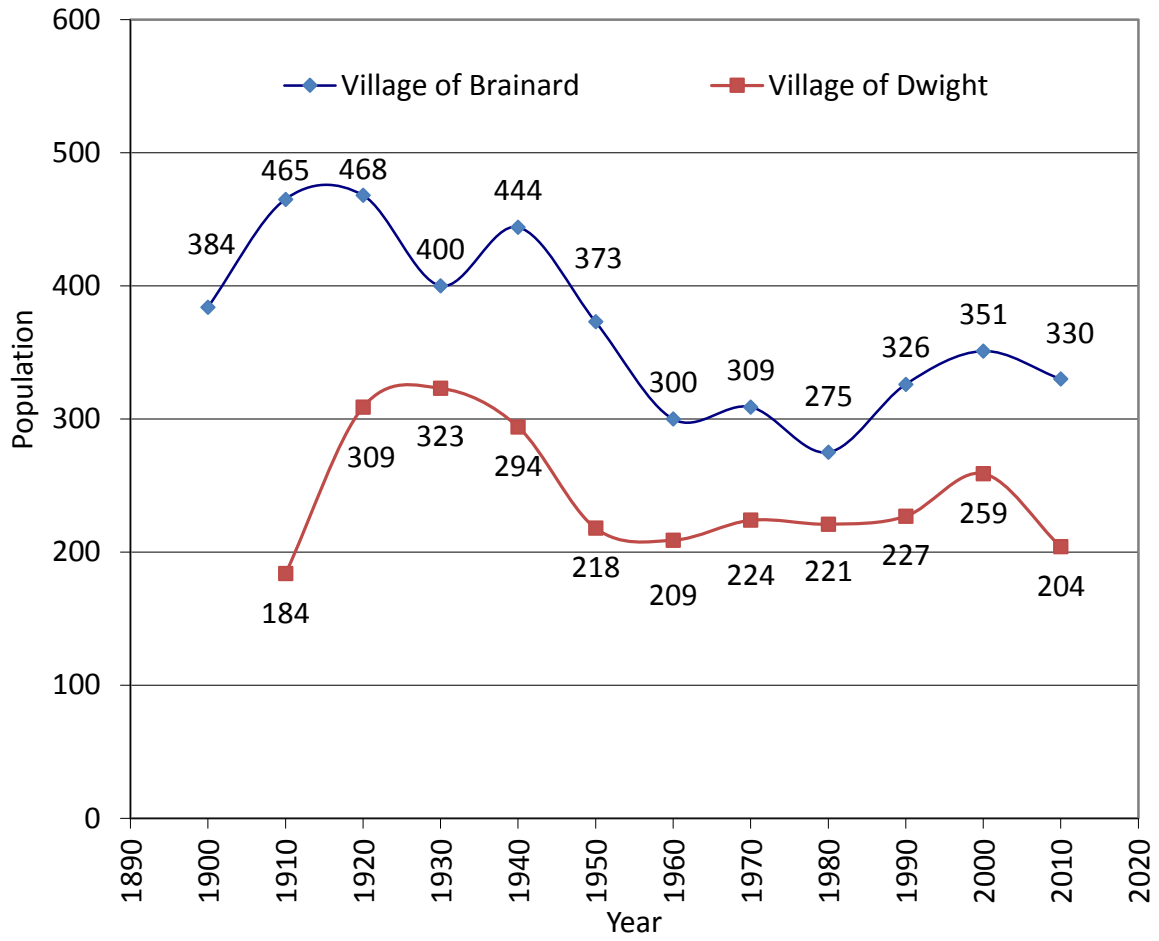
**Table 1-1: Village Population History**

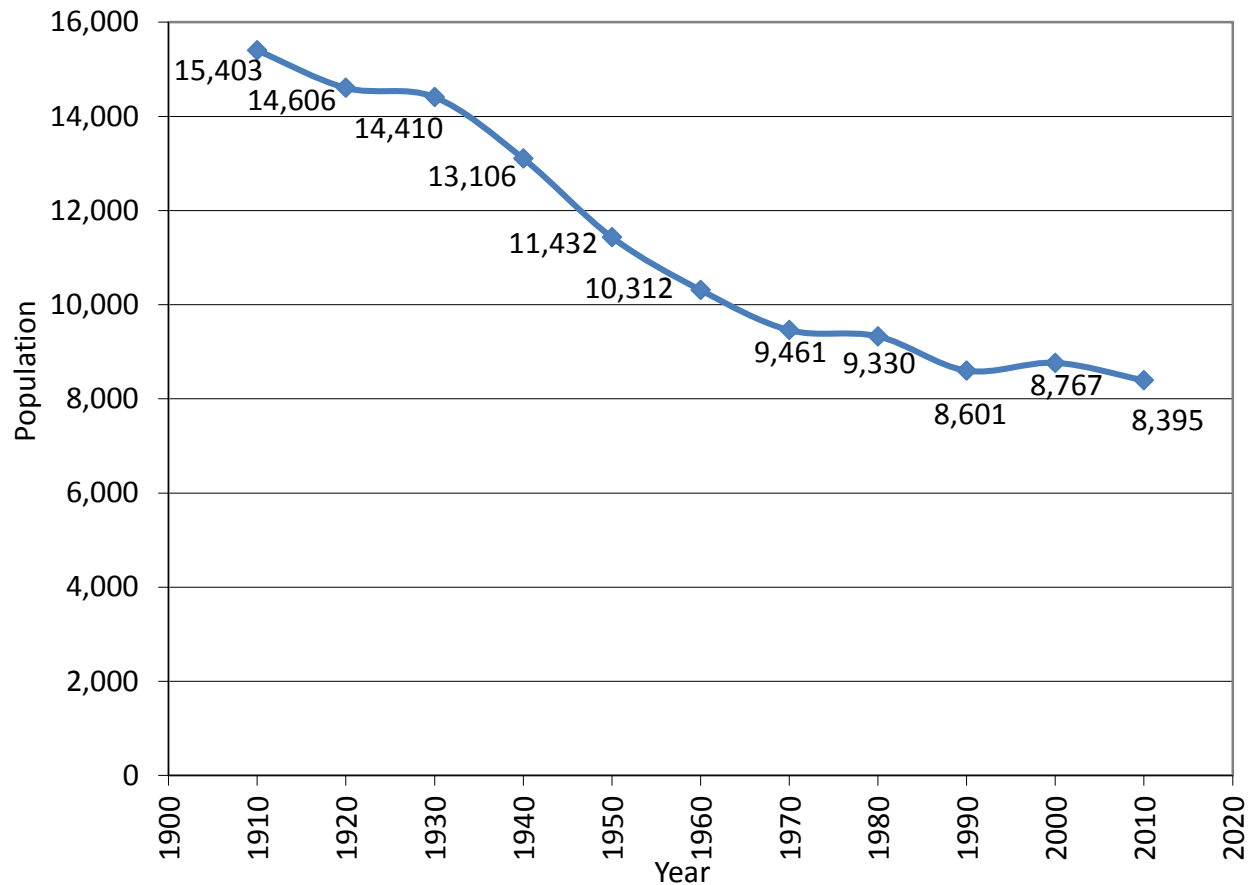
Village of Brainard				Village of Dwight			
Year	Population	Increase or Decrease	Annual Percent Change	Year	Population	Increase or Decrease	Annual Percent Change
1890	306			1890			
1900	384	78	2.3%	1900			
1910	465	81	1.9%	1910	184	184	
1920	468	3	0.1%	1920	309	125	5.3%
1930	400	-68	-1.6%	1930	323	14	0.4%
1940	444	44	1.0%	1940	294	-29	-0.9%
1950	373	-71	-1.7%	1950	218	-76	-2.9%
1960	300	-73	-2.2%	1960	209	-9	-0.4%
1970	309	9	0.3%	1970	224	15	0.7%
1980	275	-34	-1.2%	1980	221	-3	-0.1%
1990	326	51	1.7%	1990	227	6	0.3%
2000	351	25	0.7%	2000	259	32	1.3%
2010	330	-21	-1.2%	2010	204	-55	-4.7%

**Table 1-2: County Population History**

<b>Butler County</b>				
Year	Population	Increase or Decrease	Percent Change	Annual Percent Change
1910	15,403	15,403		
1920	14,606	-797	-5.17%	-0.53%
1930	14,410	-196	-1.34%	-0.14%
1940	13,106	-1,304	-9.05%	-0.94%
1950	11,432	-1,674	-12.77%	-1.36%
1960	10,312	-1,120	-9.80%	-1.03%
1970	9,461	-851	-8.25%	-0.86%
1980	9,330	-131	-1.38%	-0.14%
1990	8,601	-729	-7.81%	-0.81%
2000	8,767	166	1.93%	0.19%
2010	8,395	-372	-4.24%	-0.86%

**Figure 1-4: Village Population History**



**Figure 1-5: Butler County Population History**

For the purposes of the water data that has been provided, the 2010 populations will be used to determine per capita water use. For the purposes of population projections, it will be assumed that the current population is equal to the 2010 census population.

### 1.5.2 Projected Population

Accurately projecting the future population of a community can be fairly difficult; however, using the basis of past population data along with input from Village officials, the future population can be projected. As was seen previously, the historical populations have generally had an upward trend since 1960. However, both communities have recorded a population decreases over the last 10 years.

In lieu of using geometric population growth based off the historical census data, the population projections will be based off of the highest population achieved within the last 50 years. For both Brainard and Dwight, the population peaked in 2000 at 351 and 259, respectively. Therefore, it shall be assumed that the 2035 projected population in Brainard and Dwight will be at or less than 351 and 259, respectively.

**Table 1-3: Population Projection Summary**, presents the population projections to be used in this study.

**Table 1-3: Population Projection Summary**

<b>Year</b>	<b>Brainard</b>	<b>Dwight</b>
2015	330	204
2025	340	230
2035	351	259

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**SECTION 2**

## **2 Existing Facilities and Conditions**

The purpose of this section of the report is to conduct an engineering evaluation of the number of users, water usage and the components of the water systems.

The design criteria, materials and equipment evaluated in this report and included in the final project design shall meet the requirements of State and Federal laws and regulations, including:

- Nebraska Department of Health Regulations Governing Public Water Supply Systems – Title 179 NAC2
- Great Lakes Upper Mississippi River Board of State Health and Environmental Managers Recommended Standards for Water Works (Ten State Standards)

### **2.1 Water System Users**

There are a total of 210 existing water users on the Village of Brainard's distribution system at the time of this study. Of the 210 existing water users within the Village, there are 178 residential users and 32 commercial users. Brainard's 2010 census population is 330 people, which equates to approximately 1.6 persons/meter.

The Village of Brainard has individual water meters to measure water consumption for individual users. The Village utility superintendent reads the residential and commercial meters January, March, May, July, September, and November.

There are a total of 146 existing water users on the Village of Dwight's distribution system at the time of this study. Of the 146 existing water users within the Village, there are 136 residential users and 10 commercial users. Dwight's 2010 census population is 204 people, which equates to approximately 1.4 persons/meter.

The Village of Dwight has individual water meters to measure water consumption for individual users. The Village operator reads the residential and commercial meters once every 6 months.

### **2.2 Historic Water Usage**

The rate of water use varies over a wide range during different periods of the year and during different hours of the day. Several characteristic demands are recognized as being critical in the design and operation of a water system. In this report, demand rates are expressed in gallons per day (gpd), which in the case of daily use, indicates the total amount of water pumped in a 24-hour period.

Maximum daily demand is the maximum quantity pumped in any day during the year. The maximum daily use is the critical factor in the design of certain elements of the water system. The principal items affected by the maximum daily use are:

- Aquifer capacity
- Raw water supply facilities
- Treatment Facility Size
- Distribution and Transmission Main Capacity
- Storage capacity requirements

Raw water supply and treatment facilities should be adequate to supply the maximum daily use with the largest producing well out of service.

The annual amount of water billed to customers from 2011 to 2013 was provided by Brainard. Since only annual data was provided, a peak day factor of 4.0 will be assumed.

This water demand information is shown in **Table 2-1: Brainard Annual Water Sales**.

**Table 2-1: Brainard Annual Water Sales**

Year	Gallons Sold	GPD	GPM	GDPC
2011	9,692,324	26,554	18	80
2012	14,369,206	39,368	27	119
2013	11,435,647	31,331	22	95
<b>Averages</b>	<b>11,832,392</b>	<b>32,418</b>	<b>23</b>	<b>98</b>

Ave. Day Flow: 32,400 gpd = 23 gpm = 98 gpcpd  
 Peak Day Flow: 129,600 gpd (32,400 gpd \* 4.0) = 90 gpm = 393 gpcpd

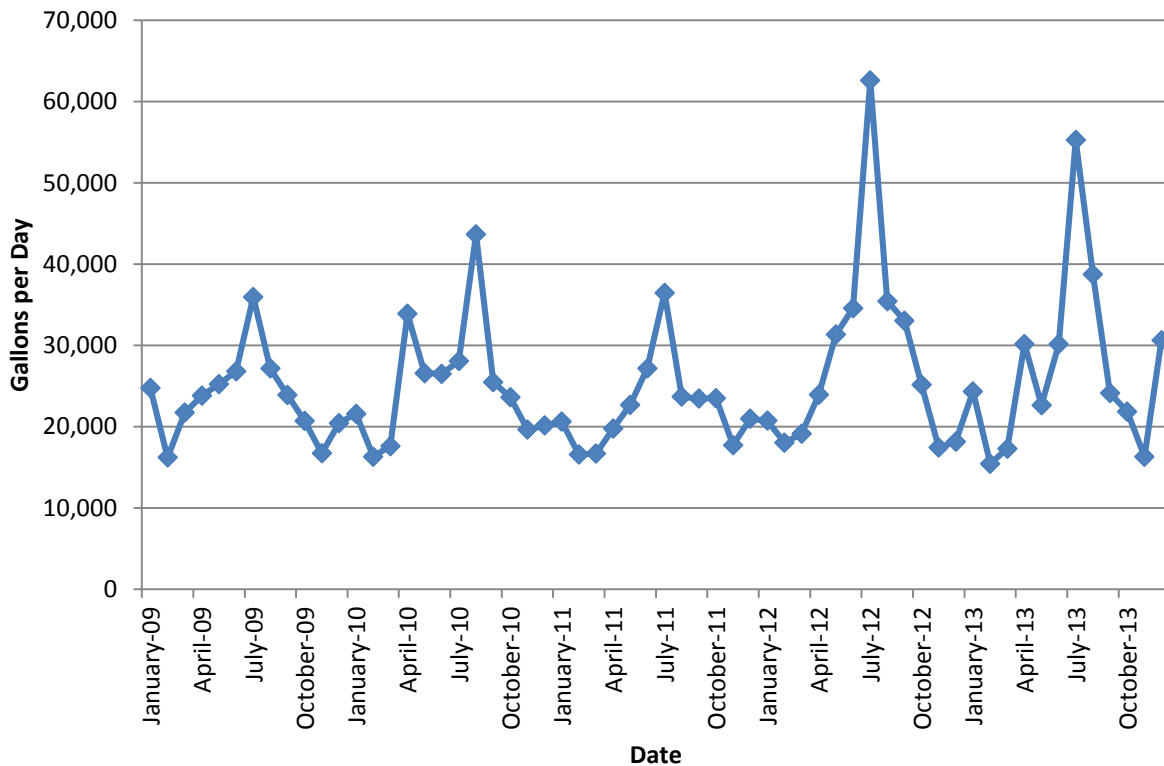
The Village of Dwight provided daily well pumping data from 2009 through 2014. The data is recorded and calculated by the water operator daily. Due to gaps in the records, the data was tabulated into monthly totals.

This information has been compiled into **Table 2-2: Dwight Monthly Water Pumped**. The information presented in **Table 2-2** is further illustrated in greater detail in **Figure 2-1: Dwight Monthly Water Pumped**.

**Table 2-2: Dwight Monthly Water Pumped**

<b>Month</b>	<b>Ave. GPD</b>	<b>Month</b>	<b>Ave. GPD</b>
January-09	24,793	July-11	36,487
February-09	16,220	August-11	23,714
March-09	21,734	September-11	23,477
April-09	23,826	October-11	23,536
May-09	25,260	November-11	17,734
June-09	26,816	December-11	20,980
July-09	35,970	January-12	20,760
August-09	27,168	February-12	18,059
September-09	23,895	March-12	19,135
October-09	20,740	April-12	23,944
November-09	16,737	May-12	31,368
December-09	20,461	June-12	34,595
January-10	21,595	July-12	62,609
February-10	16,329	August-12	35,451
March-10	17,632	September-12	33,053
April-10	33,901	October-12	25,178
May-10	26,605	November-12	17,447
June-10	26,516	December-12	18,168
July-10	28,086	January-13	24,359
August-10	43,681	February-13	15,451
September-10	25,497	March-13	17,316
October-10	23,635	April-13	30,184
November-10	19,658	May-13	22,668
December-10	20,161	June-13	30,155
January-11	20,641	July-13	55,273
February-11	16,602	August-13	38,750
March-11	16,691	September-13	24,145
April-11	19,770	October-13	21,868
May-11	22,697	November-13	16,322
June-11	27,191	December-13	30,661

**Figure 2-1: Dwight Monthly Water Pumped**



Using the data from the previous table and figure, the average day and peak day flow are calculated as follows. Since complete daily data was not available, a peak day factor of 4.0 will be assumed.

Ave. Day Flow:	25,000 gpd	= 17 gpm	= 122 gpcpd
Peak Day Flow:	100,000 gpd (25,000 gpd * 4.0)	= 69 gpm	= 490 gpcpd

The combined demands for Brainard and Dwight are shown below:

Ave. Day Flow:	57,400 gpd	= 40 gpm
Peak Day Flow:	229,600 gpd	= 159 gpm

## 2.3 Water Supply

### 2.3.1 Construction and Condition

#### 2.3.1.1 Village of Brainard

The Village of Brainard currently utilizes two wells for primary groundwater supply, each with a capacity of approximately 145 gpm. If the two wells are operated simultaneously, they would provide an estimated pumping capacity of approximately 290 gpm. The Village also has an emergency well, Well 05-1, which also has a capacity of 145 gpm.

All of the wells are located within the Village limits. Well 79-1 is located near the intersection of N Madison and W Hamilton Streets. Well 90-1 is located near the intersection of N Madison and

W Washington Streets. Well 05-1 is located near the intersection of S Cleveland Street and 30 Rd. The following figure, **Figure 2-2**, shows the location of these wells.

**Figure 2-2: Brainard Well Locations**



The wells are registered with the Nebraska Department of Natural Resources (DNR) and the Nebraska Department of Health and Human Services (NDHHS).

**Table 2-3: Brainard Well Information** is a compilation of the information that has been provided regarding the construction of the wells for the Village.

**Table 2-3: Brainard Well Information**

	Well 79-1	Well 90-1	Well 05-1
State Registration No.	G-058964	G-028519	G-150519
Street Location	N Madison and W Hamilton Street	N Madison and W Washington Street	S Cleveland Street and 30 Rd
Year Drilled	1977	1947	2007
Well Type	Submersible w/ Pitless	Submersible w/ Pitless	Submersible
Well HP	15	20	25
Depth (ft)	324	332	314
Design Capacity (gpm)	90	125	130
Current Capacity (gpm)	145	145	145
Casing	12" Steel	10" Steel	12" Steel
Screen	12" Stainless Steel	10" Stainless Steel	12" Stainless Steel
Status	Active	Active	Emergency Only*

\*Well 05-1 is listed as emergency only due to the selenium levels in the groundwater.

**Figure 2-3: Well 79-1 Exterior** is a picture of the existing submersible well and pitless adaptor.

**Figure 2-3: Well 79-1 Exterior**



**Figure 2-4: Well 90-1 Exterior** is a picture of the existing submersible well and pitless adaptor.

**Figure 2-4: Well 90-1 Exterior**



**Figure 2-5: Well 05-1 Exterior** is a picture of the existing well building.

**Figure 2-5: Well 05-1 Exterior**



Wells 90-1 and 79-1 consist of a brick building to house the piping, meter, and valves along with the control system for the pump. The pitless adaptors for the wells are located outside the buildings. Well 05-1 is located in wood framed building. All the wells pump directly into the adjacent distribution system resulting in 3 separate points of entry into the system. The control

system for the wells uses a pressure transducer at the water tower to start and stop the wells. Currently, both wells 90-1 and 79-1 run when the system calls for water.

### 2.3.1.2 Village of Dwight

The Village of Dwight currently utilizes two wells for primary groundwater supply. Well 76-1 has a capacity of approximately 220 gpm, and Well 71-1 has a capacity of approximately 200 gpm. If the two wells are operated simultaneously, they would provide an estimated pumping capacity of approximately 420 gpm.

Well 76-1 (north well) is located approximately 2,000 feet north of the intersection of Rd. 24 and South Rd. Well 71-1 (east well) is located approximately 500 feet east of the intersection of Railroad St. and Oak St. The following figure, **Figure 2-6**, shows the location of these wells.

**Figure 2-6: Dwight Well Locations**



Both wells are registered with the Nebraska Department of Natural Resources (DNR) and the Nebraska Department of Health and Human Services (NDHHS).

**Table 2-4: Dwight Well Information** is a compilation of the information that has been provided regarding the construction of the wells for the Village.

**Table 2-4: Dwight Well Information**

	Well 76-1 (North Well)	Well 71-1 (East Well)
State Registration No.	G-058478	G-120618
Street Location	Approximately 2000 ft. north of the intersection of Rd. 24 and South Rd.	Approximately 500 ft. east of the intersection of Railroad St. and Oak St.
Year Drilled	1976	1971
Well Type	Submersible	Submersible
Well HP	30	20
Depth (ft)	430	368
Current Capacity (gpm)	220	200
Status	Active	Active

**Figure 2-7: Well 76-1 (North Well)** is a picture of the existing well building.

**Figure 2-7: Well 76-1 (North Well)**



**Figure 2-8: Well 71-1 (East Well)** is a picture of the existing well building.

**Figure 2-8: Well 71-1 (East Well)**



Both wells consist of a masonry building to house the piping, meter and valves along with the control system for the pump. Both wells pump directly to the distribution system when signaled by the control system. The control system for the wells uses a pressure transducer at well 76-1 and a mercury switch at well 71-1. Currently, each well runs individually based on its own pressure switch.

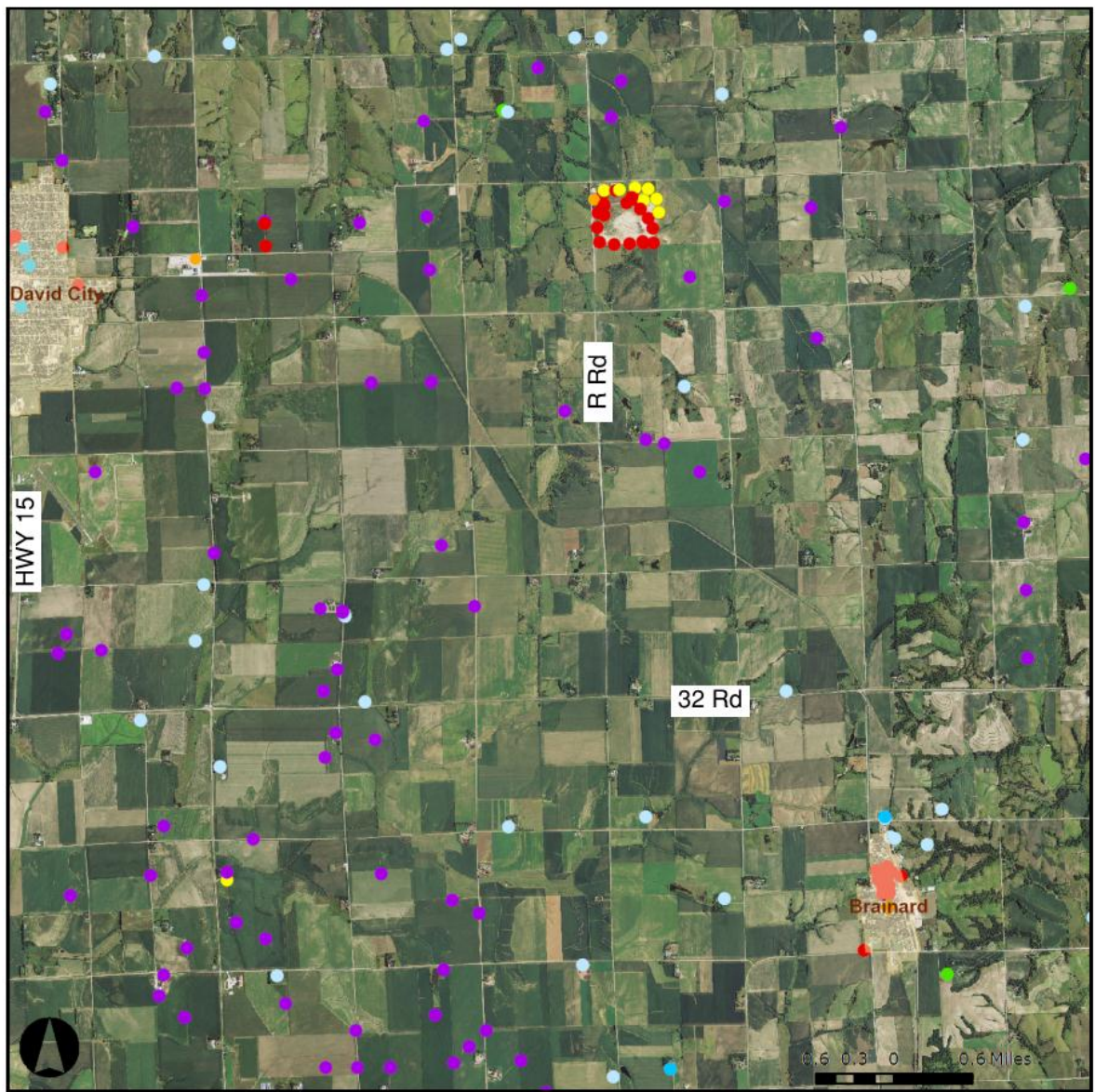
Layne-Western has completed the more recent maintenance on Dwight's wells. In 2009, well 71-1 was inspected and found to have holes in the column pipe. The column pipe was completely replaced, but the pump and motor were in good condition and reused.

In 2013, well 76-1 was inspected by Layne-Western and holes were discovered in the column pipe and pump bowls and the motor was not performing well. As a result a new pump, motor, and column pipe were installed at that time. A copy of the maintenance reports are included in the Appendix.

### 2.3.2 Water Quantity

With exception of public water supply wells, the location and design information of all registered wells are available from the Nebraska Department of Natural Resources (DNR) public information. **Figure 2-9** and **Figure 2-10** illustrates the general location of registered wells in the area around the Villages. Please note that there may be other wells that are located in the area but are not registered with the DNR.

Figure 2-9: Registered North Well Locations



- |   |   |  |
|---|---|--|
| <p><b>City Points</b></p> <ul style="list-style-type: none"> <li>✦</li> </ul> <p><b>City Bounds</b></p> <ul style="list-style-type: none"> <li>□</li> </ul> <p><b>Wells by Use</b></p> <ul style="list-style-type: none"> <li>● All Other Uses</li> <li>● Commercial</li> <li>● Domestic</li> </ul> | <p><b>Wells by Use (continued)</b></p> <ul style="list-style-type: none"> <li>● Groundwater Heat Exch.</li> <li>● Irrigation</li> <li>● Groundwater Quality</li> <li>● Livestock</li> </ul> | <p><b>State Bounds</b></p> <ul style="list-style-type: none"> <li>□</li> </ul> |
|---|---|--|

Figure 2-10: Registered South Well Locations

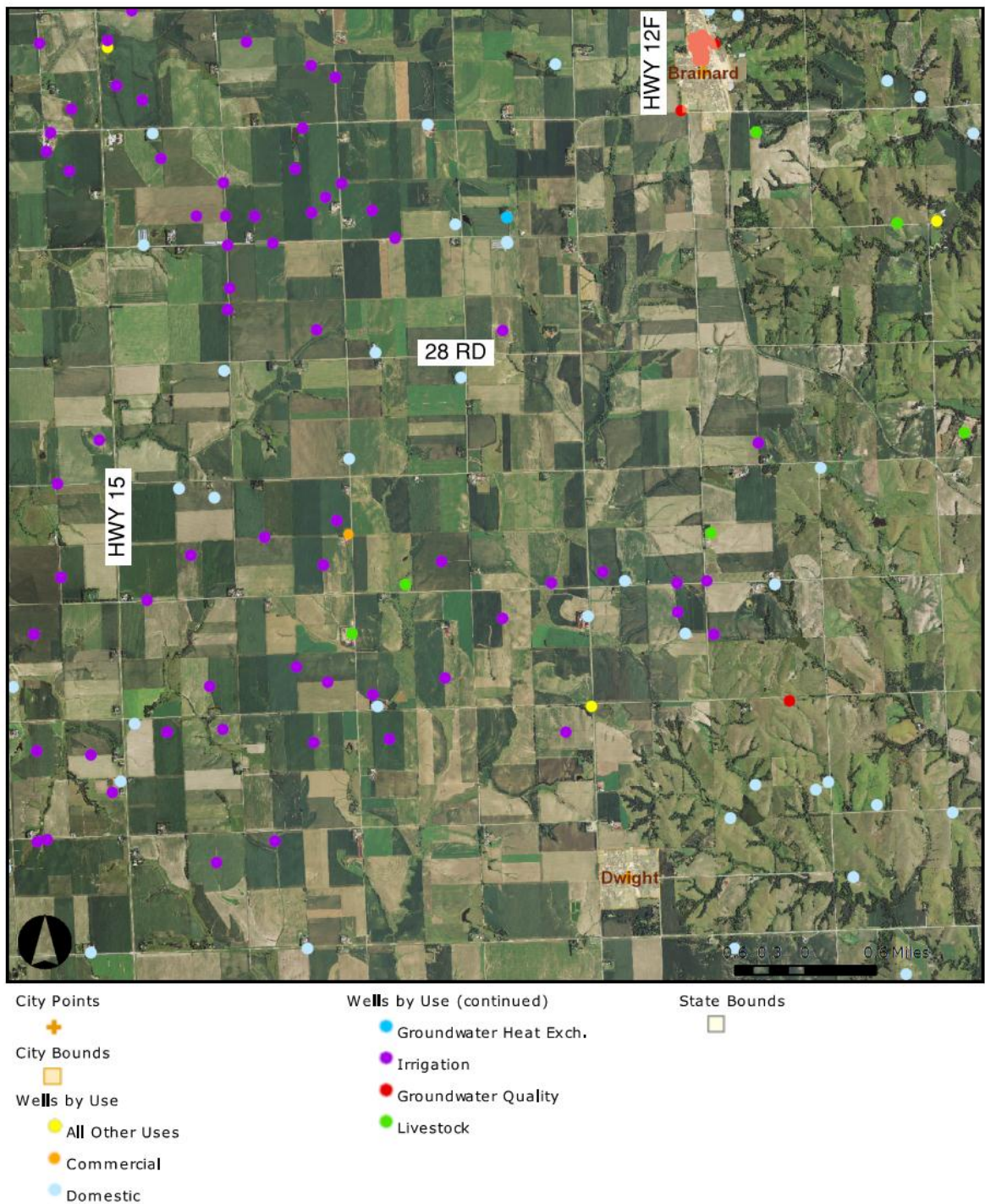


Figure 2-9 and Figure 2-10 show that there are a number of registered wells surrounding the Village of Brainard and Village of Dwight. There appears to be a number of irrigation wells to the west of the Villages and a few to the north of Dwight.

The presence of these irrigation wells indicates that there is likely groundwater capacity in that area to support a municipal supply well. If a new water supply well is pursued in this area, it will require test drilling and determinations of capacity and quality at a specific site(s) before any other plans are developed.

In 2012, there was a marked decline in the water level in both Villages' wells due to extreme drought conditions and the resulting increase in irrigation water use. If a new municipal supply well is pursued, it is recommended that these declining water levels be taken into account in the design.

### 2.3.3 Raw Water Quality

The quality of natural groundwater varies dramatically throughout Nebraska. The materials it must pass through on its way to and within the groundwater aquifers affect the water's natural quality. In some areas, the groundwater contains minerals in concentrations high enough to warrant treatment before domestic uses.

The EPA uses primary and secondary standards to distinguish between contaminants in water. Primary standards are set to provide the maximum feasible protection to public health. They regulate contaminant levels based on toxicity and adverse health effects. The goal of standard setting is to identify maximum contaminant levels (MCLs) which prevent adverse health effects. Secondary standards regulate contaminant levels based on aesthetics such as color and odor, which do not pose a risk to health. These secondary maximum contaminant levels (SMCLs) are guidelines, not enforceable limits. They identify concentrations of contaminants which cause unpleasant tastes, odors, or colors in the water. SMCLs are for contaminants that will not cause adverse health effects.

Some of the naturally occurring minerals found in groundwater include iron, manganese, chloride, and sulfate. While some of these chemicals reduce the quality of the water, the effects are generally minor. These chemicals fall under the U.S. Environmental Protection Agency's (EPA) Secondary Water Quality Standards because they have been shown not to have a detrimental effect to human health, but are primarily an aesthetic concern. Iron and manganese are the leading secondary water quality contaminants within the State of Nebraska.

In Nebraska, the most common pollutant found in excess of EPA's public Primary Drinking Water Regulations is nitrate-nitrogen. Unlike the secondary pollutants, nitrates in the groundwater pose a significant health risk to infants and other vulnerable individuals. A municipal water system with nitrate concentrations greater than the MCL of 10 mg/l (NO<sub>3</sub>-N) is required to take steps to mitigate the issue. Common steps include developing a wellhead protection plan, blending the raw water supplies, finding another source of water or treating the water, as a last resort.

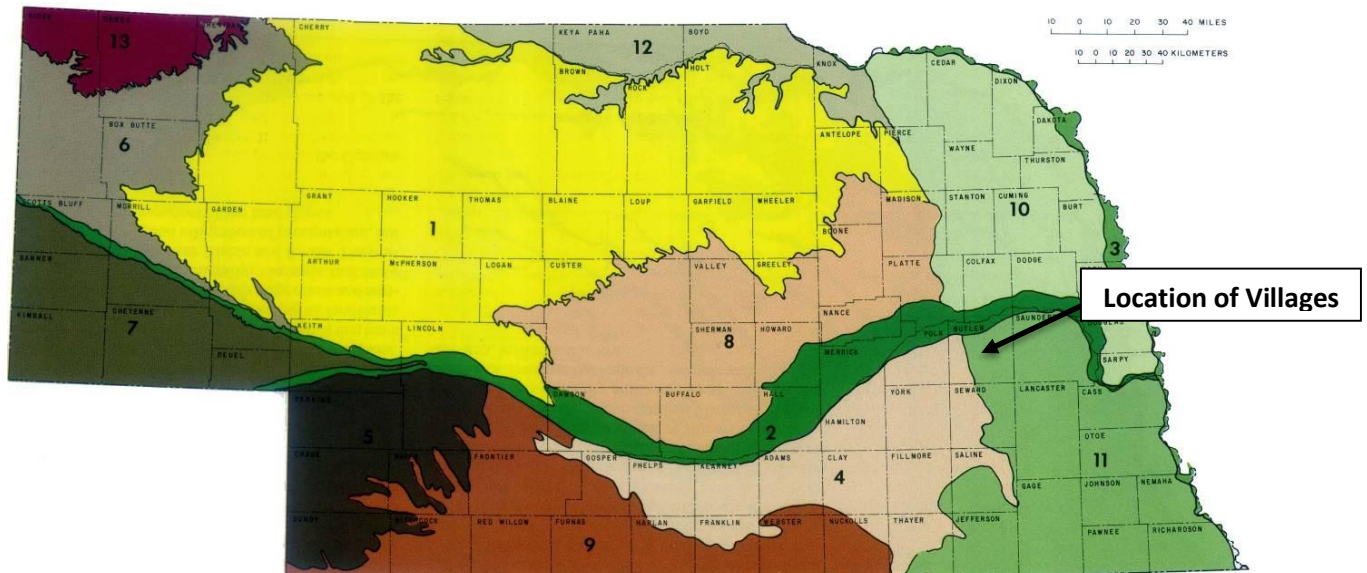
Other primary pollutants of concern in Nebraska are arsenic, radon, uranium, selenium, and in some cases volatile organic compounds (VOCs), synthetic organic compounds (SOCs), and other man made contaminants.

#### 2.3.3.1 Nebraska Groundwater Regions

Nebraska is typically divided into thirteen (13) groundwater regions, as shown in **Figure 2-11: Nebraska Groundwater Regions** and described in The Groundwater Atlas of Nebraska. Within each region, groundwater passes through soil with similar characteristics. Boundaries between

these regions represent zones of gradual change. As seen in **Figure 2-11**, the area around the Village of Brainard and the Village of Dwight is located within groundwater region 11.

**Figure 2-11: Nebraska Groundwater Regions**



*The Groundwater Atlas of Nebraska*

**Region 11 (Southeastern Nebraska):** This region contains limited areas of sand and gravel deposits in paleovalleys for groundwater supply. Other parts of the region include deposits of Dakota Group sandstone. The capacity to yield groundwater from this sandstone can differ over short distances and consequently, well yields can be difficult to predict. Depth to the regional water table varies as a function of topographic location. However, typical depths to groundwater are 50 – 200 feet. The water quality for groundwater in Dakota Sandstone will typically have elevated levels of iron, manganese and Total Dissolved Solids (TDS). The level of TDS in the source water ranges between 200 mg/l to over 1,000 mg/l.

### 2.3.3.2 Water Supply Water Samples

Water samples were taken from wells in both Brainard and Dwight to determine their existing water quality. The results of this analysis are shown in the following tables. A copy of the water testing results can also be found in the Appendix.

The following table shows the water quality results for Brainard's Well 90-1.

**Table 2-5: Brainard Well 90-1 Water Quality Analysis (May 2013)**

Analysis	Unit	Well 90-1 (Northeast Well)	*EPA Limits/Guidelines	
Alkalinity	mg CaCO <sub>3</sub> /L	370	-	
Bicarbonate	mg/L	450	-	
Calcium	mg Ca/L	150	-	
Chloride	mg/L	3.3	250	SMCL
Fluoride	mg/L	0.28	4	MCL
TDS	mg/L	611	500	SMCL
Hardness	mg CaCO <sub>3</sub> /L	540	-	
Total Iron	mg/L	0.07	0.3	SMCL
Magnesium	mg/L	41	-	
Manganese	mg/L	0.14	0.05	SMCL
pH	pH Units	8.2	6.5- 8.5	SMCL
Sodium	mg/L	23	-	
Sulfate	mg/L	160	250	SMCL
Turbidity	NTU	0.6	-	
Nitrate	mg/L	2.53	10	MCL

\*MCL – Maximum Contaminant Level; SMCL – Secondary Maximum Contaminant Level.  
Levels that exceed the MCL and SMCL are shown in red.

**Table 2-6: Dwight Well Water Quality Analysis (April 2014)**

Analysis	Unit	Well 71-1 (East Well)	Well 76-1 (North Well)	*EPA Limits/Guidelines	
Calcium	mg Ca/L	90.2	87	-	
Chloride	mg/L	5	6	250	SMCL
Fluoride	mg/L	0.4	0.3	4	MCL
TDS	mg/L	451	394	500	SMCL
Hardness	mg CaCO <sub>3</sub> /L	342	294	-	
Total Iron	mg/L	0.17	0.51	0.3	SMCL
Magnesium	mg/L	28.3	18.5	-	
Manganese	mg/L	0.19	0.36	0.05	SMCL
pH	pH Units	7.46	7.35	6.5-8.5	SMCL
Sodium	mg/L	22.3	20.0	-	
Sulfate	mg/L	33	48	250	SMCL
Nitrate	mg/L	n.d.	n.d.	10	MCL

\*MCL – Maximum Contaminant Level; SMCL – Secondary Maximum Contaminant Level.  
Levels that exceeded the MCL and SMCL are shown in red.

### 2.3.3.3 Nitrates

The EPA considers nitrates as a primary contaminant and has established a Maximum Contaminant Level (MCL) of 10 mg/L. This MCL can often be troublesome for communities that utilize shallow groundwater wells as their primary source of water and are located in an agricultural area.

Nitrate is the common form of inorganic nitrogen found in water. Heavy fertilizer application and feed-lots can cause unused nitrates to migrate down toward the groundwater. As a result, groundwater withdrawn by private and public wells is likely to have measurable concentrations of nitrate. In some regions, water withdrawn from these wells can exceed the established regulatory limit of 10 mg/L of nitrate nitrogen.

Ingesting excessive amounts of nitrate-nitrogen has been shown to cause methemoglobinemia (Blue Baby Syndrome) in infants. In the intestine of an infant, nitrate can be reduced to nitrite, which is absorbed into the blood causing the oxidization of the iron in hemoglobin. This interferes with oxygen transfer, resulting in cyanosis and giving the baby a blue color. Healthy adults are typically able to consume large quantities of nitrate in drinking water without adverse effects.

Testing indicates that the raw water in both Brainard and Dwight have low concentrations of nitrates. At this time, it is expected that the groundwater within the area is within EPA limits of nitrates and can be a reliable source of water based on the Villages's wells. But, it is noted that

nitrate levels can vary greatly across a given area depending on the past uses of the land and the structure of the aquifer. It is recommended that a large area around water sources be monitored to provide an indication of nitrate levels in the area and the potential risks for the municipal wells.

**Table 2-7: Brainard Nitrate Results**

Date	Well 90-1	Well 79-1
	Concentration, mg/L	Concentration, mg/L
2/17/2010	1.37	1.27
4/4/2011	1.47	1.38
2/7/2012	-	1.41
2/13/2012	1.59	-
2/5/2013	1.46	1.48
2/4/2014	1.47	1.51
MCL	10	

**Table 2-8: Dwight Nitrate Results**

Date	Well 71-1	Well 76-1
	Concentration, mg/L	Concentration, mg/L
1/25/2010	0.22	*<RL
3/14/2011	0.10	<RL
2/14/2012	0.06	<RL
2/19/2013	0.06	<RL
2/18/2014	<RL	<RL
MCL	10	

\*Less than reporting level.

#### 2.3.3.4 Selenium

Selenium is a metal found in natural deposits such as ores containing other elements. The major sources of selenium in drinking water are discharge from petroleum and metal refineries, erosion of natural deposits, and discharge from mines.

Selenium is an essential nutrient at low levels. However, EPA has found selenium to potentially cause health effects when people are exposed to it at levels above the Maximum Contaminant Level (MCL) of 0.05 mg/L. People who drink water containing selenium well in excess of the MCL for relatively short periods of time may experience hair and fingernail changes, damage to the peripheral nervous system, fatigue, and irritability. Lifetime exposure to selenium at levels above the MCL can cause hair and fingernail loss, damage to kidney and liver tissue, and the nervous and circulatory system.

**Table 2-9: Brainard Selenium Results**

Date	Well 90-1	Well 79-1
	Concentration, µg/L	Concentration, µg/L
1/12/2011	-	49.1
7/8/2013	51.4	54.7
8/20/2013	34.2	-
10/8/2013	57.2	61.3
1/13/2014	34.7	35.8
1/13/2014	49.2	51.6
4/7/2014	53.9	49.1
MCL	50	

Levels that exceed the MCL are shown in red.

The Village of Brainard was issued an Administrative Order (AO) by the DHHS due to the high selenium levels in their wells on December 19, 2012. This AO laid out a compliance schedule requiring a Preliminary Engineering Report to be written and actions taken to reduce the selenium in the drinking water. This study is being written to meet these requirements. A copy of the AO can be found in the appendix.

**Table 2-10: Dwight Selenium Results**

Date	Well 71-1	Well 76-1
	Concentration, µg/L	Concentration, µg/L
7/24/2001	5.25	* < RL
2/1/2005	< RL	< RL
1/18/2011	< RL	< RL
MCL	50	

\*Less than reporting level.

### 2.3.3.5 Iron and Manganese

The natural elements of Iron (Fe) and manganese (Mn) are abundantly found in the earth's crust and routinely present a problem for communities using groundwater as their primary source of drinking water in certain areas of the State. When found in drinking water, iron and manganese are not considered a health risk, but rather an aesthetic concern. These elements in public water supplies may discolor water, stain plumbing fixtures and laundry, and cause undesirable taste and odor problems.

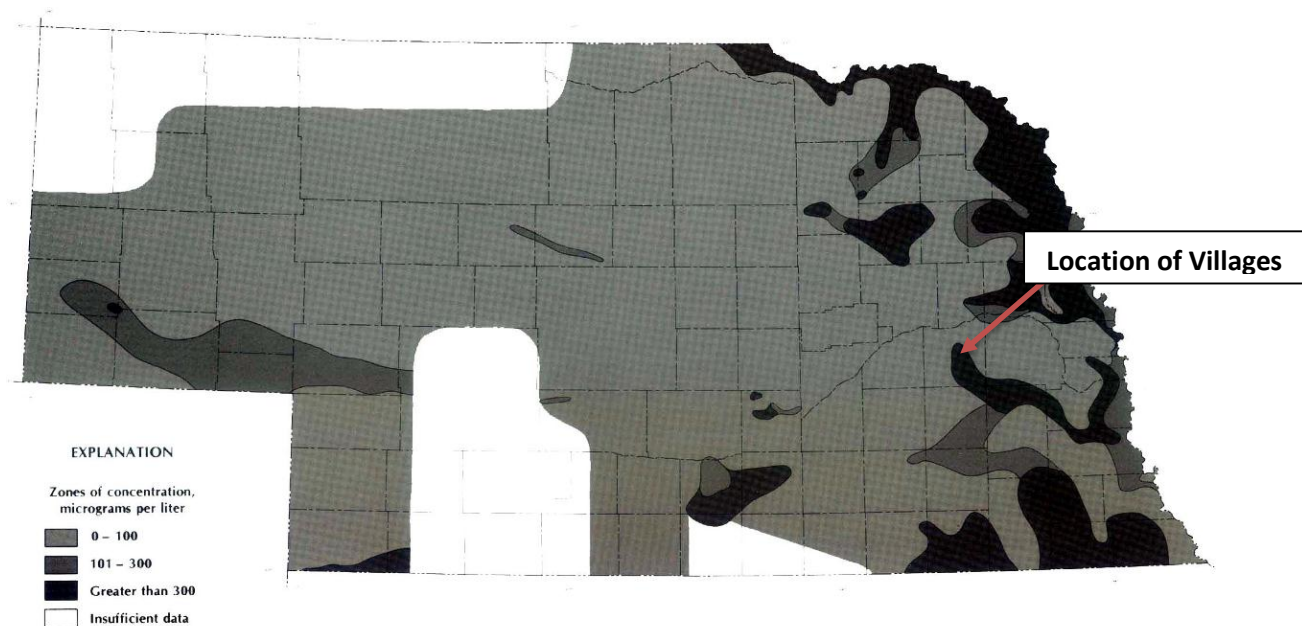
In 1987, the U.S. Environmental Protection Agency established unregulated secondary drinking water standards for iron and manganese. The purpose of these standards is to assist communities in eliminating the problems caused by these elements. The secondary drinking water standard for iron is 0.30 mg/L and the standard for manganese is 0.05 mg/L. These

standards are considered to be threshold values. When these values are exceeded, iron and manganese may begin to cause problems in the drinking water and distribution system. Community water systems typically treat groundwater that contains high levels of iron and manganese. **Figure 2-12: Iron levels in State of Nebraska** and **Figure 2-13: Manganese Levels in State of Nebraska** illustrate the respective average iron and manganese levels found in the groundwater across the State.

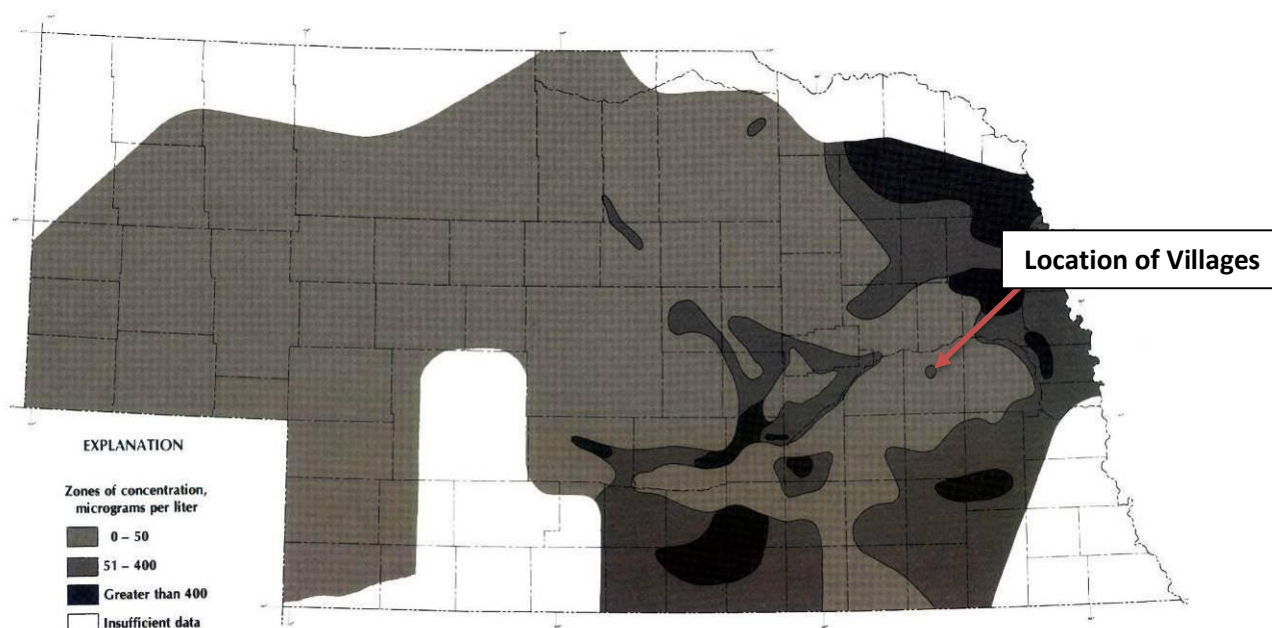
According to **Figures 2-12** and **2-13**, the groundwater in the area around the Villages of Brainard and Dwight are susceptible to elevated levels of both iron and manganese. In **Figure 2-12**, both the Village of Brainard and the Village of Dwight are located in an area that produces high levels of iron. In **Figure 2-13**, both Villages are located near areas of moderate to high concentrations of manganese. These illustrations do not indicate the exact contaminant levels, but rather that an aquifer is subject to the presence of high iron and manganese concentrations.

As seen in Section 2.3.3.2, both Brainard and Dwight's wells showed the presence of iron and manganese. Brainard's wells tested high in manganese and one of Dwight's wells tested high in iron and both tested high in manganese.

**Figure 2-12: Iron Levels in State of Nebraska**



**Figure 2-13: Manganese Levels in State of Nebraska**



**2.3.3.6 Arsenic**

Over the last decade, the EPA expanded its focus to include several new contaminants with regard to drinking water. A few of these contaminants include Arsenic, Radon and Uranium. These contaminants are naturally occurring and are at various stages of development in their regulations.

The MCL for Arsenic is 10 µg/L (0.010 mg/L). The primary concern with this contaminant is skin disease and cancer. As opposed to Iron and Manganese, the extent of Arsenic contamination has not been determined based on particular geographic areas. **Table 2-11** and **Table 2-12** shows the results found from regular testing.

**Table 2-11: Brainard Arsenic Results**

Date	Well 90-1	Well 79-1
	Concentration, µg/L	Concentration, µg/L
7/16/2001	-	4.41
6/29/2006	2.29	4.25
4/20/2009	4.83	5.12
MCL	10	

**Table 2-12: Dwight Arsenic Results**

Date	Well 71-1	Well 76-1
	Concentration, ug/L	Concentration, ug/L
7/24/2001	8.11	6.13
4/24/2006	7.51	8.1
4/28/2009	3.88	7.8
5/23/2012	9.13	8.05
MCL	10	

### 2.3.4 Area Well Testing

Water quality samples were taken from various irrigation wells around the Village of Brainard and the Village of Dwight. Four registered wells were tested west of the Village of Brainard, and eight wells were tested north and northwest of the Village of Dwight. These wells were tested for arsenic, selenium, and nitrate. The results from these water quality test results are shown in the following figures. These figures display the varying levels of contaminants within the area.

The arsenic in the area appeared to be generally lower to the north and highest near Dwight. The nitrates were highest to the northwest, but varied greatly from well to well in the rest of the test area. Selenium varied greatly over the testing area.

All 12 of the wells tests showed detectable amounts of the arsenic, selenium, and nitrate. Five of the 12 wells tested had all 3 contaminants below the MCL and none of the wells had all contaminants at less than half of the MCL.

It should also be noted many contaminants, particularly arsenic and selenium, have levels that can vary greatly over time. The testing discussed in this section should be considered a snapshot of the water quality in this area and not taken to be what the average level for each contaminant would be in a potential municipal well over time.

As previously stated the MCL's for arsenic, nitrogen, and selenium are shown below.

Contaminant	MCL
Arsenic	0.010 mg/L
Nitrates	10.0 mg/L
Selenium	0.050 mg/L

**Figure 2-14: Brainard Area Wells**

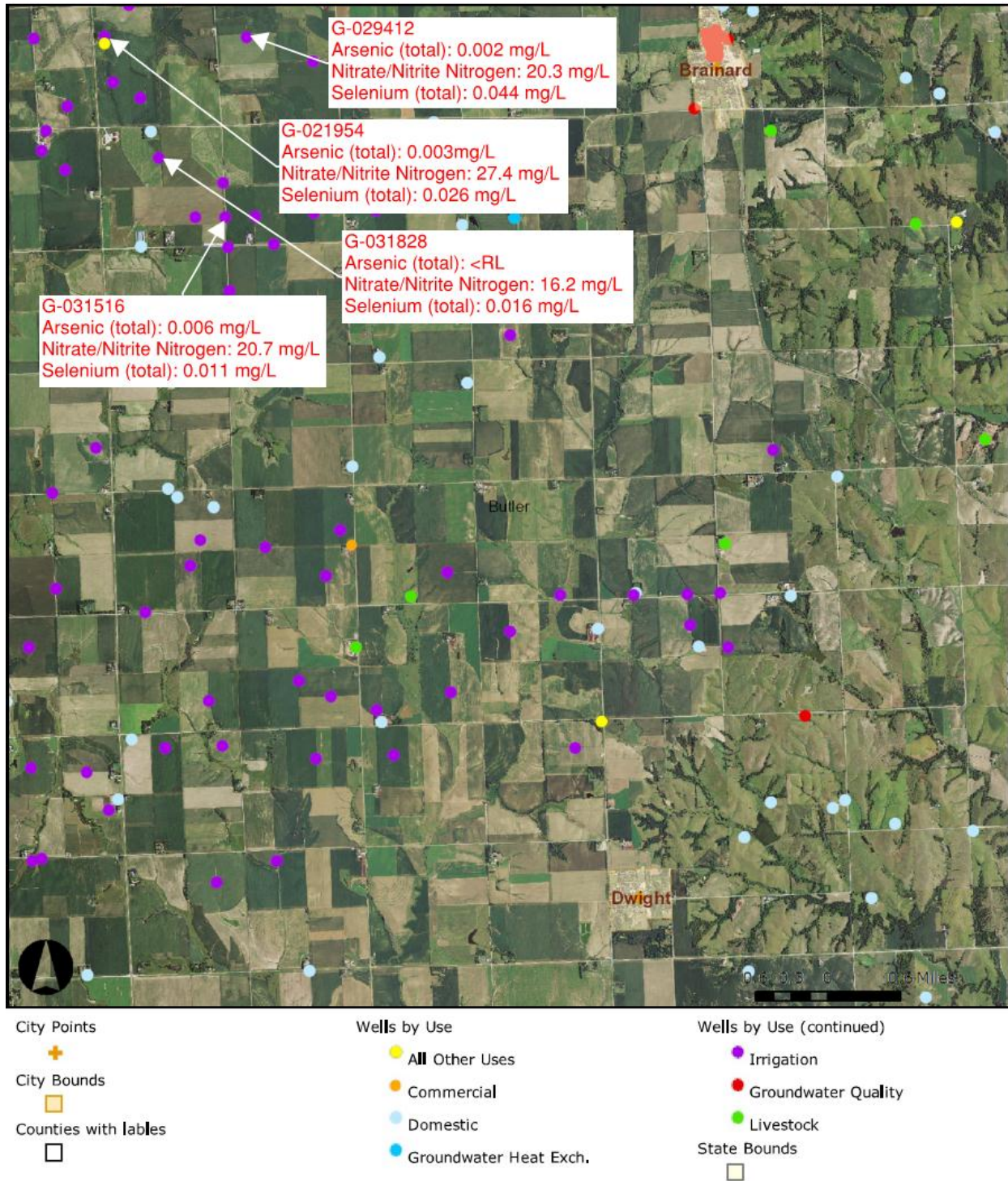
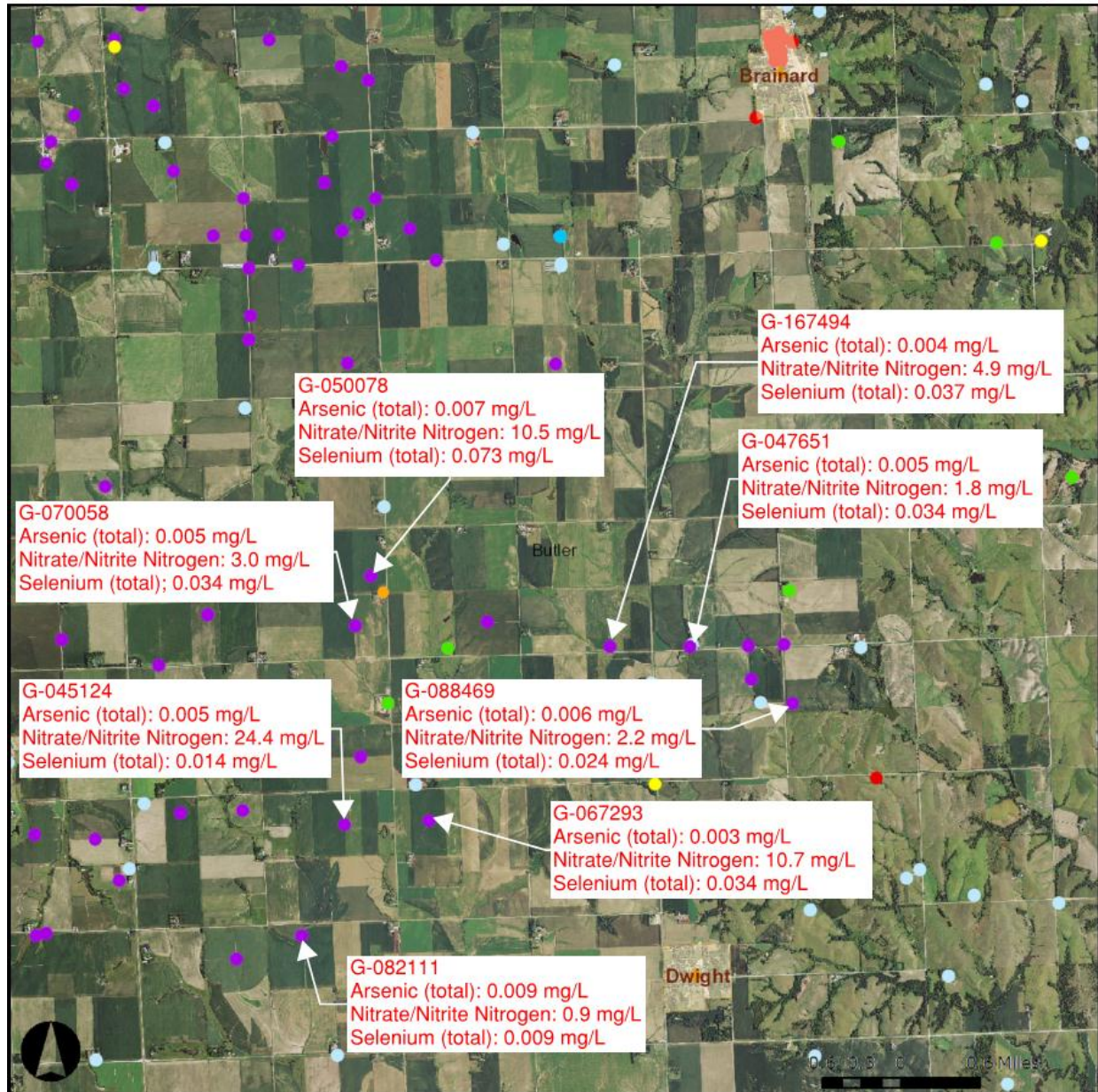


Figure 2-15: Dwight Area Wells



- City Points  
+
- City Bounds  
□
- Counties with labels  
□

- Wells by Use
- All Other Uses
- Commercial
- Domestic
- Groundwater Heat Exch.

- Wells by Use (continued)
- Irrigation
- Groundwater Quality
- Livestock
- State Bounds  
□

### **2.3.5 Wellhead Protection Plan**

A wellhead protection plan will help communities protect their source of drinking water. The plan includes delineation of the wellhead protection area, inventory of potential sources of contamination, and managing those potential sources of contamination within the projection area. The plan also includes developing an emergency plan in the case of well contamination and planning ahead for new wells as a community grows or existing wells age. Public education of the local wellhead protection plan is essential for a good plan and a smooth process.

At this time the Village of Brainard does not have a wellhead protection plan.

### **2.3.6 Water Supply Conclusion**

The wells in Brainard and Dwight have generally served the communities with a reliable source of drinking water. The declining water levels in 2012 are of some concern, but the overall water quality of the wells presents the greatest challenge to the communities.

The selenium present in Brainard's groundwater is a primary contaminant and presents a public health hazard to the water systems users. The Village is under an administrative order (AO) which will require the Village to take some action in regards to identifying a new source of drinking water.

The arsenic present in Dwight's groundwater is a primary contaminant, but has not exceeded the MCL. The arsenic levels in the wells have varied in the past but the most recent tests show both the wells being close to the MCL. Considering this, it may be prudent for the Village to begin pursuing a new source of drinking water.

The raw water in the area also has relatively high levels of hardness, iron, and manganese.

## **2.4 Water Storage Facilities**

### **2.4.1 Village of Brainard**

The Village of Brainard currently utilizes one (1) elevated water storage tank. The existing elevated tank is located on Washington St. between Madison St. and Lincoln St. The tank has a nominal storage capacity of approximately 55,000 gallons.

**Figure 2-16: Brainard's Elevated Storage Tank****2.4.2 Village of Dwight**

The Village of Dwight currently utilizes one (1) elevated water storage tank. The existing elevated tank is located on 2<sup>nd</sup> St between Madison St. and Beech St. The tank has a nominal storage capacity of approximately 39,000 gallon and was installed in 1936.

**Figure 2-17: Dwight's Elevated Storage Tank**

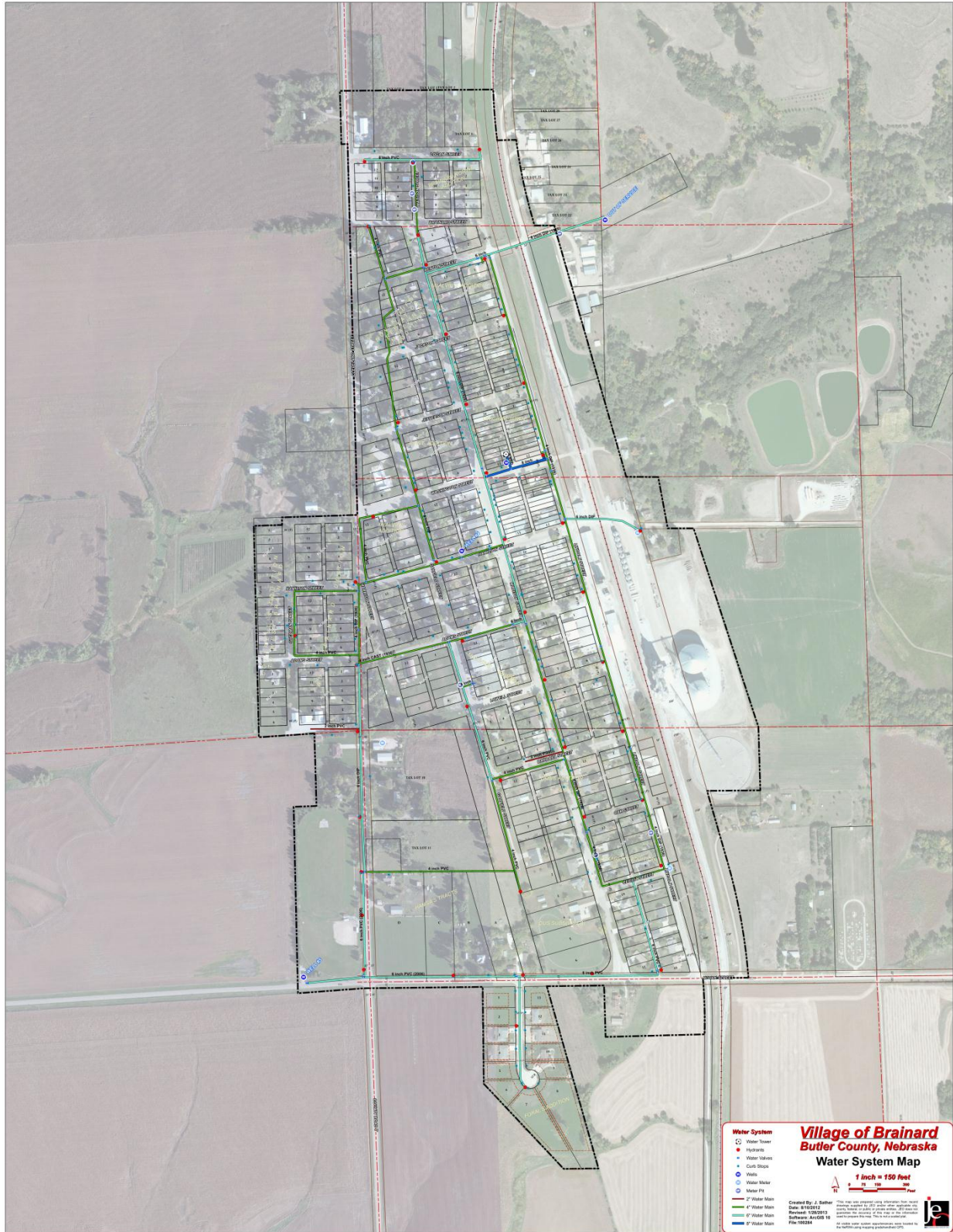
## 2.5 Water Distribution System

An abbreviated review of the Village of Brainard and Dwight's distribution systems is included in this report. Identification of deficiencies and recommendations for improvements to the distribution systems will not be included in this report.

### 2.5.1 Village of Brainard

The distribution system for the Village of Brainard consists of 2", 4", 6", and 8" PVC and DIP. **Figure 2-18** shows this distribution system. The figure includes the location of, hydrants, valves, curb stops, wells, meters, mains, and the water tower.

Figure 2-18: Brainard's Water Distribution System



A larger version of the water map can be found in the appendix.

### 2.5.2 Village of Dwight

The distribution system for the Village of Dwight consists of 2", 4", and 6" piping. A readable water system map was not immediately available.

## 2.6 Water System Reliability

During the evaluation of the water system, there are several issues that need to be considered for reliability of the system:

- How does the capacity of the supply relate to overall water usage?
- What conditions exist during a high flow demand period with the largest well or high service pump unavailable?
- What is the reliability of the water system as a whole?

### 2.6.1 Village of Brainard

#### How does the capacity of the supply relate to overall water usage?

The average day demand for water is approximately 32,400 gpd with a peak day demand estimate of approximately 129,600 gpd. With both active wells operating simultaneously, they are able to supply an approximate total of 418,000 gpd if operated continuously (24-hrs).

**Conclusion:** With all wells operating over a 24-hour period, the existing supply wells are capable of meeting the peak day water demands from the users.

#### What conditions exist during a high flow demand period with the largest well and/or high service pump unavailable?

This scenario considers the possible conditions that may arise during a high demand period with the "largest" well out of service. Under this scenario, the Village would only be capable of producing 145 gpm (209,000 gpd) from one of their wells.

For the peak day demand of 129,600 gallons, a well is capable of meeting the demands with the largest pump out of service.

**Conclusion:** It appears that the existing water supply system is able to meet the peak day water demands even if the "largest" well is taken out of service.

#### What is the reliability of the water system as a whole?

The Village has a single portable generator that can be used to provide an alternate source of electricity to allow the operation of one of the wells during power outages. The operator has stated that well 90-1 is typically run during power outages. The generator is not connected to an automatic transfer switch, so the operator will have to physically visit the well site to startup the generator and start the well.

**Conclusion:** In the event of a power outage during an emergency, the Village would be able to provide its users drinking water as long as the wells are reachable by the operator by setting up the portable generator at one of the wells.

## 2.6.2 Village of Dwight

### How does the capacity of the supply relate to overall water usage?

The average day demand for water is approximately 25,000 gpd with a peak day demand estimate of approximately 100,000 gpd. With both wells operating simultaneously, they are able to supply an approximate total of 604,800 gpd if operated continuously (24-hrs).

**Conclusion:** With both wells operating over a 24-hour period, the existing supply wells are capable of meeting the peak day water demands from the users.

### What conditions exist during a high flow demand period with the largest well and/or high service pump unavailable?

This scenario considers the possible conditions that may arise during a high demand period with the “largest” well out of service. Under this scenario, the Village would only be capable of producing 200 gpm (288,000 gpd) from the well.

For the peak day demand of 100,000 gallons, the wells are capable of meeting the demands with the largest well out of service.

**Conclusion:** It appears that the existing water supply system is able to meet the estimated peak day water demands even if the “largest” well is taken out of service.

### What is the reliability of the water system as a whole?

The Village has two portable generators that can be used to provide an alternate source of electricity to allow the operation of each well during power outages. The generators are not connected to an automatic transfer switch so the operator has to visit each well site and setup each portable generator.

**Conclusion:** In the event of a power outage during an emergency, the Village would be able to provide its users drinking water as long as the wells are reachable by the operator by setting up the portable generator at one of the wells.

## 2.7 Water Storage Evaluation

The Village of Brainard and the Village of Dwight each have their own elevated water storage tank.

### 2.7.1 Village of Brainard

The existing elevated water storage tank serving the Village is located approximately 200 feet east of the North Madison Street and Washington Street intersection, west of the fire hall. The tank has a diameter of approximately 19 feet and a nominal storage capacity of approximately 55,000 gallons. The low water level is approximately 95 feet above the base and the overflow level is approximately 117 feet above the base. The static pressure of the distribution system is currently reported to be in the range of 45-60 psi, which is within the typical range for public water supply systems of 40 to 60 psi.

The main purposes of water storage facilities are to maintain pressure and provide a stored supply of water that can be called upon when needed. Storage also provides water that can be used if the wells are temporarily out of service.

The desired range for water storage volumes is between one-half and two times the average daily water use (12 to 48 hours storage). Systems with storage less than one-half day require the well pumps as well as other mechanisms to cycle excessively, causing unnecessary wear and limit the amount of water available for high demand periods. Also, a lack of storage requires that the pumping facilities be sized to meet the system demands, which normally requires much larger pumps than are necessary if adequate storage is provided. In contrast, systems with storage in excess of two days, may encounter problems due to the possibility of internal freezing during prolonged periods of very low temperatures and low water usage. Also, excessive storage can cause stagnant water issues. The optimum storage capacity for a water system often resides in the 1 to 1.25 times average demand.

**Table 2-13: Water Storage Tank Size for the Village of Brainard** presents a matrix used to evaluate the required sizes of a storage tank based on a turnover period of 1.0 day (minimum) or 1.25 days (preferred) with current flow demands for the Village.

**Table 2-13: Water Storage Tank Size for the Village of Brainard**

		Preferred:	Minimum 1.0 days to 1.25 days detention time in tank.				
		Limits:	Minimum 0.5 days to 2.0 days detention time in tank.				
Flow Conditions	Flow Rate	Tank Size					
	gpd	25,000	50,000	55,000	75,000	100,000	
Current Average Flow	32,400	0.77	1.54	1.70	2.31	3.09	
Current Peak Flow	129,600	0.19	0.39	0.42	0.58	0.77	

The existing storage system has enough water storage capacity to supply water for approximately 1.7 days (current average daily flow), which is an acceptable storage time. Therefore, it is our opinion that the current water storage facilities are suitable for current daily water user needs.

### 2.7.2 Village of Dwight

The existing elevated tank serving the Village is located approximately 200 feet south of the 2<sup>nd</sup> and Maple Street intersection. The tank is owned by the Village of Dwight and was constructed in 1936 with a nominal storage capacity of approximately 39,000 gallons. The low water level is approximately 113 feet above the base and the high water level is approximately 126.5 feet above the base. The static pressure of the distribution system is currently reported to be in the range of 45-55 psi, which is within the typical range for public water supply systems of 40 to 60 psi. The elevated tank was last inspected in 2008, and it was reported that the tank is in fair condition. From this inspection, it was determined that the tank needed several upgrades and repainting of the exterior. The tank inspection report is included in the Appendix.

**Table 2-14: Water Storage Tank Size for the Village of Dwight** presents a matrix used to evaluate the required sizes of a storage tank based on a turnover period of 1.0 day (minimum) or 1.25 days (preferred) with current flow demands for the Village.

**Table 2-14: Water Storage Tank Size for the Village of Dwight**

Preferred:		Minimum 1.0 days to 1.25 days detention time in tank.				
Limits:		Minimum 0.5 days to 2.0 days detention time in tank.				
Flow Conditions	Flow Rate	Tank Size				
	gpd	25,000	39,000	50,000	75,000	100,000
Current Average Flow	25,000	1.0	1.56	2.0	3.0	4.0
Current Peak Flow	100,000	0.25	0.39	0.50	0.75	1.0

The existing storage system has enough water storage capacity to supply water for approximately 1.56 days (current average daily flow), which is an acceptable storage time. Therefore, it is our opinion that the current water storage facilities are suitable for current daily water user needs.

## 2.8 Water System Distribution System Evaluation

A thorough review of the distribution systems in Brainard and Dwight is not included in the scope of this study.

## 2.9 Financial Status

### 2.9.1 Existing Water Rate Structure

The Village of Brainard currently charges a \$36 monthly fee and \$2.60 per 1,000 gallons used for the first 16,000 gallons and \$5.00 per 1,000 for usage over 16,000 gallons.

### 2.9.2 Existing Operations and Maintenance Costs

The Village of Brainard's water system operating revenues and expenses for three (3) fiscal years are presented below in **Table 2-15: Brainard O&M Costs (Previous 3 Years)**.

**Table 2-15: Brainard O&M Costs (Previous 3 Years)**

	<b>2011-2012</b>	<b>2012-2013</b>	<b>2013-2014</b>
<b>Income:</b>			
Charges for Service	\$65,346	\$245,345	\$83,186
<b>TOTAL OPERATING REVENUES:</b>	\$65,346	\$245,345	\$83,186
<b>Expense:</b>			
Attorney	\$0	\$325	\$0
Bond Payments	\$14,296	\$214,312	\$21,185
Capital Improvements	\$6,069	\$0	\$0
Conference	\$0	\$170	\$0
Dues, Leases, Rental	\$240	\$303	\$240
Education & Training	\$638	\$154	\$0
Engineering & Survey	\$5,938	\$1,750	\$8,336
Labor	\$723	\$85,112	\$6,483
Locates	\$0	\$0	\$2
Miscellaneous Expense	\$0	\$176	\$0
Office Expense	\$0	\$0	\$50
Postage	\$10	\$51	\$0
Property Upkeep	\$0	\$354	\$0
Reimbursement	\$0	\$127	\$0
Repairs- Property	\$1,034	\$4,827	\$1,326
Repairs- Equipment	\$118	\$0	\$0
Sales Tax Paid	\$2,313	\$1,679	\$0
Supplies & Parts	\$2,046	\$7,576	\$8,617
Water Testing	\$2,037	\$2,645	\$2,417
<b>TOTAL OPERATING EXPENSES:</b>	\$35,462	\$319,561	\$48,656
<b>NET INCOME/LOSS:</b>	<b>\$29,884</b>	<b>-\$74,216</b>	<b>\$34,530</b>
<b>ADJUSTED ANNUAL O&amp;M</b>	<b>\$35,462</b>	<b>\$44,739</b>	<b>\$48,656</b>

The Village of Brainard is currently making bond payments for the construction of well 05-1. This amount can be seen on the Bond Payments line item. The larger than typical income and bond payment in 2013 was a result of the Village refinancing their bond. There is also a large "labor" expense in 2013 which was comprised of modifications to the existing wells. After adjusting for these one-time expenses, it will be assumed that the annual O&M for Brainard is approximately \$42,952.

The Village of Dwight’s water system operating revenues and expenses for three (3) fiscal years are presented below in **Table 2-15: Dwight O&M Costs (Previous 3 Years)**.

The water system averaged a net financial loss of approximately \$7,330 per year over the fiscal years 2010-2013 with average expenses totaling approximately \$32,552 year.

**Table 2-16: Dwight O&M Costs (Previous 3 Years)**

	2010-2011	2011-2012	2012-2013
<b>Income:</b>			
Charges for Service	\$16,227	\$21,521	\$37,916
<b>TOTAL OPERATING REVENUES:</b>	\$16,227	\$21,521	\$37,916
<b>Expense:</b>			
Personal Services	\$7,983	\$7,906	\$8,040
Engineering/Surveying	\$0	\$150	\$1,380
Telephone	\$300	\$354	\$276
Lab Tests	\$1,636	\$602	\$1,064
Electric - Buildings	\$4,229	\$4,875	\$5,344
Repairs	\$295	\$5,034	\$1,381
Meters	\$837	\$0	\$391
Office Supplies	\$100	\$224	\$100
Postage	\$79	\$0	\$0
Sales Tax	\$1,974	\$2,211	\$2,610
Bank Charges	\$5	\$0	\$0
Dues & Permits	\$100	\$100	\$475
Miscellaneous	\$0	\$0	\$115
Equipment	\$0	\$0	\$1,850
Water Improvements	\$0	\$11,449	\$23,707
School Expense	\$0	\$200	\$279
<b>TOTAL OPERATING EXPENSES:</b>	\$17,538	\$33,105	\$47,012
<b>NET INCOME/LOSS:</b>	<b>-\$1,311</b>	<b>-\$11,584</b>	<b>-\$9,096</b>
<b>ADJUSTED ANNUAL O&amp;M</b>	<b>\$17,538</b>	<b>\$21,565</b>	<b>\$23,305</b>

The Village of Dwight has shown a loss in the water funds in each of the last three years. This loss appears to be a result of the rapid increase of the “Water Improvements” line item. The Village has increased revenue in each year by raising rates to compensate.

The water improvements listed in the table are considered to be one-time expenses. Since these items are not anticipated to continue into the future, it will be assumed that the annual O&M for Dwight is approximately \$20,833.

**REGIONAL WATER SYSTEM  
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VILLAGE OF DWIGHT, NEBRASKA**

**SECTION 3**

**3 Need for a Project**

**3.1 Health, Sanitation & Security**

The Village of Brainard is currently under an AO issued by the Nebraska Department of Health and Human Services due to the high levels of selenium in their groundwater. As seen in Section 2.3.3.4, the selenium level in Brainard's wells has varied over time but has frequently exceeded the MCL of 50 µg/L. The levels of Selenium in the groundwater present a public health risk to the users in Brainard.

The Village of Dwight is currently not under any under any administrative orders and has not had any tests exceeding the MCL's recently. However, as seen in Section 2.3.3.6, the level of arsenic in the groundwater has seen a generally increasing trend over the last 10 years. The most recent tests in 2012, had both wells within 20% of the MCL. If this increasing trend continues it's very likely that the Village of Dwight will have to take measures to lower the level of arsenic in their drinking water.

**3.2 Projected Water Usage**

**3.2.1 Village of Brainard**

The projection of future domestic water supply needs is based on estimated current water usage, projected population growth, and proposed development.

As presented in previously, based on historical data, the Village has an annual average day water production of approximately 32,400 gpd, or approximately 108 gpcpd, and has an estimated peak day demand of 129,600 gpd, or approximately 393 gpcpd.

The following calculations are for the projected water demand using the projected population of 351:

Projected Average Day:	98 gpcpd x 351 people	=	34,400 gpd	~	24 gpm
Projected Peak Day:	393 gpcpd x 351 people	=	137,900 gpd	~	96 gpm

These future water use calculations do not include fire flow protection.

**3.2.2 Village of Dwight**

The projection of future domestic water supply needs is based on estimated current water usage, projected population growth, and proposed development.

As presented in previously, based on historical data, the Village has an annual average day water production of approximately 25,000 gpd, or approximately 122 gpcpd, and has an estimated peak day demand of 100,000 gpd, or approximately 490 gpcpd.

The following calculations are for the projected water demand using the projected population of 259.

Projected Average Day:	122 gpcpd x 259 people	=	31,600 gpd	~	22 gpm
Projected Maximum Day:	490 gpcpd x 259 people	=	126,900 gpd	~	88 gpm

These future water use calculations do not include fire flow protection.

Therefore, the combined projected water demands for Brainard and Dwight are:

Ave. Day Flow:	66,000 gpd	=	46 gpm
Peak Day Flow:	264,800 gpd	=	184 gpm

**REGIONAL WATER SYSTEM  
PRELIMINARY ENGINEERING REPORT  
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VILLAGE OF DWIGHT, NEBRASKA**

**SECTION 4**

**4 Improvement Alternatives Considered**

The following is a list of the alternatives that will be considered in this study.

1. No Action
2. Connection to LPNNRD RWD
  - a. Brainard and Dwight
  - b. Brainard Only
3. Construct Transmission Main and Well Field
4. Construct Transmission Main and WTP

**4.1 Design Criteria Summary**

Brainard

Ave. Day Flow:	34,400 gpd	= 24 gpm
Peak Day Flow:	137,900 gpd	= 96 gpm

Dwight

Ave. Day Flow:	31,600 gpd	= 22 gpm
Peak Day Flow:	126,900gpd	= 88 gpm

Combined

Ave. Day Flow:	66,000 gpd	= 46 gpm
Peak Day Flow:	264,800 gpd	= 184 gpm

**4.2 Summary of Alternatives**

Major improvement alternatives are outlined in the following section as means to address the current system deficiencies and meet the future needs of the Villages' water supply:

Alternative No. 1: No Action

This alternative considers the possibility of taking no action. In this scenario the Village of Brainard would have to find some other means to comply with the requirements of their AO or face further regulatory action.

The Village of Dwight, while not under any regulatory action, would remain very close to exceeding the MCL for arsenic. Should the arsenic level increase in the future, then the Village would be required to provide treatment or find some other water source to meet the MCL.

#### Alternative No. 2a: Connect Brainard and Dwight to the LPNNRD RWD

This alternative involves making a connection to the existing RWD that extends from David City to Bruno. This would include the construction of transmission main, booster stations, and master meter. The proposed system would serve both the Village of Brainard and the Village of Dwight.

#### Alternative No. 2b: Connect Brainard to the LPNNRD RWD

This alternative involves making a connection to the existing RWD that extends from David City to Bruno. This would include the construction of transmission main, booster stations, and master meter. The proposed system would serve only the Village of Brainard.

#### Alternative No. 3: Construct Transmission Main and Well Field

This alternative involves developing a new well field and transmission main to serve as the water source for Brainard and Dwight. This consists of the construction of a new municipal well field and the associated transmission main to connect to both Villages' water systems.

#### Alternative No. 4: Construct Transmission Main and WTP

This alternative involves constructing a water treatment plant (WTP) and transmission main to serve as the water source for Brainard and Dwight. This consists of the construction of a WTP in Dwight to remove arsenic, iron, and manganese, and the associated transmission main to convey water to both Villages' water systems.

### **4.3 Alternative No. 1 – No Action**

In the scenario that Village of Brainard does not proceed with any of the other alternatives in this study they would have to find some other means to comply with the requirements of their AO or face further regulatory action. It appears unlikely that the selenium levels in the existing wells will fall to acceptable levels so either a new source or treatment would be necessary.

Under the assumption that the arsenic level in Dwight's wells will exceed the MCL in the future, action will be necessary to avoid regulatory action. Ultimately, a new water source or water treatment would be needed. Thus, a no action alternative is not feasible for Brainard and expected to not be feasible for Dwight over the long term.

### **4.4 Alternative No. 2a – Connect Brainard and Dwight to the LPNNRD RWD**

This alternative proposes to supply water to Brainard and Dwight by extending a new 6" transmission main from the Villages to the existing LPNNRD RWD. This connection would provide both Villages with access to high quality water that meets both primary and secondary water standards.

The opinions of costs for this alternative are to be viewed and considered only conceptually. A much more detailed review will be needed at a later date if the Village chooses to pursue this option further. For the purposes of this report, we have made a number of assumptions in order to review feasibility and develop opinions of probable costs.

The LPNNRD RWD currently extends from their source (David City WTP) east to the Village of Bruno. Preliminary conversations with the NRD have indicated that they would be interested in being the water supplier for Brainard and Dwight. David City currently treats their drinking water and injects chlorine. The following table, **Table 4-1**, shows the water quality results from David City's WTP. Values

for hardness, iron, and manganese for David City are lower than in Brainard and Dwight. Additionally, David City's sulfate concentration is higher than that of Dwight, but lower than Brainard.

**Table 4-1: David City WTP's Water Quality**

Analysis	Unit	David City's WTP Effluent	*EPA Limits/Guidelines	
Alkalinity	mg CaCO <sub>3</sub> /L	115	-	-
Arsenic	mg/L	0.005	0.01	MCL
Calcium	mg Ca/L	28	-	-
Gross Alpha	pCi/L	1.9	15	MCL
TDS	mg/L	250	500	SMCL
Hardness	mg CaCO <sub>3</sub> /L	154	-	-
Total Iron	mg/L	0.03	0.3	SMCL
Magnesium	mg/L	20	-	-
Manganese	mg/L	<0.01	0.05	SMCL
Nickel	mg/L	0.00135	0.1	SMCL
pH	pH Units	7.6	6.5-8.5	SMCL
Combined Radium	pCi/L	1.8	5	MCL
Radium-226	pCi/L	0.8	5	MCL
Radium-228	pCi/L	1	5	MCL
Sodium	mg/L	25	-	-
Sulfate	mg/L	70	250	SMCL
TDS	mg/L	250	500	SMCL

\*MCL – Maximum Contaminant Level; SMCL – Secondary Maximum Contaminant Level

In order to connect both Brainard and Dwight to the RWD, a 6" transmission main would need to be constructed from the RWD at approximately County Road T, south to Brainard and then further south to Dwight. A master meter would be located at the point of connection to both Brainard and Dwight to monitor and measure the potable water being supplied. The construction of the transmission main would also include air releases, gate valves, fire hydrants, and other miscellaneous appurtenances.

The available information indicates that the High Water Level (HWL) in the RWD is lower than that of Brainard's tower and similar to Dwight's tower. Therefore, the water will not flow to Brainard and Dwight by gravity and will need to be boosted with pumps. Preliminary modeling indicates that two booster stations will be needed in order to maintain adequate pressure at peak day flows. It will also

be assumed that a single chlorine injection station will be installed at the connection point to Brainard to help maintain a chlorine residual.

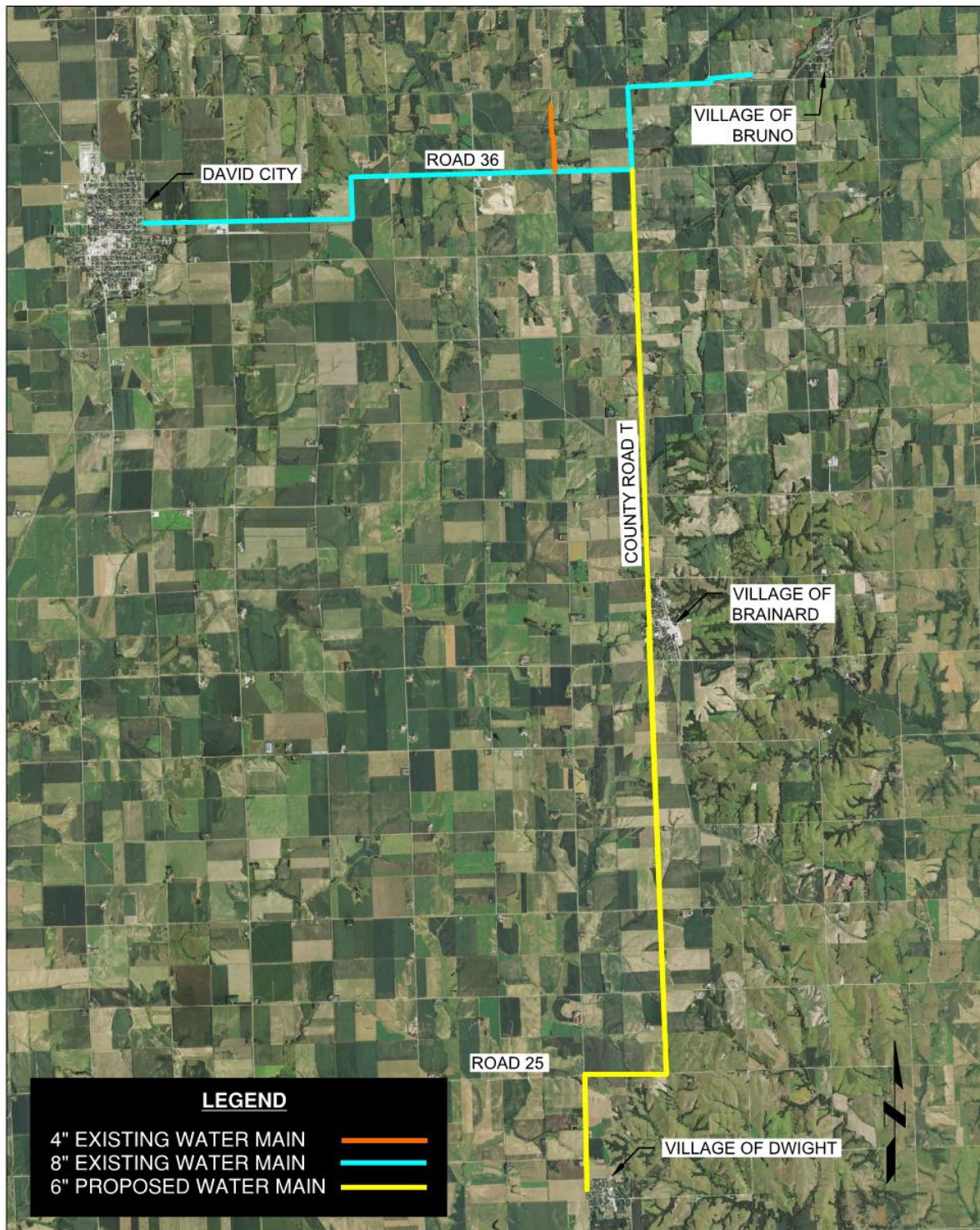
For the purposes of this study, it will be assumed that the NRD would own and maintain the transmission main to the point of connection to each Village, but the Village would be responsible to maintain and operate the water system components from the point of connection and within their corporate limits.

It is assumed that each Village would pay the NRD a commodity charge for the water volume pumped into their system. Preliminary discussions with the NRD have indicated that the monthly meter charge would be \$100 and commodity charge would be \$4.05 per 1,000 gallons.

Typically, in bulk water service connections, a purchaser such as the Village is required to pay a connection fee to the seller (NRD) in order to invest into the water supply, storage and distribution systems that are currently in place that allow for the water connection. Based on conversations with the NRD, it will be assumed that there will not be a connection fee charged to the Villages. However, the Villages will be required to construct the transmission main to the NRD's standards. This was the preliminary opinion of the NRD as of the writing of this report and may change as the project progresses.

**Figure 4-1: Alternative 2a – Conceptual Layout** presents the conceptual layout of the proposed 6" transmission main that would connect the Village of Brainard and the Village of Dwight to the existing LPNNRD RWD.

Figure 4-1: Alternative 2a – Conceptual Layout



**Table 4-2: Opinion of Cost to Connect to Connect Brainard and Dwight to RWD**

	<b>Item</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Total</b>
1.)	Mobilization (5%)	1	LS	\$100,000	\$100,000
2.)	Bonding and Insurance (2.5%)	1	LS	\$50,000	\$50,000
3.)	Clearing/Grubbing	1	LS	\$10,000	\$10,000
4.)	Site Work	1	LS	\$10,000	\$10,000
5.)	Erosion Control	1	LS	\$10,000	\$10,000
6.)	Seeding	1	LS	\$10,000	\$10,000
7.)	6" PVC Water Main	72,000	LF	\$12	\$864,000
8.)	Directional Boring	2,000	LF	\$40	\$80,000
9.)	Steel Casing Pipe	900	LF	\$225	\$202,500
10.)	6" Gate Valve and Box, MJ	15	EA	\$1,200	\$18,000
11.)	Flushing Hydrant	15	EA	\$2,000	\$30,000
12.)	Air Releases Manhole	18	EA	\$3,000	\$54,000
13.)	Misc. Fittings	1	LS	\$15,000	\$15,000
14.)	Connect to Existing Water Main	3	EA	\$1,200	\$3,600
15.)	Master Meter Station	2	EA	\$10,000	\$20,000
16.)	Booster Station	2	LS	\$225,000	\$450,000
17.)	Chlorine Booster Station	1	LS	\$50,000	\$50,000
18.)	Electrical, Controls, & Telemetry	1	LS	\$100,000	\$100,000
19.)	Backup Generator & ATS	2	LS	\$40,000	\$80,000
<b>Opinion of Construction Cost:</b>					<b>\$2,157,100</b>
Easements					\$360,000
Contingencies (10%):					\$215,710
Overhead - Legal, Fiscal, Admin., Engineering (25%):					\$539,275
<b>Total Opinion of Project Cost:</b>					<b>\$3,272,085</b>

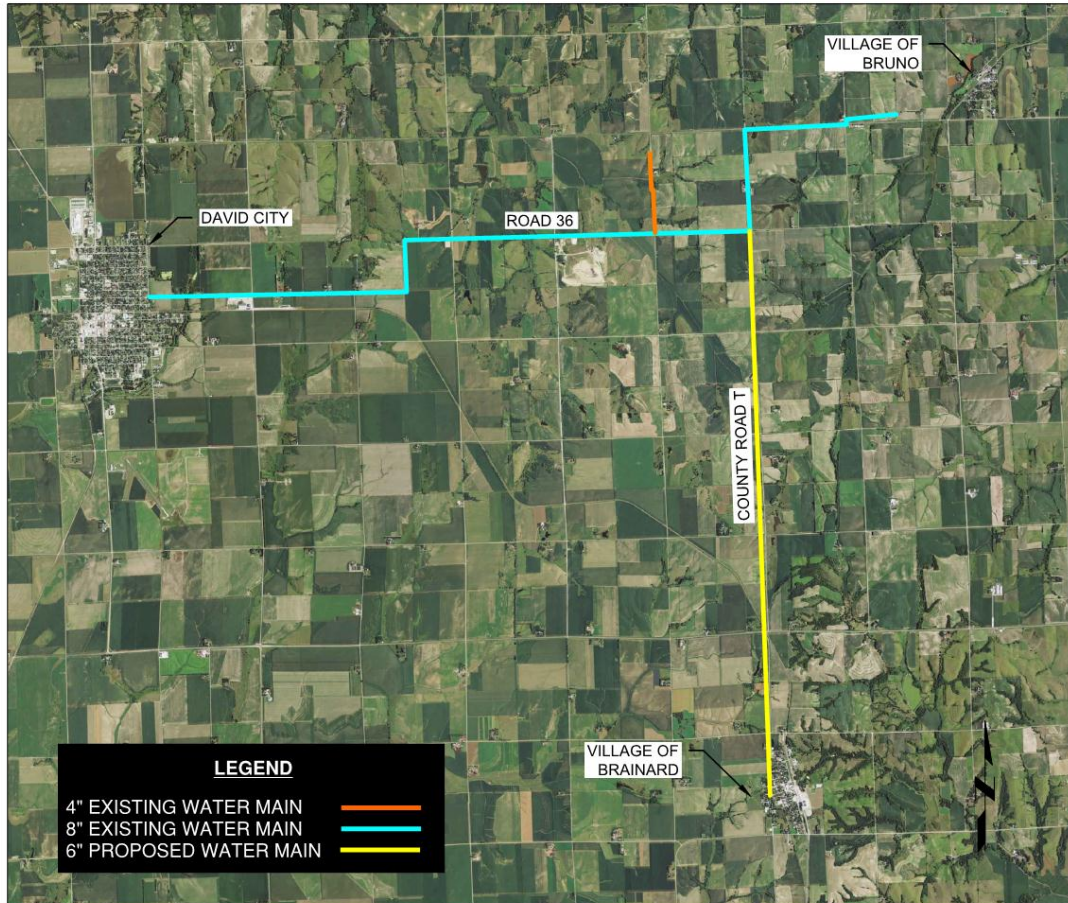
It is assumed that the NRD would remain responsible to operate the RWD, booster stations, and new transmission main and the Villages would be responsible for the master meters. It is estimated that this alternative would not significantly affect the maintenance costs for the Villages, but would have a significant cost associated with purchasing water from the NRD. As previously stated the cost of water charged by the NRD is anticipated to be \$100 per month for the meter charge and \$4.05/1,000 gallons purchased. The current water demand of 57,400 gpd would be equivalent to an annual cost of approximately \$86,000. This amount will be included in the projected annual O&M costs for this alternative.

#### **4.5 Alternative No. 2b – Connect Brainard to the LPNNRD RWD**

This alternative is similar to alternative 2a except that only the Village of Brainard would be connected to the system. A booster station would still be needed to fill Brainard's tower but the length of transmission main needed would be much shorter.

**Figure 4-2: Alternative 2b – Conceptual Layout** presents the conceptual layout of the proposed 6" main connecting the Village of Brainard to the existing LPNNRD RWD.

**Figure 4-2: Alternative 2b – Conceptual Layout**



**Table 4-3: Opinion of Cost to Connect Brainard to RWD**

	<b>Item</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Total</b>
1.)	Mobilization (5%)	1	LS	\$49,000	\$49,000
2.)	Bonding and Insurance (2.5%)	1	LS	\$24,500	\$24,500
3.)	Clearing/Grubbing	1	LS	\$5,000	\$5,000
4.)	Site Work	1	LS	\$10,000	\$10,000
5.)	Erosion Control	1	LS	\$5,000	\$5,000
6.)	Seeding	1	LS	\$5,000	\$5,000
7.)	6" PVC Water Main	30,000	LF	\$12	\$360,000
8.)	Directional Boring	1,000	LF	\$40	\$40,000
9.)	Steel Casing Pipe	600	LF	\$225	\$135,000
10.)	6" Gate Valve and Box, MJ	6	EA	\$1,200	\$7,200
11.)	Flushing Hydrant	6	EA	\$2,000	\$12,000
12.)	Air Releases Manhole	9	EA	\$3,000	\$27,000
13.)	Misc. Fittings	1	LS	\$5,000	\$5,000
14.)	Connect to Existing Water Main	2	EA	\$1,200	\$2,400
15.)	Master Meter Station	1	EA	\$10,000	\$10,000
16.)	Booster Station	1	LS	\$200,000	\$200,000
17.)	Chlorine Booster Station	1	LS	\$50,000	\$50,000
18.)	Electrical, Controls, & Telemetry	1	LS	\$75,000	\$75,000
19.)	Backup Generator & ATS	1	LS	\$30,000	\$30,000

<b>Opinion of Construction Cost:</b>	<b>\$1,052,100</b>
Easements	\$150,000
Contingencies (10%):	\$105,210
Overhead - Legal, Fiscal, Admin., Engineering (25%):	\$263,025
<b>Total Opinion of Project Cost:</b>	<b>\$1,570,335</b>

It is assumed that the NRD would remain responsible to operate the RWD, booster station, and new transmission main, and the Village would be responsible for the master meter. It is estimated that this alternative would not significantly affect the maintenance costs for the Villages, but would have a significant cost associated with purchasing water from the NRD. As previously stated the cost of water charged by the NRD is anticipated to be \$100/ per month for the meter charge and \$4.05/1,000 gallons purchased. The current water demand in Brainard of 32,400 gpd would be equivalent to an annual cost of approximately \$49,000. This amount will be included in the projected annual O&M costs for this alternative.

If selected, this alternative would still allow for Dwight to be connected to the system at a later date.

#### **4.6 Alternative No. 3 – Construct Transmission Main and Well Field**

This alternative proposes to construct a new water supply and transmission main to serve both Brainard and Dwight. This would include the construction of a 6" transmission main, well field, backup generator, and master meters.

As discussed in Section 2.3.3, the groundwater in Brainard has high selenium levels which has led to them to be under an AO to take actions to lower their selenium levels. Dwight currently has elevated arsenic that is in danger of going over the MCL. For these reasons it would be to the benefit of both communities to locate an alternative source of water.

During the summer of 2014, water tests were conducted on private irrigation wells in the area around Brainard and Dwight. The results of these tests, discussed in Section 2.3.4, showed that only five of the 12 wells tested had all 3 contaminants (arsenic, nitrates, and selenium) below the MCL. Of these 5 wells, 2 of them are approximately 3 miles to the west and northwest of Dwight. The remaining 3 are all located approximately 2.5 miles to the north of Dwight and within a mile of each other.

The 2 wells to the west and northwest of Dwight would require additional transmission main and do not provide significantly superior water quality. For these reasons, it appears that the 3 wells located to the north of Dwight would be a preferable location for a new municipal well field. Therefore, for the purposes of this study it will be assumed that a new well field will be located approximately 2.5 miles north of Dwight along the transmission main route between Brainard and Dwight.

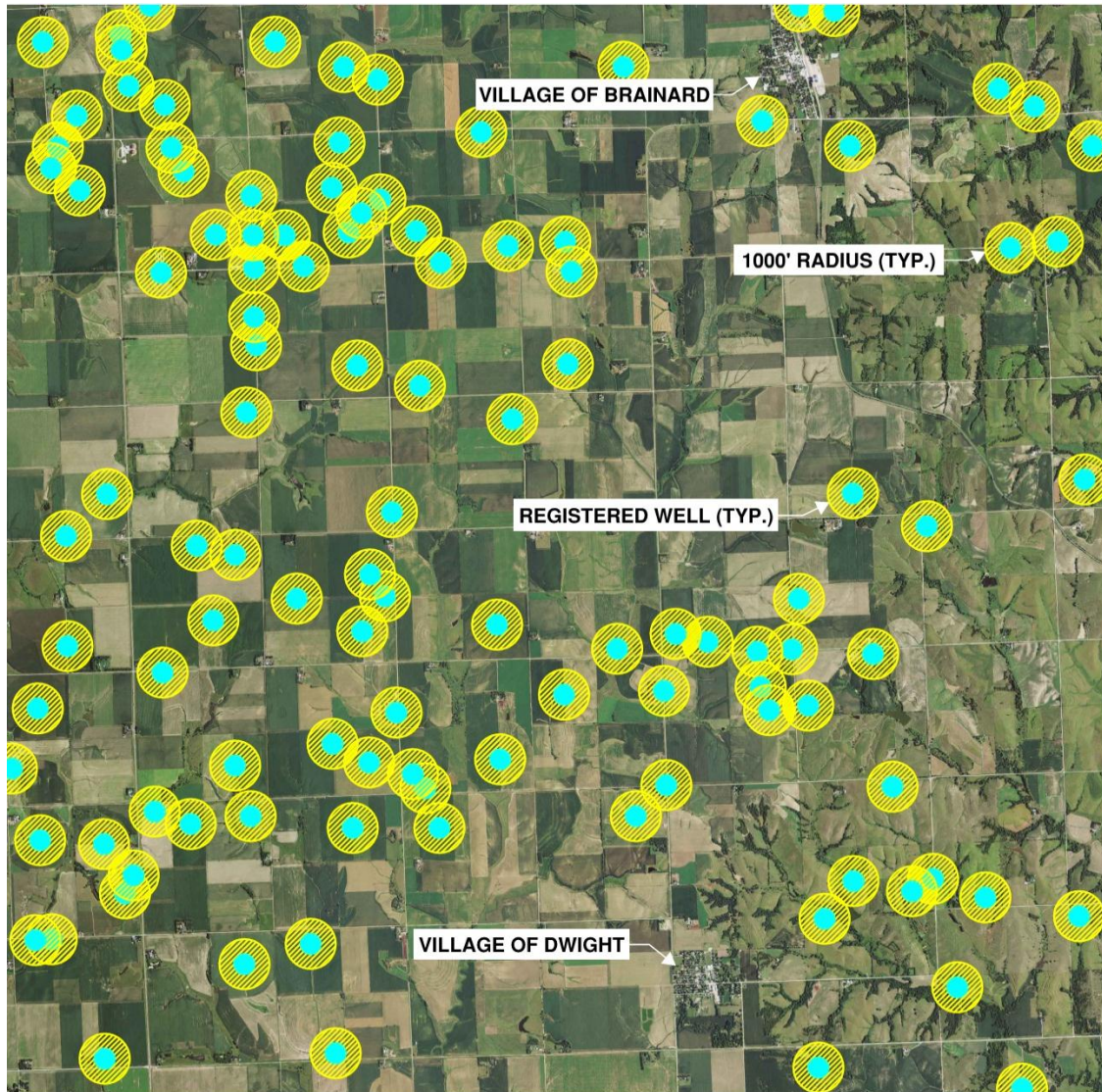
As stated in Section 2.3.4, the testing done for arsenic, nitrates, and selenium should be considered a snapshot of the water quality in this area and not an indication of what a municipal well will produce. The variability in contaminant levels seen in the Village of Brainards' wells indicates that selenium, while below the MCL when tested, could move to a level above the MCL over time. Similar variations in the arsenic level can be observed in the Village of Dwight's wells. Although impossible to predict at this point, the possible variability in the selenium and arsenic levels presents significant risk when developing a new well field. If this alternative is considered further, it is recommended that a test hole be drilled and regular water samples be taken from extended test pumping intervals to confirm the water quality prior to moving forward with a municipal well.

If a test well is pursued, the Village must comply with the regulations of the DHHS. One of the most common restrictions that apply to a community well is that a public well must be located at least 1,000 feet from any other well unless a detailed geologic investigation is conducted, an engineer certifies no significant risks, and a specific variance is granted. There are also other distance requirements that have to be met when considering a well site, such as distance from nearest landfill, sewage treatment plant, and feedlot etc., that are established to help prevent future contamination of the well.

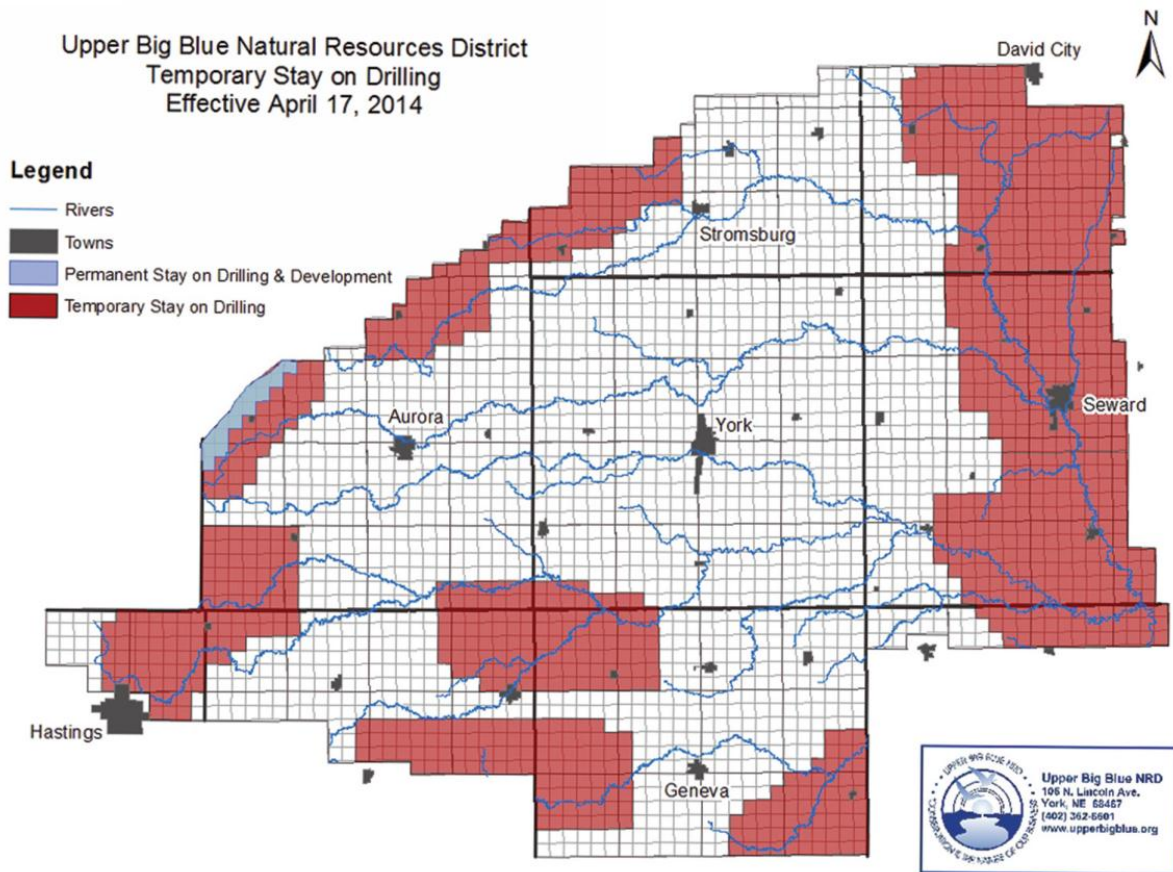
**Figure 4-3** shows the wells in the area with 1,000' setbacks.

The UBBNRD also has additional restrictions on the drilling of a well. No production wells can be drilled within 1,250' of another well and wells with different owners must also meet that setback. High capacity wells cannot be constructed within 2 miles of a municipal well. In the case where a new municipal well is drilled less than 2 miles from existing high capacity wells, those wells are grandfathered in and can remain in service. The owner of grandfathered wells may also drill replacement wells, but no new or supplemental wells will be permitted. Additionally, the UBBNRD has invoked a 180-day moratorium on drilling any new well capable of pumping more than 50 gallons per minute, with the exception of public water supplies. The largest portion of the moratorium area lies against the eastern boundary of the NRD's footprint where water quantity has been a problem. An amendment to add a two-mile buffer around the moratorium areas has also been approved. **Figure 4-4**, outlines the areas and the buffer zone in which the 180-day moratorium is in force.

Figure 4-3: Well Setback Map



**Figure 4-4: 180-day Moratorium Drilling Areas**



The initial cost of a test hole would be a direct expense to the Village, but those costs can frequently be rolled into overall improvement project financing if a test well program progresses to a full project. The following table shows an initial opinion of cost for a test hole.

**Table 4-4: Opinion of Cost for Test Hole**

1.) Mobilization, Insurance, & Bonding	1	LS	\$2,500	\$2,500
2.) Test Well w/ Hydrogeologic Report	1	LS	\$25,000	\$25,000
3.) NHHS New Well Kit	1	LS	\$7,500	\$7,500
4.) Test Pumping	1	LS	\$5,000	\$5,000

<b>Opinion of Construction Cost:</b>	<b>\$40,000</b>
Contingencies (10%):	\$4,000
Overhead - Legal, Fiscal, Admin., Engineering (25%):	\$10,000
<b>Total Opinion of Project Cost:</b>	<b>\$54,000</b>

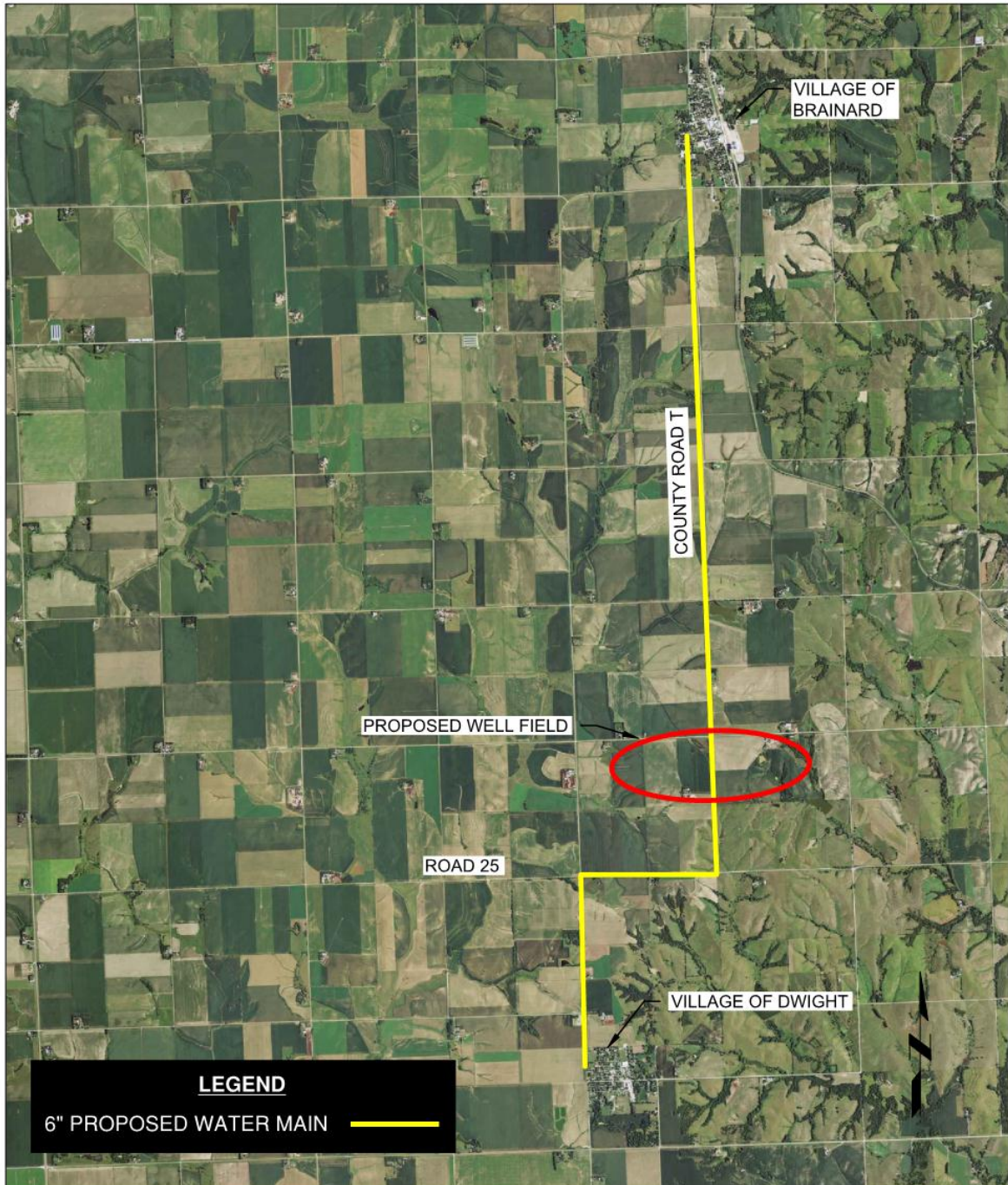
If the results of the test hole are promising then it would be recommended that the development of a new well field be pursued. It should be noted that if water quality in a new well field exceeds the MCL for a given contaminant then a new WTP would be needed.

The proposed well field would consist of two 200 gpm wells, well house, backup generator, chemical injection equipment, controls and telemetry, and other miscellaneous appurtenances.

A master meter would be located at the point of connection to both Brainard and Dwight to monitor and measure the potable water being supplied. The construction of the transmission main would also include air releases, gate valves, fire hydrants, and other miscellaneous fittings.

**Figure 4-5: Alternative 3 – Conceptual Layout** shows the location of the proposed well field and the 6” transmission main that would connect Brainard and Dwight.

Figure 4-5: Alternative 3 – Conceptual Layout



**Table 4-5: Opinion of Cost for Transmission Main and Well Field**

	<b>Item</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Total</b>
1.)	Mobilization (5%)	1	LS	\$74,000	\$74,000
2.)	Bonding and Insurance (2.5%)	1	LS	\$37,000	\$37,000
3.)	Clearing/Grubbing	1	LS	\$7,000	\$7,000
4.)	Site Work	1	LS	\$10,000	\$10,000
5.)	Erosion Control	1	LS	\$7,000	\$7,000
6.)	Seeding	1	LS	\$7,000	\$7,000
7.)	6" PVC Water Main	44,000	LF	\$12	\$528,000
8.)	Directional Boring	1,200	LF	\$40	\$48,000
9.)	Steel Casing Pipe	600	LF	\$225	\$135,000
10.)	6" Gate Valve and Box, MJ	9	EA	\$1,200	\$10,800
11.)	Flushing Hydrant	9	EA	\$2,000	\$18,000
12.)	Air Releases Manhole	12	EA	\$3,000	\$36,000
13.)	Misc. Fittings	1	LS	\$10,000	\$10,000
14.)	Connect to Existing Water Main	2	EA	\$1,200	\$2,400
15.)	Well Building, Complete	1	LS	\$180,000	\$180,000
16.)	Above Ground Piping	1	LS	\$30,000	\$30,000
17.)	Drill 24" Bore Hole	860	VF	\$65	\$55,900
18.)	16" Steel Casing	700	VF	\$85	\$59,500
19.)	16" SS Screen (90 Slot)	160	VF	\$275	\$44,000
20.)	Bentonite, Grout, Gravel Pack	2	EA	\$12,000	\$24,000
21.)	Develop and Disinfect Well	2	LS	\$5,000	\$10,000
22.)	Step Drawdown and Constant Rate Pump Testing	2	LS	\$2,500	\$5,000
23.)	Plumbness and Alignment Test	2	EA	\$800	\$1,600
24.)	Water Quality Testing	2	LS	\$5,000	\$10,000
25.)	Pitless Adapter Unit, Complete	1	EA	\$20,000	\$20,000
26.)	Submersible Pump, Motor, Drop Pipe, Check Valve, etc., Complete	2	LS	\$20,000	\$40,000
27.)	Level Transducer and Air Line, Complete	2	LS	\$2,500	\$5,000
28.)	Electrical, Controls, & Telemetry	1	LS	\$100,000	\$100,000
29.)	Backup Generator & ATS	1	LS	\$80,000	\$80,000
<b>Opinion of Construction Cost:</b>					<b>\$1,595,200</b>
Easements					\$220,000
Contingencies (10%):					\$159,520
Overhead - Legal, Fiscal, Admin., Engineering (25%):					\$398,800
<b>Total Opinion of Project Cost:</b>					<b>\$2,373,520</b>

It is assumed that the Village would be responsible for operating the well field and new transmission main. It is estimated that an additional \$12,500 of annual O&M costs could be experienced by the Villages.

#### **4.7 Alternative No. 4 – Construct Transmission Main and WTP**

This alternative consists of the construction an arsenic, iron, and manganese removal WTP at Dwight, new well, and a transmission main to serve both Dwight and Brainard. Currently, the raw water in Dwight is in danger of exceeding the MCL for arsenic. A WTP could remove the arsenic as well as other secondary contaminants to provide high quality water to both Brainard and Dwight.

As stated previously, the levels of arsenic and selenium in the groundwater have varied greatly over time. The previous alternative provided the high risk/high reward opportunity of locating a new wellfield that doesn't appear to require treatment, but may in the future if arsenic, nitrate, or selenium levels increase.

This alternative aims to provide a lower risk/higher cost alternative by treating water from Dwight with a conventional treatment system. Dwight's existing wells have an established history of low selenium, low nitrates, and varying arsenic levels. By removing the arsenic, this water supply would very likely provide acceptable water quality for the foreseeable future.

Any new WTP would require at least two wells feeding it to provide redundancy in the source water. Since both of Dwight's existing wells are approximately 40 years old, it is proposed to construct the WTP near one the existing wells and drill another well rather than install transmission main piping to the other well. This new well would provide the WTP with a more reliable water source into the future. It is assumed that this new well would be located at least 1,000 feet from the existing well. The unused existing well would be placed in emergency status.

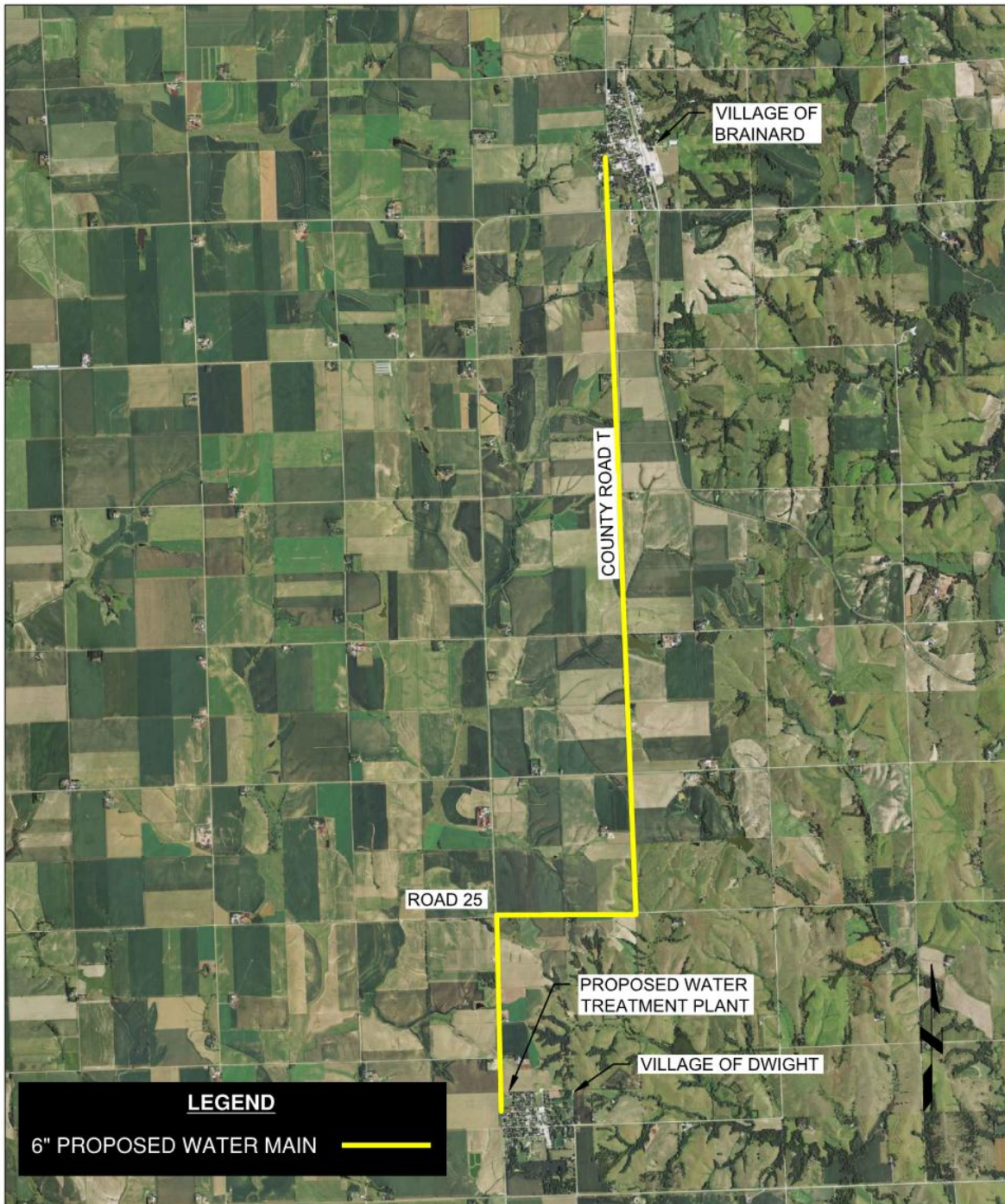
A gravity media filtration WTP consists of a new water treatment building, two package water filters, two high service pumps, two backwash blowers, chemical feed systems, back-up generator system, a new 200 gpm submersible well, modifications to the existing wells, and other miscellaneous appurtenances. The package water filters system consists of an aerator, detention tank, and filter unit.

A gravity media filter system will remove iron, manganese, total dissolved solids, and arsenic from the raw well water. The raw well water will be pumped to the top of the aeration tower where oxygen is introduced into the raw water to oxidize the iron, arsenic, and manganese so they can be collected in the filter media. Water then flows into the detention tank where chlorine is introduced and allowed to react with the arsenic, iron, and manganese for approximately 30 minutes before entering the filtration section. The arsenic, iron, and manganese in the water entering the filter unit will have been oxidized so that they can be collected in the filter. The filtered water will then be pumped into the distribution system by the high service pumps. Given the water chemistry, it is expected that arsenic removal will be achieved by co-precipitation and filtration with the existing iron during the iron and manganese filtration process. Additionally, a chlorination system will also be installed inside water treatment building. The chlorination is provided to disinfect the water supply and is required by DHHS, since the water supply is treated. Sodium Permanganate may also be added to enhance the iron and manganese removal. Ultimately, the recommended chemical dosages will be determined during pilot testing.

Over time the filter will build up solids and, as a result, must be cleaned through a process called backwashing. The backwashing process uses treated water to clean the filter media and remove accumulated solids. The backwash waste exits the units as solids laden water which is collected in a sump pit and drains into the sanitary sewer. It is estimated that the total amount of backwash water will be approximately 5% to 10% of the total water pumped. Preliminary conversations with the operator indicate there is excess capacity in the Village's controlled discharge lagoon system to handle this additional waste stream. If this alternative is pursued, additional analysis of the sewer treatment system is recommended.

**Figure 4-6: Alternative 4 – Conceptual Layout** shows the location of the proposed water treatment plant and the 6" transmission main that would connect Brainard and Dwight.

Figure 4-6: Alternative 4 – Conceptual Layout



**Table 4-6: Opinion of Cost for Gravity Media Filtration**

	<b>Item</b>	<b>Quantity</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Total</b>
1.)	Mobilization (5%)	1	LS	\$105,000	\$105,000
2.)	Bonding and Insurance (2.5%)	1	LS	\$52,500	\$52,500
3.)	Clearing/Grubbing	1	LS	\$7,000	\$7,000
4.)	Site Work	1	LS	\$10,000	\$10,000
5.)	Erosion Control	1	LS	\$7,000	\$7,000
6.)	Seeding	1	LS	\$7,000	\$7,000
7.)	6" PVC Water Main	44,000	LF	\$12	\$528,000
8.)	Directional Boring	1,000	LF	\$40	\$40,000
9.)	Steel Casing Pipe	600	LF	\$225	\$135,000
10.)	6" Gate Valve and Box, MJ	9	EA	\$1,200	\$10,800
11.)	Flushing Hydrant	9	EA	\$2,000	\$18,000
12.)	Air Releases Manhole	12	EA	\$3,000	\$36,000
13.)	Misc. Fittings	1	LS	\$10,000	\$10,000
14.)	Connect to Existing Water Main	2	EA	\$1,200	\$2,400
15.)	Treatment Building, Complete	1	LS	\$300,000	\$300,000
16.)	Treatment Units	1	LS	\$375,000	\$375,000
17.)	High Service Pumps	2	EA	\$15,000	\$30,000
18.)	Above Ground Piping	1	LS	\$30,000	\$30,000
19.)	Chemical Feed Equipment	1	LS	\$70,000	\$70,000
20.)	Drill 24" Bore Hole	430	VF	\$65	\$27,950
21.)	16" Steel Casing	350	VF	\$85	\$29,750
22.)	16" SS Screen (90 Slot)	80	VF	\$275	\$22,000
23.)	Bentonite, Grout, Gravel Pack	1	EA	\$12,000	\$12,000
24.)	Develop and Disinfect Well	1	LS	\$5,000	\$5,000
25.)	Step Drawdown and Constant Rate Pump Testing	1	LS	\$2,500	\$2,500
26.)	Plumbness and Alignment Test	1	EA	\$800	\$800
27.)	Water Quality Testing	1	LS	\$5,000	\$5,000
28.)	Pitless Adapter Unit, Complete	1	EA	\$20,000	\$20,000
29.)	Submersible Pump, Motor, Drop Pipe, Check Valve, etc., Complete	1	LS	\$20,000	\$20,000
30.)	Level Transducer and Air Line, Complete	1	LS	\$2,500	\$2,500
31.)	Electrical, Controls, & Telemetry	1	LS	\$250,000	\$250,000
32.)	Backup Generator & ATS	1	LS	\$80,000	\$80,000
<b>Opinion of Construction Cost:</b>					<b>\$2,251,200</b>
Easements					\$220,000
Contingencies (10%):					\$225,120
Overhead - Legal, Fiscal, Admin., Engineering (25%):					\$562,800
<b>Total Opinion of Project Cost:</b>					<b>\$3,259,120</b>

It is assumed that the Villages would be responsible for operating the new transmission main and the WTP. It is estimated that an additional \$30,000 of annual O&M costs could be experienced.

#### 4.8 Summary of Engineer's Opinion of Costs and O&M Costs for Alternatives

Table 4-7 below provides a side by side comparison of the estimated opinion of probable cost for each of the alternatives.

**Table 4-7: Summary of Engineer's Opinion of Cost and O&M Costs for Alternatives**

Alternative	Description	Additional O&M Cost*	Opinion of Project Cost
2a	Connect Brainard and Dwight to RWD	\$86,000	\$3,272,085
2b	Connect Brainard to RWD	\$49,000	\$1,918,635
3	Transmission Main and Well Field	\$12,500	\$2,373,520
4	Transmission Main and WTP	\$30,000	\$3,259,120

\*O&M cost includes the price to purchase water for alternative 2A & 2B.

#### 4.9 Pricing Index

Preliminary Opinions of Cost have been prepared for the purpose of making a monetary comparison between the proposed alternatives. Material and equipment costs were determined by review of local construction projects of similar nature and consultation with various material and equipment manufacturers and suppliers. Material and labor costs have increased over the recent years resulting in increasing construction, operation, and maintenance costs. Market conditions indicate that this trend will likely continue in the future at varying rates. The cost opinions have been prepared based on present value construction costs for comparison purposes.

Construction costs can be adjusted to different time periods by utilizing the Engineering News Record (ENR) construction cost index. The costs presented in this report are from 2014 which correlates to the ENR index of 9,870.12. Construction cost can be adjusted from one time to another by multiplying the cost by the ratio of the two ENR indices (future/present). For example if the cost of a project is \$100,000 when the ENR index is 10,000 the cost of same project when the ENR index is 11,000 can be estimate by multiplying 100,000 times 11,000 divided by 10,000 or 1.1. The resulting costs would be \$110,000.00

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**SECTION 5**

**5 Alternative Selection**

**5.1 Elimination of Alternatives**

**5.1.1 Technically Not Feasible**

Alternative No. 1: No Action

This alternative is not feasible because taking no action would result in the violation of the AO and would subject the Village of Brainard to fines until they took some mitigating action.

**5.2 Feasible Alternatives**

**5.2.1 Life Cycle Costs**

The purpose of the cost effective evaluation is to determine the average annual equivalent cost of the alternatives identified over the design life of the project. This evaluation considers the initial cost, estimated annual operation and maintenance costs, and salvage value, if any.

**5.2.1.1 Alternative Calculations**

The annual O&M costs listed in the following table included the existing O&M in Brainard and Dwight.

**Table 5-1: Alternatives Lift Cycle Costs Summary**

	<b>2a – Connect Brainard and Dwight to RWD</b>	<b>2b – Connect Brainard to RWD*</b>	<b>3 – Construct Transmission Main and Well Field</b>	<b>4 – Construct Transmission Main and WTP</b>
<b>Total Capital Cost</b>	\$3,272,085	\$1,570,335	\$2,373,520	\$3,259,120
<b>Add Annual O&amp;M Cost</b>	\$63,785	\$63,785	\$76,285	\$93,785
<b>Cost to Purchase Water</b>	\$86,000	\$49,000	\$0	\$0
<b>Present Worth of O&amp;M Costs over 20 years</b>	\$2,523,877	\$1,900,427	\$1,285,402	\$1,580,277
<b>Net Present Value</b>	<b>\$5,795,962</b>	<b>\$3,470,762</b>	<b>\$3,658,922</b>	<b>\$4,839,397</b>

\*Alternative 2b only provides water to Brainard.

**5.2.2 Non-Monetary Factors & Environmental Impacts**

For the previously presented alternatives, a preliminary look at the potential impacts upon social and environmental factors that are important when determining which alternative(s) should be pursued for the Villages. This evaluation will examine impacts to air, land, surface water and groundwater, as well as social and economic impacts. Beneficial water reuse or conservation are also important to consider when they are available.

The following is a preliminary list of likely known impacts from the potential improvement alternatives. A more comprehensive environmental analysis will be prepared for the selected alternative in a separate report at the conclusion of this review. As a part of that analysis, state and federal agencies will be consulted to review any potential concerns they may have.

#### **5.2.2.1 Air**

The excavation and placement of earth may cause fugitive dust emissions, but the process will be conducted with water application to reduce the amount of dust created.

#### **5.2.2.2 Land Use**

The primary effect on the surrounding land occurs during the construction process where storm water runoff and erosion are the main concerns. To mitigate this process and comply with applicable regulations to reduce erosion, erosion control fencing and other erosion control methods will be employed. Site restoration will occur promptly following any proposed construction. Vegetation will be restored to the site via site seeding and mulching.

#### **5.2.2.3 Biological Resources**

A thorough wildlife and endangered species review will be conducted in a separate report. While normal native wildlife is expected in any area, no known endangered species are present in the proposed site area.

#### **5.2.2.4 Archeological Resources**

A thorough historical buildings and archeological review will be conducted in a separate report. No known historical resources are present in the proposed site area at this time.

#### **5.2.2.5 Surface Water & Wetlands**

This alternative is not proposed to impact surface water and will not affect municipal, industrial or agricultural water users' availability of water. The potential impact to surface water from storm water runoff will be controlled via erosion control methods and best management construction practices.

All alternatives' proposed construction is not planned to be within any wetland areas. Prior to design of any of these alternatives, it is recommended that wetland delineation be accomplished to appropriately locate and define wetlands and to confirm that no proposed construction occurs within the defined areas. If any wetlands are encountered and disturbed for a proposed project, the wetland will be restored or mitigated to preconstruction condition in compliance with applicable regulations.

#### **5.2.2.6 Groundwater**

A thorough groundwater and wells review will be conducted in a separate report. Groundwater levels are not expected to be significantly impacted as a part of any alternative.

### **5.2.2.7 Economic and Social Impacts**

The primary economic impact for this alternative is the cost to the water users in the Villages. The project costs are projected to be quite high. The Villages may be eligible for low-interest loans and/or grants that could reduce the financial burden of the rate payers.

The social impacts of this project would be primarily related to the change in water quality. The water provided by one of the proposed systems would have levels of arsenic, nitrates, and selenium. In addition, the water quality produced by alternatives 2A, 2B, and 4 would also have lower levels of iron and manganese than the current water sources, but would be chlorinated due its treatment. Often changes in water quality can result in complaints from users since the water tastes different. Over time users typically become accustom to their local water supply and may be unreceptive to changes in its taste.

No relocations or disruptions of traffic are expected from this alternative.

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**SECTION 6**

## **6 Proposed Project**

### **6.1 Selected Alternative(s) and Preliminary Design Information**

After review of the available alternatives and the conditions of Brainards AO, it is recommended that alternative 4 be selected. This alternative involves constructing a water treatment plant (WTP) and transmission main to serve as the water source for Brainard and Dwight. This consists of the construction of a WTP in Dwight to remove arsenic, iron, and manganese, and the associated transmission main to convey water to both Villages' water systems.

This alternative will allow the Village to meet the terms of the AO and provide the best drinking water quality with the least financial impact to their users.

It should be noted that although alternative 3 is less costly, the risk of the levels of arsenic, nitrates, and selenium increasing after a well field is developed is considered prohibitive. The amount of testing data available is not sufficient to provide the Village with a degree of certainty that this source would have acceptable quality well into the future. The current compliance schedule in Brainards AO doesn't provide time for the additional pumping and testing necessary to confirm some kind of stability in the water quality. If the Village wishes to explore alternative 3 then the DHHS should be contacted to begin discussions on requesting a time extension of the current compliance schedule. It would also be recommended the DHHS be heavily involved in determining what degree of testing should be done before pursuing a well field in this area.

### **6.2 Possible Project Schedule**

The implementation of the recommended improvements can take a substantial length of time for the funding, design, review, and construction of the project(s). It is recommended that the Villages begin the project(s) process immediately so that the deficiencies can be corrected as soon as possible.

If the Villages decide to pursue the construction of these recommended alternatives, **Table 7-2: Potential Implementation Schedule** lists the typical steps and anticipated duration of each step to implement the alternative(s).

**Table 6-1: Potential Implementation Schedule**

Projected Steps	Elapsed Time
Completion and Acceptance of Facility Report	1 months
Start Environmental Assessment	3 months
WWAC Review	6 months
Complete Environmental Review Process	6 months
Retain Services of Professional Engineer	8 months
Secure Funding	10 months
Design of Improvements to the PWS	
Preliminary Design Review w/Owner	13 months
Final Design Review w/Owner	16 months
Advertise for Bids	18 months
Project Bid Letting and Contracts	19 months
Construction Period	20 to 28 months
Project Close-Out	30 months

If the Villages wish to pursue an improvement project, the first step that should be taken is submittal of a pre-application to the Water & Wastewater Advisory Committee (WWAC) for review and consideration of financial assistance to the Villages. WWAC is made up of representatives for the funding agencies listed in Section 7 of this report. This committee reviews the proposed improvements and advises the Villages of which Agency's funding program may be most helpful.

### 6.3 Permitting Requirements

The recommended project will need to have multiple permits in order to complete. These permits include a construction permit from DHHS, county road crossing permits from Butler County, highway crossing permits from NDOR, state electrical inspection, and well drilling permits from the NRD. Other permitting requirement may apply as well and will be identified during design.

### 6.4 Projected Impact to Users

The following **Table 6-3: Potential Impact to Village Water Rates** provides the estimated impact on the average individual water use charge if various alternatives are installed. This table assumes that no other outside party subsidizes the cost for the improvements to the system. If a source for grant funding assists with the project costs, then the impact to the existing users may be reduced.

Since many of the alternatives serve users in Brainard and Dwight and the cost sharing between those communities would likely be determined at a later time, it has been assumed that the costs will be distributed evenly on a per user basis. The "Total Cost per User" in the following table is simply the total added yearly expense divided by the number of users being served. For alternative 2A, 3, and 4 the number of users being served is 356, for alternative 2B the number of users being served is 210.

**Table 6-2: Potential Impact to Village Water Rates**

Description	Capital Cost	Estimated Debt Service @ 4.5% Over 20 yrs.	Average O&M Cost Per year	Total Added Yearly Expense	Total Cost per User**
	\$	(\$/yr.)	(\$/yr.)	(\$/yr.)	(\$/mo.)
<b>Existing System</b>	\$0	\$0	\$63,785	\$63,785	\$14.93
<b>2a-Connect Brainard and Dwight to RWD</b>	\$3,272,085	\$251,623	\$149,785	\$401,408	\$103.36
<b>2b-Connect Brainard to RWD*</b>	\$1,570,335	\$120,759	\$112,785	\$233,544	\$101.94
<b>3-Transmission Main and Well Field</b>	\$2,373,520	\$182,524	\$76,285	\$258,809	\$66.64
<b>4-Transmission Main and WTP</b>	\$3,259,120	\$250,626	\$93,785	\$344,411	\$88.68

\*Alternative 2b only provides water to Brainard.

\*\*Includes 10% reserve on O&M and debt service.

Regardless of what alternative is selected, the Village will have to enter into an inter-local or other type of agreement that would stipulate how costs are distributed among each party. This study has assumed that the costs will be distributed evenly between all the users connected to the system. Other arrangements such as splitting the costs 50/50 between parties or based on flows could be possible.

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**SECTION 7**

## **7 Funding Sources**

Depending upon the alternate selected, there are several methods of financing available; including:

- Revenue Bonds
- General Obligation Bonds
- The Nebraska Department of Health and Human Services Drinking Water State Revolving Loan Fund (SRF)
- The USDA Rural Development Water and Waste Disposal Loan and Grant Program
- The Nebraska Department of Economic Development Community Development Block Grant Program

A combination of some or all of these funding sources is also possible. Considering the capital construction cost and ongoing O&M costs of the improvements, it may prove beneficial to the communities to pursue funding assistance from one or more of the public programs listed above. A general description of each of these funding methods is provided below.

If the Villages would like to proceed with this project, a representative from all these funding agencies will need to be contacted by submitting this report to the Water and Wastewater Advisory Committee (WWAC). This committee will review the report and make recommendations on funding that might be available. By submitting to the WWAC, there is no obligation by the communities to complete the project. The communities will be given an opportunity to review the funding package offered by the WWAC and decide whether or not to move forward.

### **7.1 Revenue Bonds**

Revenue bonds may be issued by utilities or jurisdictions that provide services for which revenues are collected. Debt service on the revenue bond issue is paid from the net revenues of the utility. One requirement of revenue bonds is that the total revenues of the utility must exceed the amount of the bond issue by an excess amount referred to as “coverage”. This coverage is typically as much as 30% of the annual debt service payments in order to make the bonds attractive to buyers. In projects such as this with large expenditures and debt service requirements, the revenue bond requirement for 30% to 50% coverage often is a hardship to the owner, which makes other forms of financing more attractive. Revenue bonds are currently sold at interest rates of 2.5-4% for 15-20 year terms, depending on market conditions and credit worthiness of the issuer.

### **7.2 General Obligation Bonds**

General obligation bonds may be issued for this type of improvement. General obligation bonds are a type of municipal government bond, which is government debt issued to raise money to finance public improvements. A general obligation bond is a municipal bond backed by the credit and “taxing power” of the issuing jurisdiction, rather than the revenue from a given project. No assets are used as collateral for the bond and the bond is not dependent on revenue of any particular project for repayment. It is

also common to retire general obligation bonds with utility revenues. General obligation bonds are currently sold at interest rates of 2-3.5% for 15-20 year terms, depending on market conditions and credit worthiness of the issuer.

### **7.3 Department of Health and Human Services – Drinking Water State Revolving Fund (DWSRF)**

The median household income (MHI) for Brainard is \$51,111 +/- \$4,725 and Dwight is \$60,313 +/- \$17,506. Given this value, the Villages could be eligible for a 3.0% loan from the DHHS (SRF) and could possibly qualify for up to 20% of loan forgiveness. Since the Village of Brainard is under an AO, they may also qualify for up to 35% principal forgiveness.

**Figure 7-1: DHHS Drinking Water SRF Program Requirements**

Nebraska Department of Health & Human Service State Revolving Loan Fund State of Nebraska	
2008-2012 Median Household Income	Drinking Water State Revolving Fund
> \$61,657	Interest Rate: 2.0% plus a 1% admin fee on the outstanding principal balance waived for the first year. Term: Up to 20 years Small Town Grant: None Loan Forgiveness: None
\$41,105 - \$61,657	Interest Rate: 2.0% plus a 1.0% admin fee on the outstanding principal balance waived for the first year. Term: Up to 20 years. A 30 year term @ 2.0%+1.0% is available for disadvantaged communities. To encourage loan recipients to repay loans sooner and interest rate reduction of 0.03% per year is offered down to a minimum of 2.0%. Small Town Grant: None Loan Forgiveness: Up to 20% of eligible project costs by interpolation for towns having population < 10,000.
< \$41,105	Interest Rate: 2.0% plus a 1.0% admin fee on the outstanding principal balance waived for the first year. Term: Up to 20 years. A 30 year term @ 2.0%+1.0% is available for disadvantaged communities. To encourage loan recipients to repay loans sooner and interest rate reduction of 0.03% per year is offered. Small Town Grant: None Loan Forgiveness: 20% of eligible project costs for towns having population < 10,000.

Up to 35% loan forgiveness may be offered to PWSs whose projects will remedy an Administrative Order issued by NDHHS-DPH  
A 50% loan forgiveness ceiling may be available to a PWS, at the discretion of the NDEQ and the Director of the NDHHS-DPH up to a ceiling of \$250,000, under all of the following conditions:

- The PWS has closed a loan with the SRF within the past 5 years;
- That loan was for a project needed to resolve either an Enforcement Action or an Administrative Order (A.O.) issued to the PWS by the NDHHS-DPH; and,
- That project did not resolve the specified Enforcement Action or A.O., or resulted in a separate Enforcement Action or A.O., through no fault by the PWS.

Note: 10 year loans set at 5.5% + 1.0% admin for private, non-profit water systems.

### 7.4 USDA Rural Development Program

USDA Rural Development also uses the community’s MHI when considering funding eligibility for its program. The following diagram provides information about the type of assistance that may be offered to the community under the USDA Rural Development’s Water and Waste Disposal Loan and Grant (WWDLG) Program, based upon the community’s MHI value. It shows that the Villages may be eligible for grant assistance.

**Figure 7-2: USDA Rural Development WWDLG Program Requirements**

<b>USDA RURAL DEVELOPMENT WATER AND WASTE DISPOSAL LOAN &amp; GRANT PROGRAM STATE OF NEBRASKA</b>	
<u>Interest Rate</u>	<u>Grant Eligibility</u>
Market Rate ↑ 2008-2012 MHI* \$51,320	No grant assistance ( <i>See Note below</i> ).
↑ Intermediate Rate ↓ 2008-2012 MHI* \$41,056	Up to 45% grant assistance ( <i>See Note below</i> )
↓ Poverty	Up to 45% grant assistance, unless correcting a public health need. Then the maximum grant assistance is 75% ( <i>See Note below</i> ).

\* The MHI is the Median Household Income for the applicant according to the 2008-2012 American Community Survey 5-Year Estimates. At their sole discretion, an applicant may elect to conduct an MHI survey to challenge this figure. The MHI value established by this survey will be compared against the annually adjusted MHI value used by USDA for the applicant’s service area. The results of the MHI survey will be valid for three (3) years, and then will revert back to the 2008-2012 American Community Survey MHI figure.

*Note:* USDA Rural Development Water and Waste Disposal Loan and Grant Program require a “Test of Credit.” An applicant’s projected user fee, including all grant funds, must meet USDA’s Similar System User Rates before grant assistance can be applied to the project. Water meters are required.

### 7.5 Department of Economic Development CDBG Program

The most recent reports indicate that both the community's low- and moderate-income (LMI) percentage are approximately 19.7%. As shown by **Figure 7-3**, in order to qualify for funding under the Nebraska Department of Economic Development's Community Development Block Grant – Water and Wastewater (CDBG – WW) Category, the communities must have an LMI percentage of 51% or higher. Therefore, it initially appears that the communities may not be eligible for CDBG funding.

However, the CDBG program does allow for a local challenge of this American Community Survey percentage figures if the community has reason to believe that the service area is actually above the 51% LMI threshold. To carry out this challenge, the community must conduct a statistically valid Income Survey of the entire service area, pursuant to CDBG Survey Methodology.

If the communities choose to perform this challenge, JEO recommends that they seek the assistance of an experienced individual/organization familiar with CDBG survey requirements to oversee the process. Failure to comply with CDBG survey methodology will invalidate the results of the survey. This survey process will take additional time to complete and the outcome is not guaranteed. Therefore, the community must carefully weigh the potential inflationary cost of construction against the potential benefits of an added grant.

**Figure 7-3: Department of Economic Development CDBG Program Requirements**

<b>NEBRASKA DEPARTMENT OF ECONOMIC DEVELOPMENT                      COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG) PROGRAM                      STATE OF NEBRASKA</b>	
Low- and Moderate- Income (LMI) Percentage	CDBG Eligibility
51% - 100% LMI	<p>If the applicant’s service area has a Low- and Moderate-Income (LMI) percentage greater than 51% (51%-100%) then the community/county may be eligible for up to \$250,000 in Community Development Block Grant (CDBG) – Water and Wastewater (WW) funds.</p> <p>The applicant’s LMI percentage can be obtained from the 2006-2010 American Community Survey, or by conducting an income survey in strict accordance with CDBG survey methodology. Such income surveys are valid for up to four years.</p> <p>Other CDBG eligibility requirements include:</p> <ul style="list-style-type: none"> <li>• The applicant has been invited to apply for CDBG – WW assistance by the Nebraska Department of Economic Development.</li> <li>• The applicant has the financial capacity to provide the required 25% local match.</li> <li>• The CDBG cost per beneficiary does not exceed \$3,000.</li> <li>• The applicant has a reasonably projected user fee, including all potential grant funds, exceeding \$20 per household per month.</li> <li>• The applicant has scored 85 points or more on the State’s most recent Intended Use Plan - Drinking Water Revolving Fund priority system (Drinking Water projects only).</li> <li>• The applicant has scored 55 points or more on the State’s most recent Intended Use Plan - Clean Water Revolving Fund priority system (Clean Water projects only).</li> </ul>
0% - 50.9% LMI	<p>If the applicant’s LMI percentage is less than 51% (0%-50.9%), then the community/county is not eligible to apply for CDBG – WW funds, unless:</p> <ul style="list-style-type: none"> <li>• The applicant elects to conduct an LMI income survey to challenge the LMI percentage established by the 2006-2010 American Community Survey. Income surveys that are conducted in accordance with CDBG methodology, are valid for up to four years.</li> <li>• The applicant has, in its service area, 100 or more households with a high concentration of LMI residents (51%+). In this case, CDBG-assisted improvements must be designed (in terms of sizing and capacity) to benefit only those beneficiaries within the targeted area.</li> </ul>

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**SECTION 8**

**8 Conclusions and Recommendations**

**8.1 Conclusions**

The study and evaluation of the municipal water systems for Brainard and Dwight indicates that there are is a need for better quality water. The combination of rising contaminant levels and a state issued AO make it necessary to locate a long term source for high quality water.

**8.2 Recommendations**

Based on the information in this study, it is recommended that alternative 4 be selected. This alternative involves constructing a water treatment plant (WTP) and transmission main to serve as the water source for Brainard and Dwight. This consists of the construction of a WTP in Dwight to remove arsenic, iron, and manganese, and the associated transmission main to convey water to both Villages' water systems.

This alternative will allow the Village to meet the terms of the AO and provide the best drinking water quality with the least financial impact to their users.

It has been a pleasure for JEO to assist in identifying areas of need for the water system. If the Village should consider proceeding in any of the endeavors, JEO would be excited about assisting the Village once again in developing design plans and specifications for any improvements necessary to continue providing quality water to the Village users.

**THIS CONCLUDES THE  
REGIONAL WATER SYSTEM  
PRELIMINARY ENGINEERING REPORT  
VILLAGE OF BRAINARD, NEBRASKA**

February ??, 2015

# **Ground Water Management Area Rules and Regulations**

Implemented - January 1, 1997  
Last Amended - February 10, 2014

## PUBLIC NOTICE

**Administrative Order for Lower Platte North Natural Resources District Amended Groundwater Management Area Rules and Regulations to become effective February 10, 2014.**

Public Notice was published three times in the Wahoo Newspaper: January 16, January 23, and January 30, 2014.

Public Notice was published once in the Columbus Telegraph, Schuyler Sun, and David City Banner on January 30, 2014.

Upon request, maps showing the stay management area on well construction and expanded irrigated acres, with limited development, in the hydrologically connected areas of Lower Platte North NRD are available on the District website at [www.lpnrd.org](http://www.lpnrd.org) or from the NRD office by calling 402-443-4675 or by mail at P.O. Box-126, Wahoo, Nebraska 68066.

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## **GROUND WATER MANAGEMENT AREA IN THE LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT**

The Lower Platte North NRD with authority granted under Neb. Rev. Statutes 46-701 to 46-754 of the Nebraska Ground Water Management and Protection Act has designated the entire District as a Phase One Management Area for ground water quality and Level One Management area for ground water quantity. Geographically this will include all lands and water bodies within the boundaries of the Lower Platte North NRD. Stratigraphically this will include all ground water located within the boundaries of the Lower Platte North NRD and is not limited to just ground water found in the High Plains Aquifer, Principal Aquifer, Alluvial Aquifers, Dakota Aquifers or other such bedrock aquifers within the District.

### **Section A General Provisions**

#### **Rule 1 Definitions**

**Act** shall mean the Nebraska Ground Water Management and Protection Act as codified in Neb. Rev. Statutes 46-701 to 46-754.

**Active status water well** shall mean a water well which is in use and which is not an illegal water well.

**Acre-inch** shall mean the amount of water necessary to cover an acre of land one inch deep;

**Alleged violator** shall mean any person who has failed to abide by the rules and regulations adopted by the District;

**Allocation**, as it relates to water use for irrigation purposes, shall mean the allotment of a specified total number of acre-inches of irrigation water per irrigated acre per year or ~~an average~~ a number of acre-inches of irrigation water per irrigated acre over any reasonable period of time;

**Beneficial use** shall mean that use by which water may be put to use to the benefit of humans or other species;

**Best management practices** shall mean schedules of activities, maintenance procedures, and other management practices utilized for purposes of irrigation efficiency, to conserve or effect a savings of ground water, or to prevent or reduce present and future contamination of ground water. Best management practices relating to contamination of ground water may include, but not be limited to, irrigation scheduling, proper rate and timing of fertilizer application, and other fertilizer and pesticide management programs. In determining the rate of fertilizer application, the District shall consult with the University of Nebraska or a certified crop advisor certified by the American Society of Agronomy:

**Board** shall mean the board of directors of the Lower Platte North Natural Resources District;

**Complaint** shall mean any person who has filed a complaint against an alleged violator of these rules and regulations adopted by the District;

**Confined aquifer** shall mean an aquifer in which the ground water is isolated from the atmosphere by impermeable geologic formations and is generally subject to pressure greater than atmospheric;

**Consumptive use** shall mean the amount of water that is consumed under appropriate and reasonably efficient practices to accomplish without waste the purposes of which the appropriation or other legally permitted use is lawfully made;

**Contamination or contamination of ground water** shall mean nitrate nitrogen or other material which enters the ground water due to action of any person and causes degradation of the quality of ground water sufficient to make such ground water unsuitable for present or reasonably foreseeable beneficial uses;

**Department** shall mean the Department of Natural Resources;

**Dewatering well** shall mean a well constructed and used solely for the purpose of lowering the ground water table elevation;

**Director** shall mean the Director of the Department of Natural Resources;

**District** shall mean the geographical area of the Lower Platte North Natural Resources District (LPNNRD) operating pursuant to Chapter 2, Article 32 of the Nebraska Statutes or the political subdivision Lower Platte North NRD;

**District compliance inspector** shall mean an employee or director of the District designated by the Board and authorized to perform the functions assigned thereto by these rules and regulations;

**Emergency situation** shall mean any set of circumstances that requires the use of water from any source that might otherwise be regulated or prohibited and the agency, district, or organization responsible for regulating water use from such source reasonably and in good faith believes that such use is necessary to protect the public health, safety, and welfare, including, if applicable, compliance with federal or state water quality standards;

**Flow Meter** shall mean a measuring device of the type and design which shall meet the standards and specifications for installation, operation, and maintenance as established by the District. Every flow meter shall be a mechanical device which measures and totalizes the amount of ground water withdrawn.

**Good cause shown** shall mean a reasonable justification for granting a variance for a consumptive use of water that would otherwise be prohibited by rule or regulation and which the granting agency, district, or organization reasonably and in good faith believes will provide an economic, environmental, social, or public health and safety benefit that is equal to or greater than the benefit resulting from the rule or regulation from which a variance is sought;

**Ground water** shall mean that water which occurs in or moves, seeps, filters or percolates through ground under the surface of the land;

**Ground water reservoir life goal** shall mean the finite or infinite period of time which the District establishes as its goal for maintenance of the supply and quality of water in a ground water reservoir at the time a ground water management plan is adopted;

**Ground water user** shall mean any person who owns, rents, or leases land within the District, and who at any time extracts, withdraws, or confines ground water for any use by himself or other person;

**Historic consumptive use** shall mean the amount of water that has previously been consumed under appropriate and reasonably efficient practices to accomplish without waste the purposes for which the appropriation or other legally permitted use was lawfully made;

**Historic Irrigated acre** shall mean:

(1) in stay management areas any acre that is certified as such pursuant to rules and regulations of the District and that has actually been supplied water through irrigation works, mechanisms, or facilities (a) for two of the last ten years prior to the effective date of the stay management area and two years of the most recent ten year period subsequent to the effective date of the stay management area or, (b) at least one of the last two years prior to the effective date of the stay management area, or (c) land that is defined as sub-irrigated, or (d) land that was previously irrigated two of the last ten years prior to the effective date of the stay management area and two of the last most recent ten year period subsequent to the effective date of the stay management area was enrolled in a federal conservation program;

(2) in non-stay management areas any acre that is certified as such pursuant to rules and regulations of the District and that has actually been supplied water through irrigation works, mechanisms, or facilities (a) for two of the last ten years, or (b) at least one of the last two years, or (c) land that is defined as sub-irrigated, or (d) land that was previously irrigated but during two of the most recent ten year period was enrolled in a federal conservation program;

(3) The District may grant an exception for good cause shown, such as abundant rainfall received on irrigated acres when actual irrigation would not be necessary;

**Hydrologically connected area** shall mean the area preliminary declared Fully Appropriated by the Nebraska Department of Natural Resources on December 16, 2008 as hydrologically connected ground water and surface water of the Lower Platte Basin. Hydrologically connected areas within the Lower Platte North NRD are on file in the District office;

**Illegal water well** shall mean (a) any water well operated or constructed without or in violation of a permit required by the Act, (b) any water well not in compliance with rules and regulations adopted and promulgated pursuant to the Act, (c) any water well not properly registered in accordance with N.R.S. sections 46-602 to 46-604, or (d) any water well not in compliance with any other applicable laws of the State of Nebraska or with rules and regulations adopted and promulgated pursuant to such laws;

**Improper ground water irrigation runoff** shall mean the occurrence of irrigation runoff water within the boundaries of the District after adoption of these rules: (a) which occurs within a designed control or management area or (b) which occurs within a potential control or management area, or (c) which causes or contributes to the accumulation of water upon or beneath the surface of the lands of any other person(s) to their detriment or upon or beneath public property to its detriment; or (d) which causes or contributes to the deterioration of water quality;

**Inactive status water well** shall mean a water well that is in a good state of repair and for which the owner has provided evidence of intent for future use by maintaining the water well in a manner which meets the following requirements: (a) The water well does not allow impairment of the water quality in the water well or of the ground water encountered by the water well; (b) The top of the water well or water well casing has a water-tight welded or threaded cover or some other water-tight means to prevent its removal without the use of equipment or tools to prevent unauthorized access, to prevent a safety hazard to humans and animals, and to prevent illegal disposal of wastes or contaminants into the water well; (c) All entrances and discharge piping to the water well are effectively sealed to prevent the entrance of contaminants; and (d) The water well is marked so as to be easily visible and located and is labeled or otherwise marked so as to be easily identified as a water well and the area surrounding the water well is kept clear of brush, debris, and waste material;

**Incidental underground water storage** shall mean underground water storage which occurs as an indirect result, rather than an intended or planned purpose, of a water project or use and includes, but is not limited to, seepage from reservoirs, canals, and laterals, and deep percolation from irrigated lands;

**Intentional underground water storage** shall mean underground water storage which is an intended purpose or result of a water project or use. Such storage may be accomplished by any lawful means such as injection wells, infiltration basins, canals, reservoirs, and other reasonable methods;

**Irrigated acre** shall mean any acre that is certified as such pursuant to rules and regulations of the District and that is actually capable of being supplied water through irrigation works, mechanisms, or facilities existing at the time of the allocation;

**Irrigation runoff water** shall mean ground water used for irrigation purposes which flows from the contiguous tract of land owned, leased, or otherwise under the direct supervision and control of a ground water user;

**Irrigation water reuse pit** shall mean an excavation constructed to capture, for reuse, runoff resulting from ground water irrigation or a structure designed for the purpose of water impoundment which is used for this same purpose so long as the capacity of the facility does not exceed fifteen acre-feet;

**Landowner** shall mean any person who owns land;

**Management area** shall mean any area so designated by the District pursuant to section 46-712 or 46-718, by the Director of Environmental Quality pursuant to section 46-725, or by the Interrelated Water Review Board pursuant to section 46-719. Management area includes a control area or a special ground water quality protection area designated prior to July 19, 1996;

**Management plan** shall mean the ground water management plan developed by the District and submitted to the Director of Natural Resources for review pursuant to section 46-711;

**Monitoring well** shall mean a water well that is designed and constructed to provide ongoing hydrologic or water quality information and is not intended for consumptive use;

**Non-point source pollution** shall mean a source of contamination in which the contaminant enters the receiving water in an intermittent and/or diffuse manner where a point source can not be identified;

**Operator** shall mean (a) a person who applies or directs the application of any fertilizer, either commercial or organic, to land totaling 10 or more acres which that person owns, leases, rents or otherwise has control of; (b) a person who controls the operation of domestic, livestock, irrigation, municipal and/or industrial well systems;

**Order**, except as otherwise specifically provided, includes any order required by the Nebraska Ground Water Management and Protection Act, by rule or regulation, or by a decision adopted by the District by vote of its Board of Directors taken at any regularly scheduled or specially scheduled meeting of the Board;

**Overall difference between the current and fully appropriated levels of development** shall mean the extent to which existing uses of hydrologically connected surface water and ground water and conservation activities result in the water supply available for purposes identified in subsection (3) of section 46-713 to be less than the water supply available if the river basin, sub-basin, or reach had been determined to be fully appropriated in accordance with section 46-714;

**Perched aquifer** shall mean ground water separated from an underlying main body of ground water by an unsaturated zone;

**Person** shall mean a natural person, a partnership, a limited liability company, an association, a corporation, a municipality, an irrigation district, an agency or a political subdivision of the state, or a department, an agency, or a bureau of the United States;

**Point source** shall mean (a) any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, vessel, other floating craft, or other conveyance, over which the Department of Environmental Quality has regulatory authority and from which a substance which can cause or contribute to contamination of ground water is or may be discharged, (b) point source ground water users such as commercial/industrial, public water supply, and / or recovery well(s) that seek to collectively supply ground water equal to or greater than 300 acre feet per year to a single facility or operation;

**Pollution** shall mean the process by which concentration levels of a contaminant could restrict the potential use of water, land or air;

**Potentiometric aquifer thickness** shall mean the distance from the potentiometric surface to the base of the principal aquifer;

**Potentiometric surface** shall mean an imaginary surface representing the total head pressure of ground water, usually found in, but not limited to, a confined aquifer that is defined by the level to which water will rise in a well;

**Public water supplier** shall mean a city, village, municipal corporation, metropolitan utilities district, rural water district, natural resources district, irrigation district, reclamation district, or sanitary and improvement district which supplies or intends to supply water to inhabitants of cities, villages, or rural areas for domestic or municipal purposes;

**Replacement water well** shall mean a water well which is constructed to provide water for the same purpose as the original water well and is operating in accordance with any applicable permit from the department and any applicable rules and regulations of the District and, if purpose is for irrigation, the replacement water well delivers water to the same tract of land served by the original water well and is a water well pumping from a comparable aquifer and yielding approximately the same gallons per minute and total annual water use as the original water well it is replacing and (a) replaces a decommissioned water well within one hundred eighty days after the decommissioning of the original water well, (b) replaces a water well that has not been decommissioned but will not be used after construction of the new water well and the original water well will be decommissioned within one hundred eighty days after such construction, except that in the case of a municipal water well, the original municipal water well may be used after construction of the new water well but shall be decommissioned within one year after completion of the replacement water well, (c) the original water well will continue to be used but will be modified and equipped within one hundred eighty days after such construction of the replacement water well to pump fifty gallons per minute or less and will be used only for livestock, monitoring, observation, or any other nonconsumptive or de minimis use approved by the District;

**Rolling Average Allocation** shall mean the ~~average annual~~ amount of ground water **in acre-inches** granted by the Board to a ground water user within ~~the a~~ three year allocation period. ~~For purposes of allocated certified irrigated acres within a certified irrigated tract, this amount shall serve as an average to be used each year over a three year rolling term.~~ The term shall be rolling in that a new three year term shall commence at the expiration of each calendar year. **The number of irrigated acres within said field shall be any irrigated acre that is certified as such, pursuant to the rules and regulations of the District through the acre certification process.**

**Rotation** shall mean a recurring series of use and non-use of irrigation wells on an hourly, daily, weekly, monthly, or yearly basis;

**Semi-confined aquifer** shall mean an aquifer confined by a low-permeability layer that permits water to slowly flow through it. Also known as a leaky artesian or leaky confined aquifer;

**Special Quantity Subarea** shall mean any area so designated by the District pursuant to Nebraska Revised Statutes 46-712 or 46-718. Special Quantity Subarea includes the control areas designated pursuant to Section R, Rule 5.

**Static Water Level** shall mean the depth below ground level where water stands in a well when it's not being pumped.

**Sub-irrigation or sub-irrigated land** shall mean the natural occurrence of a ground water table within the root zone of agricultural vegetation, not exceeding ten feet below the surface of the ground, to qualify as sub-irrigation, the landowner or operator must provide to the District ground water level measurements taken at least monthly through-out the growing season of May through September for five of the last ten years and/or provide crop yields showing that sub-irrigation was able to sustain the crop through-out the growing season for five of the last ten years with comparable yields to irrigated crop ground;

**Surface water project sponsor** shall mean an irrigation district created pursuant to Chapter 46, article 1, a reclamation district created pursuant to Chapter 46, article 5, or a public power and irrigation district created pursuant to Chapter 70, article 6;

**Test hole** shall mean a hole designed solely for the purposes of obtaining information on hydrologic or geologic conditions;

**To commence construction of a water well** shall mean the beginning of the boring, drilling, jetting, digging, or excavating of the actual water well from which ground water is to be withdrawn;

**Unconfined Aquifer** shall mean an aquifer in which there are no confining beds between the zone of saturation and the surface and is generally exposed to atmospheric pressure;

**Underground water storage** shall mean the act of storing or recharging water in underground

strata. Such water shall be known as water stored underground, but does not include ground water as defined in section 46-706 which occurs naturally;

**Variance** shall mean (a) an approval to deviate from a restriction imposed under subsection (1), (2), (9), or (10) of section 46-714 or (b) the approval to act in a manner contrary to existing rules or regulations from a governing body whose rule or regulation is otherwise applicable;

**Water well** shall mean (a) any excavation that is drilled, cored, bored, washed, driven, dug, jetted, or otherwise constructed for the purpose of exploring for ground water, monitoring ground water, utilizing the geothermal properties of the ground, obtaining hydrogeologic information, or extracting water from or injecting fluid as defined in section 81-1502 into the underground water reservoir (b) Water well includes any excavation made for any purpose if ground water flows into the excavation under natural pressure and a pump or other device is placed in the excavation for the purpose of withdrawing water from the excavation for irrigation. For such excavations, construction means placing a pump or other device into the excavation for the purpose of withdrawing water for irrigation. (c) Water well shall not include (i) any excavation made for obtaining or prospecting for oil or natural gas or for inserting media to repressure oil or natural gas bearing formations regulated by the Nebraska Oil and Gas Conservation Commission or (ii) any structure requiring a permit by the Department of Natural Resources used to exercise surface water appropriation;

**Water well permit condition** shall mean a requirement placed upon a well permit issued by the District for approval of construction of a water well; and

**Wellhead Protection area** shall mean the surface and subsurface area surrounding a water well or well field, supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or well field.

## **Section B Enforcement Procedures for the Lower Platte North Natural Resources District's Management Area**

### **Rule 1 Procedures and Measures for Compliance of Irrigation Runoff Water**

In order to conserve ground water supplies and to prevent the inefficient or improper runoff of such ground water, each person who uses ground water irrigation in the District shall take action to control or prevent the runoff of water used in such irrigation. A ground water user may implement any structural or non-structural procedure, measure, or combination thereof which provides for effective prevention, control or abatement of improper ground water irrigation runoff, including, but not limited to: (a) limitation of water utilized by non-structural management practices, including, but not limited to proper irrigation scheduling such that structural measures are not necessary to prevent irrigation runoff water; (b) the proper operation and management of the irrigation system, including any reuse or other control measures previously installed; (c) construction of a runoff collection and/or retention system such as a sump or dugout, together with a reuse pump and/or ditch to return the water to the same or other field for beneficial use; (d) blocking of rows or field borders in such a manner that will contain irrigation water within the property under the direct supervision or control of the ground water user; (e) the execution and performance of an agreement between two or more persons and approved by the District for utilization of any irrigation runoff water in accordance with Section B, Rule 2 of these rules and regulations; or (f) any other acceptable procedure or measure approved by the District.

### **Rule 2 Agreements Between Ground Water Users for Irrigation Runoff Water**

Ground water users whose irrigation runoff water is capable of being captured and utilized by another ground water user or other person in a manner which will prevent waste and provide practical and efficient use of such water, to prevent deterioration of surface water quality, and to prevent accumulation of water upon the land of any other person without their consent may have such water excluded from the definition of improper ground water irrigation runoff water by submitting to the District an agreement providing for such capture and utilization signed by all affected parties, on forms provided by the District. When such agreement is approved by the District, it will indicate the District's concurrence that the ground water user's irrigation runoff water is under adequate control. Such agreement may be terminated at any time by either party or by the District whenever it determines that such agreement no longer prevents or controls improper ground water irrigation runoff water. If the District terminates the agreement, written notice shall be provided to both parties. If either of the parties to the agreement causes termination of the agreement, written notice shall be provided to the other party and to the District.

### **Rule 3 General Provisions for Enforcement**

The District shall enforce the provisions of N.R.S. Sections 46-602 and Sections 46-702 through 46-754 and all rules and regulations adopted pursuant thereto by the issuance of cease and desist orders in accordance with the procedure hereinafter specified and by bringing appropriate actions in the District Court of the County in which any violations occur for enforcement of such orders. Cease and desist orders may be issued for the following reasons: (a) Operation of an irrigation system in a manner which allows for improper ground water irrigation runoff as defined in

Section A, Rule 1 of these rules and regulations. (b) Construction or operation of an illegal well as defined in Section A, Rule 1 of these rules and regulations. (c) Violation of these rules and regulations as outlined in Sections A through Q.

#### **Rule 4 Inspections**

Any person who owns, rents, or leases land within or immediately adjacent to the boundaries of the District, any person who resides within the District, Board of an adjacent District or a Board member or staff member of the District may request an inspection of a ground water user alleging a violation of these rules and regulations or that such ground water user is constructing or operating an illegal well. Within a reasonable period of time, but in any event, not later than five (5) days following the inspection request exclusive of Saturdays, Sundays, and legal holidays, the land where the alleged violation occurred shall be inspected by a person designated by the District. The District compliance inspector, upon proper identification and after informing the person in control of the land of the inspector's purpose, is authorized to enter upon the land for the purposes of making an inspection of the alleged violation. Upon completion of the inspection, the inspector shall file a report of the inspector's findings in the District office. A copy of said report shall be delivered to the alleged violator and to the complainant, if other than the Board, in person, or at their places of residence, or shall be sent to them by registered or certified mail.

#### **Rule 5 District Enforcement Actions**

If the District compliance inspector finds there is reasonable cause to believe that a ground water user is at the time of inspection or at the time the inspection request was received, to be in violation of these rules and regulations or constructing or operating an illegal well; the District shall take one or more of the following actions: (a) seek voluntary compliance by the alleged violator, (b) alleged violator will be sent a certified or registered letter notifying them that they have until a specified date to submit the required report, information, or undertake and complete the required corrective action, (c) alleged violator will be sent a certified or registered letter requesting attendance at a Special hearing, Committee meeting, or Board meeting of the District and to provide required reports, information, or undertake and complete the required corrective action (d) alleged violator sent a certified or registered letter allowing the alleged violator 7 days upon receipt of that letter to request a Hearing before the Board and allowed to present evidence on their behalf, (e) issue cease and desist orders, following ten days notice to the alleged violator stating the contemplated action and in general the grounds for the action and following reasonable opportunity to be heard, to enforce any of the provisions of the act or of orders or permits issued pursuant to the act, to initiated suits to enforce the provisions of orders issued pursuant to the act, and to restrain the construction of illegal water wells or the use of water from illegal water wells, (f) issue an immediate cease and desist order when there is an imminent threat to the public's health or the environment, and upon ten days notice to the alleged violator, require their attendance at a subsequent Special hearing, Committee meeting or Board meeting of the District, or (g) initiate appropriate legal actions in the District Court of the County in which the violation has occurred. If any schedule of compliance or work order approved by the Board is not initiated as agreed to or is not being properly and timely carried out, unless due to circumstances beyond the control of the alleged violator, the Board shall authorize immediate initiation of appropriate litigation.

**Rule 6 Violation of Cease and Desist Orders**

(a) Any person who violates a cease and desist order issued by the District pursuant to section 46-707 shall be subject to a civil penalty of not less than one thousand dollars and not more than five thousand dollars per violation per day. In assessing the amount of the civil penalty, the court shall consider the degree and extent of the violation, the size of the operation, whether the violator has been previously convicted or subjected to a civil penalty under this section, and any economic benefit derived from noncompliance. (b) Prior to issuing a cease and desist order against a public water supplier as defined in section 46-638, the District shall consult with the Attorney General. If the Attorney General determines that the District does not have sufficient grounds to issue a cease and desist order, the District shall abide by such determination and shall not issue a cease and desist order. The Attorney General shall have exclusive authority to enforce actions under this subsection. (c) Any determination as to the whether a water well is properly registered under sections 46-602 to 46-604 or whether a water well is properly permitted under the Municipal and Rural Domestic Ground Water Transfers Permit Act shall be made by the Department of Natural Resources. (d) Any person who violates any cease and desist order issued by the District pursuant to section 46-707 or any control, rules, or regulations adopted by a natural resources district in relation to a management area shall be subject to the imposition of penalties imposed through the controls adopted by the District, including, but not limited to, having any allocation of water granted or irrigated acres certified by the District reduced in whole or in part. Before the District takes any action, notice and hearing shall be provided to such person. (e) Any person who violates any of the provisions of sections 46-721 to 46-733 for which a penalty is not otherwise provided, other than the requirements imposed on the District, the Director of Natural Resources, or the Department of Natural Resources, shall be subject to a civil penalty of not more than five hundred dollars. Each day of continued violation shall constitute a separate offense.

## **Section C Ground Water Management Area Advisory Board**

### **Rule 1 Advisory Board**

The District shall establish an Advisory Board composed of individuals representing different groups that will be affected by the District's Management Area. The purpose of the Advisory Board is to provide recommendations to the staff and Board in developing the rules and regulations for the District's Management Area. The Advisory Board is composed of 15 members representing the following groups:

Farmer/Irrigator	4
Farmer/Dryland	1
Fertilizer Dealer	2
Turf Grass Production	1
Crop Consultant	1
Cattle Feedlot Operation	1
Hog Confinement Operation	1
Poultry Operation	1
Packing Plant	1
Golf Course Manager	1
Municipality	1

## **Section D Ground Water Management Area**

### **Rule 1 Adoption of Ground Water Management Area Rules and Regulations**

A district in which a management area has been designated shall by order adopt one or more of the controls for the management area as listed in N.R.S. 46-707 and 46-739:

- The District has adopted controls with the issuance of an Order at the November 7th 1996 Board Meeting to implement a Ground Water Management Area covering the entire District beginning on January 1, 1997.
- The District has amended these rules and regulations with the issuance of an Order at the December 12, 2005 Board meeting to begin on January 25, 2006.
- The District has further amended these rules and regulations with the issuance of an Order at the March 13, 2008 Board meeting to be implemented on May 9, 2008.
- With the passage of LB483, the District amended these rules and regulations with the issuance of an Order at the July 13, 2009 Board meeting to be implemented on August 6, 2009.
- The District will extend the requirements of LB483 to allow for Limited Development of up to 2,500 new irrigated acres per year in parts of the District that were preliminary declared Fully Appropriated on December 16, 2008 by the Nebraska Department of Natural Resources as hydrologically connected ground water and surface water of the Lower Platte Basin by issuing an Order at the October 8, 2012 LPNNRD Board Meeting.
- The District further amended these rules and regulations with the issuance of an Order at the January 13, 2014 Board meeting to begin on February 10, 2014.
- Refer to map LPNNRD-WP-001 showing the different Water Development Areas and the Special Quantity Subareas.

## **Section E Water Well Permits**

### **Rule 1 Permit Application to Construct Water Well**

(1) Any person who intends to construct a water well in a management area in the District on land which he or she owns or controls shall, before commencing construction, apply with the District for a permit on forms provided by the District, except that no permit shall be required for test holes or dewatering wells with an intended use of thirty days or less. Permit is required for water wells designed and constructed to pump greater than fifty gallons per minute in the entire District. A permit is required for water wells defined by the District to be replacement water wells. A permit is required for a water well designed and constructed to pump fifty gallons per minute or less if such water well is commingled, combined, clustered, or joined with any other water well or wells or other water source, other than a water source used to water range livestock. Such wells shall be considered one water well and the combined capacity shall be used as the rated capacity. In Stay management areas and Level three management areas, a permit must be obtained for each water well or for one or more categories of water wells designed and constructed to pump fifty gallons per minute or less, other than a domestic water well required for human needs as it relates to health, fire control, sanitation, and irrigation on less than one acre of land or used to water range livestock, in ground water management areas in which regulations have been imposed to control declining ground water levels. Forms are available at the District's office and at such other places as the District may deem appropriate. The District shall review such application and issue or deny the permit, with or without well permit conditions, within thirty days after the application is filed.

(2) A person shall apply for a permit under Section E, Rule 1 before he or she modifies a water well for which a permit was not required under subsection (1) of Rule 1 into one for which a permit would otherwise be required under such subsection.

(3) Applications for water well permits for domestic, livestock, irrigation, municipal and/or industrial use must have an NRD certified operator listed on the application form. The operator will be the person who shall control the operation of the domestic, livestock, irrigation, municipal and/or industrial well for which the application is being made.

(4) The application shall be accompanied by a non-refundable fifty-dollar filing fee payable to the District, and shall contain (a) the name and post office address of the applicant or applicants, (b) the nature of the proposed use, (c) the intended location of the proposed water well or other means of obtaining ground water, (d) The intended size, type, and description of the proposed water well and the estimated depth, if known, (e) the estimated capacity in gallons per minute, (f) the acreage and location by legal description of the land involved if the water is to be used for irrigation, (g) a description of the proposed use if other than for irrigation purposes, (h) the registration number of the water well being replaced if applicable, (i) such other information as the District requires.

(5) The District hereby designates different classes of water well permits based on the well pumping capacity in gallons per minute, number of acres being irrigated, or expected total annual water use.

(a) Class one water well permits are required on all low capacity wells, which pump fifty gallons per minute or less in Stay management areas and Level three management areas. Exceptions are for domestic water wells required for human needs as it relates to health, fire control, sanitation, and irrigation on less than one acre of land or used to water range livestock.

(b) Class two water well permits are required on all high capacity wells that pump greater than fifty gallons per minute, or irrigate less than or equal to one hundred and sixty acres, or expected total annual water use of less than or equal to one hundred and fifty acre feet per year.

(c) Class three water well permits are required on all high capacity wells that pump greater than fifty gallons per minute, or irrigate land greater than one hundred and sixty acres, or expected total annual water use is greater than one hundred and fifty acre feet per year but less than three hundred acre feet per year. Applicant must submit additional information of all registered wells, test holes, and all surface water rights in a two mile radius of the proposed water use as specified on the water well permit application form, and in addition to the fifty dollar permit filing fee, must submit a two hundred and fifty dollar fee for District review.

(d) Class four water well permits are required on all high capacity wells that pump greater than fifty gallons per minute with an expected total annual water use equal to or greater than 300 acre feet per year, regardless of the number of irrigated acres. Class four water well permits are required for point source ground water users that seek to collectively supply ground water equal to or greater than 300 acre feet per year to a single facility or operation. The applicant must submit additional information of all registered wells, test holes, and all surface water rights in a five mile radius of the proposed water use, perform an District approved aquifer pump test, and perform a ground water model using MODFLOW software or a similar software program approved by the District as specified on the water well permit application form, and in addition to the fifty dollar permit filing fee, must submit a five hundred dollar fee for District review.

(e) If proposed changes in operation, based on the well pumping capacity in gallons per minute, number of acres being irrigated, or expected total annual water use would place the existing class of well permit into a different class, the owner and/or operator will need to apply for new well permit prior to commencement of new operations.

(f) If proposed changes in the beneficial use of water as listed on the original water well permit, such as industrial to irrigation well, the owner and/or operator shall apply for a new water well permit to the District prior to commencement of those new water uses. District review fees for class three and class four water well permits may be waived, but will be determined on a case-by-case basis.

(6) Any person who has failed or in the future fails to obtain a permit required by subsection (1) or (2) of Section E, Rule 1 shall make application for a late permit on forms provided by the District.

(7) The application for a late permit shall be accompanied by a two-hundred-fifty-dollar fee payable to the District, and shall contain the same information required in subsection (4) of Section E, Rule 1.

(8) The District may place conditions on approval of a water well permit such as installation of a District approved flow meter, time totalizer, monitoring equipment to measure ground water levels, require water quality sampling, specify reporting requirements to the District, or that new or replacement water wells to be used for domestic or other purposes shall be constructed to such a depth that they are less likely to be affected by seasonal water level declines caused by other water wells in the same area. For new water uses on all water well permits approved and issued by the District on or after October 1, 2005 to May 8, 2008, the District shall impose a well permit condition that a District approved flow meter or time totalizer be installed on each high capacity well to measure flow from that well and to report to the District the total gallons or total acre inches pumped by that well in a given year to the District by January 31 of the following year.

For water uses on all new and replacement water well permits approved and issued by the District after May 8, 2008, the District shall impose a well permit condition that a District approved flow meter be properly installed and recalibrated every four years to provide an accurate flow measurement on each high capacity well in the District, and on each specified low capacity well in a Stay or Level three management area as listed in Section E, Rule 1(5)(a), and to report to the District the total gallons or total acre inches pumped by that well in a given year to the District by January 31 of the following year. If water is commingled from more than one water source, the flow meter may alternatively be placed at a central location thru which all water will pass before delivery to the prescribed water use location as stated in the water well permit application. The well owner will allow access to the well when it is running by District personnel to take a flow measurement.

(9) The District may close all or a portion of the management area to the issuance of additional permits or may condition the issuance of additional permits on compliance with other rules and regulation adopted and promulgated by the District to achieve the purpose or purposes for which the management area was designated.

## **Rule 2 Denial of Water Well Permit**

(1) An application for a permit or late permit for a water well in a management area shall be denied if the District finds (a) that the location or operation of the proposed water well or other work would conflict with any regulations or controls adopted by the District, (b) that the proposed use would not be a beneficial use of water, or (c) in the case of a late permit only, that the applicant did not act in good faith in failing to obtain a timely permit.

(2) It is a violation of these regulations to locate or operate a water well or other work if: (a) the District determines that the location or operation of a proposed water well or other work would adversely impact current or proposed clean up operations of hazardous materials being conducted by NDEQ or overseen by NDEQ, including the clean up operations of the Former Mead Ordnance Plant, (b) the District determines that the location or operation of the water well or other work will endanger the health and welfare of the District by significantly impeding the conservation, protection, development and sound management of natural resources in the District, (c) the District determines that the location or operation of the water well or other work may have significant adverse affects on any other water user; (d) the District determines that the location or operation of the water well or other work is not in the public interest; or (e) the District determines that the location or operation of the water well or other work will conflict with any regulations or controls adopted by the District.

(3) If the District finds that the application is incomplete, defective, or additional information is required to process the application, it shall return the application for correction. The District may return the application for additional information if the District determines that adverse impacts to the environment or to existing users may occur if the application is granted. If the correction is not made within sixty days, the application shall be cancelled. All permits shall be issued with or without conditions attached or denied not later than thirty days after receipt by the District of a complete and properly prepared application.

(4) The District shall have the authority to impose such water well permit conditions as the District finds appropriate to protect the health and welfare of the District, to promote the conservation, protection, development, and sound management of natural resources in the District, to protect existing users, to promote the public interest, or to prevent the violation of any

regulations or controls adopted by the District. Such conditions may include, but not limited to, any of the controls set forth in N.R.S. Section 46-739.

(5) A permit issued shall specify all regulations and controls adopted by a District relevant to the construction or utilization of the proposed water well. No refund of any application fees shall be made regardless of whether the permit is issued, canceled, or denied. The District shall transmit one copy of each permit issued to the Director of Natural Resources.

### **Rule 3 Issuance of Water Well Permit**

The issuance by the District of a permit pursuant to Section E, Rule 3 of these rules and regulations or registration of a water well by the Director of Natural Resources pursuant to N.R.S. Section 46-602 shall not vest in any person the right to violate any District rule, regulation, or control in effect on the date of issuance of the permit or the registration of the water well or to violate any rule, regulation, or control properly adopted after such date.

### **Rule 4 Construction of Water Well After Issuance of Permit**

When any permit is approved pursuant to Section E, Rule 3, the applicant shall commence construction as soon as possible after the date of approval and shall complete the construction and equip the water well prior to the date specified in the conditions of approval, which date shall be not more than one year after the date of approval, unless it is clearly demonstrated in the application that one year is an insufficient period of time for such construction. If the applicant fails to complete the project under the terms of the permit, the District may withdraw the permit.

### **Rule 5 Time Limit on Full Water Utilization from Water Well as listed in Approved Permit**

After completion of the water well, the owner and/or operator has until the end of the following calendar year to purchase and install all equipment necessary to irrigate all land listed in the water well permit. If the owner or operator fails to purchase and install equipment by December 31<sup>th</sup> of the following year, then the permit shall be modified to list the acres actually irrigated. The District may grant an exception for good cause shown.

### **Rule 6 Replacement Water Wells**

Replacement Water Wells as defined in Section A will require a permit application to the District before the well is constructed.

### **Rule 7 Decommission of Water Wells**

The District shall require decommissioning of water wells that are not properly classified as active status or inactive status water wells as defined in Section A, Rule 1.

### **Rule 8 Suspension of Water Well Permit**

(1) The District may suspend an approved water well permit if the Board finds violation of the District's rules and regulations. If the District believes the water well permit should be suspended, the District will inform the landowner with at least a 45 day notice stating the intentions of the District and allowing the landowner to request a hearing before the Board of Directors within that time limit.

(2) Water well permits shall be reinstated to the same class of well permit as originally

suspended, when the owner and/or operator returns to compliance with the District's rules and regulations and following Board approval.

## **Section F Ground Water Quality Management Area - Phase One**

### **Rule 1 Phase One Criteria**

Phase One triggers are set at 0 to 80% of the contaminants MCL/LHAL and includes the entire District. Phase One nitrate-nitrogen triggers are set at 0 to 8 parts per million in the ground water reservoir with other human-induced non-point source contaminants, such as pesticides, based upon 0 to 80 % of the Maximum Contaminant Levels (MCL) or Lifetime Health Advisory Levels (LHAL).

### **Rule 2 Natural Resources District Certification**

All operators in Phase One areas within the District, who use any type of fertilizer, either commercial or organic, are required to obtain NRD certification by attending NRD education classes or by passing a take home test designed by LPNNRD and in agreement with applicable other agency input every four (4) years. Certification will be consistent with the District's chemigation program and applicable to the State FIFRA program.

### **Rule 3 Ground Water Analysis Once Every Four Years Encouraged**

A ground water analysis for nitrogen (nitrate-nitrogen) content for irrigation, municipal, and industrial wells is encouraged at least once every four years using the District's approved analysis methods. Results may be submitted to the District by December 31 of the year tested. This rule is waived for wells that are on inactive status, as defined in Nebraska State Statutes, during the entire four year cycle.

### **Rule 4 Soil Analysis Encouraged**

Prior to the planting of corn, potatoes, or grain sorghum, a soil analysis 3 feet in depth for nitrogen (nitrate-nitrogen) content for each field at least 40 acres in size, under control of the operator is encouraged at least once every four years. District approved analysis methods should be used, and results are encouraged to be submitted to the District by December 31 of the year tested.

### **Rule 5 Fertilizer Application Report Encouraged**

All operators are encouraged to submit a Fertilizer Application Report for each field 19 acres in size or larger, to the District at least once every four years on a form provided by the District, which indicates the pounds per acre of nitrogen (commercial and organic) applied to each field under their control for the past four years. The quantity in pounds per acre of pesticides applied for each field will also be encouraged. Such reports will incorporate, if applicable, those reports required under the District's chemigation program and such reporting requirements resulting from the implementation of the State assumption of the Federal Insecticide, Fungicide, Rodenticide Act (FIFRA).

### **Rule 6 Manure Application**

Application of organic fertilizer (liquid manure, dried manure, sludge or composted organic waste) is very diversified and poses management problems relative to the size of the operation. Not all organic waste contains the same amount of N per unit of measurement, as such the amount/acre/year allowed to be applied in Phase I areas will be based on method of collection

and storage, land application method, types of crops or cover crop, soil types, landscape features, source of manure, and previous manure application rates. Amount/acre/year of manure applied on each field is encouraged to be reported on the Fertilizer Application Report and submitted to the District once every four years.

**Rule 7 Fertilizer Application on Non-sandy Soils**

No fall applications of N fertilizer (commercial) for row crops will be allowed on non-sandy or fine textured soils until after November 1.

**Rule 8 Fertilizer Application on Sandy Soils**

Fall and winter applications of N fertilizer (commercial) for row crops will be prohibited on sandy soils. Commercial fertilizer can be applied on sandy soils after March 1 of the crop year.

## **Section G Ground Water Quality Management Area - Phase Two**

### **Rule 1 Phase Two Criteria**

Phase Two triggers are from 8.01 to 10 parts per million nitrate-nitrogen concentration in the ground water or when other non-point source contaminants are present at 81-100% of the MCL/LHAL. Within the same ground water reservoir, boundary setting for Phase Two Areas will be initiated when: water quality analytical results, within a minimum 9 square mile area, are at identified trigger levels for a minimum of 2 sampling events. The Area must contain a minimum of 10 registered wells and contaminant trigger levels must be exceeded in over 50% of the wells. When registered wells are not available, other wells may be used. Initial investigation by the District will be to determine if the contamination is a result of point-source or non-point source pollution. If non-point source pollution is found to be the reason, more intensive investigation for boundary setting will ensue. If a Wellhead Protection Area should be established due to non-point source pollution, the District may set boundaries that are less than 9 square miles. After the establishment of a Phase Two Area, if non-point source contamination levels should decline, two consecutive sampling events below the trigger levels are needed before the Area could be placed in Phase One.

### **Rule 2 Continuation of Phase One Rules**

A continuation of Phase One Rules as defined in Section E, Rule 1-6, Section F, Rules 2, 6 and 8 shall apply.

### **Rule 3 Ground Water Analysis Annually**

A Ground water analysis for nitrogen (nitrate-nitrogen) content for all irrigation, municipal, and industrial wells must be made annually and reported to the District by December 31 of each year. This rule is waived for wells that are on inactive status as defined in Nebraska State Statutes.

### **Rule 4 Soil Samples**

Prior to the planting of corn, potatoes, or grain sorghum, annual soil samples in the root zone, 3 feet in depth, for nitrogen (nitrate-nitrogen) content on each field at least 40 acres in size are required for Phase Two and Phase Three Areas. The results of the soil samples will accompany the annual report made to the District by December 31 of each year.

### **Rule 5 Fertilizer Application Report**

All operators will submit a Fertilizer Application Report to the District for each field 19 acres in size or larger, at the end of each crop year or by December 31 of each year. Submittal will be on a form(s) developed by the District. Reporting of the application of pesticides will be encouraged on this form.

### **Rule 6 Fertilizer Applications on Non-Sandy Soils with Approved Inhibitor**

Commercial nitrogen-fertilizer, such as anhydrous ammonia, will be permitted on non-sandy or fine textured soils from November 1 to March 1, provided that an approved inhibitor is used and applied as recommended. After March 1 an inhibitor is not needed.

**Rule 7 Furnish Record from Fertilizer Dealer that District Approved Inhibitor was Used**

In order to assure use of an approved inhibitor, the operator will be required to furnish the District the record from a fertilizer dealer that a District approved inhibitor was used and applied at recommended rates. This record shall accompany the Fertilizer Application report made to the District by December 31 of each year.

**Rule 8 Fertilizer Calibration Encouraged**

The District will begin a voluntary fertilizer calibration program addressing all applications and will strongly encourage operators to participate in the process. The District may, as conditions warrant, choose to develop a cost share program with operators.

**Rule 9 Monitoring of Water Applications**

Flow meters or time totalizers will be required on all irrigation wells in a Phase 2 or 3 management areas to monitor water applications to allow operators to better manage fertilizer applications and control excessive nitrate leaching into the aquifer. If time totalizers are used, then well output must be certified by the District. This activity will be phased in over a period of four (4) years after a Phase management area has been implemented by the Board. Total water use during the growing season will be recorded on the Fertilizer Application Report that is to be submitted by December 31 of each year.

**Rule 10 Manure Applications**

In Phase Two and Phase Three Areas, amount per acre per year of organic fertilizer allowed to be applied (liquid manure, dried manure, sludge, or composted organic waste) will be based on method of collection and storage, land application method, types of crops or cover crop, soil types, landscape features, source of manure, and previous manure application rates. The Nebraska Cooperative Extension Service Bulletin EC 89-117 "Fertilizing Crops with Animal Manure" shall be used as guidance unless more current guidelines are available.

Amount/acre/year of manure applied on each field is to be reported on the Fertilizer Application Report and submitted to the District by December 31 of each year. The amount and timing of application must be adjusted to the N concentration in the soil profile and ground water content. Application is allowed to frozen soils and is to be determined on a site-by-site basis as this is a prime cause of both ground water and surface water degradation.

**Rule 11 Education Program Expanded**

The education program will be expanded to assist the Phase Two operators and other personnel in the area to realize that continued increases of nitrate and/or other non-point source contamination could cause the area to be elevated to a Phase Three Area.

## **Section H Ground Water Quality Management Area - Phase Three**

### **Rule 1 Phase Three Criteria**

Phase Three Areas will be established when the MCL/LHAL is exceeded (>100%). Phase Three trigger levels range from 10.01 parts per million or greater for nitrate-nitrogen, with other human-induced non-point source contaminants, based upon greater than 100% of the Maximum Contaminant Levels (MCL) or Lifetime Health Advisory Levels (LHAL). Within the same ground water reservoir, boundary setting for Phase Three Areas will be initiated when: water quality analytical results within a minimum 9 square mile area are at identified trigger levels for a minimum of 2 sampling events. The area must contain a minimum of 10 registered wells and contaminant trigger levels must be exceeded in over 50% of the wells. When registered wells are not available, other wells may be used. Initial investigation by the District will be to determine if the contamination is a result of point-source or non-point source pollution. If non-point source pollution is found to be the reason, more intensive investigation for boundary setting will ensue. If a Wellhead Protection Area should be established due to non-point source pollution, the District may set boundaries that are less than 9 square miles. After the establishment of a Phase Three Area, if non-point source contamination levels should decline, two consecutive sampling events below the trigger levels are needed before the Area could be placed in Phase Two or Phase One.

### **Rule 2 Continuation of Phase One and Two Rules**

A continuation of Phase One Rules as defined in Section E, Rules 1-6, Section F, Rule 2 and in Phase Two Rules as defined in Section G, Rules 3, 4, 5, 8, 9, 10 and 11 shall apply.

### **Rule 3 Fertilizer Application On All Soils**

The application of commercial nitrogen fertilizer is prohibited in the fall and winter on all soils until after March 1. Spring applications of commercial nitrogen fertilizer will require split applications (pre-plant and side-dress) or the use of an approved inhibitor applied as recommended. If a split application is used and 50 percent or more of nitrogen fertilizer is applied as a pre-plant, the use of an approved inhibitor, applied as recommended, is still required.

### **Rule 4 Record that District Approved Inhibitor was Used**

If 50% or more of commercial nitrogen fertilizer is applied at pre-plant, then operators are required to furnish the District a record from the fertilizer dealer that a District inhibitor was used at recommended rates. This record shall accompany the Fertilizer Application report made to the District by December 31 of each year.

## **Section I Ground Water Quantity Management Area - Level One**

### **Rule 1 Level One Criteria**

Level One aquifer management areas are designated for the entire District. As more information becomes available subareas shall be further defined. Any changes in water use, location of water use, number of gallons pumped, or changes in water source shall be reviewed and approved by the District before those changes can take effect. Due to hydrologic considerations, District monitoring wells are not to be located on municipal well field property.

### **Rule 2 Certification of Historically Irrigated Acres**

The District will certify historically irrigated acres within the District using records from the County Assessor, Department of Natural Resources registered well database, Farm Service Agency, and other records the District deems pertinent. The District will base its initial determination using County Assessor records, DNR registered well database, and other relevant information. Landowners may be required to provide FSA records if they disagree with the District's information. For fields that have been certified by the LPNNRD, any changes such as number of acres irrigated, location of the irrigated acres, changes in water source, or change of landowner shall be reviewed and approved by the District before those changes can take effect.

### **Rule 3 Natural Resources District Operator Certification**

The District will be designated a Level One Quantity Area and operators of irrigation, municipal, and industrial well systems are required to obtain NRD certification by attending NRD education classes or by passing a take home test designed by LPNNRD and in agreement with applicable other agency input every four (4) years.

### **Rule 4 Well Spacing Requirements**

Well spacing requirements will be applied in the Level One Area pursuant to N.R.S. Sections 46-609, 46-651 and 46-739. Well spacing shall vary with aquifer subarea, which will include, but not limited to, areal extent of the primary aquifer, type of aquifer ranging from confined to unconfined aquifers, saturated thickness, transmissivity, availability of alternative aquifers of sufficient water quality to allow for beneficial use, local recharge characteristics and rates from any water sources, current development of water use within the designated area and projected future water use, climatic conditions, and discretionary factors determined by the Board.

#### **Rule 4.1 Well Spacing for Registered Domestic Wells**

(1) The District shall establish a minimum well spacing requirement of 600 feet for any new high capacity wells from an existing registered domestic well. Replacement high capacity wells within 600 feet of a existing registered domestic well shall be allowed provided that the replacement high capacity well is equal distance or greater away than the original high capacity well was from the existing registered domestic well. Exceptions to these spacing requirements will also be considered if both parties agree to allow drilling of the new high capacity well without regard to minimum well spacing with submittal and approval of LPNNRD form (Application for a Special Permit to Drill a Water Well Without Regard to Minimum LPNNRD Spacing). State of Nebraska well spacing requirements shall also apply.

(2) The District shall establish a minimum well spacing requirement of 600 feet for any new domestic wells from an existing registered high capacity well. Exceptions to these spacing requirements will be considered if both parties agree to allow drilling of the new domestic well without regard to minimum well spacing with submittal and approval of LPNNRD form (Application for a Special Permit to Drill a Water Well Without Regard to Minimum LPNNRD Spacing) or landowner of domestic well waive his right to take action for loss of water availability against the high capacity landowner by signing LPNNRD form (Waiver for Special Well Permit). State of Nebraska well spacing requirements shall also apply.

#### **Rule 5 Water Well Permits**

Prior to well construction, a LPNNRD water well permit is required for all new and replacement water wells in the District, which will pump greater than 50 g.p.m. as outlined in Section E, Rules 1-6.

#### **Rule 6 Well Metering Encouraged**

The District will encourage well metering with the installation of flow meters on all existing high capacity wells.

#### **Rule 7 Acre-Inch Allocations Encouraged**

The District will encourage an acre-inch allocation system that will be developed per commercial crops planted that are dependent on that particular aquifer subarea.

#### **Rule 8 Water Use Report Encouraged**

The District will encourage submission of the Water Use Report on all existing high capacity wells to the LPNNRD by January 31 of each following year.

## **Section J Ground Water Quantity Management Area - Level Two**

### **Rule 1 Level Two Criteria**

#### **Rule 1.1 Unconfined Aquifer Criteria**

Unconfined aquifer management subareas are to be designated within the District when conditions indicate a 10% drop in the saturated thickness of the aquifer. Assessment of percentage drop will be calculated utilizing the spring readings of District monitoring wells over a consecutive three (3) year period assessed against the 1987 baseline ground water levels or a more recent baseline year ground water level, adopted by the Board of Directors and revised in the Ground Water Management Rules and Regulations. When greater than 50% of the area within a subarea has reached or exceeded the trigger level, then a Level Two management area can be established. Assessment of the percentage of a sub-area will be determined by applying an area-weighting method to District GWEL wells. As more information becomes available subareas shall be further defined. Due to hydrologic considerations for point source ground water users, a sub-area can be defined as the cone of influence created from commercial / industrial, public water supply, and / or recovery well(s) that seek to collectively supply ground water equal to or greater than 300 acre feet per year to a single facility or operation. The cone of influence will be determined by the use of ground water modeling software, such as MODFLOW, or a similar modeling program approved by Lower Platte North NRD. District GWEL network monitoring wells are not to be located on municipal well field property. After the establishment of a Level Two Area, if ground water levels should recover, two consecutive spring readings below the trigger levels are needed before the Ground Water Quantity Management Area could be placed as a Level One management area.

#### **Rule 1.2 Confined Aquifer Criteria**

Confined aquifer management subareas are to be designated within the District when conditions, indicate a 7% drop in potentiometric-aquifer thickness. Assessment of percentage drop will be calculated utilizing the spring readings of District monitoring wells over a consecutive three (3) year period assessed against the 1987 baseline ground water levels or a more recent baseline year ground water level, adopted by the Board of Directors and revised in the Ground Water Management Rules and Regulations. When greater than 50% of the area within a subarea has reached or exceeded the trigger level, then a Level Two management area can be established. Assessment of the percentage of a sub-area will be determined by applying an area-weighting method to District GWEL wells. As more information becomes available subareas shall be further defined. Due to hydrologic considerations for point source ground water users, a sub-area can be defined as the cone of influence created from commercial / industrial, public water supply, and / or recovery well(s) that seek to collectively supply ground water equal to or greater than 300 acre feet per year to a single facility or operation. The cone of influence will be determined by the use of ground water modeling software, such as MODFLOW, or a similar modeling program approved by Lower Platte North NRD. District GWEL network monitoring wells are not to be located on municipal well field property. After the establishment of a Level Two Area, if ground water levels should recover, two consecutive spring readings below the trigger levels are needed before the Ground Water Quantity Management Area could be placed as a Level One management area.

**Rule 2 Continuation of Level One Rules**

A continuation of Level One Rules as defined in Section E, Rules 1-6 and Section I, Rules 2 - 5 shall apply.

**Rule 3 Well Metering**

Flow meters are required on all new, replacement and existing high capacity wells.

**Rule 4 Acre-Inch Allocations**

An acre-inch allocation will be put into place by the District and will be based on the aquifer subarea, crop planted, irrigation distribution system, percent decline of the aquifer, water use of the aquifer, climatic conditions, net corn crop requirements, and discretionary factors.

**Rule 5 Reduction of Irrigated Acres**

As an alternative to Section J, Rule 4, the District may require a reduction of irrigated acres. Except as permitted pursuant to subsections (4) through (6) of section 46-739, if annual rotation or reduction of irrigated acres is adopted for use of ground water for irrigation purposes in a management area, the nonuse of irrigated acres shall be a uniform percentage reduction of each landowner's irrigated acres within the management area or a subarea of the management area. Such uniform reduction may be adjusted for each landowner based upon crops grown on his or her land to reflect the varying consumptive requirements between crops.

**Rule 6 Water Use Report**

The District will require annual submission of the Water Use Report on all new, replacement, and existing high capacity wells to the District by January 31<sup>st</sup> of the following year.

**Rule 7 Best Management Practices Encouraged**

Best management practices are encouraged to conserve water and will be developed prior to designation of the Area as a Level Two management area.

## **Section K Ground Water Quantity Management Area - Level Three**

### **Rule 1 Level Three Criteria**

#### **Rule 1.1 Unconfined Aquifer Criteria**

Unconfined aquifer management subareas are to be designated within the District when conditions, indicate a 15% drop or greater in the saturated thickness of the aquifer. Assessment of percentage drop will be calculated utilizing the spring readings of District monitoring wells over a consecutive three (3) year period assessed against the 1987 baseline ground water levels or a more recent baseline year ground water level, adopted by the Board of Directors and revised in the Ground Water Management Rules and Regulations. When greater than 50% of the area within a subarea has reached or exceeded the trigger level, then a Level Three management area can be established. Assessment of the percentage of a sub-area will be determined by applying an area-weighting method to District GWEL wells. As more information becomes available subareas shall be further defined. Due to hydrologic considerations for point source ground water users, a sub-area can be defined as the cone of influence created from commercial / industrial, public water supply, and / or recovery well(s) that seek to collectively supply ground water equal to or greater than 300 acre feet per year to a single facility or operation. The cone of influence will be determined by the use of ground water modeling software, such as MODFLOW, or a similar modeling program approved by Lower Platte North NRD. District GWEL network monitoring wells are not to be located on municipal well field property. After the establishment of a Level Three Area, if ground water levels should recover, two consecutive spring readings below the trigger levels are needed before the Ground Water Quantity Management Area could be placed as a Level Two or Level One management area.

#### **Rule 1.2 Confined Aquifer Criteria**

Confined aquifer management subareas are to be designated within the District when conditions, indicate a 10% or greater drop in the potentiometric-aquifer thickness. Assessment of percentage drop will be calculated utilizing the spring readings of District monitoring wells over a consecutive three (3) year period assessed against the 1987 baseline ground water levels or a more recent baseline year ground water level, adopted by the Board of Directors and revised in the Ground Water Management Rules and Regulations. When greater than 50% of the area within a subarea has reached or exceeded the trigger level, then a Level Three management area can be established. Assessment of the percentage of a sub-area will be determined by applying an area-weighting method to District GWEL wells. As more information becomes available subareas shall be further defined. Due to hydrologic considerations for point source ground water users, a sub-area can be defined as the cone of influence created from commercial / industrial, public water supply, and / or recovery well(s) that seek to collectively supply ground water equal to or greater than 300 acre feet per year to a single facility or operation. The cone of influence will be determined by the use of ground water modeling software, such as MODFLOW, or a similar modeling program approved by Lower Platte North NRD. District GWEL network monitoring wells are not to be located on municipal well field property. After the establishment of a Level Three Area, if ground water levels should recover, two consecutive spring readings below the trigger levels are needed before the Ground Water Quantity Management Area could be placed as a Level Two or Level One management area.

**Rule 2 Continuation of Level One and Level Two Rules**

A continuation of Level One and Two Rules as defined in Section E, Rules 1-6, Section I, Rules 2, 4, and 5, and Section J, Rules 3, and 6 shall apply.

**Rule 3 Natural Resources District Certification**

In Level Three management areas, operators of domestic, livestock, irrigation, municipal, and industrial well systems are required to obtain NRD certification by attending NRD education classes or by passing a take home test designed by LPNDRD and in agreement with applicable other agency input every four (4) years.

**Rule 4 Adjust Acre-Inch Allocations**

As required, the District will further reduce or adjust the acre-inch allocations based on considerations outlined in Section J, Rule 4.

**Rule 5 Reduction of Irrigated Acres**

As an alternative to Section K, Rule 4, the District may further require a reduction of irrigated acres. Except as permitted pursuant to subsections (4) through (6) of section 46-739, if annual rotation or reduction of irrigated acres is adopted for use of ground water for irrigation purposes in a management area, the nonuse of irrigated acres shall be a uniform percentage reduction of each landowner's irrigated acres within the management area or a subarea of the management area. Such uniform reduction may be adjusted for each landowner based upon crops grown on his or her land to reflect the varying consumptive requirements between crops.

**Rule 6 Water Well Permit Required on New and Replacement Low Capacity Wells in Level 3 Ground Water Management Areas**

In addition to water well permits required on all high capacity wells, a water well permit is required for each water well or for one or more categories of water wells designed and constructed to pump fifty gallons per minute or less, other than a domestic water well required for human needs as it relates to health, fire control, sanitation, and irrigation on less than one acre of land or used to water range livestock, in ground water management areas in which regulations have been imposed to control declining ground water levels.

**Rule 7 Annual Water Use Reporting on New, Replacement, and Existing Low Capacity Wells in Level 3 Ground Water Management Areas**

In addition to requiring annual water use reports on new, replacement, and existing high capacity wells in a Level three management area, annual water use reports shall be submitted to the District by January 31<sup>st</sup> of the following year on new, replacement, and existing low capacity wells for one or more categories of water wells designed and constructed to pump fifty gallons per minute or less, other than a domestic water well required for human needs as it relates to health, fire control, sanitation, and irrigation on less than one acre of land or used to water range livestock, in ground water management areas in which regulations have been imposed to control declining ground water levels.

**Rule 8 Best Management Practices**

Best management practices are required to conserve water and will be developed by the District prior to designation of the Area as a Level Three management area.

## **Section L Stay Management Areas**

### **Rule 1 Temporary Stay on New Water Wells and Expansion of Irrigated Acres**

The District may imposed an immediate temporary stay for a period of one hundred eighty days on the construction of any new water well and on any increase in the number of acres historically irrigated, without prior notice or hearing, upon adoption of a resolution by the Board finding that such temporary immediate stay is necessary due to declining ground water energy levels, potential over development of an aquifer, allow reasonable time for scientific studies to be conducted, or other discretionary factors determined by the Board. A temporary stay may be placed by the District either within the entirety of the District or within designated Management Areas or Special Quantity Subareas. The District shall hold at least one public hearing on the matter within the District during such one hundred eighty days, with the notice of the hearing given as provided in section 46-743, prior to making a determination as to imposing a permanent stay or conditions in accordance with subsections (1) and (6) of section 46-739. Within forty-five days after a hearing pursuant to this subsection, the District shall decide whether to exempt from the immediate temporary stay the construction of water wells for which permits were issued prior to the date of the resolution commencing the stay but for which construction had not begun prior to such date. If construction of such water wells is allowed, all permits that were valid when the stay went into effect shall be extended by a time period equal to the length of the stay and such water wells shall otherwise be completed in accordance with section 46-738 and Section E, Rule 4 & 5 of these rules and regulations. Water wells listed in subsection (3) of section 46-714 and water wells of public water suppliers are exempt from this subsection.

### **Rule 2 Permanent Stay on New Water Wells and Expansion of Irrigated Acres**

The District may issue a permanent stay on the construction of new water wells and a stay on the expansion of irrigated acres in areas that are vulnerable to ground water level declines, potential over development of an aquifer, allow reasonable time for scientific studies to be conducted, or other discretionary factors determined by the Board. A permanent stay may be placed by the District either within the entirety of the District or within designated Management Areas or Special Quantity Subareas. Scientific information will be used in determination of these areas, which will include, but not limited to, areal extent of the primary aquifer, type of aquifer ranging from confined to unconfined aquifers, saturated thickness, transmissivity, availability of alternative aquifers of sufficient water quality to allow for beneficial use, local recharge characteristics and rates from any water sources, current development of water use within the designated area and projected future water use, climatic conditions, and discretionary factors determined by the Board. A Stay management area can be issued on any Level One, Two or Three management areas.

### **Rule 3 Review of Permanent Stay Management Area**

The District shall conduct scientific studies, reviews and utilize other information available to determine current and future hydrogeologic conditions and economic factors of management areas within the District. If review of new information as outlined in Section L, Rule 3 and other relevant information indicates that a permanent stay management area could be opened to limited development or disbanded, the District shall hold a public hearing in accordance with 46-743 and issue an order as outlined in 46-744.

#### **Rule 4 Natural Resources District Certification**

In Stay management areas, operators of domestic, livestock, irrigation, municipal, and industrial well systems are required to obtain NRD certification by attending NRD education classes or by passing a take home test designed by LPNNRD and in agreement with applicable other agency input every four (4) years.

#### **Rule 5 Water Well Variance and Water Well Permit Required on High and Low Capacity Wells in Stay Management Areas**

(1) The District will require that a water well variance and water well permit be obtained for each new high capacity well prior to construction in a Stay management area.

(2) The District shall by rule and regulation require that a water well variance and water well permit be obtained for each new water well or for one or more categories of water wells designed and constructed to pump fifty gallons per minute or less, other than a domestic water well required for human needs as it relates to health, fire control, sanitation, and irrigation on less than one acre of land or used to water range livestock, in ground water management areas in which regulations have been imposed to control declining ground water levels.

#### **Rule 6 Transport of Ground Water in a Stay Management Area**

Whenever the District has closed all or part of the District to the issuance of additional water well permits or expansion of irrigated acres, ground water withdrawn outside the affected area shall not be transported for use inside such area unless (a) such withdrawal and transport began before the affected area was closed to the issuance of additional water well permits or expansion of irrigated acres, (b) the water is used solely for domestic purposes and irrigation on less than one acre of land, (c) such withdrawal and transport is approved in advance by the District and if the water is withdrawn from another natural resources district, that neighboring district must also approve, or (d) if a proposed withdrawal and transport of water is intended for municipal purposes, the District shall approve the withdrawal and transport of ground water into the affected area when a public water supplier providing water for municipal purposes receives a permit from the Department of Natural Resources pursuant to the Municipal and Rural Domestic Ground Water Transfers Permit Act.

#### **Rule 7 Variance Application to Construct Water Well and/or Expansion of Irrigated Acres**

The District shall establish variance procedures to address requests for new water wells and the expansion of irrigated acres in portions of the District designed as temporary or permanent Stay management areas. A variance request is required on or after the effective date of a stay management area and prior to any expansion in water use or before the application for a new water well permit.

(1) A non-refundable \$75.00 filing fee payable to the District is required for each variance application.

(2) An Expanded Water Use variance or New Water Well variance is not required for test holes or temporary dewatering wells (less than 30 days).

(3) If expansion of water use could result in existing wells to enlarge their cones of influence (cones of depression) to now overlap into a District Stay management area, an Expanded Water Use Variance will now be required.

(4) If a new water well is the only water source for any expanded water use, then use the District's 'New Water Well Variance' form instead of the 'Expanded Water Use Variance' form.

(5) If a new water well and another water source, such as surface water or reuse water, will be used then the applicant will need to fill out both a variance request for a new water well and expanded water use, but the fee shall remain at \$75.00.

(6) An aerial photograph with markings to show the location of the water source(s) and the location of where the water is to be used, shall be submitted with the variance request form.

(7) If reuse water is one of the water sources, the applicant must submit the requested information on the variance request. Irrigation water by itself can not be credited as reuse water for another water user.

(8) All variance applications must include name and address of the applicant, proposed use of the water, location of water use, water sources such as ground water, surface water or reuse water, any offset water use such as the retiring of irrigated acres in the same sub-area, signature of applicant, and applications for a variance request for domestic, livestock, irrigation, municipal and/or industrial use must have an NRD certified operator listed on the variance request form. The operator will be the person who shall control the operation of the domestic, livestock, irrigation, municipal and/or industrial well for which the variance request is being made.

(9) The District shall designate different classes of variances based on the well pumping capacity in gallons per minute, number of acres being irrigated, or expected total annual water use.

(a) Class one variance is required on all low capacity wells, which pump fifty gallons per minute or less in a Stay management areas. Exceptions are for domestic water wells required for human needs as it relates to health, fire control, sanitation, and irrigation on less than one acre of land or used to water range livestock.

(b) Class two variance is required in a Stay management area for all proposed high capacity wells that will pump greater than fifty gallons per minute with an expected total annual water use of less than or equal to one hundred and fifty acre feet per year, or expansion of irrigated acres less than or equal to one hundred and sixty acres.

(c) Class three variance is required on all high capacity wells that will pump greater than fifty gallons per minute with an expected total annual water use greater than one hundred and fifty acre feet per year but less than three hundred acre feet per year, or expansion of irrigated acres on land greater than one hundred and sixty acres. Applicant must submit information as listed in Section L, Rule 8 plus additional information of all registered wells, test holes, and all surface water rights in a two mile radius of the proposed water use as specified on the variance request form. In addition to the seventy five dollar variance filing fee, the applicant must submit a two hundred and fifty dollar fee for District review.

(d) Class four variance is required on all high capacity wells that pump greater than fifty gallons per minute with an expected total annual water use equal to or greater than 300 acre feet per year, regardless of the number of irrigated acres. Class four variance requests are required for point source ground water users that seek to collectively supply ground water equal to or greater than 300 acre feet per year to a single facility or operation. Applicant must submit information listed in Section L, Rule 8 plus additional information of all registered wells, test holes, and all surface water rights in a five mile radius of the proposed water use, perform an District approved aquifer pump test, and perform a ground water model using MODFLOW software or a similar software program approved by the District as specified on the water well permit application form. In

addition to the seventy five dollar variance filing fee, the applicant must submit a five hundred dollar fee for District review.

(e) If variance request for a new water well is conditionally approved or fully approved by the District, the applicant will still need to apply for and received District approval for a water well permit before construction of the well. Fee for District review of Class three and Class four new water well permits in Stay management areas will be waived for payments received for District approved Class three and Class four new well variances.

(f) For purposes of determining the capacity in gallons per minute and expected total annual water use, the District may consider other water sources that the new well will be commingled, combined, clustered, or joined with in making such calculations (e.g., if the use previously had a Class three status and the new well increases the expected total annual water use to be equal to or greater than 300 acre feet per year, the application will be treated as a Class four variance request).

### **Rule 8 Review of Variance Application**

District review of any variance request will be based, in part, on a point system evaluation, which will consider offsets such as retiring other acres or water use, or the reuse of water from industries, municipalities or other potential sources where water can be reused. District review will also be based on discretionary factors, including but not limited to, whether the variance request would promote the health and welfare of the District by contributing to the conservation, protection, development, and sound management of natural resources in the District.

### **Rule 9 Conditional Approval of Variance Application**

(1) For an expanded water use variance from an existing water source, the landowner has 90 days following conditional approval by the Board to update County assessor records, submit records to the Department of Natural Resources (DNR) to update DNR well registration data base for new irrigated acres, and comply with any additional conditions required by the District. Conditional approval will expire in 90 days from date of issuance by the LPNNRD Board if these conditions are not met.

(2) For a new water well variance, the landowner or well owner has 90 days following conditional approval by the Board to submit a LPNNRD water well permit form to the District, and comply with any additional conditions required by the District. Information listed on the water well permit must agree with information listed on the new water variance or the variance request and well permit will be denied. Conditional approval will expire in 90 days from date of issuance by the LPNNRD Board if these conditions are not met.

(3) When the conditions of the variance have been satisfied and approved by the LPNNRD within 90 days of issuance, then the ‘conditionally approved variance’ shall become an ‘approved variance’. If these conditions have not been met, then the ‘conditionally approved variance’ will lapse and the landowner will need to submit a new variance request.

(4) When an ‘approved variance’ is granted by the District, then water users must install a flow meter and report water pumped annually in acre-inches per year or total gallons per year on LPNNRD approved forms by January 31<sup>st</sup> of each following year.

### **Rule 10 Approved Variance and Annual Review by the District**

(1) For an approved expanded water use variance from an existing water source, additional water use must be put to use within a one-year period following the District's approval of the variance and comply with any additional conditions required by the District. The District may grant an exception for good cause shown, such as abundant rainfall received on new or expanded irrigated acres when actual irrigation would not be necessary.

(2) For an approved new water well variance and approved new water well permit, the landowner has 90 days following the completion of the new well to update County assessor records, submit well registration to DNR to update the well registration data base, comply with Section E, Rule 4 and 5, and comply with any additional conditions required by the District. The District may grant an exception for good cause shown.

(3) When an approved variance is granted by the District, then water users must install a flow meter and report water pumped annually in acre-inches per year or total gallons per year on LPNNRD approved forms by January 31<sup>st</sup> of each following year and comply with any additional conditions required by the District.

(4) The approved variance will be subject to annual renewal by the District. If the District believes the variance should not be renewed, the District will inform the landowner with at least a 45 day notice stating the intentions of the District and allowing the landowner to request a hearing before the Board of Directors within that time limit.

### **Rule 11 Cancellation of Approved Variance**

The District may cancel or void an approved variance at any time if the Board finds violation of the District's rules and regulations, including the failure to submit annual reporting information required by Section L, Rule 9(4) or Rule 10(3).

### **Rule 12 Variance and/or Water Well Permit for Sub-irrigated Ground**

If loss of sub-irrigation should occur on ground certified by the District as sub-irrigated, the landowner and/or operator may apply to the District for a variance request and/or water well permit without the required offsets to install an irrigation well provided that water will be applied to the same location, field, parcel, tract or legal description, the same number of acres and the crop type must remain the same as was previous certified as sub-irrigated. Sub-irrigated ground is non-transferrable.

## **Section M Stay Management with Limited Development in Hydrologically Connected Areas**

### **Rule 1 Hydrologically Connected Stay Management Area and Number of Acres for Limited Development**

In accordance with LB483, the District hereby declares a Stay Management Area with limited development in the areas of the District that were preliminary declared Fully Appropriated on December 16, 2008 by the Nebraska Department of Natural Resources as hydrologically connected ground water and surface water of the Lower Platte Basin. The District shall limit development of new irrigated acres with a goal of no more than 2,500 acres per year in the hydrologically connected area. The hydrologically connected areas within Lower Platte North NRD are on file in the District office.

### **Rule 2 Hydrologically Connected Portions of District Divided into Three Regions**

The District hereby divides the hydrologically connected area as defined by the Nebraska Department of Natural Resources into three regions within the District in order to balance the limited development of new irrigated acres until December 31, 2012. These regions shall be the Shell Creek watershed, the Platte River Valley, and the Todd Valley, which shall include portions of the Weston Subarea. Commencing on January 1, 2013 and thereafter, the three ranking regions will no longer be used and development of up to 2,500 new irrigated acres per year may be awarded according to a criteria ranking system applied to the entire hydrologically connected area.

### **Rule 3 Water Well Variance and Water Well Permit Required on New High Capacity Wells**

The District will require that a water well variance and water well permit be obtained for each new high capacity well prior to construction in the Hydrologically Connected Stay management area with limited development.

### **Rule 4 Variance Request and Ranking Criteria for Limited Development of Additional Irrigated Acres**

(1) Landowners and/or operators wanting to expand the number of irrigated acres in the hydrologically connected area must first submit to the District a LPNNRD variance request form for a new water well and/or a LPNNRD variance request form for the expansion of irrigated acres from an existing water source by September 15<sup>th</sup> with those acres to be issued on January 1<sup>st</sup> of the following year (unless determined otherwise by the District).

(2) The District shall develop a criteria ranking system to evaluate each variance request which shall include: land class, distance of land to be irrigated from hydrologically connected surface water, saturated thickness of the aquifer underlying the water source of the new land to be irrigated, other criteria that the District deems appropriate.

### **Rule 5 Selection Process for Limited Development of Additional Irrigated Acres**

(1) At the Water Committee meeting nearest in date following the September 15<sup>th</sup> deadline for submission of variance request forms and supporting documentation, the Water Committee members shall prioritize and make recommendations as to which land shall be allowed to expand

irrigated acres at the October Board meeting of the District.

(2) The day following the Water Committee meeting, landowners and/or operators shall be informed of their ranking status and the criteria by which that ranking was determined. (3) At the October LPNNRD Board meeting, the Board shall review and may assign variance requests for a limited number of new irrigated acres for the hydrologically connected area as outlined in Section M, Rule 1 & 2. On or after the October Board meeting, up to 2,500 acres of irrigation development may be ‘conditionally approved’ to take effect for the respective following year. For previous years allocations of new irrigated acres that have not been developed in the time required, those acres can be reissued in subsequent years.

### **Rule 6 Conditional Approval of Variance Applications**

(1) For an expanded water use variance, the landowner has 90 days following conditional approval on January 1<sup>st</sup> to update County assessor records, submit records to the Department of Natural Resources (DNR) to update DNR well registration data base for new irrigated acres, and comply with any additional conditions required by the District. Conditional approval will expire in 90 days from date of issuance on January 1<sup>st</sup> if these conditions are not met.

(2) For a new water well variance and new water well permit, the landowner or well owner has 90 days following conditional approval on January 1<sup>st</sup> to submit a LPNNRD water well permit form to the District and comply with any additional conditions required by the District. Information listed on the water well permit must agree with information listed on the assigned variance request from the previous October Board meeting or the variance request and well permit will be denied. Conditional approval will expire in 90 days from date of issuance on January 1<sup>st</sup> if these conditions are not met.

(3) When the conditions of the variance have been satisfied and approved by the LPNNRD within 90 days of issuance, then the ‘conditionally approved variance’ shall become an ‘approved variance’. If these conditions have not been met, then the ‘conditionally approved variance’ will lapse and the landowner will need to submit a new variance request.

(4) When an ‘approved variance’ is granted by the District, then water users must install a flow meter and report water pumped annually in acre-inches per year or total gallons per year on LPNNRD approved forms by January 31<sup>st</sup> of each following year and comply with any additional conditions required by the District.

### **Rule 7 Cancellation of Approved Variance**

The District may cancel or void an approved variance at any time if the Board finds falsification of financial or other documentation submitted as part of the variance request; failure of the landowner and/or operator to follow the irrigation ranking criteria as submitted on the District’s variance form, and/or well permit; violation of the District’s rules and regulations, including the failure to submit annual reporting information required by Section L, Rule 9(4) or Rule 10(3) and Section M, Rule 6(4).

### **Rule 8 Annual Extension of Hydrologically Connected Stay Management Areas**

Upon annual review and Board motion, the District may extend the rules of Section M in accord with 46-714(12). Unless terminated or amended, the rules of Section M shall continue in effect.

**Rule 9 Continuation of Section M Rules**

A continuation of Stay Management Area Rules as defined in Section L, Rule 4, 6, 8, 10, and 12, shall apply.

## **Section N Ground Water Transfer**

### **Rule 1 Transfer Off Overlaying Land**

(1) A permit is required for the transfer of ground water off overlaying land for any purpose. Upon receipt of an application for the transfer of ground water off overlaying land, the District shall provide notice of the application by publishing it on the agenda for the next regularly scheduled Water Committee meeting. Any affected party may object to the transfer of ground water by filing written objections, specifically stating the grounds for such objection, in the office of the District on or before the second regularly scheduled Board meeting following publication of notice in the Water Committee's agenda. Late objections will not be considered. Upon the filing of such objections or on its own initiative, the District shall conduct a preliminary investigation to determine if the withdrawal, transfer, and use of ground water is consistent with the requirements of subsection (2) of this section and all rules and regulations of the District. Following the preliminary investigation, if the District has reason to believe that the withdrawal, transfer, and use is consistent with all rules and regulations of the District, but may not comply with one or more other requirements of subsection (2) of this section, the District shall request that the Department of Natural Resources hold a hearing on such transfer.

(2) Any person who withdraws ground water for agricultural purposes, or for any purpose pursuant to a ground water remediation plan as required under the Environmental Protection Act, including the providing of water for domestic purposes, from aquifers located within the District may transfer the use of the ground water off the overlying land if the ground water is put to a reasonable and beneficial use within the State of Nebraska and is used for an agricultural purpose, or for any purpose pursuant to a ground water remediation plan as required under the Environmental Protection Act, including the providing of water for domestic purposes, after transfer, and if such withdrawal, transfer, and use (a) will not significantly adversely affect any other water user, (b) is consistent with all applicable statutes and District rules and regulations, and (c) is in the public interest.

### **Rule 2 Transfer Off Overlying Land for Domestic Use**

Any person other than a public water supplier as defined in section 46-638 may transfer ground water off the overlying land for the purpose of domestic use of ground water required for human needs as it relates to health, fire control, sanitation, and irrigation on less than one acre of land if

(1) the location and use of the water well and any pipeline or other means of conveyance are authorized by easement or other adequate property interest on all land on which such water well and pipeline or other means of conveyance are located and

(2) the capacity of the water well or series of water wells connected together for such purposes does not exceed fifty gallons per minute. Such person may be liable for damages for interference with the use of ground water by another person only if the withdrawal of ground water for such domestic use unreasonably causes harm to another person through the lowering of the water table or by reducing artesian pressure.

### **Rule 3 Transfer Off Overlying Land for Environmental or Recreational Benefits**

(1) Any person intending to withdraw ground water from any water well located in the State of Nebraska, transport that water off the overlying land, and use it to augment water supplies in any Nebraska wetland or natural stream for the purpose of benefitting fish or wildlife or

producing other environmental or recreational benefits may do so only if the District in which the water well is or would be located allows withdrawals and transport for such purposes and only after applying for and obtaining a permit from the District. An application for any such permit shall be accompanied by a non-refundable fee of fifty dollars payable to the District. Such permit shall be in addition to any permit required pursuant to section 46-252 or 46-735 or subdivision (1)(k) of section 46-739.

(2) Prior to taking action on an application pursuant to this section, the District shall provide an opportunity for public comment on such application at a regular or special board meeting for which advance published notice of the meeting and the agenda therefor have been given consistent with the Open Meetings Act.

(3) In determining whether to grant a permit under this section, the Board of Directors of the District shall consider: (a) Whether the proposed use is a beneficial use of ground water; (b) The availability to the applicant of alternative sources of surface water or ground water for the proposed withdrawal, transport, and use; (c) Any negative effect of the proposed withdrawal, transport, and use on ground water supplies needed to meet present or reasonable future demands for water in the area of the proposed withdrawal, transport, and use, to comply with any interstate compact or decree, or to fulfill the provisions of any other formal state contract or agreement; (d) Any negative effect of the proposed withdrawal, transport, and use on surface water supplies needed to meet present or reasonable future demands for water within the state, to comply with any interstate compact or decree, or to fulfill the provisions of any other formal state contract or agreement; (e) Any adverse environmental effect of the proposed withdrawal, transport, and use of the ground water; (f) The cumulative effects of the proposed withdrawal, transport, and use relative to the matters listed in subdivisions (3)(c) through (e) of this section when considered in conjunction with all other withdrawals, transports, and uses subject to this section; (g) Whether the proposed withdrawal, transport, and use is consistent with the District's ground water quantity and quality management plan and with any integrated management plan previously adopted or being considered for adoption in accordance with sections 46-713 to 46-719; and (h) Any other factors consistent with the purposes of this section which the Board of Directors of the District deems relevant to protect the interests of the state and its citizens.

(4) Issuance of a permit shall be conditioned on the applicant's compliance with the rules and regulations of the natural resources district from which the water is to be withdrawn and, if the location where the water is to be used to produce the intended benefits is in a different natural resources district, with the rules and regulations of that natural resources district. The Board of Directors of the District shall include such reasonable conditions on the proposed withdrawal, transport, and use as it deems necessary to carry out the purposes of this section.

(5) The applicant shall be required to provide access to his or her property at reasonable times for purposes of inspection by officials of any district where the water is to be withdrawn or to be used.

## **Section O Agricultural Research Facilities and Municipal Wellfields**

### **Rule 1 Agricultural Research Facilities and Municipal Wellfields**

Agricultural Research Facilities and Municipal Wellfields within the District may apply to the District for a modification of the individual requirements within the ground water management areas that specifically affects the land they own or operate. Such requests will be reviewed on a case-by-case basis by the District.

## **Section P Special Studies and Investigations**

### **Rule 1 Special Studies and Investigations**

The Lower Platte North NRD shall have the authority to conduct investigations and cooperate or contract with agencies of the United States, agencies or political subdivisions of this state, public or private corporations, or any association or individual on any matter relevant to the administration of the Nebraska Groundwater Management and Protection Act or Lower Platte North NRD Ground Water Management Area rules and regulations. This authority will be exercised in the sole discretion of the Board of Directors of the District.

## **Section Q Appeal Process**

### **Rule 1 Appeal Process**

Any person aggrieved by any order of the District issued pursuant to the District's Management Area Rules and Regulations may appeal the order. The appeal shall be in accordance with the Administrative Procedure Act.

## **Section R Controls in Special Quantity Subareas**

### **Rule 1 Designation of Special Quantity Subarea**

The District may designate a Management Area for the protection of ground water quantity in a portion or portions of the District where additional controls are necessary for the protection of ground water quantity in that area. Such management area shall be known as a Special Quantity Subarea. Additional controls are necessary where the existing action level triggers established in Sections I, J, and K are insufficient to meet the ground water management objective or the goals of the ground water management objectives in the Special Quantity Subarea. Such additional controls are in the public interest and for the promotion of the health and welfare of the District because they will minimize pumping conflicts and protect ground water supplies in the Special Quantity Subarea without imposing unnecessary controls in other portions of the District. Regulation of a Special Quantity Subarea is also grounded on the dynamic hydrologic, geologic, climatic, and soil conditions throughout the District. Because of these varying conditions, the uniform application throughout the management area of one or more controls would fail to carry out the intent of the Nebraska Ground Water Management and Protection Act in a reasonably effective and equitable manner. As a result, the District imposes the controls for each Special Quantity Subarea described in Section R, Rule 2 as set forth in each in the following Rules respectively.

### **Rule 2 Standard Controls**

#### **Rule 2.1 Only Good Cause Variances Allowed**

There shall be no New Ground Water Irrigated Acres from any water well or for the benefit of any irrigated acre in the Special Quantity Subarea without a Written Good Cause Variance. There shall be no increase in the consumptive use of Ground Water withdrawals for agricultural purposes from water wells used for irrigation in the area or for the benefit of any irrigated acre in the area. Such activity is strictly prohibited, either from an existing well or a new well, without a Written Good Cause Variance. An applicant for a Written Good Cause Variance that is also subject to this Section shall, in addition to the requirements provided for in the preceding rules, meet the requirements set forth above. The District will follow the procedural requirements set forth above when processing a Written Good Cause Variance under this Section.

#### **Rule 2.2 Best Management Practices**

Any Landowner withdrawing Ground Water for agricultural purposes from any water well or for the benefit of any irrigated acres in the Special Quantity Subarea shall implement the following best management practices: The Landowner shall not irrigate from any water well or for the benefit of any irrigated acres in the Special Quantity Subarea unless the irrigation is for beneficial use for agricultural purposes. A Landowner must annually notify the District by telephone or in writing before irrigating for agricultural purposes from September 15 to April 15. This section shall not prohibit irrigation when necessary for compliance with a National Pollutant Discharge Elimination System permit issued to a confined animal feeding operation.

**Rule 2.3 Mandatory Educational Requirements**

There shall be mandatory educational requirements for Landowners withdrawing Ground Water for agricultural purposes from any water well or for the benefit of any irrigated acres in the Special Quantity Subarea. The requirements shall be designed to stabilize or reduce the incidence of Ground Water depletion and reduce conflicts between Ground Water users. The Board shall establish the initial education requirements when establishing the Special Quantity Subarea. The Board shall thereafter establish the applicable educational requirements by December 15 for the following calendar year. The standard educational requirements shall be no less than one hour per year and no more than five hours per year.

**Rule 2.4 Well Metering**

All Landowners withdrawing Ground Water from a high capacity well, those wells pumping greater than 50 gallons per minute, in the Special Quantity Subarea must install a District approved Flow Meter for measuring Ground Water withdrawals. The General Provisions of the Rules and Regulations pertaining to Flow Meters shall apply to Landowners and devices subject to this Section. A report of Ground Water withdrawal is also required and must be postmarked or otherwise submitted to the District by November 1<sup>st</sup> of the same year. If November 1<sup>st</sup> is a non-business day, the report must be postmarked by the next following business day.

**Rule 2.5 Domestic Wells**

New or replacement water wells to be used for domestic purposes in the Special Quantity Subarea shall be constructed to such a depth that they are less likely to be affected by seasonal water level declines caused by other water wells in the same area. Any person who installs a new or replacement water well for domestic purposes in the Special Quantity Subarea shall submit a certification from the water well contractor that the well was constructed in compliance with this section. The certification shall be submitted to the District within 90 days of completing construction.

**Rule 2.6 Level One, Two, and Three Management Areas**

Each Special Quantity Subarea shall be also governed by the applicable Level One, Two, or Three controls as enumerated in Sections I, J, and K of the Rules and Regulations. The applicable controls governing each Special Quantity Subarea shall be based upon which Management Area the respective Subarea is located. The Special Quantity Subarea standard controls of Section R, Rule 2 shall supersede the Level One, Two, and Three controls where the two are in express conflict.

**Rule 2.7 Mandatory Acre Certification**

All Landowners within a Special Quantity Subarea must complete the certification of their Historically Irrigated Acres prior to commencement of irrigation within the Special Quantity Subarea in the 2014 calendar year.

## **Rule 2.8 Static Water Level Measurements**

All Landowners withdrawing Ground Water from a high capacity well, those wells pumping greater than 50 gallons per minute, in the Special Quantity Subarea ~~must~~ shall take Static Water Level measurements semi-annually in an effort to measure the depth of Ground Water in the Landowners well. The first measurement ~~must~~ shall take place between March 15 and April 15 of each calendar year. The second measurement ~~must~~ shall take place ~~within 15 days following the Ground Water Users final irrigation of the fall season of each calendar year~~ between July 15 and August 15 of each calendar year. A report of both Static Water Levels is also required and must be postmarked or otherwise submitted to the District by November 1<sup>st</sup> of the same year. If November 1<sup>st</sup> is a non-business day, the report must be postmarked by the next following business day. The LPNNRD shall waive this requirement if the landowner grants written permission to the District to allow LPNNRD personnel to measure their well at all reasonable times.

## **Rule 3 Butler/Saunders County Special Quantity Subarea**

### **Rule 3.1 Standard Controls**

The Standard Controls described in Rule 2 shall apply in the Butler/Saunders County Special Quantity Subarea described in Rule 5.1. District approved Flow Meters required under Rule 2.4 shall be properly installed according to manufacturer's recommendation by May 1, 2015. No Landowner shall operate an irrigation well after May 1, 2015 unless it is in compliance with this requirement.

### **Rule 3.2 Allocation**

The use of Ground Water for agricultural purposes from any water well for irrigation or for the benefit of any Irrigated Acre in the Special Quantity Subarea shall be subject to an Allocation. Allocations shall be based upon a 3 year Rolling ~~Average~~ Allocation. The Board shall establish the initial ~~average~~ annual allocation when establishing the Quantity Subarea. The Board shall thereafter establish the Rolling ~~Average~~ Allocation by December 15 of each calendar year. The Rolling ~~Average~~ Allocation shall specify the total number of acre-inches of irrigation water per irrigated acre for the rolling term. If the Board fails to adopt a Rolling ~~Average~~ Allocation by December 15, the Rolling ~~Average~~ Allocation for the following rolling three year term shall be 27 acre-inches per irrigated acre in this Special Quantity Subarea (the equivalent of 9 acre-inches per year of the rolling term). Rolling ~~Average~~ Allocations for any and all wells may be amended, reduced, increased, or made subject to limitations or conditions by the Board upon notice and hearing.

### **Rule 3.3 Timing and/or Rotation of Water Use**

The timing of water use or applications shall be controlled by the District to restrict pumping during certain times of the day or to establish a rotation so high capacity wells are not all pumping at the same time. The Board may establish timing or rotation restrictions when establishing the Quantity Subarea and shall establish new timing or rotation restrictions by December 15 of each calendar year. Timing or rotation restrictions for any and all wells may be amended, reduced, increased, or made subject to limitations or conditions by the Board upon notice and hearing.

## **Rule 4 Colfax/Platte County Special Quantity Subarea**

### **Rule 4.1 Standard Controls**

The Standard Controls described in Rule 2 shall apply in the Colfax/Platte County Special Quantity Subarea described in Rule 5.2. District approved Flow Meters required under Rule 2.4 shall be properly installed according to manufacturer's recommendation by May 1, ~~2015~~ 2016. No Landowner shall operate an irrigation well after May 1, ~~2015~~ 2016 unless it is in compliance with this requirement.

### **Rule 4.2 Allocation**

The use of Ground Water for agricultural purposes from any water well for irrigation or for the benefit of any Irrigated Acre in the Special Quantity Subarea shall be subject to an Allocation. Allocations shall be based upon a 3 year Rolling ~~Average~~ Allocation. The Board shall establish the initial ~~average~~ annual allocation when establishing the Quantity Subarea. The Board shall thereafter establish the Rolling ~~Average~~ Allocation by December 15 of each calendar year. The Rolling ~~Average~~ Allocation shall specify the total number of acre-inches of irrigation water per irrigated acre for the rolling term. If the Board fails to adopt a Rolling ~~Average~~ Allocation by December 15, the Rolling ~~Average~~ Allocation for the following rolling three year term shall be 27 acre-inches per irrigated acre in this Special Quantity Subarea (the equivalent of 9 acre-inches per year of the rolling term). Rolling ~~Average~~ Allocations for any and all wells may be amended, reduced, increased, or made subject to limitations or conditions by the Board upon notice and hearing.

### **Rule 4.3 Timing and/or Rotation of Water Use**

The timing of water use or applications shall be controlled by the District to restrict pumping during certain times of the day or to establish a rotation so high capacity wells are not all pumping at the same time. The Board may establish timing or rotation restrictions when establishing the Quantity Subarea and shall establish new timing or rotation restrictions by December 15 of each calendar year. Timing or rotation restrictions for any and all wells may be amended, reduced, increased, or made subject to limitations or conditions by the Board upon notice and hearing.

## **Rule 5 Designation of Special Quantity Subareas in the District**

### **Rule 5.1 Butler/Saunders County**

The Butler/Saunders County Special Quantity Subarea shall consist of Sections 1, 12, 13, 24, 25, and 36 in Township 15 North, Range 3 East; Sections 1-36 in Township 15 North, Range 4 East; Sections 4-9 and 16-36 in Township 15 North, Range 5 East; Sections 25 and 36 in Township 16 North, Range 3 East; Sections 25-36 in Township 16 North, Range 4 East; and Sections 30-32 in Township 16 North, Range 5 East in Butler and Saunders Counties. (See attached map as Exhibit "B" for reference.)

### **Rule 5.2 Colfax/Platte County**

The Colfax/Platte County Special Quantity Subarea shall consist of Sections 1-12 in Township 18 North, Range 1 West; Sections 1-12 in Township 18 North, Range 1 East; Sections 3-10 in Township 18 North, Range 2 East; Sections 1-12 in Township 19 North, Range 2 West; Sections 1-16, 21-28, and 33-36 in Township 19 North, Range 1 West; Sections 1-36 in Township 19

North, Range 1 East; and Sections 3-10, 15-22, and 27-34 in Township 19 North, Range 2 East in Colfax and Platte Counties. (See attached map as Exhibit “B” for reference.)

## **Section S Penalties for Violations in a Special Quantity Subarea**

### **Rule 1 Additional Penalty**

In addition to or in lieu of the authority in Section B, and notwithstanding any other provision of these Rules and Regulations, the District may impose a penalty on any person who violates any control required or any Variance granted under this Section. Such penalties include, but are not limited to, a reduction (in whole or in part) in any Rolling ~~Average~~ Allocation of Ground Water applicable to the person, or additional educational requirements for the person.

### **Rule 2 Enforcement**

The General Manager shall initiate enforcement by sending a notice to the person by Certified Mail. The person shall have 10 days from receiving the notice to request a hearing in writing to the District. If requested, the Board shall hold a hearing. Following the hearing, or if no hearing is requested, the Board shall determine the appropriate penalty under the circumstances.

### **Rule 3 Annual Reduction Formula**

If, at the termination of the three year rolling term, any ground water user has exceeded the Rolling ~~Average~~ Allocation by more than one-half (0.5) inches per acre, the Rolling ~~Average~~ Allocation for the following three year term shall be reduced by the amount the ground water user exceeded his Rolling ~~Average~~ Allocation times a factor of 6 (e.g. an excess by one acre-inch shall result in a six acre-inch reduction in the users Rolling ~~Average~~ Allocation for the following three year term). For purposes of calculation of the reduction, all fractional figures shall be rounded to the nearest whole number.

If any ground water user fails to follow any timing and/or rotation restrictions imposed by the District the user shall have his Rolling ~~Average~~ Allocation reduced up to 6 acre inches for each offense.

### **Rule 4 Penalty for Tampering**

Any person who tampers, obstructs, modifies, or takes any action for the purpose of producing an inaccurate or incorrect Flow Meter reading or who takes any other action that would prevent the District from obtaining an accurate estimate of actual ground water use shall be subject to a permanent revocation of the ground water users variances, well permits, future allocations, and/or the rescission of all Certified Irrigated Acres attributable to the violator. Notice and hearing shall be provided to such ground water users before the District takes any action under this Rule.

Exhibit A Map LPNNRD-WP-001 of Water Development Areas and Special Quantity Subareas

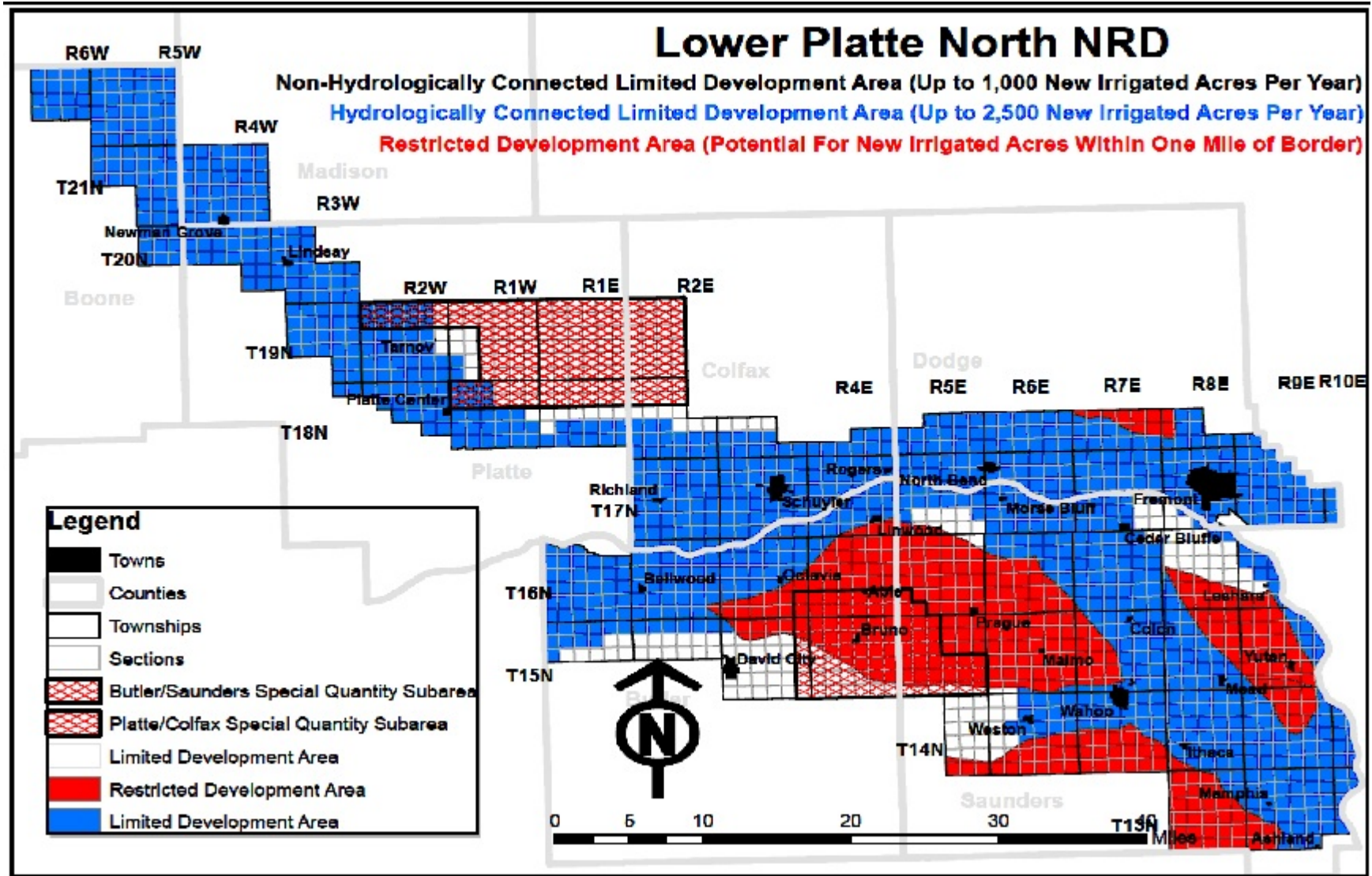


Exhibit B Map of Butler - Saunders Special Quantity Subarea

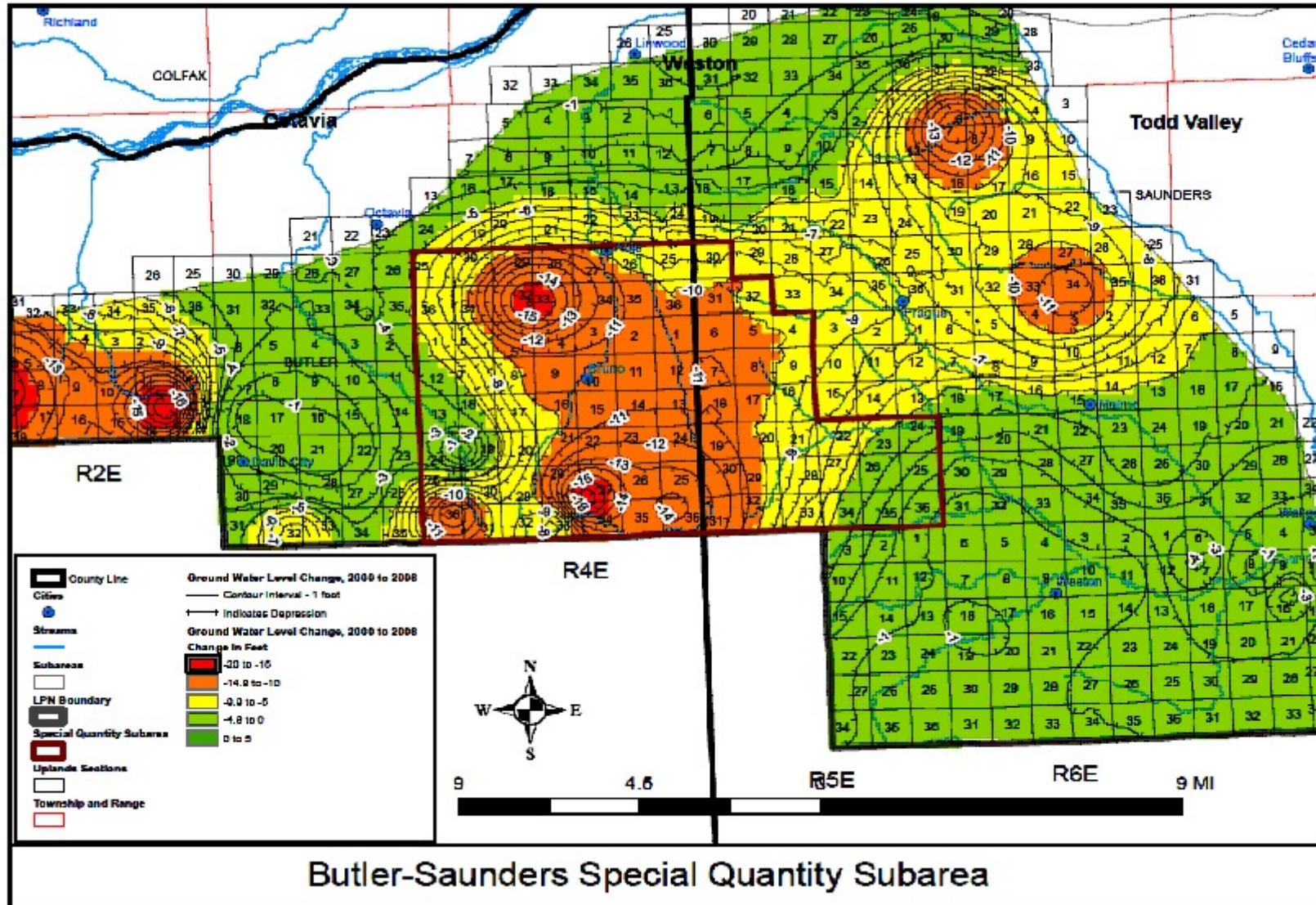
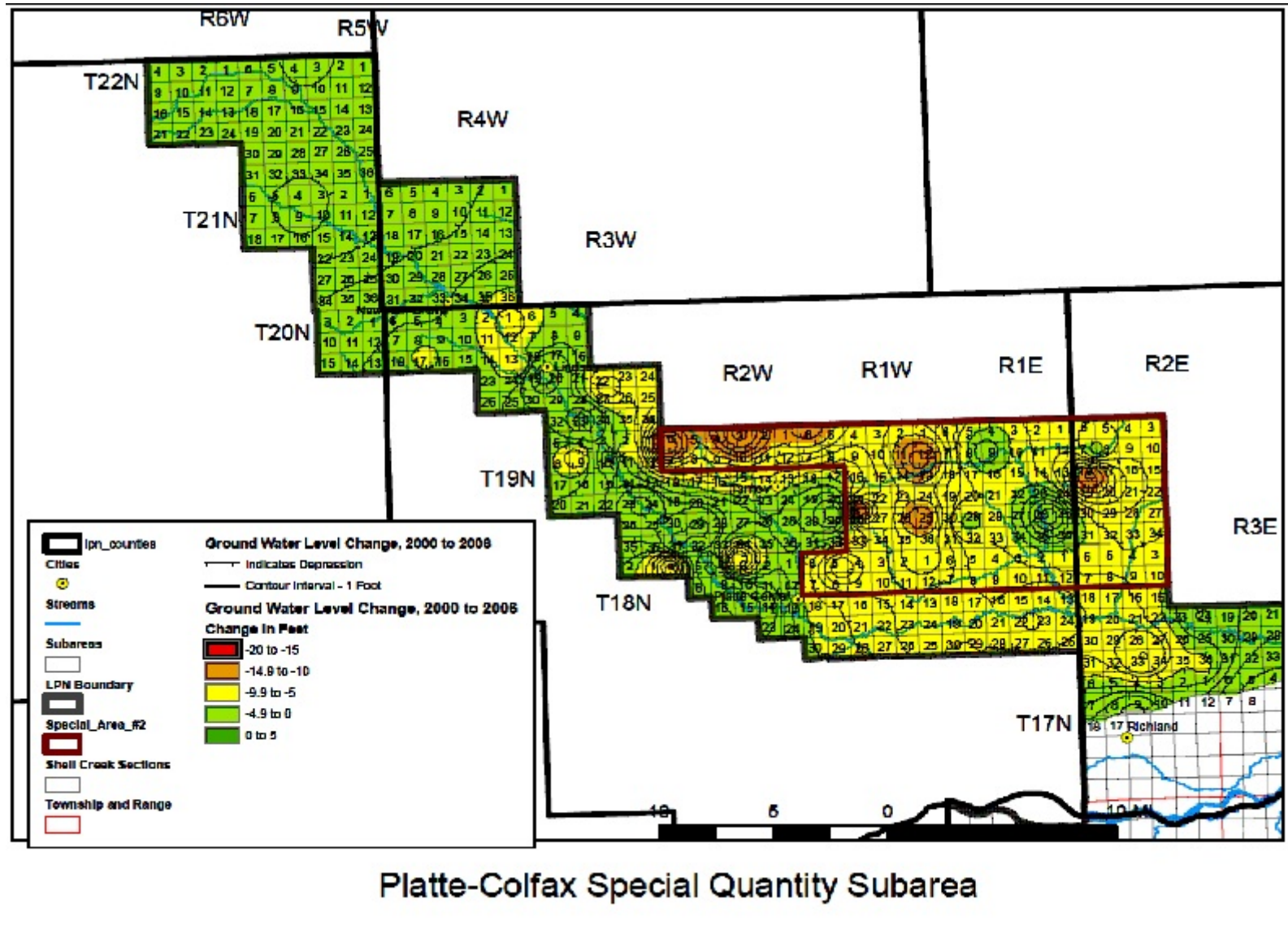


Exhibit B Map of Colfax - Platte Special Quantity Subarea



## Appendix Order of Designation

Public Notice – Lower Platte North Natural Resources District Amended Groundwater Management Area Rules and Regulations to become effective February 10, 2014.

### ORDER OF DESIGNATION

The Lower Platte North Natural Resources District (District) held a Public Hearing on January 13, 2014, in accordance with Neb. Rev. Stat. § 46-743 to consider proposed amendments to the District's rules and regulations;

Following the Public Hearing, the District adopted the proposed amendments to the District's rules and regulations for the management area. Copies of the Order, Amended Rules and Regulations indexed to the Order as Exhibit A, and Special Quantity Subarea Map indexed to the Order as Exhibit B, are available for public inspection at the District office at 511 Commercial Park Road, Wahoo, Nebraska 68066, and on the District website at [www.lpnrd.org](http://www.lpnrd.org);

WHEREAS, the District finds it necessary to publish its Order as passed by the District during its January 13, 2014 board meeting, pursuant to Neb. Rev. Stat. § 46-744 once each week for three consecutive weeks;

WHEREAS, the Amended Rules and Regulations of the District:

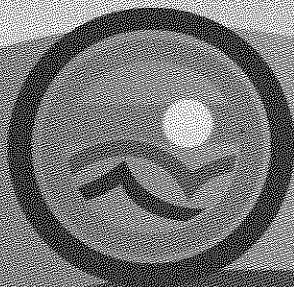
1. Provide definitions for new terms in Section A.
2. Clarify and amend the General Provisions in Section D.
3. Clarify and amend the provisions in Section L to allow the designation of temporary and/or permanent stays within specific management areas or special quantity subareas.
4. Clarify and amend the provisions in Section M to permit the District to grant up to 2,500 acres per year in the hydrologically connected area.
5. Provide penalties for violations in the special quantity subareas.
6. Establish the Butler/Saunders County Special Quantity Subarea in Sections 1, 12, 13, 24, 25, and 36 in Township 15 North, Range 3 East; Sections 1-36 in Township 15 North, Range 4 East; Sections 4-9 and 16-36 in Township 15 North, Range 5 East; Sections 25 and 36 in Township 16 North, Range 3 East; Sections 25-36 in Township 16 North, Range 4 East; and Sections 30-32 in Township 16 North, Range 5 East in Butler and Saunders Counties (See map attached as Exhibit B for reference), and imposes the following controls within this subarea:
  - a. Require participation in educational programs;
  - b. New or replacement domestic wells shall be constructed to such a depth as to be less likely to be affected by seasonal water level declines caused by other water wells;
  - c. Prohibit the development of new irrigated acres without first obtaining a good cause variance;
  - d. Require the certification of all acres be completed prior to commencement of irrigation in 2014;
  - e. Prohibit irrigation from October 1 to April 15 unless it is for beneficial use for

- agricultural purposes as determined by the District;
  - f. Require annual reporting of static water levels in all irrigation wells commencing in 2015;
  - g. Require installation of Flow Meters on all irrigation wells by May 1, 2015; and
  - h. Allocate the amount of ground water that may be withdrawn by ground water users commencing in the 2015 calendar year.
7. Establish the Colfax/Platte County Special Quantity Subarea in Sections 1-12 in Township 18 North, Range 1 West; Sections 1-12 in Township 18 North, Range 1 East; Sections 3-10 in Township 18 North, Range 2 East; Sections 1-12 in Township 19 North, Range 2 West; Sections 1-16, 21-28, and 33-36 in Township 19 North, Range 1 West; Sections 1-36 in Township 19 North, Range 1 East; and Sections 3-10, 15-22, and 27-34 in Township 19 North, Range 2 East in Colfax and Platte Counties (See map attached as Exhibit B for reference), and imposes the following controls within this subarea:
- a. Require participation in educational programs;
  - b. New or replacement domestic wells shall be constructed to such a depth as to be less likely to be affected by seasonal water level declines caused by other water wells;
  - c. Prohibit the development of new irrigated acres without first obtaining a good cause variance;
  - d. Require the certification of all acres be completed prior to commencement of irrigation in 2014;
  - e. Prohibit irrigation from October 1 to April 15 unless it is for beneficial use for agricultural purposes as determined by the District;
  - f. Require annual reporting of static water levels in all irrigation wells commencing in 2015;
  - g. Require installation of Flow Meters on all irrigation wells by May 1, 2015; and
  - h. Allocate the amount of ground water that may be withdrawn by ground water users commencing in the 2016 calendar year.

It has further been ordered by the District that the initial mandatory educational requirements for 2015 shall be one hour in a District-approved program. The General Manager shall publish a list of District-approved programs by December 15, 2014, and may amend the list as necessary and appropriate.

The effective date of the Order of Designation and the Amended Rules and Regulations is February 10, 2014.

For more information contact John Miyoshi or Larry Angle at the Lower Platte North NRD office at (402) 443-4675.



# Lower Platte North Natural Resources District

PO Box 126 511 Commercial Park Road Wahoo, NE 68066  
 402.443.4675 Fax 402.443.5339 Toll-free 888.764.0543  
 lpnrrd@lpnrrd.org www.lpnrrd.org

## 2015 Certification Classes for Nitrogen and Water Management

Class	Date & time	Location
# 1	Thursday, January 8th @ 2:45 p.m. <i>(after corn Expo)</i>	Fremont - Christensen Field
# 2	Thursday, January 15th @ 1:30 p.m.	Columbus - Ag Park •
# 3	Monday, January 26th @ 1:30 p.m.	ARDC - Mead
# 4	Wednesday, February 4th @ 9:30 a.m.	Schuyler - St Benedict Center
# 5	Wednesday, February 4th @ 1:30 p.m.	Lindsay - Village Office
# 6	Thursday, February 19th @ 1:30 p.m. <i>(Pesticide Training class, at 9:30 a.m. and at 6:30 p.m.)</i>	David City - Hruska Library
# 7	Tuesday, February 24th @ 9:30 a.m. <i>(Chemigation Training class at 1:00 p.m.)</i>	Columbus - Pinnacle Bank 210 East 23rd Street
# 8	Wednesday, March 4th @ 1:30 p.m. <i>(Chemigation Training class, at 9:00 a.m.)</i>	Fremont - Extension Office
# 9	Tuesday, March 24th @ 9:30 p.m. <i>(Pesticide Training class, at 1:00 p.m. and at 6:30 p.m.)</i>	David City - Hruska Library
# 10	Thursday, March 26th @ 7:00 p.m.	ARDC - Mead
# 11	Tuesday, March 31st @ 7:00 p.m.	Columbus - Ag Park •
		<b>Total of 11 classes</b>

• Ag Park classes will be on second floor. Entrance is on south side - accessible by stairs or elevator.



## Lower Platte North NRD – Chemigation R&R

Red text is wording added by LPNNRD

Text highlighted in yellow was added by DEQ to this chemigation template

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### Chapter   1   Section \_\_\_\_\_: Authority

These rules and regulations are adopted pursuant to the authority granted in Neb. Rev. Stat. §§46-701-754, the Nebraska Ground Water Management and Protection Act, and Neb. Rev. Stat. §§46-1101-1148, the Nebraska Chemigation Act and Title 195 N.A.C. These rules and regulations are intended to apply district-wide.

### Chapter   2   Section \_\_\_\_\_: Definitions

1. Applicator shall mean any person engaged in the application of chemicals by means of chemigation. Applicator shall include any person operating equipment used for chemigation whether for himself or herself or on behalf of the permitholder for the land on which the chemigation will take place.
2. Chemical shall mean any fertilizer, herbicide, or pesticide mixed with the water supply.
3. Chemigation shall mean any process whereby chemicals are applied to land or crops in or with water through an on farm irrigation distribution system.
4. Council shall mean the Environmental Quality Council.
5. Department shall mean the Department of Environmental Quality.
6. Director shall mean the Director of Environmental Quality.
7. District shall mean **Lower Platte North Natural Resources District**.
8. Fertilizer shall mean any formulation or product used as a plant nutrient which is intended to promote plant growth and contains one or more plant nutrients recognized by the Association of American Plant Food Control Officials in its official publication.
9. Injection location shall mean each site where chemicals will be applied through an irrigation distribution system.
10. Irrigation distribution system shall mean any device or combination of devices having a hose, pipe, or other conduit, which connects directly to any source of ground or surface water, through which water or a mixture of water and chemicals is drawn and applied for agricultural or horticultural purposes. Irrigation distribution system shall not include any hand-held hose sprayer or other similar device which is constructed so that an interruption in water flow automatically prevents any backflow to the water source.
11. **Inspector shall mean any authorized employee of the District.**
12. **Natural Resources District Operator Certification shall mean all operators within the District, who use any type of fertilizer (either commercial or organic), pesticide, or operate an irrigation system are required to obtain NRD certification by attending NRD education classes or by passing a take home test designed by LPNNRD and in agreement**

with applicable other agency input every four (4) years. This is in addition to the State of Nebraska Chemigation Certification requirement.

13. Open discharge system shall mean a system in which the water is pumped or diverted directly into a ditch or canal in such a manner that the force of gravity at the point of discharge into the ditch or canal cannot cause water to flow back to the point from which the water was pumped or diverted.
14. Permitholder shall mean the owner or operator of land who applies or authorizes the application of chemicals to such land by means of chemigation. The permitholder shall be the party primarily responsible for any liability arising from chemigation on the property.
15. Pesticide shall mean any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, insect, rodent, nematode, fungus, weed, or other form of plant or animal life or virus, except viruses on or in living humans or animals, and any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.
16. Registered well shall mean any well which is properly registered with the Nebraska Department of Natural Resources.
17. Restricted Use Pesticide shall mean a pesticide classified as a restricted-use pesticide by the United States Environmental Protection Agency, a state-limited-use pesticide, or any pesticide for which an exemption under section 136p of the Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. §§ 136, et seq., has been granted.
18. Working day shall mean Monday through Friday but shall not include Saturday, Sunday, or a federal or state holiday. In computing two working days, the day of receipt of the permit is not included and the last day of the two working days is included.

### Chapter   3   Section \_\_\_\_\_: Chemigation Application

No person shall chemigate, or authorize the application of chemicals to land or crops through the use of chemigation, unless such person obtains authorization from the District, via permit, authorizing such chemigation. No permit is required to pump or divert water to or through an open discharge system. Each injection location must be permitted on an annual basis, using forms provided by the District. Each permit expires on June 1 of each year, and the permit holder is solely responsible for renewal.

An application for a chemigation permit shall be considered received by the District on the date it is either hand delivered or received by mail, so long as the application is properly completed as per Nebraska Administrative Code Title 195, signed by the permitholder, and the permitholder has paid the requisite fee (see ~~Section~~ **Chapter 10**: Chemigation Permit Fee Schedule). Any incomplete, unsigned, or unpaid applications will be returned to the applicant.

An application must be filed with the District for each injection location on forms provided by the District. The following information is the minimum requirement of the District.

1. Name, address and telephone number of applicant.
2. Calendar year for which application is being made.
3. Legal description of the injection location site, defined to the quarter of quarter section (forty-acre increment).
4. Whether the application is for an initial, renewal or emergency permit.
5. The name(s) of the certified chemigation applicator(s), their certification number and the expiration date of their certification.
6. Whether the chemical injection equipment to be used is stationary or portable.
7. Signature of the permit applicant and date of signing. The signature must be that of the proposed permitholder or a person holding power of attorney from the applicant.
8. If the application is for a renewal permit, in addition to the information required in 1 through 7 above, the applicant shall list the names and estimated amounts of all the chemicals that were used in the chemigation system the previous year.
9. On chemigation renewal forms, the name(s) of the operator that is NRD Operator Certified, their NRD certification number, and the expiration date. This applies for renewal chemigation permits only, not new, emergency, or special chemigation permit applications.

~~[INCLUDE APPLICATION CONTENT REQUIREMENTS; PENALTY FOR INCOMPLETE APPLICATIONS]~~

#### **Chapter 4 Section \_\_\_\_\_: Certification**

Pursuant to Title 195, Chapter 13, Nebraska Department of Environmental Quality, all chemigation applicators must undergo and maintain certification. Training programs shall be offered through the University of Nebraska Cooperative Extension Service. The director shall issue a certificate acknowledging the competency, determined through the use of a written examination prepared and administered by the department. Each applicator's certificate, shall be valid for a period of four years, and shall expire on January 1 of the fourth year after the date of issuance.

The LPNNRD shall also require that all operators of chemigation irrigation systems within the District obtain NRD operator certification by attending NRD education classes, or by passing a take home test designed by LPNNRD, every four years. NRD certification shall be valid for four years and shall expire on April 1 of the fourth year after the date of issuance.

~~[INCLUDE WHETHER DISTRICT WILL NOTIFY OF CERTIFICATION EXPIRATION; INFORMATION ON LOCATION OF TRAINING; ANY ADDITIONAL REPORTING REQUIREMENTS]~~

**Chapter 5 Section \_\_\_\_\_: Original Permit Process**

- A. The District shall review each completed permit application, conduct an inspection, and approve or deny the application within 45 days after the application is filed.
- B. Applications for a new or renewal chemigation permit received by the District during the calendar year shall be inspected and approved by ~~December 31<sup>st</sup>~~ November 1<sup>st</sup> of that same calendar year. This does not apply to renewal permits that are not subject for inspection during that calendar year or when new applications are received by the district with less than forty-five days remaining in the calendar year.
- C. No chemigation permit, except a Special permit, shall be issued or renewed by the district, if any of the following conditions occur:
  - a. The applicant has failed to provide the required information, as specified in Title 195, Chapter 2, 002, Nebraska Department of Environmental Quality on the application form;
  - b. The irrigation distribution system does not comply with the equipment standards set forth in Title 195, Chapters 9 and 10, Nebraska Department of Environmental Quality;
  - c. The applicator has not been certified as a chemigation applicator by the Department; or
  - d. Failure of the applicant to remit the appropriate fee
  - e. For a renewal chemigation permit, the chemigation applicator is not NRD operator certified. This applies for renewal chemigation permits only, not new, emergency, or special chemigation permit applications.
- D. Changes in application information shall be provided to the District within 10 days.

~~[INCLUDE ANY OTHER REASONS DISTRICT MAY DENY; REPORTING INFO REQUIREMENTS]~~

**Chapter 6 Section \_\_\_\_\_: Renewal Process**

All permits must be renewed annually. If a renewal form has not been completed and filed with the requisite fee (see ~~Section~~ **Chapter 10: Chemigation Permit Fee Schedule**), the permit shall not be renewed without filing an original application. Since permits expire on June 1, all renewable applications must be on file with the District by May 31. Each application for renewal is subject to inspection of equipment and site to determine compliance with the Chemigation Act and these **District** rules and regulations. If an inspection reveals noncompliance, renewal shall be refused, suspended, or revoked until compliance is achieved, as determined by the District. Under no circumstances may a permit be transferred.

~~[EXPAND UPON DISTRICT'S FACTORS FOR INSPECTIONS OR DETERMINING COMPLIANCE]~~

## Chapter 7 Section \_\_\_\_\_: Special Permits

If the chemigation system does not need all the safety equipment, as determined by District inspection, the District shall forward such information to the Department for review. If the Department agrees with the District's inspection, the Department shall grant the District authority to issue a special permit. **Before issuing any special permit, the District shall obtain information for special permits specified by N.A.C. Title 195, Ch. 5.** Issuance of a special permit shall not relieve the permitholder, applicator, or operator of a chemigation system from compliance with all the other responsibilities of the District rules and regulations.

~~[INCLUDE REQUIRED EQUIPMENT OR INSPECTION REQUIRMENTS]~~

## Chapter 8 Section \_\_\_\_\_: Emergency Chemigation Permit Approval

A person may file an application for an emergency permit as established in Title 195, Chapter 6, Nebraska Department of Environmental Quality. The District shall have two working days to review the permit before issuing or denying. "Two working days" shall mean Monday through Friday, but does not include Saturday, Sunday, or a federal or state holiday. The day the District receives the permit application is not included in the two working days. On the second working day, the District shall complete its review and either issue or deny the permit. If the District has not denied the permit within two working days, the permit shall be deemed issued.

Emergency permits shall be valid for a period of forty five (45) days from the date of issuance.

Any holder of an emergency permit or an applicator applying chemicals pursuant thereto who violates any of the provisions of the Nebraska Chemigation Act or standards, rules and regulations adopted under it, shall have such permit automatically revoked by the district or the Department, without a hearing and shall be guilty of a Class II misdemeanor

~~[INCLUDE DISTRICT REASONS FOR GRANTING PERMIT]~~

## Chapter 9 Section \_\_\_\_\_: Permit Revocation

The District shall **immediately** suspend any and all permitted chemigation systems if there is an actual or imminent threat of danger to the public or environment due to the operation of the chemigation system.

The District shall suspend or deny any and all permits if: a permit was obtained fraudulently; a permitholder fails to notify the district of equipment replacement or alteration within seventy-two hours; Applicator or permitholder fails to notify the District and Department of actual or suspected spill or accident within 24 hours; Permitholder fails to carry out cleanup measures developed by the Department within the time specified; **Failure to have the well properly registered with the Department of Natural Resources, however a six month grace period (one time only per injection site) will be**

**granted to allow time for registration; Violation of any provisions of the Lower Platte North NRD Ground Water Management Rules and Regulations;**

Should a violation of the Nebraska Chemigation Act or rules and regulations promulgated pursuant to the Act occur, the District shall notify the person in violation. The violator has 10 days to remedy the violation or request a hearing before the District's Board of Directors. If the violation has not been corrected in the 10-day period, the District shall notify the Department of the violation. If after a preliminary investigation, the Department determines there is a violation, then the person's permit shall be revoked until compliance is met. For systems operated by a permit holder, the District may, but shall not be required to, establish a compliance schedule in lieu of the 10-day compliance deadline.

~~{PROVIDE COMPLIANCE SCHEDULE}~~

**Chapter 10 Section \_\_\_\_\_: Chemigation Permit Fee Schedule**

As required by Title 195, Chapter 3, Nebraska Department of Environmental Quality, the District shall review applications, conduct inspections, and approve or deny permits. No permit may be approved without payment of the requisite permit fee, which shall reflect the cost of administration and inspections.

- A. An original application fee of **\$60.00** (~~not to exceed \$150~~) for each new permit shall be paid to the District, of which \$5.00 shall be paid to the Department of Environmental Quality.
- B. A special permit application fee of **\$60.00** (~~not to exceed \$150~~) shall be paid to the District, of which \$5.00 shall be paid to the Department of Environmental Quality.
- C. The annual renewal fee of **\$30.00** (~~not to exceed \$100~~) shall be paid to the District, of which \$2.00 shall be paid to the Department of Environmental Quality.
- D. An emergency permit application fee of **\$250.00** (~~not to exceed \$500~~) shall be paid to the District, of which \$10.00 shall be paid to the Department of Environmental Quality.

**Chapter 11 Section \_\_\_\_\_: Inspections**

District and Department employees shall have reasonable access to inspect all chemigation systems and to otherwise carry out their duties pursuant to the Act; specifically, Neb. Rev. Stat. § 46-1124. The District shall conduct an inspection of each injection location for which the permit is sought in order to ensure compliance with the equipment standards set forth herein and in Title 195, Chapters 9 and 10, Nebraska Department of Environmental Quality.

The District shall conduct an inspection of replaced or altered equipment and shall approve the continuance of chemigation so long as the inspected equipment is deemed to be in compliance

with the Act. The District shall not collect a new fee for an inspection of replaced or altered equipment of previously approved injection locations.

Timing of inspections:

- Inspections for original applications shall be conducted within 45 days of filing.
- Inspections for special permits shall be conducted prior to permit renewal.
- Inspections for an emergency permit shall be conducted during the 45 day effective period if no inspection was conducted prior to the permit issuance.
- The District has the right to inspect any location up for renewal to determine compliance. Should an inspection determine noncompliance with the Act, the District shall refuse the application until compliance with the Act is demonstrated.

~~[INCLUDE INSPECTION DISTRICT PROCEDURE – NOTICE, ACCESS, LIABILITY]~~

The district will make area wide, selective, and periodic inspection of permitted systems on an annual basis. The district will investigate complaints concerning permitted systems.

The district will inspect each renewal permit at least once every three years.

The district will make area wide selective and periodic inspections of non-permitted systems annually. The district will investigate complaints concerning non-permitted systems. Any person believed by the district to be chemigating without a required permit shall be notified of the district's right and intent to inspect the premises concerned. If consent for inspection is denied, such authorized representatives may apply to the district or county court of the county in which the chemigation system is located for an inspection warrant to allow inspector entrance to the systems for purposes of the Chemigation Act. No person shall refuse entry or access to any authorized representative of the district or department who requests entry for purposes of inspection and who presents appropriate credentials and an inspection warrant. Nothing in this chapter shall be construed to prevent prompt inspection without consent or appropriate warrant in emergency situations when there is neither sufficient time nor opportunity to obtain an inspection warrant.

If a permit is not issued after inspection, it is the responsibility of the person making the permit application to request re-inspection.

If two inspections to a site have been made and the permit request is still denied based on equipment requirements or failure of the landowner, permitholder, applicator, or designated person to be present at the scheduled appointment, the district will require reapplication for a new permit and will require the resubmittal of the initial \$60 fee prior to the next inspection.

Permitholder/applicators are required to be present during the inspection and to operate the chemigation equipment. The inspector will not operate such systems.

- Permitholder/applicator is responsible for removal of the vacuum relief valve, if used as an inspection port, and the chemical injection check valve. The inspector may assist in removal of either valve if so requested by the permitholder/applicator.
- The district will replace chemigation injection check valves if damaged during the testing process only. The district will not replace valves damaged as a result of removal or attachment or any defects in the valve.

Functional operation of the irrigation and chemigation system, to include start-up and shutdown, is required during the inspection process.

District inspectors may have for sale, at district cost, a limited number of chemical injection check valves and other pieces of chemigation equipment as needed to improve the inspection process. The permitholder/applicator will not be required or encouraged to purchase such equipment from the inspector but may do so for ease of the inspection process.

The district will inspect all permit application requests in the district boundaries. Special cases involving neighboring districts will be handled on a case by case basis.

For each new chemigation permit application submitted after January 1, 2015 the District shall require a dedicated irrigation pipeline check valve, vacuum relief valve, inspection port, low-pressure drain, and simultaneous interlock devices for each chemigation injection site.

## **Chapter 12 Section \_\_\_\_\_: Equipment**

Irrigation distribution systems with chemigation capabilities shall be equipped with the following devices:

- A. Check valve
- B. Vacuum relief valve
- C. Inspection port
- D. Low pressure drain
- E. Chemical injection line check valve
- F. Simultaneous interlock device

**Equipment shall** be in compliance with Title 195, Chapters 9 &10, Nebraska Department of Environmental Quality and any rules and regulations promulgated by the District.

All permitholders shall maintain the above listed equipment in good working condition at all times of chemigation.

**A person is hereby authorized by rule to inject chemicals for maintenance of a subsurface drip irrigation system once each calendar year, provided such system:**

- Is equipped with an irrigation pipeline check valve, and
- Is permitted under Title 122 – Rules and Regulations for Underground Injection and Mineral Production Wells.

~~[INCLUDE ALL EQUIPMENT, DESIGN, ANY DISTRICT REPORTING/INSPECTION REQUIREMENTS—INCLUDING THAT RELATED TO SUBSURFACE DRIP IRRIGATION]~~

### **Chapter 13 Section \_\_\_\_\_: Posting**

All permit holders shall post signs on chemigated fields when using any herbicide or pesticide, or a chemical for which the label requires posting. A sign with the words, “KEEP OUT, CHEMICAL APPLICATION THROUGH IRRIGATION WATER SYSTEM” shall be posted by the permit holder at each point of entry into the treated area, adjoining farmstead, or residential area, along any public road where public exposure may occur, and at the point of chemical inject if such point is outside the treated area. **Each sign shall be posted that it is clearly visible and legible prior to becoming wetted by the irrigation spray. The lettering on the sign(s) shall be a color which clearly contrasts with the background and the letters shall be two and one-half inches in height. Each sign shall be posted and maintained during the chemigation period and until the end of reentry period as specified by the chemical label. The sign(s) shall be posted no sooner than 48 hours prior to the start of chemigation and shall be removed, covered, or otherwise made illegible, no later than 48 hours after the end of reentry period.** The signs shall conform to District rules and regulations as well as Title 195, Chapter 12, 002.04, Nebraska Department of Environmental Quality.

~~[INCLUDE DISTRICT RULES AS TO SIZE OF SIGN, LOCATIONS, RESPONSIBLE PARTY, ETC.]~~

### **Chapter 14 Section \_\_\_\_\_: Enforcement**

The District shall enforce the provisions of Neb. Rev. Stat. §§ 46-601, 46-602.01, the Groundwater Management and Protection Act, the Nebraska Chemigation Act, and all its own orders and rules and regulations adopted pursuant thereto through the issuance of a formal notice of an alleged violation, cease and desist orders issued and enforced against operators or landowners, as determined by the Board of Directors, and/or by bringing an appropriate action in the district court in the county where the violation occurs for the reasons and by the procedures as follows.

Absent an immediate threat, the District shall give 3 days' notice to the affected person and an opportunity to be heard before issuing a cease and desist order to enforce the Ground Water Management Protection Act or the Chemigation Act.

If there is an actual or imminent threat of danger to the public or environment due to the operation of a permitted or non-permitted chemigation system, the District shall order immediate suspension of any chemigation operations.

In the event the District finds an adverse effect caused by an actual or suspected accident related to chemigation, the District may require the permit holder to carry out a cleanup and recovery plan pursuant to Neb. Rev. Stat. §46-1131.

The District shall make reasonable efforts to obtain voluntary compliance before compelling compliance through the legal system.

#### Chapter 15 Section \_\_\_\_\_ : Reporting

The applicator or permit holder shall report any actual or suspected accident related to the use of chemigation in his or her system to the Department and the District within twenty-four hours of its discovery. Notification shall be made by telephone to the Department and the District during office hours, from 8:00 a.m. to 5:00 p.m., Monday through Friday. After hours, weekdays, and holidays, reports shall be made to the Nebraska State Patrol. All information known about the accident at the time of discovery shall be included, such as time of occurrence, quantity and type of material, location and any corrective or cleanup actions presently being taken.

Permitholders shall notify the District and the Department of any actual or suspected accident resulting from the use of chemigation within 24 hours. Failure to do so may result in a civil penalty of not more than five hundred dollars or a guilty verdict of a Class III misdemeanor. Permitholders shall note the District and Department consider each day a single, separate violation.

Permitholders who either replace or alter or authorize such replacement or alteration of chemigation equipment previously approved by the District shall notify the District within 24 hours of such replacement or alteration. The District shall conduct an inspection of the replaced or altered equipment.

Abandoned Well Cost Share Program

Name	County	Well Drill/ Pump Inst.	Date Applied	Plugging Exp. Date	Pre-plug Insp. Date	Date Well Plugged	Post-plug Insp. Date	Date Comm. App.	Date Board App.	Well Type	Casing Diam.	Well Depth	Total P&OR Cost	NRD P&OR Cost	State Reimb. Amount	Estimate	Approv. Total	25% SAND/DUCK	25% SHELL CR.	Total NRD Cost Share
<b>ESTIMATE APPROVED</b> – waiting for driller to plug these wells																				
Ray Sedlacek	Saunders	Webster	Jan-11	Jul-11	Jan-11					Domestic	15	47				\$ 724.28	\$ 719.78			\$539.84
Donald Folken	Colfax	Grosch	Jan-11	Jul-11	Jan-11					Irr.	18	85				\$ 674.11	\$ 644.11			\$505.58
Kathleen Johnson	Saunders	AWS	Jan-11	Jul-11	Jan-11					Stock	2"	100				\$ 453.00	\$ 412.50			\$309.38
Maynard Flamme x 2	Dodge	Dvorak	Feb.-11	Aug-11	Feb-11					Irr. X 2	6"	28-38'				\$ 590.00	\$ 590.00			\$442.50
Gregory Haskins X 2	Butler	Preister	Mar-11	Sep-11	Mar-11					Irr	24"/24"	80+'				\$ 1,997.72	\$ 1,809.02			\$1,356.76
Frank Vech	Saunders	Dvorak	Apr-11	Oct.-11	Apr-11					Irr.	18"	167'				\$ 878.51	\$ 708.01			\$531.01
Alice Anderson	Boone	Scott's	Apr-11	Oct.-11	Apr-11					Dom.	3"	223				\$ 455.14	\$ 387.34			\$290.51
Dorothy Jelinek x 2	Saunders	Webster	May-11	Nov.-11	May-11					2 Dom.	2"					\$ 1,125.60	\$ 893.11			\$669.83
Frank Peltz	Butler	AWS	Aug-11	Feb-12	Aug-11					Domestic	5"	137'				\$ 343.40	\$ 304.00			\$228.00
Janice Wilke Trust	Platte	Grosch	Oct-11	Apr-12	Oct-11					Irr.	16"	95'				\$ 705.57	\$ 697.70			\$523.28
Viola Remmeireid x 2	Boone	Scott's	Oct-11	Apr-12	Oct-11					Stock x 2	3"	225+ '				\$ 1,138.44	\$ 958.44			\$718.84
Curtis Havelka	Saunders	Subbert	Nov-11	May-12	Nov-11					Irr.	16"	80 +				\$ 500.00	\$ 500.00			\$375.00
Michael Kubik x 2	Saunders	AWS	Dec.-11	Jun-12	Dec.-11					Hand/Dom	32"/8"	40'				\$ 1,671.00	\$ 1,606.00			\$1,204.50
Maynard Flamme	Dodge	Dvorak	Jan-12	Jul-12	Jan-12					Irr	16"	50+'				\$ 648.74	\$ 516.74			\$387.56
Viola Remmeireid	Boone	Scott's	Jan-12	Jul-12	Jan-12					Stock	4"	278				\$ 634.12	\$ 524.12			\$468.09
Ken Hagemann	Dodge	Dvorak	Mar-12	Nov-12	Mar-12					Irrigation	6"	45'+				\$ 943.79	\$ 824.65			\$618.49
Lumir Jedlicka	Colfax	Grosch	Mar-12	Nov-12	Mar-12					Irrigation	12"	76'				\$ 996.04	\$ 646.04			\$484.53
Marty Peters	Dodge	Dvorak	Mar-12	Nov-12	Mar-12					Irrigation	8"	48'				\$ 673.70	\$ 550.90			\$413.18
Gerald Killham	Platte	Grosch	Jun-12	Dec-12	Jun-12					Irrigation	18"	101'				\$ 996.17	\$ 840.67			\$630.50
Moser KMKR, LLC	Platte	Dietz	Aug-12	Feb-13	Feb-13					Irrigation	16"	263'				\$ 1,298.36	\$ 1,100.61			\$825.46
Rose Rosengren	Saunders	AWS	Sep-12	Mar-13	Sep-12					Dom.	4"	400'				\$ 704.00	\$ 451.50			\$338.63
Janice Wilke Trust	Dodge	Grosch	Nov.-12	May-13	Nov-12					Irr	15	120'				\$ 853.97	\$ 843.68			\$632.75
Tom Preister	Boone	Preister	Feb-13	Aug-13	Feb-13					Irrigation	24"	217'				\$ 1,101.17	\$ 1,053.23			\$789.92
Dorothy Dewisplare	Butler	Preister	Jul-13	Jan-14	Jul-13					Hand Dug	48"	75'				\$ 2,625.02	\$ 2,388.30			\$1,791.24
Neil Schilke	Dodge	Webster	Jul-13	Jan-14	Jul-13					Irrigation	18"	72'				\$ 998.74	\$ 920.86			\$690.65
Gene Hansen	Saunders	Webster	Sep-13	Mar-14	Sep-13					Irrigation x	16"	140+				\$ 3,575.59	\$ 2,638.66			\$1,979.01
North Bend Grain Co.	Dodge	Webster								Irrigation	16"	31'				\$ 820.74	\$ 766.24			\$574.68
Dave Pieke	Madison	Grosch								Irrigation	10.75"	315'				\$ 2,116.86	\$ 763.86			\$572.90
Ronald Freeman	Saunders	AWS	Nov-13	May-14	Nov-13					Irrigation	16"	144'				\$ 940.22	\$ 907.15			\$680.36
Duane Johnson x 2	Saunders	AWS	Nov-13	May-14	Nov-13					Irrigation x	16"	135'				\$ 2,022.50	\$ 1,612.76			\$1,209.58
Ronald Ueckert	Saunders	AWS	Nov-13	May-14	Nov-13					Hand Dug	24"	50+'				\$ 1,220.40	\$ 813.60			\$610.20
Robinson Land, LLC	Dodge	Dvorak	Jan-14	Jul-14	Jan-14					Irr	16"	36'				\$ 681.15	\$ 601.30			\$450.98
Thomas Stibal	Platte	Wemhoff	Feb-14	Aug-14	Feb-14					Irrigation	18"	54'				\$ 1,197.44	\$ 987.44			\$740.58
Marty Peters	Dodge	Dvorak	Feb-14	Aug-14	Feb-14					Irrigation	6"	48'				\$ 569.32	\$ 547.12			\$410.34
Krafka Brothers Trust	Butler	Grosch	Feb-14	Aug-14	Feb-14					Irrigation	17"	56'				\$ 653.08	\$ 645.58			\$484.19
Calvin & Carolyn Dietrich	Colfax	Grosch	Mar-14	Sep-14	Mar-14					Irrigation	14"	331'				\$ 1,280.67	\$ 1,053.17			\$789.88
Mary Larsen Johnston	Saunders	AWS	Apr-14	Oct-14	Apr-14					Irrigation	16"	208'				\$ 1,260.00	\$ 824.50			\$618.38
Marvin Sidel	Butler	Grosch	Apr-14	Oct-14	Apr-14					Domestic	12"	76'				\$ 677.54	\$ 609.43			\$457.07
Gary Wirka	Saunders	Sargent	Jun-14	Dec-14	Jun-14					Irrigatin	16"	275'				\$ 1,984.55	\$ 1,169.50			\$877.13
Robert Bartek	Saunders	AWS	Aug-14	Feb-15	Aug-14					Irrigation	16"	246'				\$ 1,260.00	\$ 892.42			\$669.32
Greg Haskings x 2	Butler	Webster	Sep-14	Mar-15	Sep-14					Stock/Hand E	32" & 15"	30' / 35'				\$ 1,600.74	\$ 1,437.74			\$1,078.31
Wilma Loseke	Platte	Grosch	Oct-14	Apr-15	Oct-14					Irrigation	16"	102'				\$ 863.05	\$ 817.55			\$613.16
Jane A Stara Rev. Trust	Butler	Grosch	Nov-14	May-15	Nov-14					Irrigation	16"	435'				\$ 1,639.02	\$ 1,257.48			\$943.11
Goedeken Farms Inc	Platte	Grosch	Nov-14	May-15	Nov-14					Irrigation	15"	104'				\$ 922.67	\$ 803.30			\$602.48
Charles Emanuel & Sons Inc. x 2	Dodge	Webster	Nov-14	May-15	Nov-14					Irrigation x	17" x 2	37' & 40'				\$ 1,645.45	\$ 1,335.45			\$1,001.59
Bernard Hain x 2	Butler	Webster	Nov-14	May-15	Nov-14					Stock x 2	6" x 2	80' & 50'				\$ 1,294.58	\$ 1,200.08			\$901.56
Philip & Jeana Buhman	Platte	Grosch	Dec-14	Jun-15	Dec-14					Irrigation	18"	100+				\$ 984.64	\$ 889.27			\$666.95

Abandoned Well Cost Share Program

Name	County	Well Drill/ Pump Inst.	Date Applied	Plugging Exp. Date	Pre-plug Insp. Date	Date Well Plugged	Post-plug Insp. Date	Date Comm. App.	Date Board App.	Well Type	Casing Diam.	Well Depth	Total P&OR Cost	NRD P&OR Cost	State Reimb. Amount	Estimate	Approv. Total	25% SAND/DUCK	25% SHELL CR.	Total NRD Cost Share
<b>SHELL CREEK GRANT</b>																				
Fred Fehringer x 2	Boone	Preister	May-08	Nov-08	May-08					Dom	2" & 3"	78'-88'	\$ 737.60			\$ 737.60	\$ 722.10		\$ 180.53	\$541.58
Hope Cemetery Assn.	Platte	Preister	Oct-09	Apr-10	Oc-09					dom	2"	200+	\$ 300.00			\$ 300.00	\$ 290.00		\$ 72.50	\$217.50
Gary Seier	Boone	Grosch	Mar-11	Sept.-11	Mar-11					Irr.	18"	187+	\$ 570.00			\$ 570.00	\$ 528.15	\$ 132.04		\$396.11
DL Svehla Land LLC	Colfax	Hamernik	Nov.-12	May-13	Nov-12					Irr	16"	124'	\$ 905.65			\$ 828.85				\$621.64
Jeffrey Mitties X 2	Colfax	Webster	Apr-13	Oct-13	Apr-13					Irr. X 2	6"	46'	\$ 902.02			\$ 899.52				\$674.64
Sub Total													\$ 0.00	\$ -		\$ 56,356.07	\$46,733.53		\$385.07	\$2,451.47

<b>COST-SHARE, TO BE APPROVED FOR PAYMENT</b>																				
Donald Yindrick	Butler	Sargent	Jun-14	Dec-14	Jun-14					Irrigation	16"	423'	\$ 1,915.00			\$ 1,915.00	\$ 1,161.28			\$870.96
Jamie Yindrick x 2	Butler	Webster	Aug-14	Feb-15	Aug-14					Domestic	4"	240	\$ 1,399.68			\$ 1,399.68	\$ 1,139.46			\$854.60
Ch																				
Sub Total													\$ 0.00	\$ 0.00		\$ 3,314.68	\$2,300.74		\$ 0.00	\$1,725.56

<b>COST-SHARE APPROVED - awaiting further action from landowner (Nitrogen certification)</b>																				
Sub Total													\$ -	\$ 0.00					\$ 0.00	\$0.00

<b>Approved in FY 2014-15 and Paid by LPNNRD; Reimbursement NOT YET sent to DNR</b>																				
Donna O'Connor	Dodge	Dvorak	Jan-14	Jul-14	Jan-14					Irr	24"	35'	\$ 989.80			\$ 875.80				\$656.85
Daniel Wondercheck	Boone	Scott's	Nov-13	May-14	Nov-13					Domestic	2"	200'	\$ 475.57			\$ 362.51				\$271.88
G & B Farms	Saunders	AWS	Apr-14	Oct-14	Apr-14					Irrigation	16"	145'	\$ 1,140.00			\$ 762.00				\$571.50
Arnold Stuthman x 2	Platte	Grosch	Apr-14	Oct-14	Apr-14					2 Stock	12" & 18"	120' & 100'	\$ 1,227.76			\$ 1,034.22				\$775.66
Delores Kallweit/Dayle Kallweit T1	Platte	Grosch	May-14	Nov-14	May-14					Irrigation	16"	300+	\$ 824.96			\$ 817.09				\$612.82
Gary Vandenberg	Butler	Webster	Jun-13	Dec-13	Jun-13					Stock	15"	35'	\$ 872.61			\$ 798.86				\$599.15
Sub Total													\$ 5,530.70	\$ 4,650.48				\$3,487.86		

LPNNRD budgetted amount	15,000.00
Cost-share funds PAID	3,487.86
Sub Total	11,512.14



—

ENWRA  
PO Box 83581  
Lincoln, NE 68501-3581

# INVOICE

INVOICE #3026  
DATE: DECEMBER 2, 2014

TO: Lower Platte North Natural Resources District  
PO Box 126  
Wahoo, NE 68066  
Attn: Larry Angle

DESCRIPTION	AMOUNT
FY 2015 ENWRA annual dues  Date rec'd <u>12/4/14</u> Approved by _____ Date approved _____ Expense acct _____ Funding source _____ % (amount) _____ Income acct _____	\$30,000
TOTAL	\$30,000

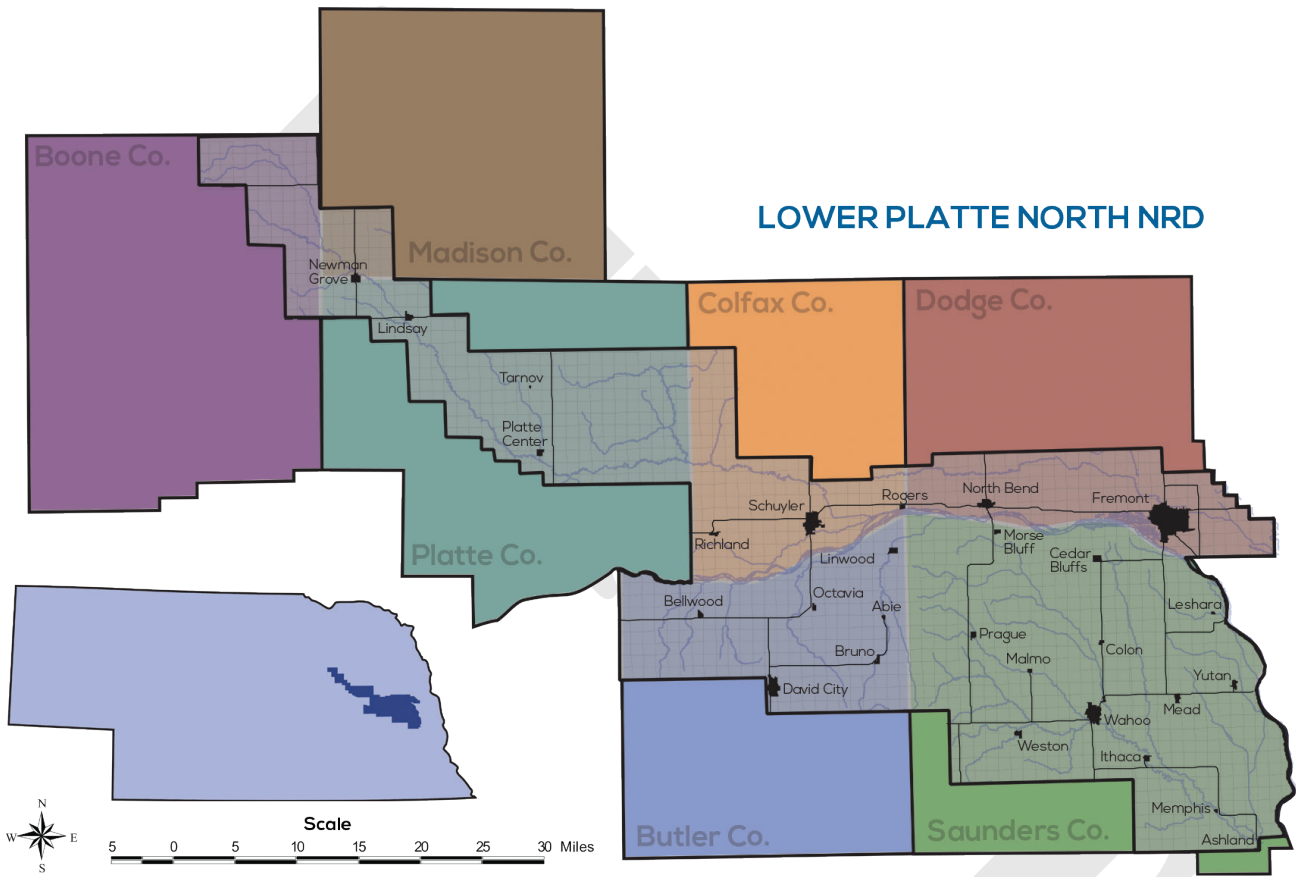
Make all checks payable to ENWRA.

**Thank you!**



# Lower Platte North Natural Resources District

Long Range Implementation Plan  
Fiscal Year 2015



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# LOWER PLATTE NORTH NRD

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## LONG RANGE IMPLEMENTATION PLAN

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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 2013 (July 1, 2013 to June 30, 2014) and planned District activities for fiscal year 2015 (July 1, 2014 to June 30, 2015). There are also objectives for a five-year period from fiscal years 2016 to 2020. The plan serves as an implementation tool of the district's Master Plan.

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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, Loeske 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 61,000, 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 2015 tax levy is 4.7231 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. Also, 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.



## LOWER PLATTE RIVER BASIN

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 top priority at the LPNNRD, since approximately 72 miles of the river flow directly through or border the district.

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### FY 2014 Platte River Basin Activities

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#### Platte River Alliance

The Lower Platte River Corridor Alliance entered its twentieth year in FY 15. The Alliance members are the Lower Platte North NRD, Lower Platte South NRD, and several state entities dedicated to working with people to protect the long-term vitality of the lower Platte River Corridor. One primary focus has been on building a coalition including counties, cities, businesses and individuals concerned with the preservation and proper use of the river.

The Alliance is primarily concerned with the lower portion of the Platte River. This stretch of the river runs from Columbus to Plattsmouth. It winds past or through towns and cities such as Bellwood, Schuyler, North Bend, Fremont, Waterloo and Louisville. In FY 14, the Alliance was involved with many activities and projects that included: Environmental Suitability Assessment, Cumulative Impact Study, River Obstruction Removal, hosted a PRCA Summit, River Tours and educational events.

#### Ice Jam Agreement

In 1994, the LPNNRD entered into an agreement with two other NRDs and four counties to more effectively deal with ice jams and their resulting flood damages along the Lower Platte River. This area of concern is primarily south of the city limits of Fremont, Nebraska. Besides the Lower Platte North NRD, other partners include the Pappio-Missouri River NRD, Lower Platte South NRD, and Cass, Douglas, Sarpy and Saunders Counties. This group has pooled funds to use explosives, when needed, to remove ice jams in a timely manner.

During the winter of 2013-14, no ice jams caused any adverse flooding.

#### 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 FY 14, this program provided \$8,228 to 3 cooperators.

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### FY 2015 Platte River Basin Objectives

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- Administer \$10,000 in the Rock & Jetty Program to assist with priority stream bank stabilization for a potential 40 cooperators. This includes assisting cooperators with meeting the regulations of the Clean Water Act and 404 permits.
- Participate with LPSNRD, PMRNRD and other partners and provide up to \$150,000 for the Western Sarpy/Clear Creek Levee Project and continue work with Nebraska's Delegation for obtaining additional federal funding to complete the Clear Creek Levee portion of the project.
- Assist the City of Schuyler with the construction of the Shell Creek Levee Project (Army COE 205 Project).
- Provide leadership assistance to the City of Fremont to continue moving forward with exploring flood control solutions as a result of the completed Army COE 205 feasibility study.
- Support the Lower Platte Weed Management Area financially and technically in controlling noxious weeds.
- Support the Nebraska Land Trust in acquiring easements for the protection and preservation of quality lands.
- Assist the City of Schuyler to obtain federal funding for completing a levee system to reduce flooding and economic losses from the Platte River.

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### FY 2016-2020 Long Range Platte River Basin Objectives

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- Continue to support the Platte River Corridor Alliance and continue to seek available federal and state funds to assist with Alliance objectives.
- Continue to budget cost-share funds for priority bank stabilization along the Platte and Elkhorn rivers and other perennial streams in the district.
- 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.

- 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 Fremont to study potential structural and nonstructural measures to reduce flooding and economic losses on the Lower Platte River.
- Assist the City of Schuyler to obtain federal funding for completing a levee system to reduce flooding and economic losses from the Platte River.
- Encourage cities and counties to join the Lower Platte River Corridor Alliance and initiate floodplain management planning to promote wise floodplain development.
- Assist dike and drainage districts to certify and properly maintain levy projects.
- Budget annually, if in need, to support the Lower Platte Weed Management group in controlling noxious weeds.





One of the Lower Platte North NRD's major responsibilities is to conserve and protect our ground and surface water supplies. 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 2014 Ground & Surface Water Activities

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#### Ground Water Management Area

The LPNNRD implemented a District-wide Ground Water Management Area (GWMA) on January 1, 1997, to address both water quality and quantity concerns. Data gathered since 1985 indicates where ground water quality conditions have deteriorated beyond those established as health standards, such as nitrate nitrogen. On that date, ground water quality Phase I (education) regulations in effect for the entire District. One primary rule in Phase I requires certification for fertilizer use. The District has developed a ground water program emphasizing a protection-based approach rather than a reactive, corrective approach.

As of 2011, the District has two Phase 2 groundwater quality control areas, those being Bellwood and Richland/Schuyler. The Bellwood Phase 2 Area was established in 2003. This area covers approximately 30 square miles in the western portion of the Platte Valley in Butler County and includes the town of Bellwood. The Richland/Schuyler Phase 2 Area was established in 2004. This area covers approximately 55 square miles in the Platte Valley of Colfax County and includes the towns of Richland and Schuyler. Elevated nitrate-nitrogen levels continue to be the major concern in both Phase 2 areas.

Due to the drought from 2000 to 2006 and heavy water demand, several of the District's aquifers declined to the point where several wells have reached or exceeded their trigger levels. If more than 50% of the subarea, as measured in our GWEL network wells reach those trigger levels then a management area maybe declared. Due to three consecutive years (2004, 2005 & 2006) of groundwater declines in the Butler County Uplands aquifer, the Lower Platte North NRD declared a "Level One Management Area" for the David City area effective in 2007. Due to changes in the District's rules and regulations the remainder of the district has also been declared a Level One management area. By the spring of 2009, the David City aquifer had recovered for two consecutive spring readings, therefore the

District has changed the status of the David City subarea on October 8, 2009 from a potential Level 2 to a Level 1 ground water management area.

As 2007 progressed, the district noted increased ground water demands for irrigation, due in part to good commodity prices. Expansion in the Uplands portion of Saunders and Butler Counties raised concerns that small pocket aquifers in the glaciated areas may not be able to accommodate even one or two additional high capacity wells. On May 14, 2007 the Board of Directors declared these areas as a 'Temporary Stay Management Area.' A second Temporary Stay Management Area was declared on November 12, 2007. The District completed a Subarea Delineation Study to identify aquifer subareas and to help determine if the two consecutive stays should be made permanent in all or portions of the Uplands or be allowed to expire. In 2008, the LPNNRD revised its rules and regulations to take into account glaciated portions of our District, effects of the recent drought and new information from our Subarea Delineation Study. This revision included declaring a Level One District-wide management area for ground water quantity, different classes of water well permits based on annual usage, and adoption of Stay Management Areas. The temporary stay became a Permanent Stay Management Area in May 2008 for the Swedeburg, Prague, Yutan, and Yutan South subareas. Other subareas are being monitored and may be placed in future Stay Management Areas if needed.

In August of 2008, our office received four phone calls from domestic well owners all in or adjacent to the Platte River Uplands subarea northwest of Fremont, that they were running out of water. Following a survey of all well owners in the area, this subarea was declared a temporary Stay Management Area on December 8, 2008. A second temporary stay was declared on June 6, 2009 and was under review to make this a permanent stay or let the temporary stay lapse. On December 3, 2009 this area was declared a permanent Stay Management Area.

In December 2008, the Nebraska Department of Natural Resources (NDNR) declared the Lower Platte River Basin as "fully appropriated". This designation would mean that no new additional irrigation acres would be allowed in the hydrologically connected area unless offsets were provided. After an intense review of the model that NDNR used, it was discovered that there were errors that lead to this declaration. NDNR reversed their preliminary decision in April 2009 and declared that the basin was not fully appropriated at this time. With the passage of LB 483, the District along with other NRD's completed an

update of our rules and regulations, which were approved by NDNR on August 21, 2009, to help avoid becoming fully appropriated in future years. The District will be able to expand new irrigated acres by an additional 2,500 acres per year for four years in this hydrologically connected area. To assist with providing the best science for future fully appropriated decisions, the District has teamed with NDNR, UNL, and neighboring NRD's to complete special studies to provide assessments and modeling to provide the best information in determining groundwater effects to the Lower Platte River. These studies include Elkhorn Loup Model, The Eastern Nebraska Water Resources Assessment, and the Platte River Modeling Study. From October 2009 to October 2012 the District has issued 10,000 new irrigated acres in the hydrologically connected or limited water development area (LDA) of the District, as allowed under LB 483. In addition, the District has agreed to limit expansion to 2,500 acres in the LDA for future years. These acres for 2013 were awarded on October 15, 2012 and will be issued in January 2013. The drought of 2012 has also intensified the interest in irrigation and we received twice as many requests for new irrigated acres than could be granted by October 15, 2012. The drought of 2012 also intensified the number of well interference complaints. These were recorded and mapped to learn more about the long term sustainability of area aquifers and aid future management decisions.

As of December 18, 2012, the District had 4,445 active registered irrigation wells and 165 wells in our GWEL network. The Metropolitan Utilities District (MUD) well field became operational in the summer of 2008. The MUD well field has 26 high capacity municipal wells in Saunders County (LPNNRD) and 16 municipal wells in Douglas County (PMRNRD). This well field has a Corps of Engineers 404 permit to produce a maximum annual average of 52 Million Gallons per Day (MGD) and a maximum daily yield of 104 MGD. Of the four bio-fuels plants planned for our District, none of them are currently in operation.

At the July 2011 Board meeting, the LPNNRD Directors voted to start the process for a voluntary Integrated Water Management Plan (V-IMP). In the fall of that year, LPSNRD, LPNNRD, and Papio-Missouri River NRD met to discuss working together to develop an IMP for the Lower Platte River basin. LPSNRD has already started the process, while the Board for Papio-Missouri River NRD has not yet voted on the proposal. The four other NRD's in the basin (LENRD, UENRD, LLNRD, and ULNRD) are still undecided.

For 2012 all seven NRD's have agreed to develop a Lower Platte Basin plan, but only LPN, LPS, Papio, and LE NRDs have also decided to develop an IMP. All Districts

are presently drafting the cooperative agreement for the Basin Plan. The summer of 2012 also turned out to be a strong drought year with high temperatures and very light rain. Many parts of our District during the month of July received no rain at all. Starting in early July the District started receiving numerous well interference complaints (~35) that continued into early September. Usually we receive no complaints over the course of the summer. These complaints were scattered over the District, except no complaints were received from the Todd Valley. The only limitation in the Todd Valley was for the community of Mead which was on voluntary water restrictions due to limitations of their facilities, not lack of water.

The year 2013 proved to be a very active year concerning ground water management in LPNNRD and the entire Lower Platte River basin. The year started with cool temperatures and timely rains into the summer months. The exception was mid July and late August with temperatures in the 90's and low 100's and no rain. In late August we started receiving several complaints from the Bruno to Brainard area within LPNNRD and LPSNRD. This area has confined aquifers existing in many different layers and when area high capacity wells all run at the same time this can cause large pressure drops in these aquifers. During the fall and winter of 2013 the LPNNRD was looking at modifications to our ground water management Rules to address more of these in-season declines. The District is also working with LENRD on 'Request for Proposals' from consulting firms to help develop our Voluntary Integrated Water Management Plan in conjunction with DNR, with the goal to finish this Plan by the summer of 2015. The seven Lower Platte Basin NRD's are also working on a Basin-wide Plan with the first step to develop Goals and Objectives. This work began in earnest during the fall of 2013.

In February 2014, the Board approved our updated GWMA Rules and Regulations that primarily addressed the 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. Contact was awarded to Olsson Associates for development of a Voluntary Integrated Water Management Plan (V-IMP) for the LPNNRD to direct and organize Stakeholder and Coordination meetings and provide updates to the LPNNRD Board of Directors. Deadline for completion for this contract and completion of this phase of the V-IMP is set for June 1, 2015. The contract for the Lower Platte River Basin Coordination Plan (LPRBC) was awarded to HDR in early summer 2014 to develop a basin-wide approach to managing the water. Seven NRD's and DNR are involved in this process

and three committees were formed: Board, Managerial, and Technical.

Current rules and regulations of the GWMA are available at the LPNNRD headquarters in Wahoo and via the district website at [lpnnrd.org](http://lpnnrd.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. Due to current staff limitations the District is focusing on the State-wide ground water quality network, where staff sample the same 53 wells each summer to determine long term trends for nitrate-nitrogen. This information is provided to the Department of Environmental Quality and the Department in turn provides this to the Nebraska Legislature on an annual basis.

Samples were collected from 52 of 53 sites in 2013 (~ one sample per township).

Year	Nitrate-Nitrogen Range	% Nitrate-nitrogen 0-8.0 ppm	% Nitrate nitrogen 8.01-10.0 ppm	% Nitrate nitorgen > 10 ppm
2013	0 - 25.5 ppm	78.9% (41 of 52)	11.5% (6 of 52)	9.6% (5 of 52)

Samples for pesticide analysis were collected from eight of these sites (15%). The pesticide analysis was for a suite of 25 constituents. A pesticide was detected at three sites and a plasticizer at one. The detections were at a very low level, less the the Maximum Contaminate Level (MCL).

### Ground Water Energy Level Monitoring Network

One of the responsibilities of the NRDs in the State is to monitor fluctuations in ground water 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 ground water levels throughout the District. As of November 2013, the LPNNRD had 168 wells in the ground water 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 ground water 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 25 subareas within the District, 17 subareas are currently at Level 1 management, while the other 8 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.

Due to three consecutive years (2004–2006) of ground-water declines in the Butler County Uplands aquifer, the Lower Platte North NRD declared a “Level Management Area” for the David City area effective Jan. 15, 2007. This was the district’s first management area for ground water quantity. Changes in the district’s rules and regulations in 2008 have placed the entire District in a Level One management area. The David City subarea ground water levels have recovered above its designated trigger levels for two consecutive years (2008–2009), therefore this subarea was not placed into a Level Two management area, but reverted back to a Level One.

Subsequent years (2007 to 2011) showed adequate rainfall across the entire District, which allowed recharge to all of the District’s aquifers. The spring readings of 2012 indicated that levels had recovered almost to the pre-drought conditions of 2000 to 2006. The drought of 2012 seem to come on fast and strong starting in mid June. Daily temperatures in the mid to upper 90’s with very little or no rain caused all water users to pump more frequently in an effort to keep up with crop and other water demands. As a consequence the 2012 fall readings showed a dramatic decline in ground water levels, especially in the confined aquifers of the Shell Creek watershed and the Uplands of Butler and Saunders Counties. Aquifers recharge and/or pressure equalize at different rates, therefore it will not be until the spring readings of 2013 that a true assessment of aquifer levels will be possible. The water levels in 166 wells were measured in the spring of 2013. Of the 166 wells measured, one well showed an increase, three wells were unchanged, and 162 wells decreased. Hydrographs in several of our confined aquifers have shown a one year decline that is equivalent to several years of decline noted in the previous drought of 2000 to 2006.

Spring readings in 2014 showed some improvement over the spring readings from 2013. In part this was due to near normal annual rainfall in 2013 and the flash flooding that occurred near Boulder, Colorado on September 12, 2013. While this flooding was very detrimental in Colorado, it had some benefits to Nebraska. Minor flooding on the Platte River occurred from the Colorado border down to Kearney, but from Grand Island to the mouth of the Platte River at Plattsmouth the river remained in its banks. Nebraska diverted some of the flood waters into the Tri-County Canal to recharge reservoirs that were depleted due to the drought of 2012. Other canal systems did the same. The LPNNRD also believes this helped to recharge several of our aquifers near the Platte River that are in hydrologic connection. The spring readings for

2014 had the following subareas at the second consecutive year were 50% or more of the subarea is below its Level 2 trigger level: Fremont East, Octavia, David City, and Prague subareas.

Monitoring wells with continuous reading data-loggers also showed mid-summer declines in the uplands of Platte-Colfax SQS. An additional monitoring well with a data-logger was also installed in 2013 in the Butler-Saunders SQS.

The District has also established, with the help of Lincoln Water System, Metropolitan Utilities District of Omaha, US Geological Survey, US Army Corps of Engineers, University of Nebraska, Lower Platte South NRD, and Saunders County, a network of monitoring wells to track changes in ground water levels in the Wann Basin area, which is in the Platte River valley north of Ashland. This area has two major municipal well fields and the ongoing cleanup efforts of a former ordnance plant south of Mead, Nebraska. This network was established in the fall of 2003. Readings are taken three times per year in late March, late August, and late October.

### Chemigation

Chemigation is the practice of applying fertilizers or other agricultural chemicals to land or crops through an irrigation system. To protect Nebraska's ground water from possible back-flow of chemicals into irrigation wells, the Legislature enacted LB 284, the Chemigation Act in the 1980s. The Act requires the operator of a chemigation system to obtain a permit prior to use. To obtain this permit, 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 in the District with each recent successive year setting a new record. In 2014 heavy rains in June caused a large increase in the number of chemigation requests due to fertilizer being washed out of the root zone.

Chemigation Permits	Total	Renewal	New
November 2013	405	377	28
November 2014	465	381	84

In 2011 the Legislature though LB28 proposed some changes to Title 195 – the Chemigation Regulations. Most of these changes were simple house-keeping changes, except for the addition of rules for sub-surface drip irrigation. Maintenance of sub-surface drip irrigation systems is exempt from the chemigation permits provided 1) the system has an inline check valve and 2) the system has an Underground Injection Control Permit. This is only applicable for one maintenance event each year.

For 2014 the Legislature approved LB272 for additional changes to Title 195 that would let the individual NRD's set their own chemigation fees. At the October 13, 2014 Board meeting the future chemigation fees for LPNNRD will be: \$60 for a New permit, \$30 for a Renewal permit, and \$250 for a Emergency permit.

### Decommissioned (Abandoned) Wells

Decommissioned (Abandoned) wells are a health and safety concern and have been ruled as illegal by the Nebraska Legislature. It is estimated that there are approximately one-thousand improperly abandoned wells within the Lower Platte North Natural Resources District boundaries. 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.

Since 1992 the district has administered local and state cost-share dollars to decommission 598 wells. During FY13-14, 36 wells were plugged with this program. The district will administer approximately \$15,000 of state and local funds to plug additional wells during the current fiscal year.

### Precipitation Gauging Network

The Lower Platte North NRD has a District-wide precipitation gauging network, which consists of six sites maintained by cooperation landowners. Precipitation information is useful when merged with other District water programs including: ground water quality sampling, ground water energy levels, and surface water/ground water correlations, among others.

Our normal yearly precipitation is 28 inches per year and for 2010, some parts of the District were over that amount and others less. Upper Shell Creek had the least rainfall with 26 inches, while the Prague area had the most with over 33 inches.

In March 2011 the forecast for the rest of year appeared that we maybe coming back into a dry cycle. The District average precipitation for 2011 was 27.0 inches or slightly under our normal amount of 28.0 inches. Most of the precipitation came during the months of April through August, with the fall again being very dry as in 2010.

For 2012 the spring months through May were slightly less than normal precipitation. However, June through

the rest of the summer were very dry and temperatures in the mid to upper 90's almost every day. In the Fall of 2012 most of Nebraska is listed as extreme to exceptional drought conditions by NOAA.

For 2013 the year started with cool temperatures and timely rains into the summer months. The exception was mid July and late August with temperatures in the 90's and low 100's and no rain. The US Drought Monitor website has our District as 'Abnormally Dry'.

For 2014 the spring was relatively dry but in June the District received substantial amounts of rain in excess of 10 inches. Wahoo itself received 10 inches of rain in a one week period, which resulted in lowland flooding. In late August to mid September the southern part of our District again received substantial rainfall, but this was not reflected in the counties of Platte, Madison, and Boone of our District. The US Drought Monitor website has our District (and most of Nebraska) as no longer in drought.

### 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 Water Resources. Wells that are not registered are illegal and should be registered as soon as possible. It is estimated that 15% of the total irrigation wells in the District are not registered. A breakdown by decade from 1970 to present shows the growth of active irrigation wells in the District.

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

Date	Number of Active Irrigation Wells in the District
December 31, 1970	1,428
December 31, 1980	2,756
December 31, 1990	3,241
December 31, 2000	3,686
December 31, 2010	4,307
November 12, 2014	4,579

### 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 will require the owner of that well to install a flow meter and report the total water pumped from the well during the calendar year to the LPNNRD by January 31 of the following year. This reporting requirement is effective the year the well is drilled and for each year thereafter, until the well is decommissioned. With the onset of the drought in 2012,

the number of requests for new well permits across the District has increased dramatically, especially in the Normal Development Area where further development is allowed. Some of these are in areas where the NRD has received well interference complaints. For 2012, the District issued 78 well permits with 59 new irrigation wells and 16 replacement irrigation wells.

### Special Studies

#### *Elkhorn Loup Model*

The LPNNRD is a partner in the Elkhorn Loup Model Study, as this basin overlaps and covers portions of upper Shell Creek. 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. The study will assist the Nebraska Department of Natural Resources and the Natural Resources Districts within the study area by characterizing the groundwater system and by providing a regional groundwater flow model that could be used to evaluate surface water/groundwater interaction in the study area. The study will also provide data and interpretations that could serve as the basis for future management of the regional water resources. This study is well underway and some of the reports have been completed and are available online at <http://ne.water.usgs.gov/projects/elm.html>. The ELM model is currently in Phase 3 with emphasis on developing a two layer model to more accurately reflect observed changes in ground water levels.

In early 2011, the ELM project learned that funding from IWMPPF was being reduced due to budget cuts from DNR and the Nebraska Legislature. Further test holes and geophysical work was delayed or eliminated. At subsequent technical meetings the group discussed which scenarios had the highest priority to run by the model once it is completed.

In 2013 the USGS converted the ground water model from a one layer to a two layer model and has now been completed. For 2014 USGS is training NRD personnel on the use of GIS to generate maps using batch files and the completed ELM MODFLOW model.

#### *Eastern Nebraska Water Resources Assessment*

LPNNRD is a partner in the Eastern Nebraska Water Resources Assessment study. In order to better understand and manage this resource, several Natural Resources Districts, State and Federal Agencies have formed the Eastern Nebraska Water Resources Assessment group (ENWRA) and are proposing to do a geologic framework study at three locations. These pilot studies will evaluate different

methods and techniques to characterize and map the subsurface. One of these methods will use Helicopter Electromagnetic (HEM) surveys, which is a geophysical method that can quickly map the subsurface geology over a fairly large area. HEM has been used successfully in other parts of the United States. A separate study funded by the Nebraska Department of Natural Resources will look at other geophysical methods to test their effectiveness, such as Direct Current Resistivity survey. Information from that study will be incorporated into this project. Test holes and monitoring wells will also be installed to verify these different geophysical methods and will be used as long-term ground water quantity and quality monitoring sites in the future. If successful, geophysical techniques could provide a rapid assessment technique to characterize other glaciated areas of eastern Nebraska. This project will lay the groundwork for future studies (including ground water modeling efforts) and improving on existing water management plans.

In the fifth year of the study (2011), the focus shifted to publication of existing C&SD data and updating of the DNR database. C&SD has numerous drilling logs and studies that need to be digitized for publication. Also publication of test results for the three study areas and evaluation of the HEM and Time Domain geophysical methods are being developed. These reports were presented in the spring of 2011.

The latest ENWRA study is looking to fly long Airborne Electromagnetic (AEM) transects over eastern Nebraska to better model the geology of the glaciated portion of the State. ENWRA coordinator Katie Cameron has applied to the Nebraska Environmental Trust (NET) for \$198,000 to help fund the study, while ENWRA will contribute \$381,000 and NDNR will contribute \$500,000. A new AEM method will be used called SkyTEM 508 which is expected to see to a depth of 800 to 1,200 feet below the surface. This will provide information on deep geologic formations, such as aquifers and bedrock, that were previously little known.

#### *Platte River Modeling Study*

The University of Nebraska is conducting this ground water modeling effort of the Platte River in the LPNNRD. The purpose of this project is to develop a regional groundwater flow model that will be used to analyze the interactions of aquifer-stream-well systems and to determine the 10-50 boundary line for wells that are hydrologically connected to rivers and streams. The model will focus on the analysis of wells in the following counties: Saunders, Butler, Colfax, and Dodge, which are administered by the Lower Platte North NRD. This project consists of two phases: phase I – development of model framework; phase

II – hydrologic data collection and groundwater-stream model development.

In 2008 & 2009, phase 1 of the project were generally completed:

- Aquifer tests (pumping and recovery) were conducted at two sites – south of the Platte River [Butler County] northwest of Octavia, and north of the Platte River [Colfax County] northeast of Schuyler.
- Collected geo-probe samples (soil cores and electro-conductivity) from sandbars along the banks of the Platte River at ten locations – one in Colfax County, three in Butler County, two in Dodge County, and four in Saunders County. Two more sites still need to be done, but high flows in the Platte River have caused delays.
- Permeameter testing at seven sites in the Platte River.

In the fall of 2010, Dr. Chen (chief investigator) reports that calibration of the model is in progress and hopes to begin actual simulations in the spring of 2011. Grant funding for this project comes from the Nebraska Environmental Trust.

For 2011, Dr. Chen asked for a six month extension to complete the model by the end of the year. This was completed and Dr. Chen presented that information in 2012. The hydrologically connected areas to the Platte River seemed quite extensive south of the river, but with the completion of the Subarea Delineation Study this information was forwarded to Dr. Chen. He has revisited the model and submitted a second iteration in September 2012. The model was completed in early 2013.

#### *Eastern Nebraska HEM Aquifer Mapping (Swedeburg Area)*

Grant funding for this project comes from the Nebraska Environmental Trust. In April 2009 portions of the Swedeburg subarea aquifers were mapped using electromagnetic sensors mounted on a helicopter (HEM). This was followed in October 2010 with the installation of three test holes by C&SD to ground truth the HEM data. As an additional measure to assist with ground truthing, LPNNRD GPS selected irrigation and domestic wells in this same area that currently do not have footage or lat. – long. coordinates for their well logs. In the fall of 2011, three additional test holes were drilled by C&SD which fulfilled the contract with the University. Dana Divine (Project Coordinator) gave a presentation on the HEM data at the September 28, 2011 Water Committee, but due to limitations in the NET grant, the comparison of the HEM data with the test hole data had to be cut. Staff will review the cost of ground truthing the HEM data for further discussion by the Board.

For 2012, the correlation of the HEM data to the test holes has been completed and Dana Divine gave a pre-

sentation of those results at the December 2012 Board meeting. The HEM worked well to define upper resistive materials (sands and gravels) but had mixed results at deeper formations greater than 80 feet deep. Divine also presented information contrasting an estimate of the thickness of the upper resistive unit vs. the estimated saturated thickness of this same formation. A final report was delivered to LPNNRD in February 2013.

#### *Farm Process Package (FMP) of MODFLOW Groundwater Modeling Software*

The Farm Process Package is an application to the MODFLOW software program that looks at consumptive use of water based on precipitation, crop type, and maturity of crop to assist in future management decisions. The FMP can be an important new refinement to MODFLOW to allow the NRD's to more accurately account for water use by irrigated agriculture. This is a cooperative study between the Papio-Missouri River NRD, LPNNRD, and LPSNRD and the USGS who did the actual modeling for this project. The study area included land within the three NRD's and focused primarily on the Todd Valley and the Platte River Valley north of Ashland, Nebraska. This two year study ran from 2010 to 2011 with a possible report to be written in 2012, if additional funding becomes available.

#### **Certifying Acres**

In July 2009, the District signed a contract with GIS workshop to develop a GIS database and obtain county assessor records as the preliminary step to certifying irrigated acres. Using those assessor records LPNNRD staff in early 2010 mailed out letters to landowners in Madison County to verify which fields are irrigated or not. As of September 2010 mass mailings to landowners in Butler, Boone, and Platte counties have also been completed. The assessor records in Saunders and Dodge counties lack an active GIS database, which means obtaining accurate records will be more of a challenge. FSA records also have been shown to be of limited use in Saunders and Dodge as well because for FSA procedures the field is irrigated or not. They don't differentiate for the pivot corners. Therefore, the LPNNRD has gone to using its own records on aerial overflight information to determine if corners are being irrigated. As of November 2014, staff have sent letters to landowners in our final County, Dodge. When certifying acres has been completed, this will provide a true inventory of the irrigation needs in the District, which will be an important part for future ground water management and planning.

#### **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 ground water 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.

The Soils cleanup was completed in 1998. Sixteen thousand tons of soil contaminated with RDX (an explosive residue) were incinerated. As part of the cleanup efforts for OU3, the COE demolished the load line buildings and storage bunkers in 1998. Approximately 900 cubic yards of soil contamination (antimony may be from a former paint shop) was also removed near Load Line 4 in 2007. Other significant developments included the continued search for the Mustard Gas Agent from Offutt Air Force, which was disposed at the landfill area below the NRD reservoir.

The cleanup of the ground water (OU2) involved drilling 11 wells at the leading edge of the current contaminant plumes to halt their further advance. Water from these wells is treated and then discharged to Wahoo Creek or Clear Creek, or used for beneficial reuse. The time frame for OU2 cleanup is estimated at 90 to 140 years, extracting up to approximately 3.7 million gallons of water per day. More recent modeling efforts indicate that the majority of the contaminants could be cleaned up within 30 years. The containment wells and constructed water treatment plant were completed in 2002. Additional containment and monitoring wells plus additional treatment plants have since been established to assist with the cleanup effort and to contain the contaminant plumes. Beneficial reuse of the clean up water is currently being used by the University of Nebraska-Lincoln Agricultural Research and Development Center (ARDC) south of Mead, and by two landowner/producers for irrigation, livestock water, and for filling a pond.

The groundwater cleanup has involved modeling efforts to determine the impact of the proposed Omaha Metropolitan Utilities District (MUD) (located in the Platte Valley, two and a half miles northeast of the edge of one of the contaminant plumes) on containment of the contaminant plumes. The COE Omaha office approved a construction permit for MUD in 2003 for this well field and operations began in 2008. The LPNNRD has and will continue to play a vital role in working with the Army COE, MUD and area landowners to help insure containment of the

contaminant plumes and eventual cleanup without severe impact to the underground aquifer supplying the area.

At a public meeting on October 19, 2011 the Army COE had the following update:

- TCE total removed = 19,690 pounds from the ground water by the four treatment plants.
- RDX removed by the main treatment plant = 211 pounds
- 2010 ground water model evaluation has modified the use of some containment wells. EW-2, EW-5, EW-8, EW-10, and EW-13 have been turned off since these were causing the contaminate plumes to move further south than expected. New wells FEW-11, FEW-14, FEW-15, EW-16 are now in operation and better placed to contain the contaminate plumes.
- MW-116 on two sampling events had 'detects' of TCE and a new irrigation well in the area is the likely influence of these results. Pump test done on EW-1 shows the capture zones of this well will normally keep this TCE in containment. In the future the COE will likely pump EW-1 harder during the irrigation season to compensate for this irrigation well.

Major focus on the cleanup efforts during 2012 were: the drop in pressure in the discharge line to Wahoo Creek, since this will affected the long term beneficial use of the cleanup water for irrigation; a plan to inject the cleanup water instead of discharge it, but a ground water model stills needs to be developed to determine the best hydrologic sites that could help speed up the cleanup efforts; HEM flights were conducted by the COE in early October 2012 to further evaluate the geology of the area that will assist in cleanup efforts; the COE is recommending 'No Further Action for OU3', which deals with landfills and other burial sites, as well as, miscellaneous clean-up efforts.

Some of the highlights for 2013 included:

- Three extraction wells have been shut off (EW-3, EW-6, and EW-16) since the cleanup goal of less than 2 ppb of RDX has been obtained at these sites since 2009. FEW-14 will be pumped at a slightly higher rate of 250 pgm to keep the leading edge of LL3 plume in containment. A new extraction well (EW-17) was installed and will pump at 275 gpm. This well will supplement EW-12 and both are designed to contain the LL1 plume. With EW-17, nine containment wells are running.
- At Pilot Study site 1 (PTA-1) a zero valent iron barrier was installed in the aquifer to chemically treat the TCE and change it to a more harmless form. Lactic acid is also being injected into the aquifer as

a carbon source to stimulate bacterial growth that will also break down the TCE.

- At Pilot Study site 2 (PTA-2) sodium acetate is being injected into the aquifer to help break down RDX. Both studies are scheduled to take 14 months. If these methods work this could be up scaled to large areas to help shorten the clean up time.
- Results from the HEM flights (that were flown in October 2012) were completed in the fall of 2013. Buried power lines interfered with the study and only limited new geologic information was obtained.
- The COE has announced that the Restoration Advisory Board (RAB) will be dissolved, but that the quarterly public informational meetings will continue. It has been three or four years since the last RAB meeting was held.
- Monitoring well MW-116 had a detection for TCE above the cleanup goals during the August 2012 sampling event but during the March, May, and November 2012 sampling events TCE was below the cleanup goals. This also happened in 2011 and the likely cause was heavy pumping of a nearby irrigation well. The COE has adjusted their pumping rate of a nearby containment well to compensate. MW-116 is at the lower end of the Atlas Missile Area Plume (LL-4 plume).
- A new contractor has been hired by the USACE to work on the cleanup efforts. HydroGeologic (HGL) will replace the current contractor of Environmental Chemical Corporation (ECC) who have worked 10 years at the site.

Updates for 2014 include:

- The 2013 Containment Evaluation has been completed with the recommendation to install an additional extraction well (EW-18) at the leading edge of the LL2 plume that will be placed between EW-7 and EW-9. To date several extraction (EW wells) and focussed extraction wells (FEW) have been shut off, primarily due to these wells pulling the contaminant plumes away from other extraction wells. The wells shut down are EW-8 (LL1), EW-10 (LL2), EW-6, EW-5, EW-16, EW-3, (all LL3), EW-2 (LL4). Extraction wells still operating include EW-12 and EW-17 (LL1), EW-9 and EW-7 (LL2), FEW-14 and EW-4 (LL3), FEW-15 and EW-1R (LL4).
- The highest RDX (explosives) concentrations are in LL2, while the highest TCE concentrations are in LL1 and LL4.

- The second 5 Year review has been completed. This is required by the Corps to take a fresh look at the clean-up efforts and evaluate any new technology that could shorten the cleanup time or cut cost.
- On site UV treatment systems have been installed on several extraction wells (EW-4, 7 and 9, FEW-11 and 14) to the point that the main treatment plant is no longer needed and therefore has been shutdown since April 30, 2014. Reuse of the cleanup water is still available on the existing discharge lines, but users have had to install booster pumps to increase the pressure for use in center pivots.
- Public availability meetings have gone from quarterly to semi-annual.
- The Pilot Studies for in-situ treatment within the aquifer for RDX and TCE are still on-going.

### **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 town of Lindsay is experiencing higher nitrate levels in some of their municipal wells and in 2010 applied to DEQ to develop a wellhead protection area for the town. If a wellhead protection area is established by the community, the LPNNRD may become involved in sampling area wells and the possible establishment of a Phase 2 or 3 ground water management area. No new updates for 2014.

### **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. Both systems are designed to serve rural customers along each service route. 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. In FY 2014, LPNNRD continued involvement in a joint study that will eventually

determine the feasibility of a rural water district for the villages of Brainard and Dwight.

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

The LPNNRD has been using Geographic Information System (GIS) technology since 1996. GIS is an automated system that combines an information system with mapping capabilities. Features on a map created with GIS technology contain attributes or features descriptions that are referenced by location. Initially, a series of base maps were created and coverages included counties, townships, sections, major streams, and major roads with the District. Later, new coverages were generated using Digital Elevation Models (DEM's), Digital Orthophoto Quarter Quadrangles (DOQQ's), and the NRCS Soil Survey, among other sources. The District has incorporated the use of GIS to greatly enhance program and project activities. The LPNNRD brought the NRD MapMaker system online in 2002. The system was developed in cooperation of several neighboring NRD's, the UNL Conservation and Survey Division and the Lower Platte River Corridor Alliance. The system allows the delivery of GIS information over the Internet. Continuing efforts will be made to create and update the metadata for the District's geographic data coverages. The District also plans to continue updating GIS data layers and publishing appropriate material on the NRD MapMaker system.

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

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## **FY 2015 Ground and Surface Water Objectives**

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- Continue with LPNNRD Ground Water Management Area (GWMA) programs to help avoid the Lower Platte Basin being designated "fully appropriated."
- Continue work on a Voluntary Integrated Water Management Plan (V-IMP) for the District.
- Work with the Lower Platte River Basin NRD's and the DNR to develop a basin-wide integrated water management plan.
- As part of the GWMA, continue with LPNNRD certification classes, demonstration plots, generation of maps indicating problem areas, and development of a landowner database using spreadsheets and GIS.

- Continue to cooperate with the United States Geological Survey (USGS) in monitoring groundwater levels at two sites.
- 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.
- Following intensive ground water sampling of the Bellwood Phase 2 area in 2010 and 2011, evaluate continuation of this Phase 2 area and/or modifications of its boundaries.
- Following intensive ground water sampling of the Richland-Schuyler Phase 2 area in 2013 and 2014, evaluate continuation of this Phase 2 area and/or modification of its boundaries.
- Administer \$15,000 of state and local cost-share funds to decommission abandoned water wells, and provide 100% cost-share assistance within Wellhead Protection Areas.
- Continue to manage the Phase II Ground Water Management Areas in the Bellwood region of Butler County and the Richland-Schuyler region in Colfax County.
- Maintain a multi-agency ground water 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 ground water modeling efforts.
- Continue to implement the Chemigation Program to inspect safety equipment on permitted irrigation systems in the district.
- Update the District’s Chemigation rules and regulations to reflect an increase in permit fees and non-compliance issues.
- Continue with the district’s Well Permitting Program and review of Variances in Stay Management Areas (Hydrologically Connected Areas (Limited Development) or Restricted Development areas).
- 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 site registered and unregistered wells in the district using GPS.
- Promote and sponsor “Spring Conservation Sensation” at Czechland Lake in May 2015.
- Provide information on Integrated Pest Management in news releases and the “Viaduct” newsletter to encourage reduced use of pesticides.
- Support “Landscape Connection” event in Lincoln to promote the wise use of chemicals in urban areas.
- 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 Monitor changes in ground water levels and quality in the district.
- 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 subareas as designated in the Subarea Delineation Study. This will be done by incorporating additional high capacity wells and the drilling of new monitoring wells.
- Maintain a homepage for the Groundwater Management Districts Association (GMDA). GMDA is composed of Management Districts in Nebraska, Kansas, Colorado, Texas, Oklahoma, Louisiana and Mississippi.
- 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 ARDC facilities east of Ithaca, Nebraska.
- Maintain transducers placed in District monitoring wells to record changes in ground water energy levels.
- Declare Level 2 or Level 3 Management areas as warranted caused by declining ground water energy levels in 50% or more of the monitoring wells reaching their trigger levels after three consecutive spring readings.
- Declare Special Quantity Subareas (SQS) due to mid-summer declines in aquifers that are vulnerable to large pressure drops caused by heavy pumping of large capacity wells at the same time.
- Develop informational classes for well operators in the SQS as to proper installation of flow meters, set acre inch allocations and reporting annual pumpage to the LPNNRD.
- Review livestock permits from DEQ.
- Investigate irrigation runoff and groundwater management area complaints as needed.
- Continue to administer the Precipitation Gauging Network established by the district.
- Expand the NeRain program within our District.

- Continue to be a sponsor member of the Elkhorn – Loup Model (ELM)
- Continue ground water modeling efforts with the University on the Platte Valley. Study will focus on determining hydrologic connection between surface water and ground water and determination of the 10/50 boundary.
- Contact well drillers and pump installers to further define areas that are experiencing well inference problems.
- 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. Flightlines are proposed that are to be flown in the fall of 2014 and the spring of 2015.
- Improve irrigation efficiency by working with UNL Extension on the Nebraska Agricultural Water Management Network (NAWMN) to install Watermark sensor's and ET gauges with 20 producers each year in our District.
- Continue with the process of Irrigated Acre Certification within the District.
- Complete the Shell Creek Watershed Water Quality Plan.
- Complete water quality objectives as identified in the Wahoo Creek Watershed and the Shell Creek Watershed Water Quality Plans.
- Complete the Brainard/Dwight Rural Water System Feasibility Study.
- Assist in the projected decommissioning of 1,000 water wells in the district.
- Continue to use GPS to site registered and unregistered wells within the district.
- Keep the Saunders County Rural Water System study as an alternative in the event of changing federal regulations governing municipal water supplies.
- If necessary, designate Level II and III boundaries within the district to manage declining ground water levels.
- If necessary, designate new Special Quantity Subareas (SQS) within the district to manage mid summer declines of ground water energy levels in aquifers that operate under large pressure swings.
- Continue measurement of ground water energy levels in the district.
- Develop a ground water model for each sub-area.
- Complete Platte Valley modeling efforts and submit information to the Department of Natural Resources for their review of the 10/50 boundary line.
- Complete Elkhorn – Loup Model (ELM) to determine which areas in the Shell Creek watershed are in hydrologic connection with the Elkhorn or Loup River basins.
- Complete Eastern Nebraska Water Resources Assessment (ENWRA) and apply information to the glaciated portions of our District.
- Additional studies to identify vulnerable aquifers and modify GWMA rules and regulations to protect these aquifers. Continue geophysical work, installation of monitoring wells and test holes to better define these vulnerable sub-areas.
- Expand GWEL network to have wells in each sub-area to better manage the resource.
- Initiate new ground water studies to further define aquifers and their long term sustainability in the LPNNRD.
- Install at least one monitoring well in each sub-area with continuous recording of ground water energy levels.
- Install precipitation gauges near monitoring wells in important sub-areas.
- Complete the certification of irrigated acres and incorporate this into our Ground Water Management Plan and rules and regulations.
- Complete water quality objectives as identified in the Wahoo Creek Watershed and the Shell Creek Watershed Water Quality Plans.
- Continue to assist District communities who have difficulties with water quality and quantity by helping determine rural water system feasibility.

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## **FY 2016-2020 Long Range Ground and Surface Water Objectives**

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- Update the Ground Water Management Plan to include Integrated Management of surface and ground water.
- Continue ground water quality sampling throughout the LPNNRD, 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 LPNNRD Ground Water Management Area, which includes LPNNRD certification classes for landowners, municipal and industrial water users.
- If needed, designate further Phase II & III boundaries for the Groundwater Quality Management Areas.
- Continue with nitrogen application demonstrations and participate with demonstrations on integrated pest management and sustainable agriculture.



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. Strategy objectives include completing 80% of the 1987 land treatment needs by the year 2010 and reducing soil loss on all lands to soil levels ("T") by 2025. The LPNNRD updated the district's Erosion and Sediment Control Program in FY 96 to include provisions for sediment runoff control in urban areas. 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.

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## FY 2014 Soil Conservation Activities

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### Soil and Water Conservation Programs (SWCP)

Under Soil and Water Conservation Programs (SWCP), the LPNNRD administered \$107,976.46 of state funds and \$33,000 of local funds for land treatment practices during fiscal year 2013. Approximately \$9,200.00 in 319 Grant Funds have been spent in the Sand & Duck Creek watersheds. These cost-share monies helped construct practices including approximately 20,500 linear feet of terraces, 5,687 linear feet of tile outlets, 31 risers and 14 basins. In addition, 8 Buffer Strip contracts were administered with \$11,882 in state funds. The district also administered one new planned grazing project that affected approximately 57 acres of grazed pasture land as well as 51 irrigation flow meter applications.

For fiscal year 2014, approximately \$109,558.42 of state funds (from the Nebraska Department of Natural Resources) and \$23,000 of local funds will be allocated for soil and water conservation practices.

### 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 14 the district received no formal complaints, but two minor drainage issues.

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## FY 2015 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 Duck Creek Watershed to reduce soil erosion and improve water quality.
- 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, to reduce erosion and improve water quality.
- Administer \$109,558.42 of State NSWCP and \$23,000 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 Conservationist, at the Annual LPNNRD Recognition Banquet.
- 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 Group (SWG) and NDEQ toward completing the Shell Creek Watershed Water Quality Plan.
- Work with NDEQ and the Wahoo Creek locally led Steering Committee in pursuing additional grant funds to assist with land treatment practices as defined in water quality objectives in the completed Wahoo Creek Watershed Water Quality Plan.

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## FY 2016-2020 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 the NDEQ/EPA 319 Grant Program to improve water quality throughout Wahoo Creek, Shell Creek 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.





Watershed projects have been completed in five of eleven sub-watersheds (see Appendix E) in the LPNNRD to help control floodwater and provide grade stabilization. These projects include Bellwood, Clear Creek, Cottonwood Creek, and Swedeburg watersheds, along with Rawhide Creek. Future flood control priority areas include Shell Creek, Skull Creek and Wahoo Creek watersheds. On federal and state projects where the LPNNRD acts as project sponsor, the district obtains land rights and 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 2014 Flood Control and Damage Reduction Activities

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### Sand Creek Environmental Restoration Project (Lake Wanahoo)

In 1993, the Lower Platte North NRD, City of Wahoo and Saunders County began investigating the possibility of constructing a multipurpose dam site on Sand Creek, one mile north of Wahoo. A feasibility study was completed to look at soil types, water budget and benefits derived from the possible construction of the lake. The report gave a positive benefit cost ratio should the lake be constructed. The study identified reduction in storm damages and recreation as two major benefits, with no fatal flaws identified. A later study by the U.S. Army Corps of Engineers identified Lake Wanahoo and seven smaller upstream dams as the preferred alternative for environmental restoration and flood control in the watershed.

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 have also been completed. Recreation components were also started for Lake Wanahoo in FY 2011 and landrights were secured for five of the seven upstream sediment/nutrient trap structures. Construction of the five upstream structures were completed in FY 2012 and the final two structures were completed in FY 2014.

### Operation and Maintenance

District staff completed inspections on 50 watershed structures and special projects in the NRD in FY 13/14. These inspections help detect problems before they become serious. Also during the 2014 fiscal year, noxious weeds were sprayed on 50 structures and along Rawhide Ditch 8. 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 2005, LPNNRD entered into a 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 2014, there was very little activity associated with the Fremont 205 Study, the existing study will continue and transform to a General Investigation (GI) Study, hopefully gaining federal funding in March 2015. 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 landrights for the Shell Creek Levee portion of the project which began construction activities in the spring of 2014 and is scheduled to be completed this fall.

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## FY 2015 Flood Control and Damage Reduction Objectives

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- Continue with accelerated land treatment efforts in Sand Creek, Shell Creek, Wahoo Creek, Bone Creek, Skull Creek and other priority watersheds in the District.
- Complete biannual inspections on 50 watershed structures; spray noxious weeds on 50 dams and 10 miles of ditch; complete regular maintenance activities at all sites.
- Continue to educate the public on watershed management and flood control in LPNNRD newsletters and news releases.

- Cooperate with landowners and counties in evaluating small dam sites for cost-share throughout the district.
- Continue to pursue funding opportunities for the Sand Creek Environmental Restoration Project.
- Continue with the Army Corps of Engineers 205 study efforts and move toward feasible flood control projects for Fremont.
- Partner with the City of Schuyler to complete construction on the Shell Creek levee project and budget \$125,000 in FY 2015 for the project.
- Support the City of Schuyler with efforts to move forward with the levee designs to reduce flooding and economic losses from the Platte River.
- Assist District Communities in evaluating future flood protection for their communities through the District's Hazard Mitigation Plan.
- Work with Communities, Counties and other entities in updating our District-wide All Hazard Mitigation Plan.

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## **FY 2016-2020 Flood Control and Damage Reduction Long Range Objectives**

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- Commit funds and staff time toward obtaining funds for floodwater control 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 investigate flood control structure opportunities for Wahoo Creek, Shell Creek and Skull Creek.
- Continue to support the efforts of the Platte River Alliance to encourage cities and counties in the district to accept and implement Floodplain Management Authorities.
- Continue to explore cost-effective projects to reduce flooding within the Wahoo Creek and Shell Creek Watersheds.
- Assist Schuyler with pursuing federal assistance for completing construction of the Platte River Levee flood protection project as identified and preliminarily designed as a result by the Army Corps of Engineers 205 study.
- Assist Fremont with flood protection projects as identified by the Army Corps of Engineers 205 study.
- Assist District Communities in evaluating future flood protection for their communities through updating the District's Hazard Mitigation Plan and assisting with identified projects.



The district administers several programs designed to enhance the region's forest, range, and wildlife land, including the Tree Planting Program, Wildlife Habitat Program, 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 2014 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 800,000 trees and shrubs have been planted in the district. Trees and shrubs may be obtained from the NRD for windbreaks, shelter belts, wildlife habitat, woodlots, and Christmas tree plantings. Besides providing a planting service, the NRD also designs tree plans and offers technical advice on ground preparation for tree sites.

During the spring of 2014, 14,000 trees and shrubs were distributed to District residents. Of this total, approximately 3,400 were planted by the NRD field crew at 13 sites.

**WILD Nebraska Program**

WILD Nebraska is intended to encourage landowners to set aside land for wildlife habitat, but payment rates and acceptable practices have been adjusted in the new program to make it more flexible.

The new program bases its payments on average county rental rates. There are numerous habitat practices eligible for funding in three major categories: Woodlands, Wetlands and Grasslands. Funding for the program is split between the Nebraska Game and Parks Commission (75%) and the NRD (25%).

The district did not receive any new applications for the program in FY 13/14.

**Community Forestry Program**

In FY 2013/14, the LPNNRD donated 1,000 seedlings to Conservation Sensation, and schools for educational purposes. The District received two request for assistants from communities to plant trees during the year, spending \$1,017. The District budgets \$2,000 for such projects.

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**FY 2015 Forestry, Range and Wildlife Habitat Objectives**

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- Plant and distribute conservation trees and shrubs through the districts 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.
- Sign cooperators into the district's WILD Nebraska Program and assist with funding from the CREP program.
- Cooperate with the Extension Service and the NRCS in obtaining tree orders from District residents.
- Recognize a cooperator for outstanding tree planting efforts at the Annual Recognition Banquet.
- 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.
- Cooperate with Pheasant Forever Chapters to enhance wildlife habitat and establish windbreaks.

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**FY 2016-2020 Forestry, Range and Wildlife Habitat Long Range Objectives**

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- Sell between 20,000 and 30,000 trees and shrubs each year through the district's Tree Planting Program, and to plant at least half of the trees ordered.
- Provide information and education on tree planting, woodland management, grassland management, and proper wildlife habitat enhancement through the media, tours, and schools.
- Continue to administer the WILD Nebraska program in cooperation with the Nebraska Game and Parks Commission.



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## **FY 2014 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. The District installed electrical service to 8 camper pads and established an \$18/night fee for the use a camping pad. 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 areas 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.

In FY 01 the district received grants from DEQ (EPA Section 319) and the Nebraska Environmental Trust to construct a silt dam with a sediment pumping station to route excess silt downstream around Czechland Lake to prevent it from being deposited in the lake. The Czechland recreation area was used extensively during FY 14. 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.

### **Lake Wanahoo**

Work was completed on recreation facilities at Lake Wanahoo one mile north of Wahoo in FY 2012. Recre-

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

The camping area contains 74 camper pads and 60 tent camping sites. All camper pads are equipped with electrical hookups and 50 of them are hard surfaced, with the remainder on grass. All tent sites have fire rings and picnic tables.

The camping area also offers access to a large boat ramp that's wide enough to accommodate three boats at a time. Boating at the lake will be 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.

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 popular 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.

### **Wildlife Habitat Public Access Areas**

Under the WILD Nebraska program, administered jointly with the Nebraska Game & Parks Commission, the LPNNRD encourages landowners to allow public access on habitat lands signed up under the program. The NRD currently has a total of 15 habitat acres in the CREP program, none of which offer public access.

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## **FY 2015 Recreation Objectives**

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- Continue to budget funds for maintenance, including grass mowing, painting, tree trimming, road grading, outhouse cleaning, trash removal, and noxious weed control, at Lake Wanahoo, Czechland Lake and Homestead Lake Recreation Areas.

- Acquire additional acres of wildlife habitat lands which allow public access under the WILD Nebraska program.

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### **FY 2016-2020 Recreation Long Range Objectives**

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- Continue to evaluate development of new outdoor public recreational facilities as opportunities arise.
- Continue to administer the WILD Nebraska programs and pursue developing new areas offering public access.





## **DRAINAGE IMPROVEMENT AND CHANNEL RECTIFICATION**

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 or city. Under this policy, the district has cooperated on several projects that have provided public benefit. In FY 2010, the District assisted Colfax County to study the 5-mile Hughes/Payzant drainage ditch east of Schuyler. With the help of a community block grant, this drainage system will be improved in FY 2012 to help move local drainage off public and private land.

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### **FY 2015 Drainage Improvement & Channel Rectification Objectives**

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- Continue to oversee the progress of the Rawhide Creek West Branch Project to ensure that landowners control vegetation on Rawhide Creek to help it stay clean.

- Provide continued assistance to Platte Center with stabilizing a segment of Elm Creek.
- Work with local landowners and Colfax County to improve Shell Creek flows east of Schuyler.

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### **FY 2016-2020 Drainage Improvement & Channel Rectification Long Range Objectives**

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- Continue to assist counties and cities in the district that sponsor sound drainage and channel improvement projects.



In recent years, vast changes have 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. Now, 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 2015 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 2016-2020 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.
- 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 2014 Information & Education Activities

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During fiscal year 2014, the Lower Platte North NRD conducted many activities to help residents learn the importance of our soil and water resources and keep abreast of natural resource issues and concerns. Some of the highlights included:

#### Education Programs

The district once again sponsored the "Spring Conservation Sensation" activities held at the Czechland Lake Recreation Area in May 2014. During this all-day event, nearly 400 fifth- and sixth-grade students from Saunders, Butler, Platte, Colfax and Dodge Counties participated in various activities. Hands-on activities were presented by agency personnel and volunteers to teach the students about the environment and their natural resources. Students visited stations demonstrating tree planting, fishing, soil erosion, water sampling and more.

The district hosted the East Central Land Judging Contest in October 2014 for area FFA chapters, with nearly 200 students and a record number of schools participating.

District staff presented various activities at natural resources festivals, field days, and school classrooms.

District staff helped maintain the website for NACEE, the Nebraska Alliance for Conservation and Environmental Education.

#### Awards, Contests, and Events

The district issued awards recognizing outstanding accomplishments, including: Conservationist of the Year, NRCS Employee of the Year, Educator of the Year, and Volunteer of the Year, among others.

Free materials were distributed to churches to honor Soil and Water Stewardship Week.

The LPNNRD also attended five county fairs.

#### Publications

In FY 2012, the district switched distribution of the "The Viaduct" newsletter from direct mail subscriptions to inserts in area newspapers. In FY 2014, more than 58,000 copies of two issues of the newsletter went out in

area papers and via email. The spring issue included the district's 2013 Annual Report, which was previously a separate publication.

Various brochures describing LPNNRD programs and services were updated as needed in FY 2014. A Fact Sheet for use with the NARD's public relations campaign was updated.

News releases were mailed to district papers and radio stations, and numerous ads spotlighting different NRD programs were aired on KTIC Radio. In FY 14 the district also began running digital ads on the Wahoo newspaper website.

#### Web Site

The NRD's website at [www.lpnnrd.org](http://www.lpnnrd.org) contains information on nearly all of the district's projects and programs, as well as 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. In FY 2008, online payment capabilities were added to the site to allow customers to pay for trees and rural water bills.

The district also maintains websites and mobile apps for two statewide NRD programs: Conservation Trees for Nebraska ([www.nrdtrees.org](http://www.nrdtrees.org)) and NRD Outdoor Recreation Areas ([www.nrdrec.org](http://www.nrdrec.org)). Mobile app versions are available for iPhone/iPad and the Android operating system. The district also has a custom-built Rural Water app for in-house use.

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### FY 2015 Information & Education Objectives

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- Publish the district newsletter "Viaduct" biannually in an electronic format and as a printed newspaper insert in 8 area newspapers, and produce supplemental electronic issues on an as-needed basis.
- Send timely news releases to the local media on various LPNNRD programs, projects and activities.
- Assist in development of an outdoor classroom for a District school.
- Continue with the annual Award Program.
- Provide District elementary students free trees, as requested, in the spring.
- Disseminate pamphlets and other publications about LPNNRD programs.
- Provide LPNNRD staff as requested to speak to community organizations and schools on NRD activities and environmental topics.

- Continue to provide a display at county fairs (up to five major counties) within the district.
- Promote Soil & Water Stewardship Week and distribute free materials to churches throughout the NRD.
- Sponsor the Spring Conservation Sensation in spring 2015.
- Co-sponsor the area Range Judging Content in fall 2015.
- Assist with the area Land Judging Contest in fall 2015.
- Participate in Nebraska Alliance for Conservation and Environmental Education.
- Update the district's web site regularly.
- Continue social networking outreach for the district through use of tools such as Facebook, Twitter, etc.
- Maintain and update NRD Trees and NRD Rec Areas websites and mobile apps as needed.

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## **FY 2016-2020 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.
- Increase participation in activities sponsored by other agencies related to NRD responsibilities.
- Seek to have conservation/environmental education as a part of the school curriculum.
- Support environmental education activities and events.
- Participate with the Information & Education Staff Group to coordinate statewide I&E activities and produce statewide products.



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**NRD Staff**

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The staff of the Lower Platte North NRD includes 16 full-time and part-time employees at the district office in Wahoo. The NRD also staffs a full-time field technician, four clerks in Natural Resource Conservation Service county offices, and a Recreation Facilitator for Czechland Lake Recreation Area. Current staff as of December 1, 2014 was:

- Mike Almond, **Accountant**
- Larry Angle, **Water Resources Manager**
- Tyler Benal, **GIS Assistant**
- Jill Breunig, **Administrative Manager**
- Duke Dokulil, **Operations & Maintenance Technician**
- Eric Gottschalk, **Projects Coordinator**
- Bob Heimann, **Operations & Maintenance Supervisor**
- John Miyoshi, **General Manager**
- Tom Mountford, **Assistant Manager**
- Mike Murren, **Large Projects Coordinator**
- Russell Oaklund, **Lead Water Resources Specialist**
- Dave Odvody, **Recreation Facilitator**
- Mitch O'Reilly, **O&M/Rural Water Specialist**
- Chris Poole, **GIS/Computer Specialist**
- Karen Rezac, **Secretary/Receptionist**
- Bret Schomer, **Water Resources Specialist**
- Mike Sousek, **Rural Water Manager**
- Troy Thompson, **Information & Education/Computer Specialist**

**Staff Support for NRCS Offices:**

- Kelly Bartek, **Conservation Technician**
- Susie Leu, **NRD/NRCS Secretary (Butler County)**
- Patty Holmberg, **NRD/NRCS Secretary (Colfax County)**
- Jenny Campbell, **NRD/NRCS Secretary (Dodge County)**
- Marla Milliken, **NRD/NRCS Secretary (Saunders County)**

In addition to the listed full-time and part-time positions, the district employs part-time and seasonal conservation technicians to assist in the layout of land treatment structures. There are also seasonal employees hired to help with water sampling, tree planting and maintenance of NRD projects.

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**FY 2016-2020 Personnel Needs**

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Personnel positions and assigned responsibilities could increase as increased project and program responsibilities increase.

Funding required for the LPNNRD projects and programs for Fiscal Year 2015 requires a general operating budget of \$11,115,098. A tax levy of .047231 cents per \$100 actual valuation is required from District property. Projected expenses and income for FY 2015-2020 is shown in Appendix E.

A tax levy of .052603 means that an owner of a \$150,000 home will pay about \$71 in NRD taxes for FY 2015. An owner of farm land valued at \$7,000 per acre will pay about \$3.31 an acre/year in FY 2015. The LPNNRD levy represents about 1.5 percent of the total property tax collected.

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### **FY 2016-2020 Long Range Financial 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 \$0.045 and \$0.055 per \$100 actual valuation as the District continues to pay down past project indebtedness, assists with new project requests, and increases activities in groundwater management.

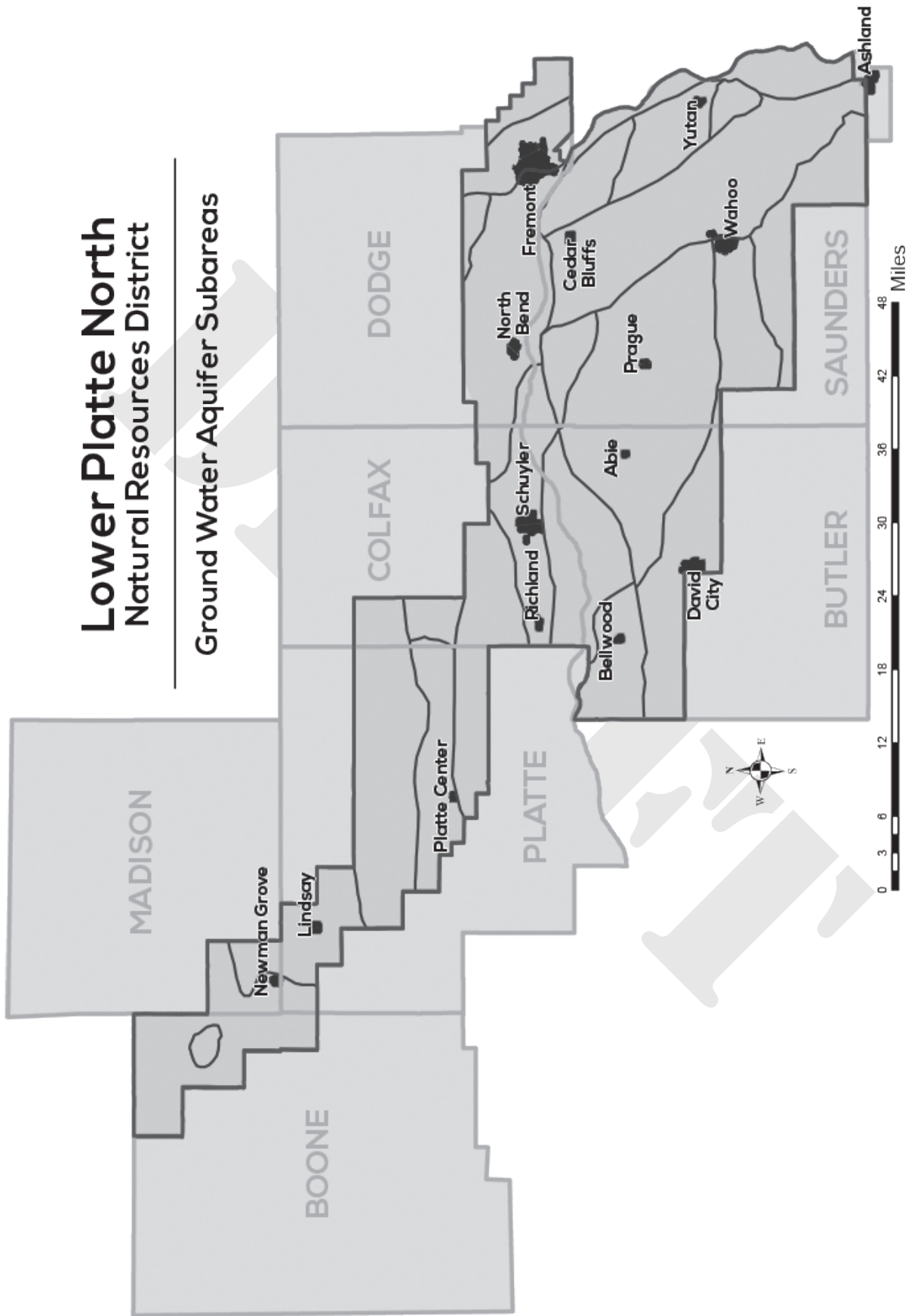


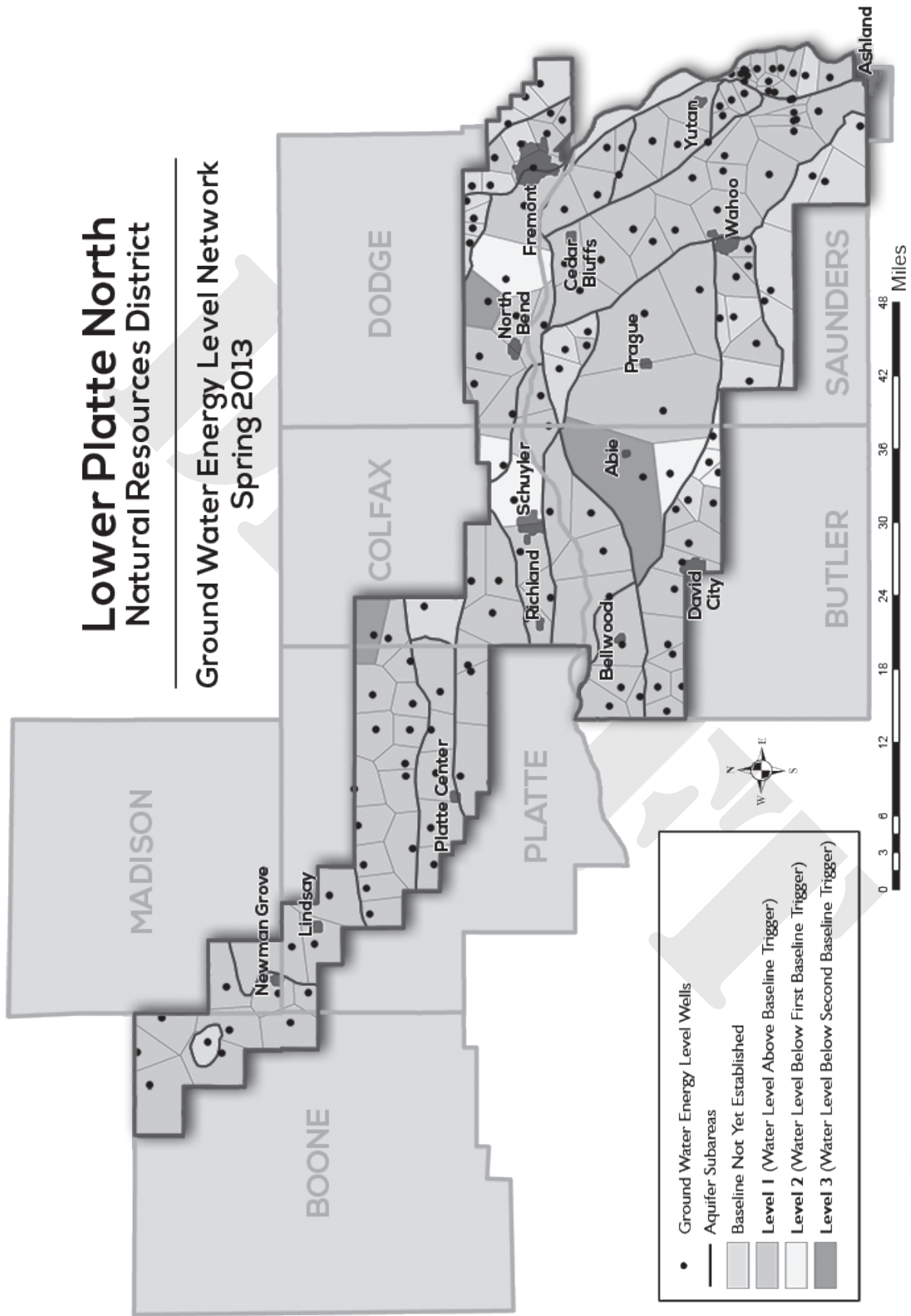
## APPENDIX A - Estimated Population by County

COUNTY	% OF COUNTY IN DISTRICT	ACRES IN DISTRICT	RURAL POPULATION IN DISTRICT	URBAN POPULATION IN DISTRICT	TOTAL	% OF FISCAL INPUT
Boone	12.6	54,473	362	--	362	2.3
Butler	44.3	165,476	2,022	3,387	5,409	11.0
Colfax	41.9	111,528	1,414	4,237	5,651	10.0
Dodge	30.2	104,245	3,100	25,215	28,315	35.7
Madison	6.3	23,086	194	770	964	1.5
Platte	38.5	169,432	2,878	723	3,571	10.5
Saunders	81.5	401,234	6,698	6,949	13,647	29.0

Twenty-eight cities, towns and villages are located within the Lower Platte North NRD, listed below with their populations:

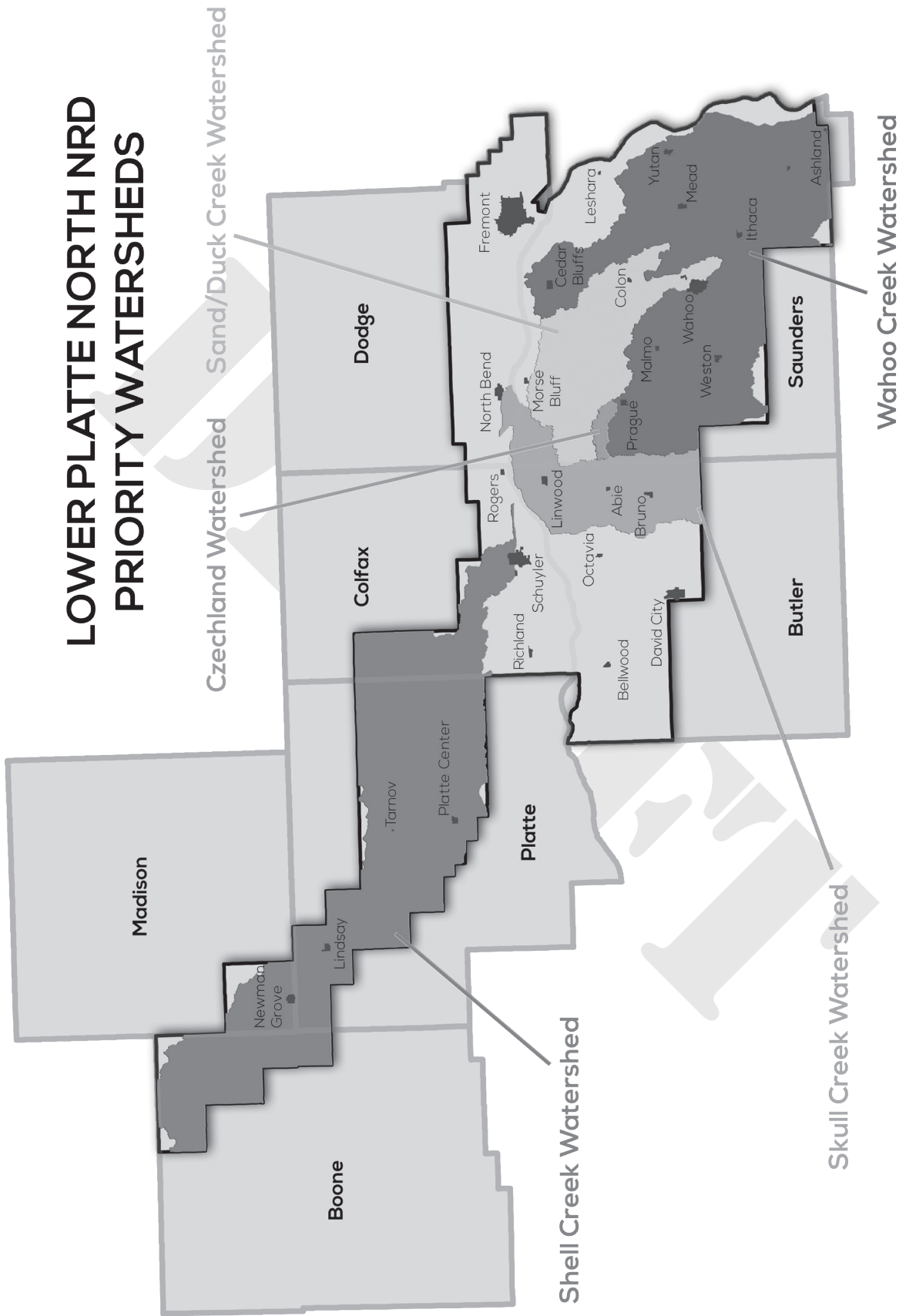
Fremont.....	23,680	Inglewood .....	286
Wahoo .....	3,681	Prague .....	282
Schuyler.....	4,052	Weston .....	299
David City.....	2,522	Morse Bluff .....	128
North Bend.....	1,249	Malmo .....	114
Ashland.....	219	Tarnov.....	141
Newman Grove .....	770	Colon.....	128
Cedar Bluffs .....	591	Leshara .....	118
Yutan.....	626	Richland.....	96
Ithaca .....	133	Linwood.....	91
Mead .....	513	Octavia .....	132
Platte Center .....	341	Rogers .....	117
Lindsay.....	321	Memphis.....	117
Bellwood .....	395	Abie .....	106







# LOWER PLATTE NORTH NRD PRIORITY WATERSHEDS





# APPENDIX E - Projected Budget (Expenses), Fiscal Years 2015-2020

Description	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
<b>ADMINISTRATION</b>						
Bonds	415	430	450	470	490	510
Dues and Membership	28,787	29,000	29,870	30,766	31,689	32,639
Fees & Licenses	8,750	9,100	9,464	9,843	10,236	10,646
GIS	2,000	2,500	3,000	3,500	4,000	4,500
Insurance	45,946	47,784	49,695	51,683	53,750	55,900
Interest Expense	10,000	10,000	10,000	10,000	10,000	10,000
Legal Notices	4,000	4,160	4,326	4,499	4,679	4,867
Maintenance Contracts	6,800	7,004	7,284	7,576	7,879	8,194
Office Supply & Expense	9,600	9,984	10,383	10,799	11,231	11,680
Computer Supply & Expense	24,400	18,000	18,720	19,469	20,248	21,057
Postage	7,000	7,280	7,571	7,874	8,189	8,517
Professional Services	83,750	84,000	84,250	84,500	85,000	85,250
Rent Expense	600	625	650	675	700	725
Support to Organizations	1,000	1,200	1,300	1,400	1,500	1,600
Telephone	13,000	13,520	14,061	14,623	15,208	15,816
Utilities	8,000	8,320	8,653	8,999	9,359	9,733
<b>INFORMATION &amp; EDUCATION</b>						
Education	2,400	2,496	2,596	2,700	2,808	2,920
Information	19,240	20,010	20,810	21,642	22,508	23,408
Scholarships & Grants	2,600	2,704	2,812	2,925	3,042	3,163
Other	3,900	4,100	4,300	4,500	4,700	4,900
<b>OPERATION/MAINTENANCE</b>						
Auto & Truck Expense	22,500	23,400	24,336	25,309	26,322	27,375
Building Maintenance	8,650	8,996	9,356	9,730	10,119	10,524
Comm. Forestry Program	2,000	2,000	2,500	2,500	3,000	3,000
Operation and Maintenance	80,550	83,772	87,123	90,608	94,232	98,001
Project Repairs	7,000	10,000	10,000	15,000	15,000	15,000
Stream Bank Stabilization	10,000	10,000	10,000	10,000	10,000	10,000
WHIP/CREP	3,155	3,000	3,000	3,000	3,000	3,000
Other	33,100	34,000	35,000	36,000	37,000	38,000
<b>PERSONNEL</b>						
Directors Expense	50,500	52,520	54,621	56,806	59,078	61,441
Directors Per Diem	40,000	41,000	42,000	43,000	44,000	45,000
Employee Benefits	351,390	365,446	380,063	395,266	411,077	427,520
Payroll Taxes	87,200	90,688	94,316	98,088	102,012	106,092
Personnel Expense	37,000	37,500	38,000	38,500	39,000	39,500
Salaries	1,127,415	1,161,238	1,196,075	1,231,957	1,268,915	1,306,983
<b>PROJECTS</b>						
Inter-governmental	126,537	50,000	50,000	50,000	50,000	50,000
Special Projects	500	25,000	25,000	25,000	25,000	25,000
Wanahoo (Includes interest)	155,000	65,000	10,000			
Other Projects (205 Projects, ect.)	355,000	350,000	350,000	350,000	350,000	350,000
<b>PR CORRIDOR ALLIANCE</b>	47,367	50,000	50,000	50,000	50,000	50,000
<b>WATER</b>						
Ground water Management Area	380,000	300,000	300,000	300,000	300,000	300,000
Ground water Programs	33,950	35,308	36,720	38,189	39,717	41,305
Regulatory	500	500	500	500	500	500
Surface Water Programs	18,000	18,000	18,500	19,000	19,500	20,000
Special Projects	86,600	100,000	100,000	100,000	100,000	100,000
Land Treatment	480,970	500,000	500,000	500,000	500,000	500,000
<b>RURAL WATER DISTRICT</b>	83,945	85,000	86,000	87,000	88,000	89,000
<b>CAPITAL IMPROVEMENTS</b>						

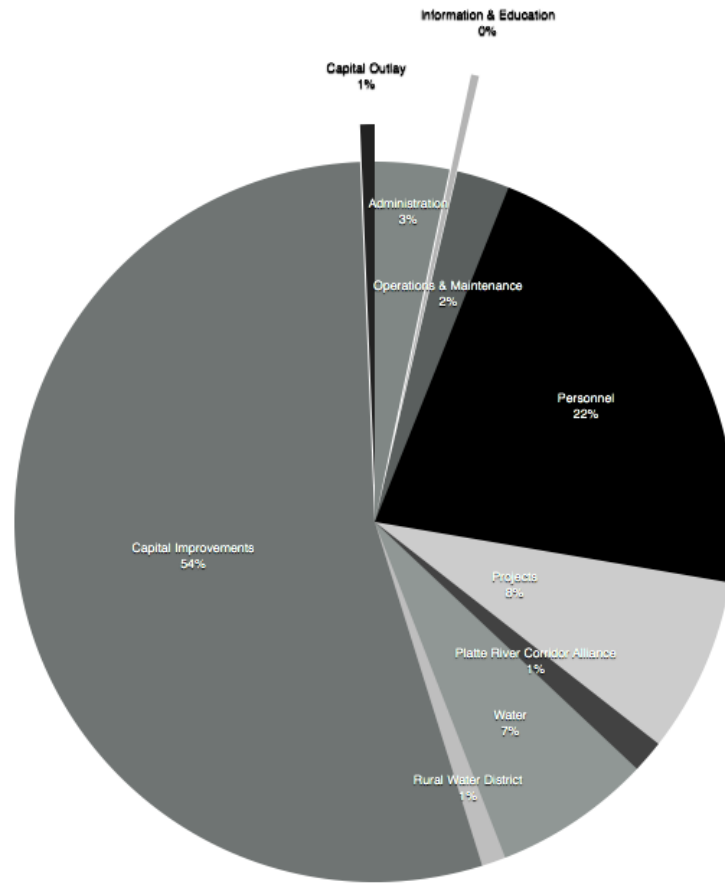
## APPENDIX F - Projected Budget (Income), Fiscal Years 2015-2020

Description	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
<b>BEGINNING CASH BALANCE</b>	806,628	800,000	800,000	800,000	800,000	800,000
<b>PROPERTY TAX</b>	3,650,000	3,600,000	3,000,000	3,000,000	3,000,000	3,000,000
<b>FEDERAL INCOME</b>						
Czechland Fisheries	20,000					
Cottonwood 319	75,000					
Water Meter Grant	215,592					
Sand & Duck Creek 319	150,000					
Shell Creek 319	47,970	50,000	50,000	50,000	50,000	50,000
Wahoo Creek 319	90,000	100,000	100,000	100,000	100,000	100,000
<b>STATE</b>						
Decommissioned Well Fund	2,200	2,000	2,000	2,000	2,000	2,000
Hazard Mitigation Update	80,000					
Natural Resource WQ Fund	40,000	36,000	36,000	36,000	36,000	36,000
NE Buffer Strip Program	12,000	12,000	12,000	12,000	12,000	12,000
NRDF - Wanahoo	5,103,081	1,175,471	219,539			
Sand Creek - Entry Road	120,000					
Wahoo Creek ET Grant	90,000	25,000				
<b>LOCAL</b>						
Chemigation	5,000	5,000	5,000	5,000	5,000	5,000
Czecland Camping	5,700	5,500	5,500	5,500	5,500	5,500
Director/Employee Reimb.	5,000	5,000	5,000	5,000	5,000	5,000
Equipment Rent	7,000	7,000	7,000	7,000	7,000	7,000
Fremont South 205	75,000					
Gain/Loss sale of assests	7,500	10,000	10,000	10,000	10,000	10,000
Game & Parks Sales	250	250	250	250	250	250
Interest	750	750	750	750	750	750
Misc. Income	45,000	70,000	70,000	70,000	70,000	70,000
NRD/NRCS Clerks	67,000	68,000	70,000	72,000	74,000	76,000
Other Sales	9,000	9,000	9,000	9,000	9,000	9,000
Rural Water Admin. Fee	3,490	3,500	3,500	3,500	3,500	3,500
Tree Sales	11,000	12,000	12,000	12,500	12,500	12,500
Wanahoo Borrow Dirt Sales	10,000					
Wanahoo Hay Sales	18,400	15,000	15,000	15,000	15,000	15,000
Water Mark Sensors	500	500	500	500	500	500
Water Reimbursements	1,830	2,000	2,000	2,000	2,000	2,000
Well Permits	5,000	5,000	5,000	5,000	5,000	5,000
W.Sarpy/Clear Creek	700,000					
Rural Water Income	86,000	90,000	90,000	90,000	90,000	90,000
<b>TOTAL</b>	<b>11,565,891</b>	<b>6,108,971</b>	<b>4,530,039</b>	<b>4,313,000</b>	<b>4,315,000</b>	<b>4,317,000</b>

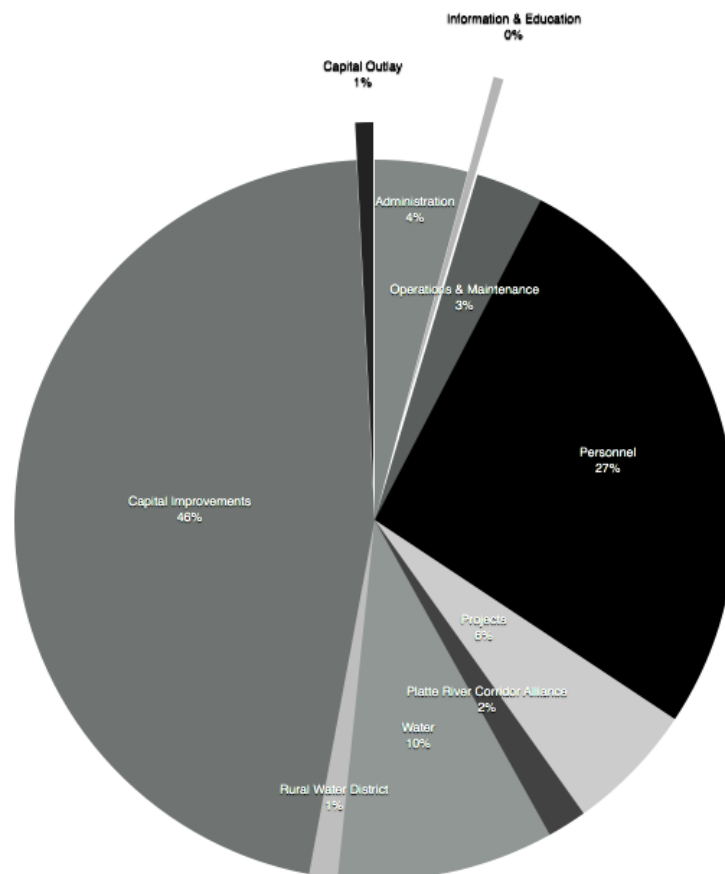


# APPENDIX G - Projected Expenses Breakdown, Fiscal Years 2014-2019

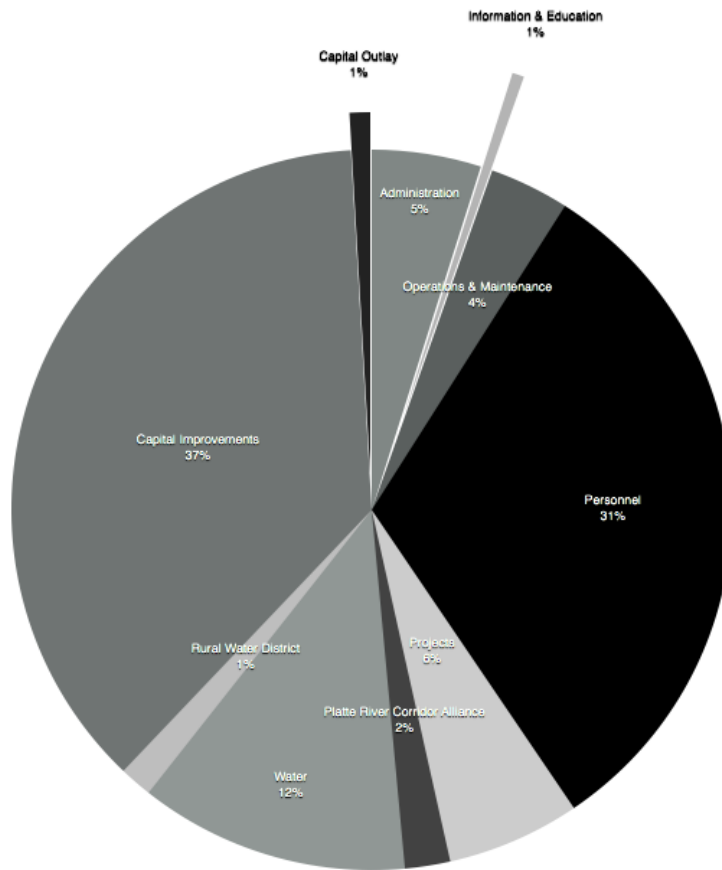
**FY 2014**  
Total Budget:  
\$7,563,504



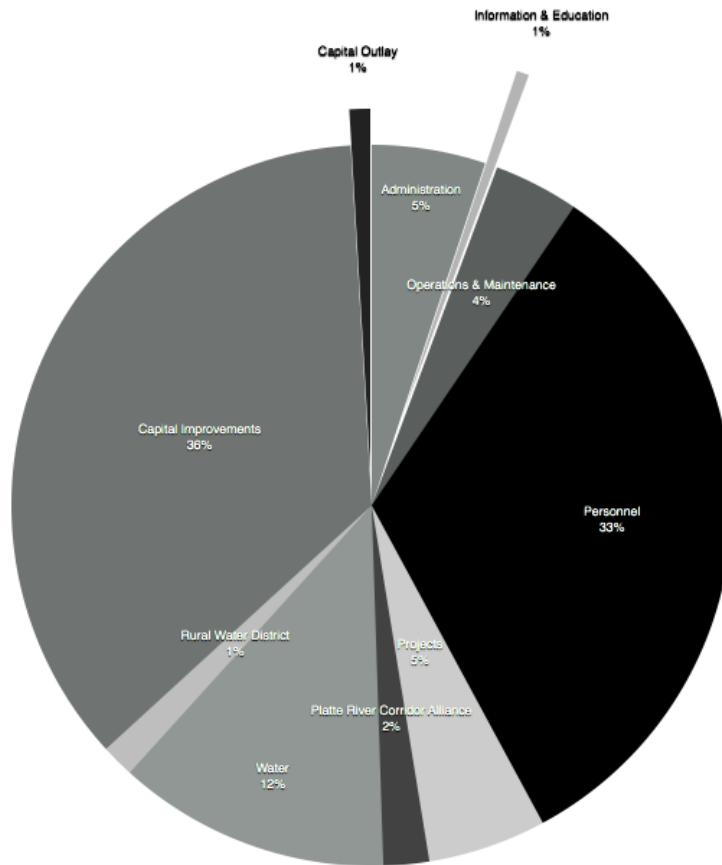
**FY 2015**  
Total Budget:  
\$6,228,057



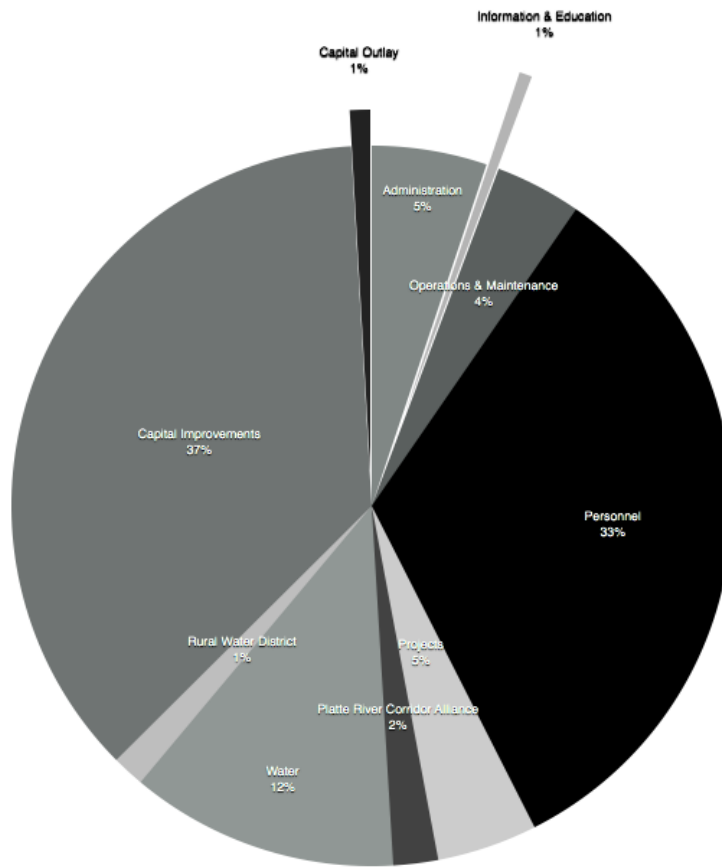
**FY 2016**  
Total Budget:  
\$5,428,713



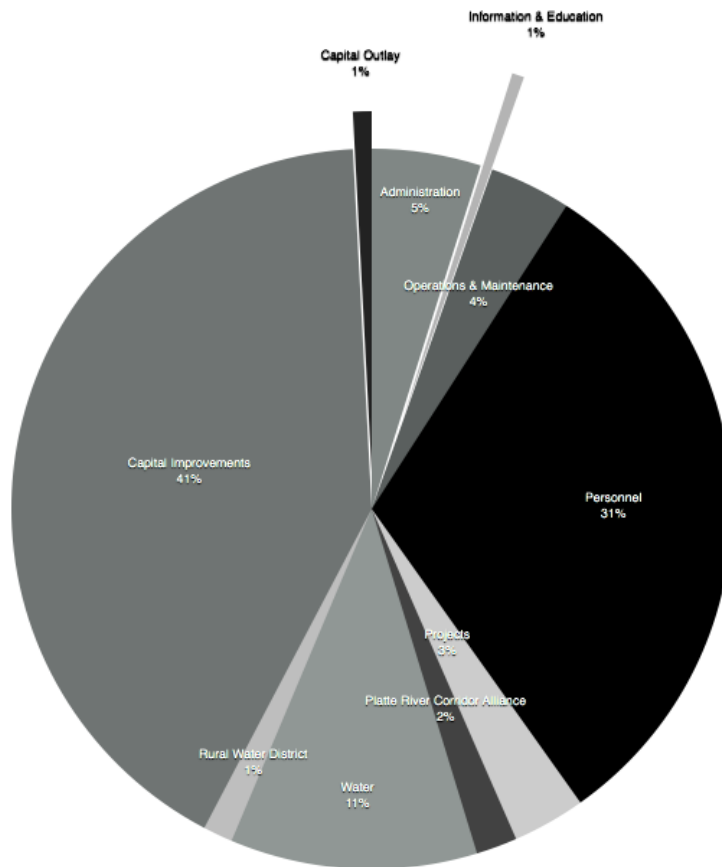
**FY 2017**  
Total Budget:  
\$5,386,477



**FY 2018**  
 Total Budget:  
 \$5,491,442



**FY 2019**  
 Total Budget:  
 \$5,985,171



**SWCP Monthly Report**

December 16, 2014

SWCP LOCAL	\$20,000.00
SWCP TREE ALLOCATION	\$3,000.00
STATE ALLOCATION	\$109,558.42
AMOUNT SPENT	\$31,119.87
CASH BALANCE	\$101,438.55
ALLOCATION %	159%

SWCP #	STATUS	NAME	AMOUNT	PROJECT	SHELL CREEK FUND
--------	--------	------	--------	---------	------------------

**APPROVED SMALL DAM PROJECTS:**

**APPROVED SUMMER PROJECTS:**

13-B-57	Approved	The Meadow 5 LLC	\$ 5,169.24	Planned Grazing	
<b>TOTAL SUMMER APPROVALS</b>			<b>\$ 5,169.24</b>		

**APPROVED PROJECTS:**

13-B-1	Approved	James Vandenberg	\$ 1,250.00	Flow Meter	
13-P-30	Approved	David Schumacher	\$ 625.00	Flow Meter	
13-S-36	Approved	Ronald Woita	\$ 625.00	Flow Meter	
13-C-42	Approved	Shirley Johannes	\$ 2,423.44	W/S Basins	
13-S-45b	Approved	Burneil Ecklund	\$ 625.00	Flow Meter	
13-B-51	Approved	Dwayne Schmit	\$ 1,250.00	Flow Meter x 2	
14-S-1	Approved	Dan & Ailene Wageman	\$ 625.00	Flow Meter	
14-P-3a&b	Approved	LeRoy Sprunk Sr.	\$ 1,250.00	Flow Meter x 2	
14-S-8	Approved	Lawrence Styskal	\$ 625.00	Flow Meter	1-May
14-S-9	Approved	Rita Freeman	\$ 625.00	Flow Meter	
14-S-10	Approved	Mark Kavan	\$ 625.00	Flow Meter	
14-P-12	Approved	Dean Sander	\$ 1,250.00	Flow Meter x 2	1-May
14-P-13	Approved	Ann Olmer	\$ 625.00	Flow Meter	
14-S-14	Approved	G & B Farms	\$ 625.00	Flow Meter	
14-S-15	Approved	David Feist	\$ 625.00	Flow Meter	
14-P-16	Approved	Jason Mejstrik	\$ 625.00	Flow Meter	
14-P-21A&B	Approved	Jeana Buhman	\$ 1,250.00	Flow Meter x 2	
14-B-22	Approved	Lee R. Schmit	\$ 5,967.50	Planned Grazing	
14-P-31	Approved	Warren Janssen	\$ 1,250.00	Flow Meter x 2	
14-TR-1	Approved	Ron Sabatka		Terrace Repair	\$1,000.00
14-TR-2	Approved	Dayle Alswager		Terrace Repair	\$1,000.00
14-P-34	Approved	Larry & Lois Mohrman	\$ 1,250.00	Flow Meter x 2	
14-B-35	Approved	Yindrick Farms LLC	\$ 1,250.00	Flow Meter x 2	1-May
14-B-36	Approved	Gary Yindrick	\$ 1,250.00	Flow Meter x 2	1-May
14-S-39 A&B	Approved	Robert Lubker	\$ 1,250.00	Flow Meter x 2	1-May
14-B-41	Approved	R. Allen Covault	\$ 625.00	Flow Meter	
14-B-42	Approved	Walter Bohaty	\$ 1,500.00	Flow Meter x 3	
14-S-43	Approved	Douglas Ritthaler	\$ 625.00	Flow Meter	
14-B-44	Approved	Don Yindrick	\$ 12,500.00	Terraces/Tile/Basins	
14-B-46	Approved	Gary Vandenberg	\$ 625.00	Flow Meter	
14-C-47	Approved	Daryl Blodowski	\$ 12,500.00	Terraces/Tile	
14-B-48	Approved	Robert Schmit Family Tr	\$ 340.83	Planned Grazing	
14-D-49	Approved	Gary Mintken	\$ 2,712.00	Diversion/Waterway	
14-P-50	Approved	Stephen Wieser	\$ 625.00	Flow Meter	
14-P-51	Approved	Shirley Johannes Rev. Tr.	\$ 10,337.86	W/S Basins	
14-P-52	Approved	James Christensen	\$ 625.00	Flow Meter	
14-B-53	Approved	Maryann Shuey Rev. Tr.	\$ 625.00	Flow Meter	

**APPROVED COTTONWOOD CREEK PROJECTS: \$ 47,000.00**

**TOTAL FALL APPROVALS \$ 118,406.63**

**APPROVED SHELL CREEK PROJECTS:**

12-P-16	Approved	Randy Streblow	\$ 5,000.00	Dam Renovation - Tube	\$5,000.00
13-C-31	Approved	Adrian Muhle	\$ 12,500.00	Terraces/Tile	\$12,500.00
14-P-40	Approved	Jim Fehringer	\$ 12,500.00		\$12,500.00

**TOTAL**

**TOTAL \$37,915.31**

**TOTAL AMOUNT ALLOCATED \$ 161,491.18**

**PAID PROJECTS**

SWCP #	STATUS	NAME	AMOUNT	PROJECT	
12-C-41	PAID	Dennis Waak	\$ 594.50	Flow Meter	
13-S-29	PAID	James Kubik	\$ 3,345.55	Planned Grazing	
13-S-35	PAID	Henry Johnson	\$ 625.00	Flow Meter	
13-D-44	PAID	Donna O'Connor	\$ 594.50	Flow Meter	
13-B-47	PAID	Thomas Smaus	\$ 1,637.39	Terraces/Tile	EQIP Supplement
13-C-48	PAID	Jeff Muhle	\$ 3,194.10	Diversion/Basins/Tile	\$3,194.10
13-D-49	PAID	Gary Mitken	\$ 900.63	Diversion & Waterway	
13-S-50	PAID	Dan Wesely	\$ 568.50	Flow Meter	
13-C-52	PAID	Pine Tree Farms Ltd.	\$ 552.70	Flow Meter	
13-C-53	PAID	Oehlich Farm Inc.	\$ 625.00	Flow Meter	
13-P-55	PAID	Todd Maurer	\$ 1,143.00	Flow Meter x 2	
13-P-56	PAID	Myron Leffers	\$ 493.50	Flow Meter	
14-B-4	PAID	Robert Hilger	\$ 625.00	Flow Meter	
14-P-5	PAID	Eugene Wiese	\$ 565.00	Flow Meter	
14-C-6	PAID	Jay Jedlicka	\$ 594.50	Flow Meter	
14-S-7	PAID	LaVerne Kadavy	\$ 511.00	Flow Meter	
14-S-11	PAID	Roger Nelson	\$ 625.00	Flow Meter	
14-B-17	PAID	John Krafka	\$ 1,250.00	Flow Meter x 2	
14-D-18	PAID	Ruzicka Farms	\$ 475.00	Flow Meter	
14-C-19	PAID	Dennis Waak	\$ 594.50	Flow Meter	
14-C-20	PAID	Lewis Grotelueschen	\$ 564.43	Flow Meter	
14-B-24	PAID	Patrick Ewert	\$ 625.00	Flow Meter	
14-S-25	PAID	Jack Wollem	\$ 1,055.50	Flow Meter x 2	
14-S-26	PAID	Vicki Wollem	\$ 625.00	Flow Meter	
14-S-27	PAID	Jakeman Farms Ltd.	\$ 552.50	Flow Meter	
14-P-28	PAID	Wilma Loseke	\$ 575.00	Flow Meter	
14-P-29	PAID	Paul Ramaekers	\$ 535.00	Flow Meter	
14-P-30	PAID	Roger Gehring	\$ 625.00	Flow Meter	
14-S-32	PAID	Marvin Boschult Tr.	\$ 625.00	Flow Meter	
14-B-33	PAID	Robert Schmit	\$ 4,065.57	W/S Basins	
14-B-37	PAID	Lloyd From	\$ 597.50	Flow Meter	
14-B-38	PAID	Donald Yindrick	\$ 535.00	Flow Meter	
14-S-45	PAID	BRT Farms	\$ 625.00	Flow Meter	

**PAID PROJECTS COTTONWOOD CREEK WATERSHED**

**SWCP PAID: \$ 31,119.87**

**PAID PROJECTS COORDINATING - SAND & DUCK CREEK**

**\$ -**  
**Total SWCP PAID: \$ 31,119.87**



Invoice

December 24, 2014  
Project No: R100267.01  
Invoice No: 80938  
Invoice Amount: 7,650.00

Lower Platte North NRD  
511 Commercial Park Road  
PO Box 126  
Wahoo, NE 68066

Project Manager John Petersen  
Project R100267.01 Lower Platte North NRD: Wahoo Watershed Water Quality Plan Phase I Implementation

**Professional Services through December 19, 2014**

	Contract Amount	Percent Complete	Billed-to-Date	Previous Billing	Current Billing
<b>Lump Sum Phase(s)</b>					
Task 1 - Land Use and Condition Assessment	\$15,000.00	20 %	\$3,000.00	\$1,500.00	\$1,500.00
Task 2 - Stream Stability and Ecological Assessment	\$61,500.00	20 %	\$12,300.00	\$6,150.00	\$6,150.00
Task 3 - Stream Monitoring Reference Sites	\$18,500.00	0 %	0.00	0.00	0.00
Meetings and Public involvement	\$12,500.00	10 %	\$1,250.00	\$1,250.00	0.00
Project Management	\$12,500.00	20 %	\$2,500.00	\$2,500.00	0.00
<b>Total</b>	<b>\$120,000.00</b>		<b>\$19,050.00</b>	<b>\$11,400.00</b>	<b>\$7,650.00</b>
<b>Total Amount Due Upon Receipt</b>					<b>\$7,650.00</b>

Date rec'd 12/29/14

Approved by \_\_\_\_\_

Date \_\_\_\_\_

For \_\_\_\_\_

By \_\_\_\_\_

To \_\_\_\_\_

\_\_\_\_\_



**MONTHLY PROGRESS REPORT  
LOWER PLATTE NORTH NRD  
WAHOO WATERSHED WQP IMPLEMENTATION PHASE I**

**JEO PROJECT NO. 100267.01**

**THROUGH THE PERIOD OF December 19, 2014**

- 1. Overall Project and Budget Status:**
  - Project is on budget
  
- 2. Work completed during current month (November 21 to December 19, 2014):**
  - Continued preliminary stream assessment
    - o Detailed LiDAR analysis and field work prep
  - Continued land use assessment work
  - Letter sent to landowners informing of field work for stream assessments
  
- 3. Planned Accomplishment for next month:**
  - Begin detailed stream walk-throughs
  - Continue land use assessments
  
- 4. Project Schedule:**
  - Draft reports by March 2015
  
- 5. Information from the NRD:**
  - N/A
  
- 6. Next Meeting Date & Time:**
  - TBD



# Lower Platte North Natural Resources District

PO Box 126 511 Commercial Park Road Wahoo, NE 68066  
402.443.4675 Fax 402.443.5339 Toll-free 888.764.0543  
lpnnrd@lpnnrd.org www.lpnnrd.org

December 12, 2014

RE: Wahoo Creek Watershed Plan Implementation  
Dunlap Stream Assessment

Dear Landowner:

The Lower Platte North Natural Resources District (LPNNRD) is beginning the first phase of implementing the Wahoo Creek Watershed Water Quality Management Plan (watershed plan). The watershed plan was commissioned in 2013 to identify strategies to improve water quality within Wahoo Creek, its tributaries, and their adjacent watersheds. Three initial, high priority, watersheds were identified: Cottonwood Creek, North Fork of Wahoo Creek, and Dunlap Creek, due to high amounts of field and stream bank erosion.

Willing landowners, in these areas, are being targeted for best management practice (BMP) implementation costshare. LPNNRD, in conjunction with JEO Consulting Group, is seeking to identify areas on Dunlap Creek that are experiencing degradation due to erosion, down cutting, bank failure, etc. This assessment will be completed through a visual field survey along the creek.

**I am writing this letter to request permission for LPNNRD representatives and JEO engineering technicians to access your property along Dunlap Creek.** We have not established a timeline for when the field work will begin, but anticipate sometime in December or January, weather permitting. The proposed field work would consist of 2 to 3 people walking along the stream and taking notes and photographs. No ground would be disturbed and no vehicles would be driven off road or through the area. The field staff may walk on either side of the creek, depending upon accessibility.

Please notify me by December 19, 2014 of your decision to allow entrance. This will enable us to begin scheduling field work. If we receive your permission to access your property, you will receive a notification before any field work is undertaken.

I would like to thank you in advance for your cooperation in improving the watershed. If you have questions or comments feel free to contact me at 402.443.4675, or by email at [tmountford@lpnnrd.org](mailto:tmountford@lpnnrd.org).

Sincerely,

Tom Mountford  
Assistant Manager, Lower Platte North NRD

protecting lives    protecting property    protecting the future

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Lower Platte River  
CORRIDOR ALLIANCE

LEAD. ORGANIZE. INSPIRE. The voice of the Lower Platte.

3125 Portia St.  
PO Box 83581  
Lincoln, NE 68501-3581

p: 402.476.2729  
f: 402.476.6454

[www.lowerplatte.org](http://www.lowerplatte.org)

## Monthly Report for December 2014

Meghan Sittler, Coordinator

### **Recreation Planning**

Focus on the Recreation Planning Study intensified again throughout December. The Planning Study is being conducted as part of the Corps of Engineers' Planning Assistance to States Authority. The final report is in process of being developed with a draft expected to be ready for review by mid-January. Currently completed portions of the project include a public opinion survey focused on recreation, coordination with city and county officials regarding existing recreation properties, survey of available city and county comprehensive plans, a hydraulic analysis of historic flows, and an inventory of all publicly owned recreation properties (i.e. parks, access areas, trails etc) in the Corridor—these properties are displayed on maps and described within the narrative. Additionally the Corps has developed a preliminary economic scope for the impact of recreation within the lower Platte. Work will continue to fully develop the recommendations with the report expected to be finalized in spring of this year.

A meeting was also held with the National Park Service in mid-December as a “kick off” to the Rivers, Trails and Conservation Assistance the LPRCA received from NPS in fall 2014. Through the program, NPS will provide technical assistance and staff time to help the LPRCA begin to implement the recommendations from the Recreation Planning Study. The first task the NPS will be assisting with is expanded stakeholder engagement and coordination to begin to “roll out” the plan and hear from individuals about ideas, needs, barriers etc. This will be a key step in building partnerships. Additional tasks down the road can include site planning, funding identification, and moving into broader conservation planning. NPS staff will also be reviewing the draft of the recreation planning study to provide comments or recommendations. We look forward to working with NPS.

### **Nebraska Watershed Network**

The LPRCA has served in an advisory capacity with the Nebraska Watershed Network lead by Dr. Alan Kolok of UNO over the past several years. The LPRCA and NWN have consistently sought opportunities to work together on unique projects to engage individuals in “citizen science” while also doing valuable monitoring and research of water quality within the lower Platte and Elkhorn Rivers and smaller tributaries. In December the LPRCA and UNO partnered on a grant application to engage students and other individuals both in an urban setting (Omaha) and a rural setting such as Shell Creek in maintaining a sampling program and communicating their findings and experiences with one another via social media. The monitoring data that is collected through the program would be an additional data set useful to both the NWN and LPRCA is characterizing quality concerns in portions of the lower Platte watershed. We hope to hear about any award we may receive early in 2015

### **Water Quality Monitoring Network**

The final Nebraska Environmental Trust report for the predictive water quality study, completed by USGS, was submitted in November. In December I met with USGS to go over the developed website framework which will be live in April when the real-time water quality data becomes available again. The site will display real-time data along with the correlated or predictive values of constituents such as turbidity, e-coli and suspended sediment, atrazine and phosphorous among others. Additionally the thresholds for body contact for recreation or for aquatic life will be displayed where applicable with the real time and correlated data. Once live the site will also be searchable for past data from 2008 to present.

### **Newsletter**

December was also busy with pulling together the Fall/Winter edition of the LPRCA Newsletter. The Newsletter should be mailed out in early January with an electronic version also available on the LPRCA website. The highlight of Platte River Update this time includes the story of the European discovery of the Platte River, an overview of the Great Plains EcoTourism Coalition, takeaways from the Water For Food Institute's Global Conference recently held in Seattle and a discussion of the Rivers, Trails and Conservation Assistance program from the National Park Service among other news from the LPRCA. The next Newsletter will be out in late Spring/early summer and we are always open to suggestions or submissions!

### **Upcoming Events:**

LPRCA Quarterly Meeting: January 21, LPNDRD, 9:00 a.m.

NARD Legislative Conference: January 26-28



Lower Platte River  
CORRIDOR ALLIANCE

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**QUARTERLY MEETING TENTATIVE AGENDA**

**Wednesday, January 21, 2014 9:00 a.m.**

**Lower Platte North NRD**

**5111 Commercial Park RD, Wahoo, NE 68066**

1. Call to Order / Introductions
2. Proof of Legal Notice/Publication
3. Adoption of Agenda [**ACTION**]
4. Approval of LPRCA Minutes from October 21, 2014 Meeting [**ACTION**]
5. Great Plains EcoTourism Coalition—Kat Shiffler, Center for Great Plains Studies
6. Recreation Planning
  - a. Recreation Planning Study Update—Meghan Sittler
  - b. RTCA Grant—Kim Shafer, National Park Service
  - c. Recreation Advisory Group
7. ESRI Services Discussion
8. River Obstruction Removal at Two Rivers
9. Lower Platte River Summit Recap
10. FY2016 Budget Planning Discussion
  - a. Review of last year's input session
  - b. Meetings with each member & input plan
11. NRD Integrated Management Plans Update
12. WRDA Authorized Project Updates
  - a. Deadman's Run
  - b. Sand Creek
  - c. Fremont & Schuyler 205
  - d. Western Sarpy Clear Creek
  - e. Lower Platte River Watershed Authority
13. Next Meeting Date [**ACTION**]
14. Public Comment
15. Adjourn

**NOTES**

- **To be removed from/ added to our mailing or e-mailing list**, please contact the LPRCA at (402) 476-2729 or via e-mail at [msittler@lpsnrd.org](mailto:msittler@lpsnrd.org).
- **Meeting information (past and present)** will be kept up to date at [www.lowerplatte.org/meetings.html](http://www.lowerplatte.org/meetings.html).

## Tom Mountford

---

**From:** Meghan Sittler  
**Sent:** Friday, December 12, 2014 12:07 PM  
**To:** John Winkler; Marlin Petermann; John Miyoshi; 'Tom Mountford'; Glenn Johnson; Paul Zillig  
**Subject:** Obstruction Removal Update

I wanted to let you all know that the Two Rivers obstruction removal project was not selected for funding by the RTP Committee at their meeting in November. I did attend the meeting and provided the committee some more of the history of the project and answered several questions. I felt that the conversation was generally very positive and was somewhat surprised to learn that we were not funded in any amount. Any lack of surprise on my part stems from what could be described as a more arduous process than how it began in initial conversations. I do have an inquiry in to NGPC asking for more explanation of why the committee did not provide any assistance to this project and I will share that when I receive it.

The committee's decision does not become final until the Commission meeting in January. At that time, I will share this with the entire LPRCA membership and we will need to discuss how we want to proceed. If any of you want to discuss this any further in the interim, I'm happy to answer any questions you may have (well, those that I think I know the answers to).

Thanks,  
Meghan

Meghan Sittler, Coordinator  
Lower Platte River Corridor Alliance (LPRCA)  
3125 Portia Street, PO Box 83581  
Lincoln, NE 68501-3581  
Phone: (402)-476-2729  
Cell: (402)-429-0334  
[www.lowerplatte.org](http://www.lowerplatte.org)

the dredge. Contractor indicated that the redredged quantity was approximately 10,000 CY and intends on submitting an REA.

4. Notice letter was sent to contractor on 17 September 2014, citing inadequate progress on excavation/dredging and requesting recovery schedule.
5. Mod was issued to extend completion date by 18 days due to water above flood stage elevation.
6. Contractor has completed dredging and moved the dredge off-site. Remaining work includes placement of tree structures. Pre-final inspection is scheduled for Monday, 15 December 2014.

**Contract W9128F-13-C-0024, Platte River Flood Risk Reduction Project, Phase I – Shell Creek, Schuyler, NE**

Scheduled: 100%

Actual: 93%

1. Contract was awarded to TJC Engineering, INC. on 30 September 2013 in the amount of \$2,829,805.00. NTP was issued on 16 October 2013; acknowledgement was made on 24 October 2013. Current contract completion date is 15 October 2014. Contract is currently 93% complete.
2. Seepage berm is currently 98% complete.
3. Cohesive fill is currently 98% complete.
4. Random fill is currently 98% complete.
5. Topsoil is currently 90% complete
6. All utility crossings are complete except #5, which the owner will not irrigate this season due to the staging area.
7. Structures 1 and 2 complete.
8. Contractor has put USACE on notice that irrigation runoff from an adjacent landowner is hindering progress on the seepage berm. In addition, landowner has regraded the drainage of low areas within our construction project which is exacerbating the drainage problem. Contractor intends on regrading the disturbed area along with berming the area along the fields to prevent irrigation runoff to the project site. Contractor intends on submitted a Request for Equitable Adjustment (REA) for compensation. This REA will have merit. Currently, estimating that the cost impacts will be less than \$4,000 and several days of time.
9. Contractor also put USACE on notice of differing site condition of existing levee from station 109+00 to 115+00. They have started to uncover boulders, steel and various debris. The contract requires removal of the existing levee so the extent of the debris is unknown at this point. First part of a two part modification executed. Excavation of debris on far east end of project complete, cohesive fill to start soon to complete this section. Contractor encountered less debris than anticipated.
10. Backfill of structure #2 is nearly complete after pipe testing passed. Topsoil, toe trench, finish grading, and restoration of temporary easements also ongoing. Surfacing and seeding to start next week. Levee crest is approved in the majority to place surfacing with a few exceptions.
11. Contractor is in liquidated damages as of 9 December 2014. We will call the contract substantially complete when all that remains is seeding, gates and ROW markers.

## Tom Mountford

---

**From:** Jeff Henson  
**Sent:** Tuesday, December 09, 2014 8:47 AM  
**To:** Lalit Jha  
**Subject:** Lower Platte North Hazard Mitigation Plan

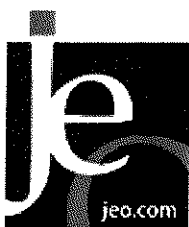
All-

As you know we are continuing with the update of the Lower Platte North NRD Hazard Mitigation Plan. The original goal was to have a draft ready for review by the end of November, but due to a high number of communities unable to attend meetings in October it is taking more time than expect to develop a draft plan. To allow for the additional meetings and interviews to be completed it will be necessary to postpone the public review period until the end of December. This will still allow for the plan to be submitted to FEMA and reviewed prior to the expiration of the current plan (April 2015).

In addition, this email is a reminder of the Project Screening funds that are available as a part of this planning process. As was outlined at the beginning of the planning process, additional **funds are available for communities that would like to spend some time in exploring specific projects and the project's potential eligibility under the Hazard Mitigation Assistance program (HMA)**. Projects that will be considered for these project funds include (but are not limited to): **bank stabilization, tornado safe rooms, localized drainage issues, and acquisition of properties/structures in the floodplain**. Project scoping can include: completion of project worksheet (based on Unified Hazard Mitigation Assistance Program guidelines), upper and lower limits BCA, collection of historic damages, and some environmental review. It should be noted that communities pursuing project scoping as a portion of this planning process will be responsible for the 25% match for project screening.

***We ask that communities wishing to be considered for the project screening funds please submit projects for consideration no later than December 19<sup>th</sup>.*** To submit projects for consideration or for questions related to the hazard mitigation plan or project screening please contact Jeff Henson at [jhenson@jeo.com](mailto:jhenson@jeo.com) or by phone at 402.474.8764.

Thanks  
Jeff Henson



**JEFF HENSON, CFM** | Senior Planner | Hazard Mitigation and Emergency Planning  
**JEO CONSULTING GROUP INC**  
2700 Fletcher Avenue | Lincoln, Nebraska 68504-1113  
d: 402.474.8764 | o: 402.435.3080 | f: 402.435.4110  
[jhenson@jeo.com](mailto:jhenson@jeo.com)



Invoice

December 24, 2014  
Project No: R110036.00  
Invoice No: 80946  
Invoice Amount: 10,849.50

Tom Mountford  
Lower Platte North NRD  
511 Commercial Park Road  
PO Box 126  
Wahoo, NE 68066

Project Manager Jeffrey Henson

Project R110036.00 Lower Platte North NRD Hazard Mitigation Plan Update

**Professional Services through December 19, 2014**

	Contract Amount	Percent Complete	Billed-to-Date	Previous Billing	Current Billing
<b>Lump Sum Phase(s)</b>					
Project Management and Kick-Off	\$16,980.00	55 %	\$9,339.00	\$7,810.80	\$1,528.20
Public Involvement	\$15,330.00	92 %	\$14,103.60	\$11,497.50	\$2,606.10
Data Collection and Analysis	\$20,020.00	80 %	\$16,047.80	\$11,963.00	\$4,084.80
Mitigation Plan	\$14,860.00	56 %	\$8,321.60	\$6,241.20	\$2,080.40
Pre-Project Application Information	\$48,000.00	5 %	\$2,440.00	\$2,440.00	0.00
Submit to NEMA	\$530.00	0 %	0.00	0.00	0.00
Submit to FEMA	\$200.00	0 %	0.00	0.00	0.00
Revise Plan	\$3,470.00	0 %	0.00	0.00	0.00
Resubmit Plan to NEMA/FEMA	\$470.00	0 %	0.00	0.00	0.00
Adopt Plan	\$670.00	0 %	0.00	0.00	0.00
Distribute Plan	\$470.00	0 %	0.00	0.00	0.00
QA/QC	\$5,000.00	25 %	\$1,250.00	\$700.00	\$550.00
<b>Total</b>	<b>\$126,000.00</b>		<b>\$51,502.00</b>	<b>\$40,652.50</b>	<b>\$10,849.50</b>
<b>Total Amount Due Upon Receipt</b>					<b>\$10,849.50</b>

cc: Mike Almond, malmond@lpnrd.org



## MONTHLY PROGRESS REPORT

### Lower Platte North Natural Resources District Hazard Mitigation Plan

JEO PROJECT NO. R110036.00  
Project Contact: Jeff Henson, 402.474.8764

Through the Period of December 21, 2014

---

1. **Overall Project and Budget Status:**
  - Project Completion: 42%                      Budget: 41%
  
2. **Work completed during current period (thru December 21, 2014)**
  - Continue data collection
  - Continue developing draft of plan
  - Follow-up with communities unable to attend meetings (completed)
  - Develop grant templates (ongoing)
  
3. **Planned accomplishment for next period (Dec. 22 – Jan. 25, 2015):**
  - Continue HMP development
  - Continue data collection related to HMP
  - Continue development of project grant templates
  - Submit HMP for public review
  
4. **Action items:**
  - Write HMP
  - Follow-up with communities
  - Provide update to planning team
  - Update project website
  
5. **Project schedule:**
  - On schedule
  
6. **Information from NRD:**
  - Assistance contacting communities that have been unresponsive in scheduling meetings
  
7. **Next Meeting Date and Time:**
  - None at this time



Lower Platte North NRD  
Project Screening  
December 29, 2014

The purpose of this document is to identify and review project submitted for consideration as a component of the Lower Platte North Multi-Jurisdictional Hazard Mitigation Plan. This document contains a list of projects that were submitted or discussed during the planning process which have enough information /data to support further exploration during the project screening process.

**Lower Platte North Natural Resource District**

- 1) Grant templates
  - a. Develop grant templates for distribution to all participating jurisdictions. Grant template areas include: emergency generators, emergency warning systems, residential safe rooms, public safe rooms, and electrical transmission system hardening
  - b. Proposed budget: \$5,000
- 2) Develop educational materials for distributions to all participating communities. Proposes materials include (but are not limited to):
  - a. Educational handouts designed to educate community members about risk reduction or hazard mitigation. Possible topics include: emergency preparedness, residential safe room requirements and opportunities, water saving devices, green infrastructure and building practices, and existing programs related hazard mitigation.
  - b. Potential audiences: homeowners, renters, landlords, students, small business owners, childcare operators, building contractors, and developers.
  - c. Proposed budget: \$5,000 - \$7,500
- 3) Dam assessment and advanced risk assessment. Proposed services include (but are not limited to):
  - a. Dam inspections and prioritization for retrofitting and upgrades and inundation mapping for moderate and significant hazard dams (not regulatory mapping). The function of this project would be to review the status of current dams and identify needed improvements. Mapping would be for planning and zoning purposes only and not sufficient for regulatory use. The function of the maps would be to protect current dam classifications and to guard against development in potential inundation areas.
  - b. Proposed budget: \$3,500 - \$5,000 per dam
- 4) Develop tabletop exercise protocol for dam emergency action plans or other hazard as identified by the NRD.
  - a. Proposed protocol would entail: exercise scenario, participation materials, and an exercise facilitation plan.
  - b. Proposed budget: \$3,000

**Colon**

- 1) Flood Control Project Development
  - a. Proposed scope of work: Review current status of flooding in the village and develop an approach to reduce flood impacts. Work would include: Benefit Cost Analysis upper and lower bounds and collection of historic damage data.
  - b. Proposed budget: \$5,000 - \$7,500

### **Dwight**

- 1) Storm sewer system upgrades: Replacement of an existing storm sewer pipe. The current pipe is deteriorating and is subject to clogging. It is possible/likely that the current pipe in addition to being in disrepair is also undersized. There has been some preliminary cost of repairs developed for this project.
  - a. Proposed scope of work: develop preliminary Benefit Cost Analysis
  - b. Proposed budget: \$5,000 - \$7,500

### **Woodcliff**

- 1) Bank stabilization along the Platte River to include bendway weirs, stone toe reinforcement and vegetative plantings in the form of locked logs.
  - a. Proposed scope of work: develop preliminary Benefit Cost Analysis
  - b. Proposed budget: \$5,000 - \$7,500

Proposed scope of work represents work to be completed as the initial phase of project screening. Any remaining funds can be utilized at the NRD's discretion to further pursue environmental review and collection of historic damage data for eligible projects.

## Tom Mountford

---

**From:** Schutz, Jeremiah - NRCS, Fremont, NE  
**Sent:** Tuesday, December 09, 2014 8:01 AM  
**To:** tmountford@lpnnrd.org  
**Cc:** Walkenhorst, Mark - NRCS, Wahoo, NE  
**Subject:** Fabric Checks  
**Attachments:** SKMBT\_C35314120908210.pdf

Tom,

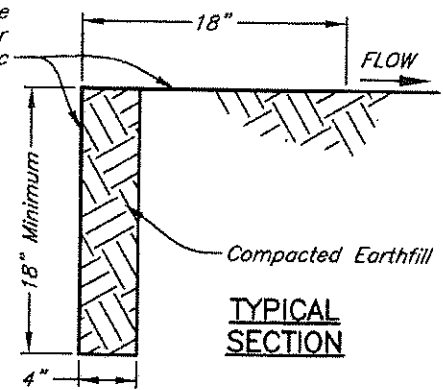
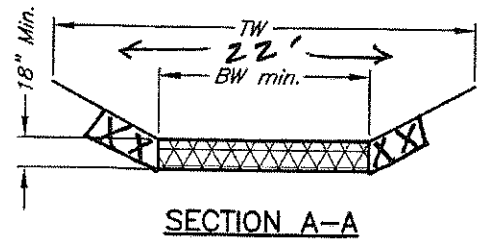
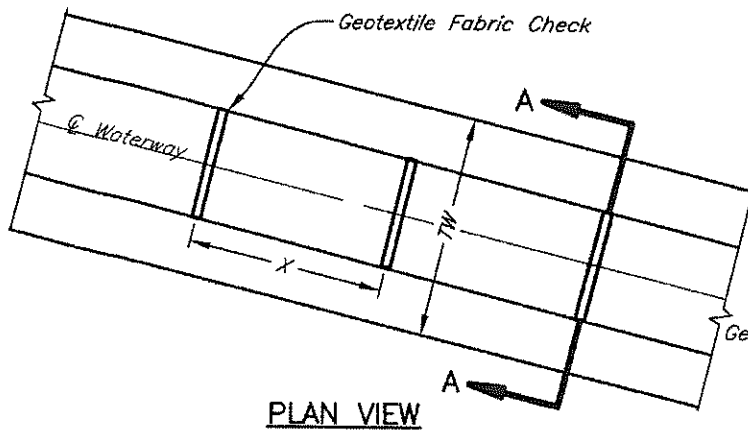
I would like to present an idea I have a facilitate the installation of fabric checks for erosion control on existing and new grassed waterway construction. From 2012-2014 in Dodge County the NRCS has designed and completed 4 grassed waterways and we are currently designing 3 new waterways. The NRCS in Fremont would like to install fabric checks in all new waterways to eliminate the initial erosion issues that occur during grass establishment. These projects only require 100 – 150 ft of fabric and buying a bulk 600 ft roll increases the landowners cost. I am requesting the NRD purchase this fabric material with the intent to sell to contractors. I would like to store this material at the NRCS Field Offices and provide to contractors and landowners as needed. Attached is the material and design specification for fabric checks. Installation is completed with a small trencher, backhoe or silt fence plow.

Thanks,

### Jeremiah Schutz

USDA Natural Resources Conservation Service  
2450 Business Park Drive | FREMONT, NE 68025  
Phone: (402) 721-8455 x- 110

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**Notes:**

1. Geotextile shall meet the IA-95 Geotextile Construction Specification: Type-Nonwoven, Class 3, 2, or 1.
2. Geotextile fabric checks shall be installed according to the TYPICAL SECTION shown or with a mechanical device (fabric plow) specifically designed for geotextile installation.
3. Compact the geotextile trench in six inch lifts, ensuring the top of the trench is level with the surrounding ground surface.

Geotextile Fabric Check Data							
Waterway Number	Start Station	End Station	Check Stations (X)	No. of Checks	Geotextile Length (Section A-A)	Total (lin.ft.)	Total (sq.yd.)
WW2	0+38	4+85	0+50	4	22'	88'	29.3
			1+41				
			2+41				
			3+41				
TOTALS:							

<u>Waterway Grade</u>	<u>Maximum Spacing between Checks</u>
0 to 1.5 percent	100 Feet
1.5 to 3.0 percent	75 Feet
Greater than 3 percent	50 Feet

NEBRASKA STANDARD DRAWING  
NE400-10-003  
Adapted from IA drawing nrcs142p2\_011585.dwg (1508)  
DATE Sept. 2009 Page 1 OF 1



TRAPEZOIDAL FILTER FABRIC CHECK  
Owner: Gary Mintken  
Location: Sec. 24 T. 18 N. R. 7 W. 10  
Township  
Dodge County, NE

Designed <u>J. Skute</u>	Date <u>11/4</u>	File Name
Drawn		Drawing Name
Checked <u>J. Ruff</u>	<u>11/5</u>	
Approved		Sheet 1 of 1

## MATERIAL SPECIFICATION

### 592. GEOTEXTILE

#### 1. SCOPE

This specification covers the quality of geotextiles.

#### 2. GENERAL REQUIREMENTS

Fibers (threads and yarns) used in the manufacture of geotextile shall consist of synthetic polymers composed of a minimum of 85 percent by weight polypropylenes, polyesters, polyamides, polyethylene, polyolefins, or polyvinylidene-chlorides. They shall be formed into a stable network of filaments or yarns retaining dimensional stability relative to each other. The geotextile shall be free of defects and conform to the physical requirements contained in Tables 1 and 2. The geotextile shall be free of any chemical treatment or coating that significantly reduces its porosity. Fibers shall contain stabilizers and/or inhibitors to enhance resistance to ultraviolet light.

Thread used for factory or field sewing shall be of contrasting color to the fabric and made of high strength polypropylene, polyester, or polyamide thread. Thread shall be as resistant to ultraviolet light as the geotextile being sewn.

#### 3. CLASSIFICATION

Geotextiles shall be classified based on the method used to place the threads or yarns forming the fabric. The geotextiles will be grouped into the types described below:

- a. Woven. Fabrics formed by the uniform and regular interweaving of the threads or yarns in two directions.

Woven fabrics shall be manufactured from monofilament yarn formed into a uniform pattern with distinct and measurable openings, retaining their position relative to each other. The edges of fabric shall be selvaged or otherwise finished to prevent the outer yarn from unraveling.

- b. Non-woven. Fabrics formed by a random placement of threads in a mat and bonded by heat-bonding, resin-bonding, or needle punching.

Non-woven fabrics shall be manufactured from individual fibers formed into a random pattern with distinct but variable small openings, retaining their position relative to each other when bonded by needle punching, heat, or resin bonding. The use of non-wovens, other than the needle punched geotextiles, is somewhat restricted (see Note 3 of Table 2).

#### 4. SAMPLING AND TESTING

The geotextile shall meet the specified requirements (Table 1 or 2) for the product style shown on the label. Product properties as listed in the latest edition of the "Specifiers Guide", Geotechnical Fabrics Report, ADDRESS: Industrial Fabrics Association International, 1801 County Road BW, Roseville, MN 55113-4061; and that represents minimum average roll values, will be acceptable documentation that the product style meets the requirements of these specifications.

For products that do not appear in the above directory, or do not have minimum average roll values listed, typical test data from the identified production run of the geotextile will be required for each of the specified tests (Table 1 or 2) as covered under clause AGAR 452.236-76.

#### 5. SHIPPING AND STORAGE

The geotextile shall be shipped/transported in rolls wrapped with a cover for protection from moisture, dust, dirt, debris, and ultraviolet light. The cover shall be maintained undisturbed to the maximum extent possible prior to placement.

Each roll of geotextile shall be labeled or tagged to clearly identify the brand, Class and the individual production run in accordance with ASTM D 4873.

TABLE 1. REQUIREMENTS FOR WOVEN GEOTEXTILES

Property	Test Method	Class I	Class II & III	Class IV
Tensile Strength (pounds) <u>1/</u>	ASTM D 4632 Grab Test	200 minimum in any principal direction	120 minimum in any principal direction	180 min. in any principal direction
Bursting Strength (psi) <u>1/</u>	ASTM D 3786 Diaphragm Tester	400 minimum	300 minimum	NA
Elongation at Failure (percent) <u>1/</u>	ASTM D 4632 Grab Test	<50	<50	<50
Puncture (pounds) <u>1/</u>	ASTM D 4833	90 minimum	60 minimum	60 minimum
Ultraviolet Light (percent residual tensile strength)	ASTM D 4355 150-hours exposure	70 minimum	70 minimum	70 minimum
Apparent Opening Size (AOS)	ASTM D 4751	As specified or a minimum # 100 <u>2/</u>	As specified or a minimum # 100 <u>2/</u>	As specified or minimum # 100 <u>2/</u>
Percent Open Area (percent)	CWO-02215-86	4.0 minimum	4.0 minimum	1.0 minimum
Permittivity sec <sup>-1</sup> min.	ASTM D 4491	0.10 minimum	0.10 minimum	0.10

1/ Minimum average roll value (weakest principal direction).

2/ U. S. Standard Sieve Size.

NOTE: CWO is a USACE reference.

TABLE 2. REQUIREMENTS FOR NON-WOVEN GEOTEXTILES

Property	Test Method	Class I	Class II	Class III	Class IV <u>3/</u>
Tensile Strength (pounds) <u>1/</u>	ASTM D 4632 Grab Test	180 minimum	120 minimum	90 minimum	115 min.
Bursting Strength (psi) <u>1/</u>	ASTM D 3786 Diaphragm Tester	320 minimum	210 minimum	180 minimum	NA
Elongation at Failure (percent) <u>1/</u>	ASTM D 4632	≥50	≥50	≥50	≥50
Puncture (pounds)	ASTM D 4833	80 minimum	60 minimum	40 minimum	40 minimum
Ultraviolet Light (percent residual tensile strength)	ASTM D 4355 150-hours exposure	70 minimum	70 minimum	70 minimum	70 minimum
Apparent Opening Size (AOS) <u>2/</u>	ASTM D 4751	As specified max. # 40 <u>2/</u>	As specified max. # 40 <u>2/</u>	As specified max. # 40 <u>2/</u>	As specified max. # 40
Permittivity sec <sup>-1</sup>	ASTM D 4491	0.70 minimum	0.70 minimum	0.70 minimum	0.10 min.

1/ Minimum average roll value (weakest principal direction)

2/ U. S. Standard Sieve Size.

3/ Heat-bonded or resin-bonded geotextile may be used for Class III and IV. They are particularly well suited for Class IV. Needle-punched geotextiles are required for all other classes.

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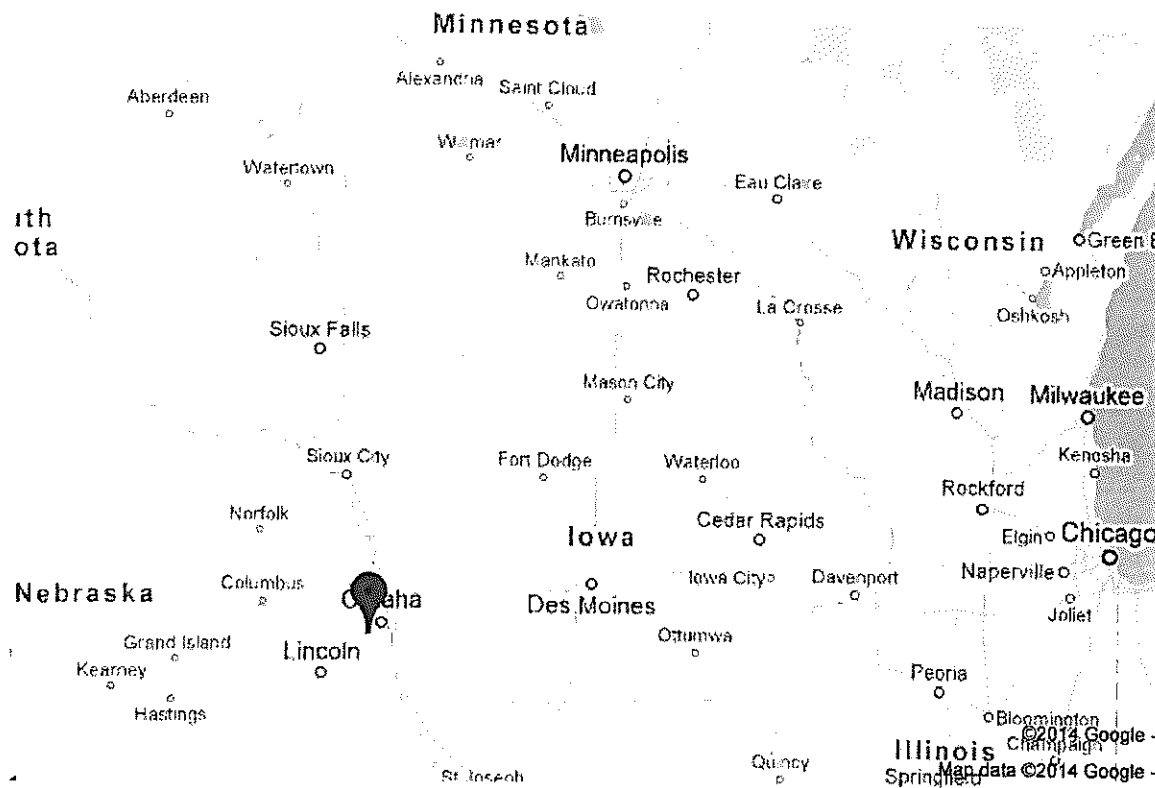
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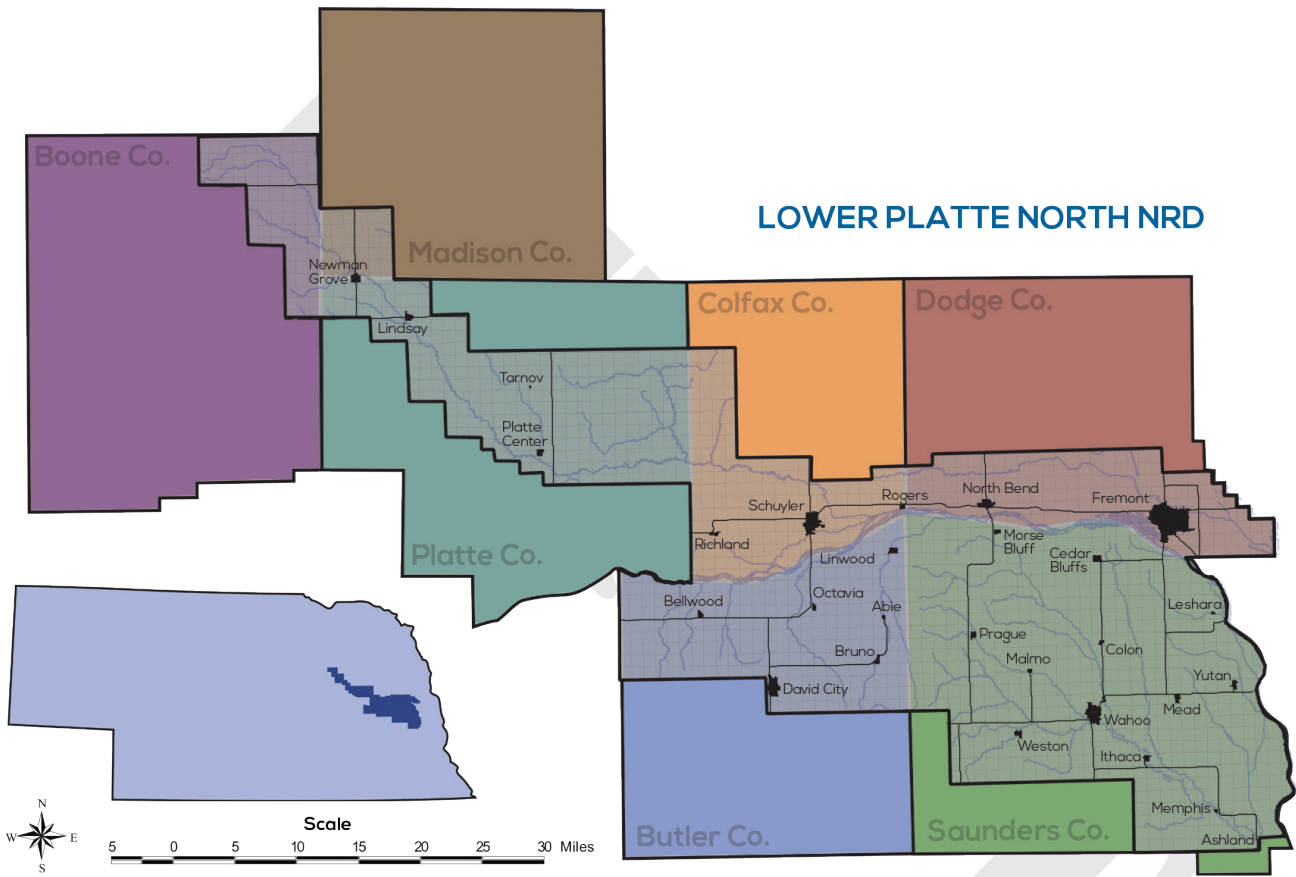
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Or contact us at:



# Lower Platte North Natural Resources District

Long Range Implementation Plan  
Fiscal Year 2015



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# LOWER PLATTE NORTH NRD

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## LONG RANGE IMPLEMENTATION PLAN

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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 2013 (July 1, 2013 to June 30, 2014) and planned District activities for fiscal year 2015 (July 1, 2014 to June 30, 2015). There are also objectives for a five-year period from fiscal years 2016 to 2020. The plan serves as an implementation tool of the district's Master Plan.

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### Authority and Responsibilities

---

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

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

---

### Description of the District

---

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, Loeske 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 61,000, 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 2015 tax levy is 4.7231 cents per \$100 valuation.

---

### Governing Body

---

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. Also, 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.



## LOWER PLATTE RIVER BASIN

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 top priority at the LPNNRD, since approximately 72 miles of the river flow directly through or border the district.

---

### FY 2014 Platte River Basin Activities

---

#### Platte River Alliance

The Lower Platte River Corridor Alliance entered its twentieth year in FY 15. The Alliance members are the Lower Platte North NRD, Lower Platte South NRD, and several state entities dedicated to working with people to protect the long-term vitality of the lower Platte River Corridor. One primary focus has been on building a coalition including counties, cities, businesses and individuals concerned with the preservation and proper use of the river.

The Alliance is primarily concerned with the lower portion of the Platte River. This stretch of the river runs from Columbus to Plattsmouth. It winds past or through towns and cities such as Bellwood, Schuyler, North Bend, Fremont, Waterloo and Louisville. In FY 14, the Alliance was involved with many activities and projects that included: Environmental Suitability Assessment, Cumulative Impact Study, River Obstruction Removal, hosted a PRCA Summit, River Tours and educational events.

#### Ice Jam Agreement

In 1994, the LPNNRD entered into an agreement with two other NRDs and four counties to more effectively deal with ice jams and their resulting flood damages along the Lower Platte River. This area of concern is primarily south of the city limits of Fremont, Nebraska. Besides the Lower Platte North NRD, other partners include the Pappio-Missouri River NRD, Lower Platte South NRD, and Cass, Douglas, Sarpy and Saunders Counties. This group has pooled funds to use explosives, when needed, to remove ice jams in a timely manner.

During the winter of 2013-14, no ice jams caused any adverse flooding.

#### 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 FY 14, this program provided \$8,228 to 3 cooperators.

---

### FY 2015 Platte River Basin Objectives

---

- Administer \$10,000 in the Rock & Jetty Program to assist with priority stream bank stabilization for a potential 40 cooperators. This includes assisting cooperators with meeting the regulations of the Clean Water Act and 404 permits.
- Participate with LPSNRD, PMRNRD and other partners and provide up to \$150,000 for the Western Sarpy/Clear Creek Levee Project and continue work with Nebraska's Delegation for obtaining additional federal funding to complete the Clear Creek Levee portion of the project.
- Assist the City of Schuyler with the construction of the Shell Creek Levee Project (Army COE 205 Project).
- Provide leadership assistance to the City of Fremont to continue moving forward with exploring flood control solutions as a result of the completed Army COE 205 feasibility study.
- Support the Lower Platte Weed Management Area financially and technically in controlling noxious weeds.
- Support the Nebraska Land Trust in acquiring easements for the protection and preservation of quality lands.
- Assist the City of Schuyler to obtain federal funding for completing a levee system to reduce flooding and economic losses from the Platte River.

---

### FY 2016-2020 Long Range Platte River Basin Objectives

---

- Continue to support the Platte River Corridor Alliance and continue to seek available federal and state funds to assist with Alliance objectives.
- Continue to budget cost-share funds for priority bank stabilization along the Platte and Elkhorn rivers and other perennial streams in the district.
- 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.

- 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 Fremont to study potential structural and nonstructural measures to reduce flooding and economic losses on the Lower Platte River.
- Assist the City of Schuyler to obtain federal funding for completing a levee system to reduce flooding and economic losses from the Platte River.
- Encourage cities and counties to join the Lower Platte River Corridor Alliance and initiate floodplain management planning to promote wise floodplain development.
- Assist dike and drainage districts to certify and properly maintain levy projects.
- Budget annually, if in need, to support the Lower Platte Weed Management group in controlling noxious weeds.





One of the Lower Platte North NRD's major responsibilities is to conserve and protect our ground and surface water supplies. 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 2014 Ground & Surface Water Activities

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#### Ground Water Management Area

The LPNDRD implemented a District-wide Ground Water Management Area (GWMA) on January 1, 1997, to address both water quality and quantity concerns. Data gathered since 1985 indicates where ground water quality conditions have deteriorated beyond those established as health standards, such as nitrate nitrogen. On that date, ground water quality Phase I (education) regulations in effect for the entire District. One primary rule in Phase I requires certification for fertilizer use. The District has developed a ground water program emphasizing a protection-based approach rather than a reactive, corrective approach.

As of 2011, the District has two Phase 2 groundwater quality control areas, those being Bellwood and Richland/Schuyler. The Bellwood Phase 2 Area was established in 2003. This area covers approximately 30 square miles in the western portion of the Platte Valley in Butler County and includes the town of Bellwood. The Richland/Schuyler Phase 2 Area was established in 2004. This area covers approximately 55 square miles in the Platte Valley of Colfax County and includes the towns of Richland and Schuyler. Elevated nitrate-nitrogen levels continue to be the major concern in both Phase 2 areas.

Due to the drought from 2000 to 2006 and heavy water demand, several of the District's aquifers declined to the point where several wells have reached or exceeded their trigger levels. If more than 50% of the subarea, as measured in our GWEL network wells reach those trigger levels then a management area maybe declared. Due to three consecutive years (2004, 2005 & 2006) of groundwater declines in the Butler County Uplands aquifer, the Lower Platte North NRD declared a "Level One Management Area" for the David City area effective in 2007. Due to changes in the District's rules and regulations the remainder of the district has also been declared a Level One management area. By the spring of 2009, the David City aquifer had recovered for two consecutive spring readings, therefore the

District has changed the status of the David City subarea on October 8, 2009 from a potential Level 2 to a Level 1 ground water management area.

As 2007 progressed, the district noted increased ground water demands for irrigation, due in part to good commodity prices. Expansion in the Uplands portion of Saunders and Butler Counties raised concerns that small pocket aquifers in the glaciated areas may not be able to accommodate even one or two additional high capacity wells. On May 14, 2007 the Board of Directors declared these areas as a 'Temporary Stay Management Area.' A second Temporary Stay Management Area was declared on November 12, 2007. The District completed a Subarea Delineation Study to identify aquifer subareas and to help determine if the two consecutive stays should be made permanent in all or portions of the Uplands or be allowed to expire. In 2008, the LPNDRD revised its rules and regulations to take into account glaciated portions of our District, effects of the recent drought and new information from our Subarea Delineation Study. This revision included declaring a Level One District-wide management area for ground water quantity, different classes of water well permits based on annual usage, and adoption of Stay Management Areas. The temporary stay became a Permanent Stay Management Area in May 2008 for the Swedeburg, Prague, Yutan, and Yutan South subareas. Other subareas are being monitored and may be placed in future Stay Management Areas if needed.

In August of 2008, our office received four phone calls from domestic well owners all in or adjacent to the Platte River Uplands subarea northwest of Fremont, that they were running out of water. Following a survey of all well owners in the area, this subarea was declared a temporary Stay Management Area on December 8, 2008. A second temporary stay was declared on June 6, 2009 and was under review to make this a permanent stay or let the temporary stay lapse. On December 3, 2009 this area was declared a permanent Stay Management Area.

In December 2008, the Nebraska Department of Natural Resources (NDNR) declared the Lower Platte River Basin as "fully appropriated". This designation would mean that no new additional irrigation acres would be allowed in the hydrologically connected area unless offsets were provided. After an intense review of the model that NDNR used, it was discovered that there were errors that lead to this declaration. NDNR reversed their preliminary decision in April 2009 and declared that the basin was not fully appropriated at this time. With the passage of LB 483, the District along with other NRD's completed an

update of our rules and regulations, which were approved by NDNR on August 21, 2009, to help avoid becoming fully appropriated in future years. The District will be able to expand new irrigated acres by an additional 2,500 acres per year for four years in this hydrologically connected area. To assist with providing the best science for future fully appropriated decisions, the District has teamed with NDNR, UNL, and neighboring NRD's to complete special studies to provide assessments and modeling to provide the best information in determining groundwater effects to the Lower Platte River. These studies include Elkhorn Loup Model, The Eastern Nebraska Water Resources Assessment, and the Platte River Modeling Study. From October 2009 to October 2012 the District has issued 10,000 new irrigated acres in the hydrologically connected or limited water development area (LDA) of the District, as allowed under LB 483. In addition, the District has agreed to limit expansion to 2,500 acres in the LDA for future years. These acres for 2013 were awarded on October 15, 2012 and will be issued in January 2013. The drought of 2012 has also intensified the interest in irrigation and we received twice as many requests for new irrigated acres than could be granted by October 15, 2012. The drought of 2012 also intensified the number of well interference complaints. These were recorded and mapped to learn more about the long term sustainability of area aquifers and aid future management decisions.

As of December 18, 2012, the District had 4,445 active registered irrigation wells and 165 wells in our GWEL network. The Metropolitan Utilities District (MUD) well field became operational in the summer of 2008. The MUD well field has 26 high capacity municipal wells in Saunders County (LPNNRD) and 16 municipal wells in Douglas County (PMRNRD). This well field has a Corps of Engineers 404 permit to produce a maximum annual average of 52 Million Gallons per Day (MGD) and a maximum daily yield of 104 MGD. Of the four bio-fuels plants planned for our District, none of them are currently in operation.

At the July 2011 Board meeting, the LPNNRD Directors voted to start the process for a voluntary Integrated Water Management Plan (V-IMP). In the fall of that year, LPSNRD, LPNNRD, and Papio-Missouri River NRD met to discuss working together to develop an IMP for the Lower Platte River basin. LPSNRD has already started the process, while the Board for Papio-Missouri River NRD has not yet voted on the proposal. The four other NRD's in the basin (LENRD, UENRD, LLNRD, and ULNRD) are still undecided.

For 2012 all seven NRD's have agreed to develop a Lower Platte Basin plan, but only LPN, LPS, Papio, and LE NRDs have also decided to develop an IMP. All Districts

are presently drafting the cooperative agreement for the Basin Plan. The summer of 2012 also turned out to be a strong drought year with high temperatures and very light rain. Many parts of our District during the month of July received no rain at all. Starting in early July the District started receiving numerous well interference complaints (~35) that continued into early September. Usually we receive no complaints over the course of the summer. These complaints were scattered over the District, except no complaints were received from the Todd Valley. The only limitation in the Todd Valley was for the community of Mead which was on voluntary water restrictions due to limitations of their facilities, not lack of water.

The year 2013 proved to be a very active year concerning ground water management in LPNNRD and the entire Lower Platte River basin. The year started with cool temperatures and timely rains into the summer months. The exception was mid July and late August with temperatures in the 90's and low 100's and no rain. In late August we started receiving several complaints from the Bruno to Brainard area within LPNNRD and LPSNRD. This area has confined aquifers existing in many different layers and when area high capacity wells all run at the same time this can cause large pressure drops in these aquifers. During the fall and winter of 2013 the LPNNRD was looking at modifications to our ground water management Rules to address more of these in-season declines. The District is also working with LENRD on 'Request for Proposals' from consulting firms to help develop our Voluntary Integrated Water Management Plan in conjunction with DNR, with the goal to finish this Plan by the summer of 2015. The seven Lower Platte Basin NRD's are also working on a Basin-wide Plan with the first step to develop Goals and Objectives. This work began in earnest during the fall of 2013.

In February 2014, the Board approved our updated GWMA Rules and Regulations that primarily addressed the 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. Contact was awarded to Olsson Associates for development of a Voluntary Integrated Water Management Plan (V-IMP) for the LPNNRD to direct and organize Stakeholder and Coordination meetings and provide updates to the LPNNRD Board of Directors. Deadline for completion for this contract and completion of this phase of the V-IMP is set for June 1, 2015. The contract for the Lower Platte River Basin Coordination Plan (LPRBC) was awarded to HDR in early summer 2014 to develop a basin-wide approach to managing the water. Seven NRD's and DNR are involved in this process

and three committees were formed: Board, Managerial, and Technical.

Current rules and regulations of the GWMA are available at the LPNNRD headquarters in Wahoo and via the district website at [lpnnrd.org](http://lpnnrd.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. Due to current staff limitations the District is focusing on the State-wide ground water quality network, where staff sample the same 53 wells each summer to determine long term trends for nitrate-nitrogen. This information is provided to the Department of Environmental Quality and the Department in turn provides this to the Nebraska Legislature on an annual basis.

Samples were collected from 52 of 53 sites in 2013 (~ one sample per township).

Year	Nitrate-Nitrogen Range	% Nitrate-nitrogen 0-8.0 ppm	% Nitrate nitrogen 8.01-10.0 ppm	% Nitrate nitorgen > 10 ppm
2013	0 - 25.5 ppm	78.9% (41 of 52)	11.5% (6 of 52)	9.6% (5 of 52)

Samples for pesticide analysis were collected from eight of these sites (15%). The pesticide analysis was for a suite of 25 constituents. A pesticide was detected at three sites and a plasticizer at one. The detections were at a very low level, less than the Maximum Contaminant Level (MCL).

### Ground Water Energy Level Monitoring Network

One of the responsibilities of the NRDs in the State is to monitor fluctuations in ground water 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 ground water levels throughout the District. As of November 2013, the LPNNRD had 168 wells in the ground water 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 ground water 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 25 subareas within the District, 17 subareas are currently at Level 1 management, while the other 8 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.

Due to three consecutive years (2004–2006) of ground-water declines in the Butler County Uplands aquifer, the Lower Platte North NRD declared a “Level Management Area” for the David City area effective Jan. 15, 2007. This was the district’s first management area for ground water quantity. Changes in the district’s rules and regulations in 2008 have placed the entire District in a Level One management area. The David City subarea ground water levels have recovered above its designated trigger levels for two consecutive years (2008–2009), therefore this subarea was not placed into a Level Two management area, but reverted back to a Level One.

Subsequent years (2007 to 2011) showed adequate rainfall across the entire District, which allowed recharge to all of the District’s aquifers. The spring readings of 2012 indicated that levels had recovered almost to the pre-drought conditions of 2000 to 2006. The drought of 2012 seem to come on fast and strong starting in mid June. Daily temperatures in the mid to upper 90’s with very little or no rain caused all water users to pump more frequently in an effort to keep up with crop and other water demands. As a consequence the 2012 fall readings showed a dramatic decline in ground water levels, especially in the confined aquifers of the Shell Creek watershed and the Uplands of Butler and Saunders Counties. Aquifers recharge and/or pressure equalize at different rates, therefore it will not be until the spring readings of 2013 that a true assessment of aquifer levels will be possible. The water levels in 166 wells were measured in the spring of 2013. Of the 166 wells measured, one well showed an increase, three wells were unchanged, and 162 wells decreased. Hydrographs in several of our confined aquifers have shown a one year decline that is equivalent to several years of decline noted in the previous drought of 2000 to 2006.

Spring readings in 2014 showed some improvement over the spring readings from 2013. In part this was due to near normal annual rainfall in 2013 and the flash flooding that occurred near Boulder, Colorado on September 12, 2013. While this flooding was very detrimental in Colorado, it had some benefits to Nebraska. Minor flooding on the Platte River occurred from the Colorado border down to Kearney, but from Grand Island to the mouth of the Platte River at Plattsmouth the river remained in its banks. Nebraska diverted some of the flood waters into the Tri-County Canal to recharge reservoirs that were depleted due to the drought of 2012. Other canal systems did the same. The LPNNRD also believes this helped to recharge several of our aquifers near the Platte River that are in hydrologic connection. The spring readings for

2014 had the following subareas at the second consecutive year were 50% or more of the subarea is below its Level 2 trigger level: Fremont East, Octavia, David City, and Prague subareas.

Monitoring wells with continuous reading data-loggers also showed mid-summer declines in the uplands of Platte-Colfax SQS. An additional monitoring well with a data-logger was also installed in 2013 in the Butler-Saunders SQS.

The District has also established, with the help of Lincoln Water System, Metropolitan Utilities District of Omaha, US Geological Survey, US Army Corps of Engineers, University of Nebraska, Lower Platte South NRD, and Saunders County, a network of monitoring wells to track changes in ground water levels in the Wann Basin area, which is in the Platte River valley north of Ashland. This area has two major municipal well fields and the ongoing cleanup efforts of a former ordnance plant south of Mead, Nebraska. This network was established in the fall of 2003. Readings are taken three times per year in late March, late August, and late October.

### Chemigation

Chemigation is the practice of applying fertilizers or other agricultural chemicals to land or crops through an irrigation system. To protect Nebraska's ground water from possible back-flow of chemicals into irrigation wells, the Legislature enacted LB 284, the Chemigation Act in the 1980s. The Act requires the operator of a chemigation system to obtain a permit prior to use. To obtain this permit, 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 in the District with each recent successive year setting a new record. In 2014 heavy rains in June caused a large increase in the number of chemigation requests due to fertilizer being washed out of the root zone.

Chemigation Permits	Total	Renewal	New
November 2013	405	377	28
November 2014	465	381	84

In 2011 the Legislature though LB28 proposed some changes to Title 195 – the Chemigation Regulations. Most of these changes were simple house-keeping changes, except for the addition of rules for sub-surface drip irrigation. Maintenance of sub-surface drip irrigation systems is exempt from the chemigation permits provided 1) the system has an inline check valve and 2) the system has an Underground Injection Control Permit. This is only applicable for one maintenance event each year.

For 2014 the Legislature approved LB272 for additional changes to Title 195 that would let the individual NRD's set their own chemigation fees. At the October 13, 2014 Board meeting the future chemigation fees for LPNNRD will be: \$60 for a New permit, \$30 for a Renewal permit, and \$250 for a Emergency permit.

### Decommissioned (Abandoned) Wells

Decommissioned (Abandoned) wells are a health and safety concern and have been ruled as illegal by the Nebraska Legislature. It is estimated that there are approximately one-thousand improperly abandoned wells within the Lower Platte North Natural Resources District boundaries. 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.

Since 1992 the district has administered local and state cost-share dollars to decommission 598 wells. During FY13-14, 36 wells were plugged with this program. The district will administer approximately \$15,000 of state and local funds to plug additional wells during the current fiscal year.

### Precipitation Gauging Network

The Lower Platte North NRD has a District-wide precipitation gauging network, which consists of six sites maintained by cooperation landowners. Precipitation information is useful when merged with other District water programs including: ground water quality sampling, ground water energy levels, and surface water/ground water correlations, among others.

Our normal yearly precipitation is 28 inches per year and for 2010, some parts of the District were over that amount and others less. Upper Shell Creek had the least rainfall with 26 inches, while the Prague area had the most with over 33 inches.

In March 2011 the forecast for the rest of year appeared that we maybe coming back into a dry cycle. The District average precipitation for 2011 was 27.0 inches or slightly under our normal amount of 28.0 inches. Most of the precipitation came during the months of April through August, with the fall again being very dry as in 2010.

For 2012 the spring months through May were slightly less than normal precipitation. However, June through

the rest of the summer were very dry and temperatures in the mid to upper 90's almost every day. In the Fall of 2012 most of Nebraska is listed as extreme to exceptional drought conditions by NOAA.

For 2013 the year started with cool temperatures and timely rains into the summer months. The exception was mid July and late August with temperatures in the 90's and low 100's and no rain. The US Drought Monitor website has our District as 'Abnormally Dry'.

For 2014 the spring was relatively dry but in June the District received substantial amounts of rain in excess of 10 inches. Wahoo itself received 10 inches of rain in a one week period, which resulted in lowland flooding. In late August to mid September the southern part of our District again received substantial rainfall, but this was not reflected in the counties of Platte, Madison, and Boone of our District. The US Drought Monitor website has our District (and most of Nebraska) as no longer in drought.

### 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 Water Resources. Wells that are not registered are illegal and should be registered as soon as possible. It is estimated that 15% of the total irrigation wells in the District are not registered. A breakdown by decade from 1970 to present shows the growth of active irrigation wells in the District.

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

Date	Number of Active Irrigation Wells in the District
December 31, 1970	1,428
December 31, 1980	2,756
December 31, 1990	3,241
December 31, 2000	3,686
December 31, 2010	4,307
November 12, 2014	4,579

### 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 will require the owner of that well to install a flow meter and report the total water pumped from the well during the calendar year to the LPNNRD by January 31 of the following year. This reporting requirement is effective the year the well is drilled and for each year thereafter, until the well is decommissioned. With the onset of the drought in 2012,

the number of requests for new well permits across the District has increased dramatically, especially in the Normal Development Area where further development is allowed. Some of these are in areas where the NRD has received well interference complaints. For 2012, the District issued 78 well permits with 59 new irrigation wells and 16 replacement irrigation wells.

### Special Studies

#### *Elkhorn Loup Model*

The LPNNRD is a partner in the Elkhorn Loup Model Study, as this basin overlaps and covers portions of upper Shell Creek. 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. The study will assist the Nebraska Department of Natural Resources and the Natural Resources Districts within the study area by characterizing the groundwater system and by providing a regional groundwater flow model that could be used to evaluate surface water/groundwater interaction in the study area. The study will also provide data and interpretations that could serve as the basis for future management of the regional water resources. This study is well underway and some of the reports have been completed and are available online at <http://ne.water.usgs.gov/projects/elm.html>. The ELM model is currently in Phase 3 with emphasis on developing a two layer model to more accurately reflect observed changes in ground water levels.

In early 2011, the ELM project learned that funding from IWMPPF was being reduced due to budget cuts from DNR and the Nebraska Legislature. Further test holes and geophysical work was delayed or eliminated. At subsequent technical meetings the group discussed which scenarios had the highest priority to run by the model once it is completed.

In 2013 the USGS converted the ground water model from a one layer to a two layer model and has now been completed. For 2014 USGS is training NRD personnel on the use of GIS to generate maps using batch files and the completed ELM MODFLOW model.

#### *Eastern Nebraska Water Resources Assessment*

LPNNRD is a partner in the Eastern Nebraska Water Resources Assessment study. In order to better understand and manage this resource, several Natural Resources Districts, State and Federal Agencies have formed the Eastern Nebraska Water Resources Assessment group (ENWRA) and are proposing to do a geologic framework study at three locations. These pilot studies will evaluate different

methods and techniques to characterize and map the subsurface. One of these methods will use Helicopter Electromagnetic (HEM) surveys, which is a geophysical method that can quickly map the subsurface geology over a fairly large area. HEM has been used successfully in other parts of the United States. A separate study funded by the Nebraska Department of Natural Resources will look at other geophysical methods to test their effectiveness, such as Direct Current Resistivity survey. Information from that study will be incorporated into this project. Test holes and monitoring wells will also be installed to verify these different geophysical methods and will be used as long-term ground water quantity and quality monitoring sites in the future. If successful, geophysical techniques could provide a rapid assessment technique to characterize other glaciated areas of eastern Nebraska. This project will lay the groundwork for future studies (including ground water modeling efforts) and improving on existing water management plans.

In the fifth year of the study (2011), the focus shifted to publication of existing C&SD data and updating of the DNR database. C&SD has numerous drilling logs and studies that need to be digitized for publication. Also publication of test results for the three study areas and evaluation of the HEM and Time Domain geophysical methods are being developed. These reports were presented in the spring of 2011.

The latest ENWRA study is looking to fly long Airborne Electromagnetic (AEM) transects over eastern Nebraska to better model the geology of the glaciated portion of the State. ENWRA coordinator Katie Cameron has applied to the Nebraska Environmental Trust (NET) for \$198,000 to help fund the study, while ENWRA will contribute \$381,000 and NDNR will contribute \$500,000. A new AEM method will be used called SkyTEM 508 which is expected to see to a depth of 800 to 1,200 feet below the surface. This will provide information on deep geologic formations, such as aquifers and bedrock, that were previously little known.

#### *Platte River Modeling Study*

The University of Nebraska is conducting this ground water modeling effort of the Platte River in the LPNNRD. The purpose of this project is to develop a regional groundwater flow model that will be used to analyze the interactions of aquifer-stream-well systems and to determine the 10-50 boundary line for wells that are hydrologically connected to rivers and streams. The model will focus on the analysis of wells in the following counties: Saunders, Butler, Colfax, and Dodge, which are administered by the Lower Platte North NRD. This project consists of two phases: phase I – development of model framework; phase

II – hydrologic data collection and groundwater-stream model development.

In 2008 & 2009, phase 1 of the project were generally completed:

- Aquifer tests (pumping and recovery) were conducted at two sites – south of the Platte River [Butler County] northwest of Octavia, and north of the Platte River [Colfax County] northeast of Schuyler.
- Collected geo-probe samples (soil cores and electro-conductivity) from sandbars along the banks of the Platte River at ten locations – one in Colfax County, three in Butler County, two in Dodge County, and four in Saunders County. Two more sites still need to be done, but high flows in the Platte River have caused delays.
- Permeameter testing at seven sites in the Platte River.

In the fall of 2010, Dr. Chen (chief investigator) reports that calibration of the model is in progress and hopes to begin actual simulations in the spring of 2011. Grant funding for this project comes from the Nebraska Environmental Trust.

For 2011, Dr. Chen asked for a six month extension to complete the model by the end of the year. This was completed and Dr. Chen presented that information in 2012. The hydrologically connected areas to the Platte River seemed quite extensive south of the river, but with the completion of the Subarea Delineation Study this information was forwarded to Dr. Chen. He has revisited the model and submitted a second iteration in September 2012. The model was completed in early 2013.

#### *Eastern Nebraska HEM Aquifer Mapping (Swedeburg Area)*

Grant funding for this project comes from the Nebraska Environmental Trust. In April 2009 portions of the Swedeburg subarea aquifers were mapped using electromagnetic sensors mounted on a helicopter (HEM). This was followed in October 2010 with the installation of three test holes by C&SD to ground truth the HEM data. As an additional measure to assist with ground truthing, LPNNRD GPS selected irrigation and domestic wells in this same area that currently do not have footage or lat. – long. coordinates for their well logs. In the fall of 2011, three additional test holes were drilled by C&SD which fulfilled the contract with the University. Dana Divine (Project Coordinator) gave a presentation on the HEM data at the September 28, 2011 Water Committee, but due to limitations in the NET grant, the comparison of the HEM data with the test hole data had to be cut. Staff will review the cost of ground truthing the HEM data for further discussion by the Board.

For 2012, the correlation of the HEM data to the test holes has been completed and Dana Divine gave a pre-

sentation of those results at the December 2012 Board meeting. The HEM worked well to define upper resistive materials (sands and gravels) but had mixed results at deeper formations greater than 80 feet deep. Divine also presented information contrasting an estimate of the thickness of the upper resistive unit vs. the estimated saturated thickness of this same formation. A final report was delivered to LPNNRD in February 2013.

#### *Farm Process Package (FMP) of MODFLOW Groundwater Modeling Software*

The Farm Process Package is an application to the MODFLOW software program that looks at consumptive use of water based on precipitation, crop type, and maturity of crop to assist in future management decisions. The FMP can be an important new refinement to MODFLOW to allow the NRD's to more accurately account for water use by irrigated agriculture. This is a cooperative study between the Papio-Missouri River NRD, LPNNRD, and LPSNRD and the USGS who did the actual modeling for this project. The study area included land within the three NRD's and focused primarily on the Todd Valley and the Platte River Valley north of Ashland, Nebraska. This two year study ran from 2010 to 2011 with a possible report to be written in 2012, if additional funding becomes available.

#### **Certifying Acres**

In July 2009, the District signed a contract with GIS workshop to develop a GIS database and obtain county assessor records as the preliminary step to certifying irrigated acres. Using those assessor records LPNNRD staff in early 2010 mailed out letters to landowners in Madison County to verify which fields are irrigated or not. As of September 2010 mass mailings to landowners in Butler, Boone, and Platte counties have also been completed. The assessor records in Saunders and Dodge counties lack an active GIS database, which means obtaining accurate records will be more of a challenge. FSA records also have been shown to be of limited use in Saunders and Dodge as well because for FSA procedures the field is irrigated or not. They don't differentiate for the pivot corners. Therefore, the LPNNRD has gone to using its own records on aerial overflight information to determine if corners are being irrigated. As of November 2014, staff have sent letters to landowners in our final County, Dodge. When certifying acres has been completed, this will provide a true inventory of the irrigation needs in the District, which will be an important part for future ground water management and planning.

#### **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 ground water 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.

The Soils cleanup was completed in 1998. Sixteen thousand tons of soil contaminated with RDX (an explosive residue) were incinerated. As part of the cleanup efforts for OU3, the COE demolished the load line buildings and storage bunkers in 1998. Approximately 900 cubic yards of soil contamination (antimony may be from a former paint shop) was also removed near Load Line 4 in 2007. Other significant developments included the continued search for the Mustard Gas Agent from Offutt Air Force, which was disposed at the landfill area below the NRD reservoir.

The cleanup of the ground water (OU2) involved drilling 11 wells at the leading edge of the current contaminant plumes to halt their further advance. Water from these wells is treated and then discharged to Wahoo Creek or Clear Creek, or used for beneficial reuse. The time frame for OU2 cleanup is estimated at 90 to 140 years, extracting up to approximately 3.7 million gallons of water per day. More recent modeling efforts indicate that the majority of the contaminants could be cleaned up within 30 years. The containment wells and constructed water treatment plant were completed in 2002. Additional containment and monitoring wells plus additional treatment plants have since been established to assist with the cleanup effort and to contain the contaminant plumes. Beneficial reuse of the clean up water is currently being used by the University of Nebraska-Lincoln Agricultural Research and Development Center (ARDC) south of Mead, and by two landowner/producers for irrigation, livestock water, and for filling a pond.

The groundwater cleanup has involved modeling efforts to determine the impact of the proposed Omaha Metropolitan Utilities District (MUD) (located in the Platte Valley, two and a half miles northeast of the edge of one of the contaminant plumes) on containment of the contaminant plumes. The COE Omaha office approved a construction permit for MUD in 2003 for this well field and operations began in 2008. The LPNNRD has and will continue to play a vital role in working with the Army COE, MUD and area landowners to help insure containment of the

contaminant plumes and eventual cleanup without severe impact to the underground aquifer supplying the area.

At a public meeting on October 19, 2011 the Army COE had the following update:

- TCE total removed = 19,690 pounds from the ground water by the four treatment plants.
- RDX removed by the main treatment plant = 211 pounds
- 2010 ground water model evaluation has modified the use of some containment wells. EW-2, EW-5, EW-8, EW-10, and EW-13 have been turned off since these were causing the contaminate plumes to move further south than expected. New wells FEW-11, FEW-14, FEW-15, EW-16 are now in operation and better placed to contain the contaminate plumes.
- MW-116 on two sampling events had 'detects' of TCE and a new irrigation well in the area is the likely influence of these results. Pump test done on EW-1 shows the capture zones of this well will normally keep this TCE in containment. In the future the COE will likely pump EW-1 harder during the irrigation season to compensate for this irrigation well.

Major focus on the cleanup efforts during 2012 were: the drop in pressure in the discharge line to Wahoo Creek, since this will affected the long term beneficial use of the cleanup water for irrigation; a plan to inject the cleanup water instead of discharge it, but a ground water model stills needs to be developed to determine the best hydrologic sites that could help speed up the cleanup efforts; HEM flights were conducted by the COE in early October 2012 to further evaluate the geology of the area that will assist in cleanup efforts; the COE is recommending 'No Further Action for OU3', which deals with landfills and other burial sites, as well as, miscellaneous clean-up efforts.

Some of the highlights for 2013 included:

- Three extraction wells have been shut off (EW-3, EW-6, and EW-16) since the cleanup goal of less than 2 ppb of RDX has been obtained at these sites since 2009. FEW-14 will be pumped at a slightly higher rate of 250 pgm to keep the leading edge of LL3 plume in containment. A new extraction well (EW-17) was installed and will pump at 275 gpm. This well will supplement EW-12 and both are designed to contain the LL1 plume. With EW-17, nine containment wells are running.
- At Pilot Study site 1 (PTA-1) a zero valent iron barrier was installed in the aquifer to chemically treat the TCE and change it to a more harmless form. Lactic acid is also being injected into the aquifer as

a carbon source to stimulate bacterial growth that will also break down the TCE.

- At Pilot Study site 2 (PTA-2) sodium acetate is being injected into the aquifer to help break down RDX. Both studies are scheduled to take 14 months. If these methods work this could be up scaled to large areas to help shorten the clean up time.
- Results from the HEM flights (that were flown in October 2012) were completed in the fall of 2013. Buried power lines interfered with the study and only limited new geologic information was obtained.
- The COE has announced that the Restoration Advisory Board (RAB) will be dissolved, but that the quarterly public informational meetings will continue. It has been three or four years since the last RAB meeting was held.
- Monitoring well MW-116 had a detection for TCE above the cleanup goals during the August 2012 sampling event but during the March, May, and November 2012 sampling events TCE was below the cleanup goals. This also happened in 2011 and the likely cause was heavy pumping of a nearby irrigation well. The COE has adjusted their pumping rate of a nearby containment well to compensate. MW-116 is at the lower end of the Atlas Missile Area Plume (LL-4 plume).
- A new contractor has been hired by the USACE to work on the cleanup efforts. HydroGeologic (HGL) will replace the current contractor of Environmental Chemical Corporation (ECC) who have worked 10 years at the site.

Updates for 2014 include:

- The 2013 Containment Evaluation has been completed with the recommendation to install an additional extraction well (EW-18) at the leading edge of the LL2 plume that will be placed between EW-7 and EW-9. To date several extraction (EW wells) and focussed extraction wells (FEW) have been shut off, primarily due to these wells pulling the contaminant plumes away from other extraction wells. The wells shut down are EW-8 (LL1), EW-10 (LL2), EW-6, EW-5, EW-16, EW-3, (all LL3), EW-2 (LL4). Extraction wells still operating include EW-12 and EW-17 (LL1), EW-9 and EW-7 (LL2), FEW-14 and EW-4 (LL3), FEW-15 and EW-1R (LL4).
- The highest RDX (explosives) concentrations are in LL2, while the highest TCE concentrations are in LL1 and LL4.

- The second 5 Year review has been completed. This is required by the Corps to take a fresh look at the clean-up efforts and evaluate any new technology that could shorten the cleanup time or cut cost.
- On site UV treatment systems have been installed on several extraction wells (EW-4, 7 and 9, FEW-11 and 14) to the point that the main treatment plant is no longer needed and therefore has been shutdown since April 30, 2014. Reuse of the cleanup water is still available on the existing discharge lines, but users have had to install booster pumps to increase the pressure for use in center pivots.
- Public availability meetings have gone from quarterly to semi-annual.
- The Pilot Studies for in-situ treatment within the aquifer for RDX and TCE are still on-going.

### **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 town of Lindsay is experiencing higher nitrate levels in some of their municipal wells and in 2010 applied to DEQ to develop a wellhead protection area for the town. If a wellhead protection area is established by the community, the LPNNRD may become involved in sampling area wells and the possible establishment of a Phase 2 or 3 ground water management area. No new updates for 2014.

### **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. Both systems are designed to serve rural customers along each service route. 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. In FY 2014, LPNNRD continued involvement in a joint study that will eventually

determine the feasibility of a rural water district for the villages of Brainard and Dwight.

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

The LPNNRD has been using Geographic Information System (GIS) technology since 1996. GIS is an automated system that combines an information system with mapping capabilities. Features on a map created with GIS technology contain attributes or features descriptions that are referenced by location. Initially, a series of base maps were created and coverages included counties, townships, sections, major streams, and major roads with the District. Later, new coverages were generated using Digital Elevation Models (DEM's), Digital Orthophoto Quarter Quadrangles (DOQQ's), and the NRCS Soil Survey, among other sources. The District has incorporated the use of GIS to greatly enhance program and project activities. The LPNNRD brought the NRD MapMaker system online in 2002. The system was developed in cooperation of several neighboring NRD's, the UNL Conservation and Survey Division and the Lower Platte River Corridor Alliance. The system allows the delivery of GIS information over the Internet. Continuing efforts will be made to create and update the metadata for the District's geographic data coverages. The District also plans to continue updating GIS data layers and publishing appropriate material on the NRD MapMaker system.

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

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## **FY 2015 Ground and Surface Water Objectives**

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- Continue with LPNNRD Ground Water Management Area (GWMA) programs to help avoid the Lower Platte Basin being designated "fully appropriated."
- Continue work on a Voluntary Integrated Water Management Plan (V-IMP) for the District.
- Work with the Lower Platte River Basin NRD's and the DNR to develop a basin-wide integrated water management plan.
- As part of the GWMA, continue with LPNNRD certification classes, demonstration plots, generation of maps indicating problem areas, and development of a landowner database using spreadsheets and GIS.

- Continue to cooperate with the United States Geological Survey (USGS) in monitoring groundwater levels at two sites.
- 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.
- Following intensive ground water sampling of the Bellwood Phase 2 area in 2010 and 2011, evaluate continuation of this Phase 2 area and/or modifications of its boundaries.
- Following intensive ground water sampling of the Richland-Schuyler Phase 2 area in 2013 and 2014, evaluate continuation of this Phase 2 area and/or modification of its boundaries.
- Administer \$15,000 of state and local cost-share funds to decommission abandoned water wells, and provide 100% cost-share assistance within Wellhead Protection Areas.
- Continue to manage the Phase II Ground Water Management Areas in the Bellwood region of Butler County and the Richland-Schuyler region in Colfax County.
- Maintain a multi-agency ground water 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 ground water modeling efforts.
- Continue to implement the Chemigation Program to inspect safety equipment on permitted irrigation systems in the district.
- Update the District’s Chemigation rules and regulations to reflect an increase in permit fees and non-compliance issues.
- Continue with the district’s Well Permitting Program and review of Variances in Stay Management Areas (Hydrologically Connected Areas (Limited Development) or Restricted Development areas).
- 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 site registered and unregistered wells in the district using GPS.
- Promote and sponsor “Spring Conservation Sensation” at Czechland Lake in May 2015.
- Provide information on Integrated Pest Management in news releases and the “Viaduct” newsletter to encourage reduced use of pesticides.
- Support “Landscape Connection” event in Lincoln to promote the wise use of chemicals in urban areas.
- 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 Monitor changes in ground water levels and quality in the district.
- 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 subareas as designated in the Subarea Delineation Study. This will be done by incorporating additional high capacity wells and the drilling of new monitoring wells.
- Maintain a homepage for the Groundwater Management Districts Association (GMDA). GMDA is composed of Management Districts in Nebraska, Kansas, Colorado, Texas, Oklahoma, Louisiana and Mississippi.
- 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 ARDC facilities east of Ithaca, Nebraska.
- Maintain transducers placed in District monitoring wells to record changes in ground water energy levels.
- Declare Level 2 or Level 3 Management areas as warranted caused by declining ground water energy levels in 50% or more of the monitoring wells reaching their trigger levels after three consecutive spring readings.
- Declare Special Quantity Subareas (SQS) due to mid-summer declines in aquifers that are vulnerable to large pressure drops caused by heavy pumping of large capacity wells at the same time.
- Develop informational classes for well operators in the SQS as to proper installation of flow meters, set acre inch allocations and reporting annual pumpage to the LPNNRD.
- Review livestock permits from DEQ.
- Investigate irrigation runoff and groundwater management area complaints as needed.
- Continue to administer the Precipitation Gauging Network established by the district.
- Expand the NeRain program within our District.

- Continue to be a sponsor member of the Elkhorn – Loup Model (ELM)
- Continue ground water modeling efforts with the University on the Platte Valley. Study will focus on determining hydrologic connection between surface water and ground water and determination of the 10/50 boundary.
- Contact well drillers and pump installers to further define areas that are experiencing well inference problems.
- 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. Flightlines are proposed that are to be flown in the fall of 2014 and the spring of 2015.
- Improve irrigation efficiency by working with UNL Extension on the Nebraska Agricultural Water Management Network (NAWMN) to install Watermark sensor's and ET gauges with 20 producers each year in our District.
- Continue with the process of Irrigated Acre Certification within the District.
- Complete the Shell Creek Watershed Water Quality Plan.
- Complete water quality objectives as identified in the Wahoo Creek Watershed and the Shell Creek Watershed Water Quality Plans.
- Complete the Brainard/Dwight Rural Water System Feasibility Study.
- Assist in the projected decommissioning of 1,000 water wells in the district.
- Continue to use GPS to site registered and unregistered wells within the district.
- Keep the Saunders County Rural Water System study as an alternative in the event of changing federal regulations governing municipal water supplies.
- If necessary, designate Level II and III boundaries within the district to manage declining ground water levels.
- If necessary, designate new Special Quantity Subareas (SQS) within the district to manage mid summer declines of ground water energy levels in aquifers that operate under large pressure swings.
- Continue measurement of ground water energy levels in the district.
- Develop a ground water model for each sub-area.
- Complete Platte Valley modeling efforts and submit information to the Department of Natural Resources for their review of the 10/50 boundary line.
- Complete Elkhorn – Loup Model (ELM) to determine which areas in the Shell Creek watershed are in hydrologic connection with the Elkhorn or Loup River basins.
- Complete Eastern Nebraska Water Resources Assessment (ENWRA) and apply information to the glaciated portions of our District.
- Additional studies to identify vulnerable aquifers and modify GWMA rules and regulations to protect these aquifers. Continue geophysical work, installation of monitoring wells and test holes to better define these vulnerable sub-areas.
- Expand GWEL network to have wells in each sub-area to better manage the resource.
- Initiate new ground water studies to further define aquifers and their long term sustainability in the LPNNRD.
- Install at least one monitoring well in each sub-area with continuous recording of ground water energy levels.
- Install precipitation gauges near monitoring wells in important sub-areas.
- Complete the certification of irrigated acres and incorporate this into our Ground Water Management Plan and rules and regulations.
- Complete water quality objectives as identified in the Wahoo Creek Watershed and the Shell Creek Watershed Water Quality Plans.
- Continue to assist District communities who have difficulties with water quality and quantity by helping determine rural water system feasibility.

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## **FY 2016-2020 Long Range Ground and Surface Water Objectives**

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- Update the Ground Water Management Plan to include Integrated Management of surface and ground water.
- Continue ground water quality sampling throughout the LPNNRD, 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 LPNNRD Ground Water Management Area, which includes LPNNRD certification classes for landowners, municipal and industrial water users.
- If needed, designate further Phase II & III boundaries for the Groundwater Quality Management Areas.
- Continue with nitrogen application demonstrations and participate with demonstrations on integrated pest management and sustainable agriculture.



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. Strategy objectives include completing 80% of the 1987 land treatment needs by the year 2010 and reducing soil loss on all lands to soil levels ("T") by 2025. The LPNNRD updated the district's Erosion and Sediment Control Program in FY 96 to include provisions for sediment runoff control in urban areas. 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.

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## FY 2014 Soil Conservation Activities

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### Soil and Water Conservation Programs (SWCP)

Under Soil and Water Conservation Programs (SWCP), the LPNNRD administered \$107,976.46 of state funds and \$33,000 of local funds for land treatment practices during fiscal year 2013. Approximately \$9,200.00 in 319 Grant Funds have been spent in the Sand & Duck Creek watersheds. These cost-share monies helped construct practices including approximately 20,500 linear feet of terraces, 5,687 linear feet of tile outlets, 31 risers and 14 basins. In addition, 8 Buffer Strip contracts were administered with \$11,882 in state funds. The district also administered one new planned grazing project that affected approximately 57 acres of grazed pasture land as well as 51 irrigation flow meter applications.

For fiscal year 2014, approximately \$109,558.42 of state funds (from the Nebraska Department of Natural Resources) and \$23,000 of local funds will be allocated for soil and water conservation practices.

### 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 14 the district received no formal complaints, but two minor drainage issues.

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## FY 2015 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 Duck Creek Watershed to reduce soil erosion and improve water quality.
- 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, to reduce erosion and improve water quality.
- Administer \$109,558.42 of State NSWCP and \$23,000 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 Conservationist, at the Annual LPNNRD Recognition Banquet.
- 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 Group (SWIG) and NDEQ toward completing the Shell Creek Watershed Water Quality Plan.
- Work with NDEQ and the Wahoo Creek locally led Steering Committee in pursuing additional grant funds to assist with land treatment practices as defined in water quality objectives in the completed Wahoo Creek Watershed Water Quality Plan.

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## FY 2016-2020 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 the NDEQ/EPA 319 Grant Program to improve water quality throughout Wahoo Creek, Shell Creek 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.





Watershed projects have been completed in five of eleven sub-watersheds (see Appendix E) in the LPNNRD to help control floodwater and provide grade stabilization. These projects include Bellwood, Clear Creek, Cottonwood Creek, and Swedeburg watersheds, along with Rawhide Creek. Future flood control priority areas include Shell Creek, Skull Creek and Wahoo Creek watersheds. On federal and state projects where the LPNNRD acts as project sponsor, the district obtains land rights and 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 2014 Flood Control and Damage Reduction Activities

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### Sand Creek Environmental Restoration Project (Lake Wanahoo)

In 1993, the Lower Platte North NRD, City of Wahoo and Saunders County began investigating the possibility of constructing a multipurpose dam site on Sand Creek, one mile north of Wahoo. A feasibility study was completed to look at soil types, water budget and benefits derived from the possible construction of the lake. The report gave a positive benefit cost ratio should the lake be constructed. The study identified reduction in storm damages and recreation as two major benefits, with no fatal flaws identified. A later study by the U.S. Army Corps of Engineers identified Lake Wanahoo and seven smaller upstream dams as the preferred alternative for environmental restoration and flood control in the watershed.

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 have also been completed. Recreation components were also started for Lake Wanahoo in FY 2011 and landrights were secured for five of the seven upstream sediment/nutrient trap structures. Construction of the five upstream structures were completed in FY 2012 and the final two structures were completed in FY 2014.

### Operation and Maintenance

District staff completed inspections on 50 watershed structures and special projects in the NRD in FY 13/14. These inspections help detect problems before they become serious. Also during the 2014 fiscal year, noxious weeds were sprayed on 50 structures and along Rawhide Ditch 8. 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 2005, LPNNRD entered into a 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 2014, there was very little activity associated with the Fremont 205 Study, the existing study will continue and transform to a General Investigation (GI) Study, hopefully gaining federal funding in March 2015. 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 landrights for the Shell Creek Levee portion of the project which began construction activities in the spring of 2014 and is scheduled to be completed this fall.

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## FY 2015 Flood Control and Damage Reduction Objectives

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- Continue with accelerated land treatment efforts in Sand Creek, Shell Creek, Wahoo Creek, Bone Creek, Skull Creek and other priority watersheds in the District.
- Complete biannual inspections on 50 watershed structures; spray noxious weeds on 50 dams and 10 miles of ditch; complete regular maintenance activities at all sites.
- Continue to educate the public on watershed management and flood control in LPNNRD newsletters and news releases.

- Cooperate with landowners and counties in evaluating small dam sites for cost-share throughout the district.
- Continue to pursue funding opportunities for the Sand Creek Environmental Restoration Project.
- Continue with the Army Corps of Engineers 205 study efforts and move toward feasible flood control projects for Fremont.
- Partner with the City of Schuyler to complete construction on the Shell Creek levee project and budget \$125,000 in FY 2015 for the project.
- Support the City of Schuyler with efforts to move forward with the levee designs to reduce flooding and economic losses from the Platte River.
- Assist District Communities in evaluating future flood protection for their communities through the District's Hazard Mitigation Plan.
- Work with Communities, Counties and other entities in updating our District-wide All Hazard Mitigation Plan.

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## **FY 2016-2020 Flood Control and Damage Reduction Long Range Objectives**

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- Commit funds and staff time toward obtaining funds for floodwater control 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 investigate flood control structure opportunities for Wahoo Creek, Shell Creek and Skull Creek.
- Continue to support the efforts of the Platte River Alliance to encourage cities and counties in the district to accept and implement Floodplain Management Authorities.
- Continue to explore cost-effective projects to reduce flooding within the Wahoo Creek and Shell Creek Watersheds.
- Assist Schuyler with pursuing federal assistance for completing construction of the Platte River Levee flood protection project as identified and preliminarily designed as a result by the Army Corps of Engineers 205 study.
- Assist Fremont with flood protection projects as identified by the Army Corps of Engineers 205 study.
- Assist District Communities in evaluating future flood protection for their communities through updating the District's Hazard Mitigation Plan and assisting with identified projects.



The district administers several programs designed to enhance the region's forest, range, and wildlife land, including the Tree Planting Program, Wildlife Habitat Program, 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 2014 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 800,000 trees and shrubs have been planted in the district. Trees and shrubs may be obtained from the NRD for windbreaks, shelter belts, wildlife habitat, woodlots, and Christmas tree plantings. Besides providing a planting service, the NRD also designs tree plans and offers technical advice on ground preparation for tree sites.

During the spring of 2014, 14,000 trees and shrubs were distributed to District residents. Of this total, approximately 3,400 were planted by the NRD field crew at 13 sites.

**WILD Nebraska Program**

WILD Nebraska is intended to encourage landowners to set aside land for wildlife habitat, but payment rates and acceptable practices have been adjusted in the new program to make it more flexible.

The new program bases its payments on average county rental rates. There are numerous habitat practices eligible for funding in three major categories: Woodlands, Wetlands and Grasslands. Funding for the program is split between the Nebraska Game and Parks Commission (75%) and the NRD (25%).

The district did not receive any new applications for the program in FY 13/14.

**Community Forestry Program**

In FY 2013/14, the LPNNRD donated 1,000 seedlings to Conservation Sensation, and schools for educational purposes. The District received two request for assistants from communities to plant trees during the year, spending \$1,017. The District budgets \$2,000 for such projects.

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**FY 2015 Forestry, Range and Wildlife Habitat Objectives**

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- Plant and distribute conservation trees and shrubs through the districts 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.
- Sign cooperators into the district's WILD Nebraska Program and assist with funding from the CREP program.
- Cooperate with the Extension Service and the NRCS in obtaining tree orders from District residents.
- Recognize a cooperator for outstanding tree planting efforts at the Annual Recognition Banquet.
- 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.
- Cooperate with Pheasant Forever Chapters to enhance wildlife habitat and establish windbreaks.

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**FY 2016-2020 Forestry, Range and Wildlife Habitat Long Range Objectives**

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- Sell between 20,000 and 30,000 trees and shrubs each year through the district's Tree Planting Program, and to plant at least half of the trees ordered.
- Provide information and education on tree planting, woodland management, grassland management, and proper wildlife habitat enhancement through the media, tours, and schools.
- Continue to administer the WILD Nebraska program in cooperation with the Nebraska Game and Parks Commission.



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## **FY 2014 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. The District installed electrical service to 8 camper pads and established an \$18/night fee for the use a camping pad. 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 areas 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.

In FY 01 the district received grants from DEQ (EPA Section 319) and the Nebraska Environmental Trust to construct a silt dam with a sediment pumping station to route excess silt downstream around Czechland Lake to prevent it from being deposited in the lake. The Czechland recreation area was used extensively during FY 14. 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.

### **Lake Wanahoo**

Work was completed on recreation facilities at Lake Wanahoo one mile north of Wahoo in FY 2012. Recre-

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

The camping area contains 74 camper pads and 60 tent camping sites. All camper pads are equipped with electrical hookups and 50 of them are hard surfaced, with the remainder on grass. All tent sites have fire rings and picnic tables.

The camping area also offers access to a large boat ramp that's wide enough to accommodate three boats at a time. Boating at the lake will be 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.

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 popular 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.

### **Wildlife Habitat Public Access Areas**

Under the WILD Nebraska program, administered jointly with the Nebraska Game & Parks Commission, the LPNNRD encourages landowners to allow public access on habitat lands signed up under the program. The NRD currently has a total of 15 habitat acres in the CREP program, none of which offer public access.

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## **FY 2015 Recreation Objectives**

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- Continue to budget funds for maintenance, including grass mowing, painting, tree trimming, road grading, outhouse cleaning, trash removal, and noxious weed control, at Lake Wanahoo, Czechland Lake and Homestead Lake Recreation Areas.

- Acquire additional acres of wildlife habitat lands which allow public access under the WILD Nebraska program.

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### **FY 2016-2020 Recreation Long Range Objectives**

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- Continue to evaluate development of new outdoor public recreational facilities as opportunities arise.
- Continue to administer the WILD Nebraska programs and pursue developing new areas offering public access.





## **DRAINAGE IMPROVEMENT AND CHANNEL RECTIFICATION**

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 or city. Under this policy, the district has cooperated on several projects that have provided public benefit. In FY 2010, the District assisted Colfax County to study the 5-mile Hughes/Payzant drainage ditch east of Schuyler. With the help of a community block grant, this drainage system will be improved in FY 2012 to help move local drainage off public and private land.

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### **FY 2015 Drainage Improvement & Channel Rectification Objectives**

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- Continue to oversee the progress of the Rawhide Creek West Branch Project to ensure that landowners control vegetation on Rawhide Creek to help it stay clean.

- Provide continued assistance to Platte Center with stabilizing a segment of Elm Creek.
- Work with local landowners and Colfax County to improve Shell Creek flows east of Schuyler.

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### **FY 2016-2020 Drainage Improvement & Channel Rectification Long Range Objectives**

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- Continue to assist counties and cities in the district that sponsor sound drainage and channel improvement projects.



In recent years, vast changes have 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. Now, 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 2015 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 2016-2020 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.
- 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 2014 Information & Education Activities

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During fiscal year 2014, the Lower Platte North NRD conducted many activities to help residents learn the importance of our soil and water resources and keep abreast of natural resource issues and concerns. Some of the highlights included:

#### Education Programs

The district once again sponsored the "Spring Conservation Sensation" activities held at the Czechland Lake Recreation Area in May 2014. During this all-day event, nearly 400 fifth- and sixth-grade students from Saunders, Butler, Platte, Colfax and Dodge Counties participated in various activities. Hands-on activities were presented by agency personnel and volunteers to teach the students about the environment and their natural resources. Students visited stations demonstrating tree planting, fishing, soil erosion, water sampling and more.

The district hosted the East Central Land Judging Contest in October 2014 for area FFA chapters, with nearly 200 students and a record number of schools participating.

District staff presented various activities at natural resources festivals, field days, and school classrooms.

District staff helped maintain the website for NACEE, the Nebraska Alliance for Conservation and Environmental Education.

#### Awards, Contests, and Events

The district issued awards recognizing outstanding accomplishments, including: Conservationist of the Year, NRCS Employee of the Year, Educator of the Year, and Volunteer of the Year, among others.

Free materials were distributed to churches to honor Soil and Water Stewardship Week.

The LPNNRD also attended five county fairs.

#### Publications

In FY 2012, the district switched distribution of the "The Viaduct" newsletter from direct mail subscriptions to inserts in area newspapers. In FY 2014, more than 58,000 copies of two issues of the newsletter went out in

area papers and via email. The spring issue included the district's 2013 Annual Report, which was previously a separate publication.

Various brochures describing LPNNRD programs and services were updated as needed in FY 2014. A Fact Sheet for use with the NARD's public relations campaign was updated.

News releases were mailed to district papers and radio stations, and numerous ads spotlighting different NRD programs were aired on KTIC Radio. In FY 14 the district also began running digital ads on the Wahoo newspaper website.

#### Web Site

The NRD's website at [www.lpnrd.org](http://www.lpnrd.org) contains information on nearly all of the district's projects and programs, as well as 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. In FY 2008, online payment capabilities were added to the site to allow customers to pay for trees and rural water bills.

The district also maintains websites and mobile apps for two statewide NRD programs: Conservation Trees for Nebraska ([www.nrdtrees.org](http://www.nrdtrees.org)) and NRD Outdoor Recreation Areas ([www.nrdrec.org](http://www.nrdrec.org)). Mobile app versions are available for iPhone/iPad and the Android operating system. The district also has a custom-built Rural Water app for in-house use.

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### FY 2015 Information & Education Objectives

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- Publish the district newsletter "Viaduct" biannually in an electronic format and as a printed newspaper insert in 8 area newspapers, and produce supplemental electronic issues on an as-needed basis.
- Send timely news releases to the local media on various LPNNRD programs, projects and activities.
- Assist in development of an outdoor classroom for a District school.
- Continue with the annual Award Program.
- Provide District elementary students free trees, as requested, in the spring.
- Disseminate pamphlets and other publications about LPNNRD programs.
- Provide LPNNRD staff as requested to speak to community organizations and schools on NRD activities and environmental topics.

- Continue to provide a display at county fairs (up to five major counties) within the district.
- Promote Soil & Water Stewardship Week and distribute free materials to churches throughout the NRD.
- Sponsor the Spring Conservation Sensation in spring 2015.
- Co-sponsor the area Range Judging Content in fall 2015.
- Assist with the area Land Judging Contest in fall 2015.
- Participate in Nebraska Alliance for Conservation and Environmental Education.
- Update the district's web site regularly.
- Continue social networking outreach for the district through use of tools such as Facebook, Twitter, etc.
- Maintain and update NRD Trees and NRD Rec Areas websites and mobile apps as needed.

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## **FY 2016-2020 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.
- Increase participation in activities sponsored by other agencies related to NRD responsibilities.
- Seek to have conservation/environmental education as a part of the school curriculum.
- Support environmental education activities and events.
- Participate with the Information & Education Staff Group to coordinate statewide I&E activities and produce statewide products.



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**NRD Staff**

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The staff of the Lower Platte North NRD includes 16 full-time and part-time employees at the district office in Wahoo. The NRD also staffs a full-time field technician, four clerks in Natural Resource Conservation Service county offices, and a Recreation Facilitator for Czechland Lake Recreation Area. Current staff as of December 1, 2014 was:

- Mike Almond, **Accountant**
- Larry Angle, **Water Resources Manager**
- Tyler Benal, **GIS Assistant**
- Jill Breunig, **Administrative Manager**
- Duke Dokulil, **Operations & Maintenance Technician**
- Eric Gottschalk, **Projects Coordinator**
- Bob Heimann, **Operations & Maintenance Supervisor**
- John Miyoshi, **General Manager**
- Tom Mountford, **Assistant Manager**
- Mike Murren, **Large Projects Coordinator**
- Russell Oaklund, **Lead Water Resources Specialist**
- Dave Odvody, **Recreation Facilitator**
- Mitch O'Reilly, **O&M/Rural Water Specialist**
- Chris Poole, **GIS/Computer Specialist**
- Karen Rezac, **Secretary/Receptionist**
- Bret Schomer, **Water Resources Specialist**
- Mike Sousek, **Rural Water Manager**
- Troy Thompson, **Information & Education/Computer Specialist**

**Staff Support for NRCS Offices:**

- Kelly Bartek, **Conservation Technician**
- Susie Leu, **NRD/NRCS Secretary (Butler County)**
- Patty Holmberg, **NRD/NRCS Secretary (Colfax County)**
- Jenny Campbell, **NRD/NRCS Secretary (Dodge County)**
- Marla Milliken, **NRD/NRCS Secretary (Saunders County)**

In addition to the listed full-time and part-time positions, the district employs part-time and seasonal conservation technicians to assist in the layout of land treatment structures. There are also seasonal employees hired to help with water sampling, tree planting and maintenance of NRD projects.

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**FY 2016-2020 Personnel Needs**

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Personnel positions and assigned responsibilities could increase as increased project and program responsibilities increase.

Funding required for the LPNNRD projects and programs for Fiscal Year 2015 requires a general operating budget of \$11,115,098. A tax levy of .047231 cents per \$100 actual valuation is required from District property. Projected expenses and income for FY 2015-2020 is shown in Appendix F.

A tax levy of .052603 means that an owner of a \$150,000 home will pay about \$71 in NRD taxes for FY 2015. An owner of farm land valued at \$7,000 per acre will pay about \$3.31 an acre/year in FY 2015. The LPNNRD levy represents about 1.5 percent of the total property tax collected.

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### **FY 2016-2020 Long Range Financial 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 \$0.045 and \$0.055 per \$100 actual valuation as the District continues to pay down past project indebtedness, assists with new project requests, and increases activities in groundwater management.

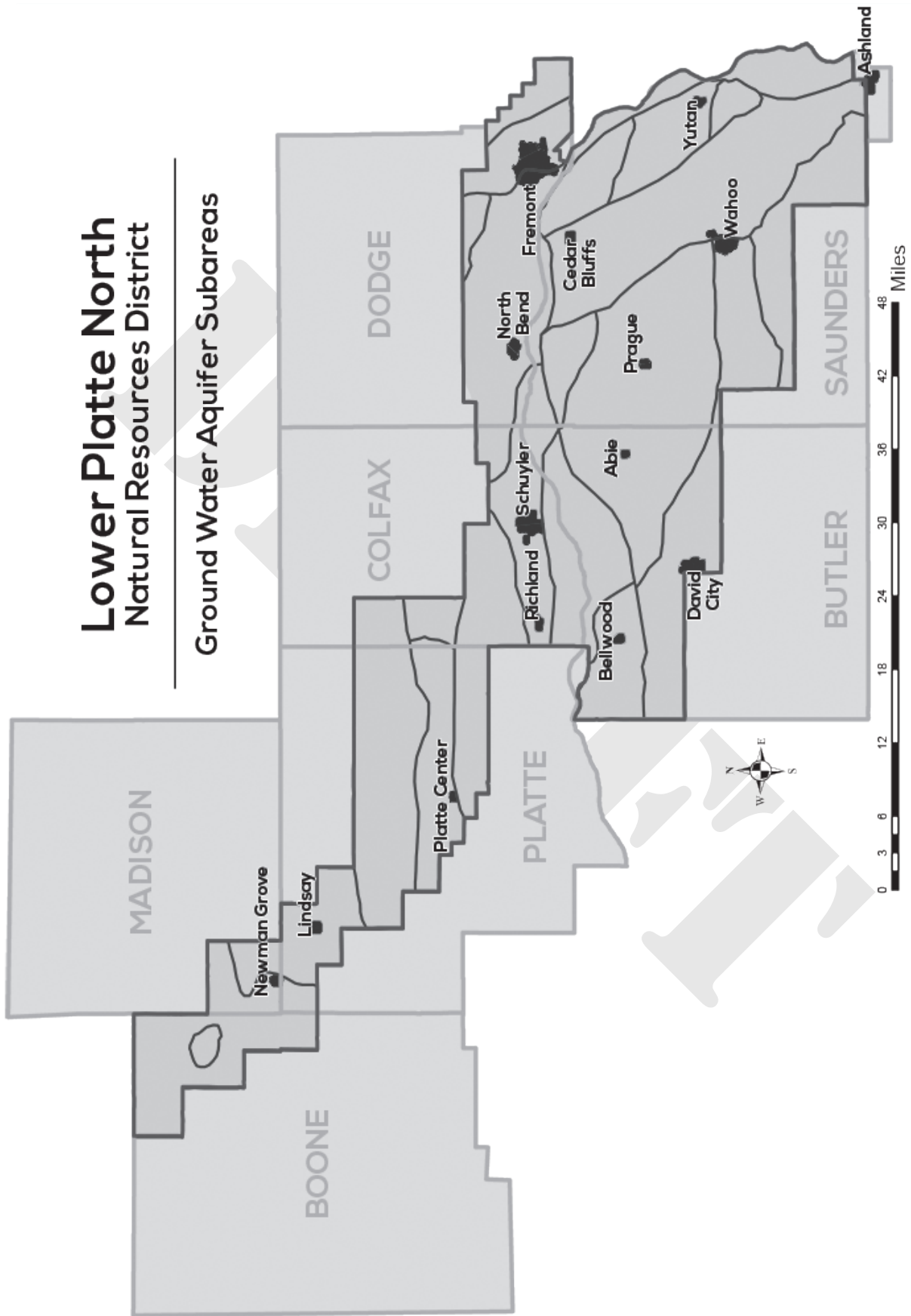


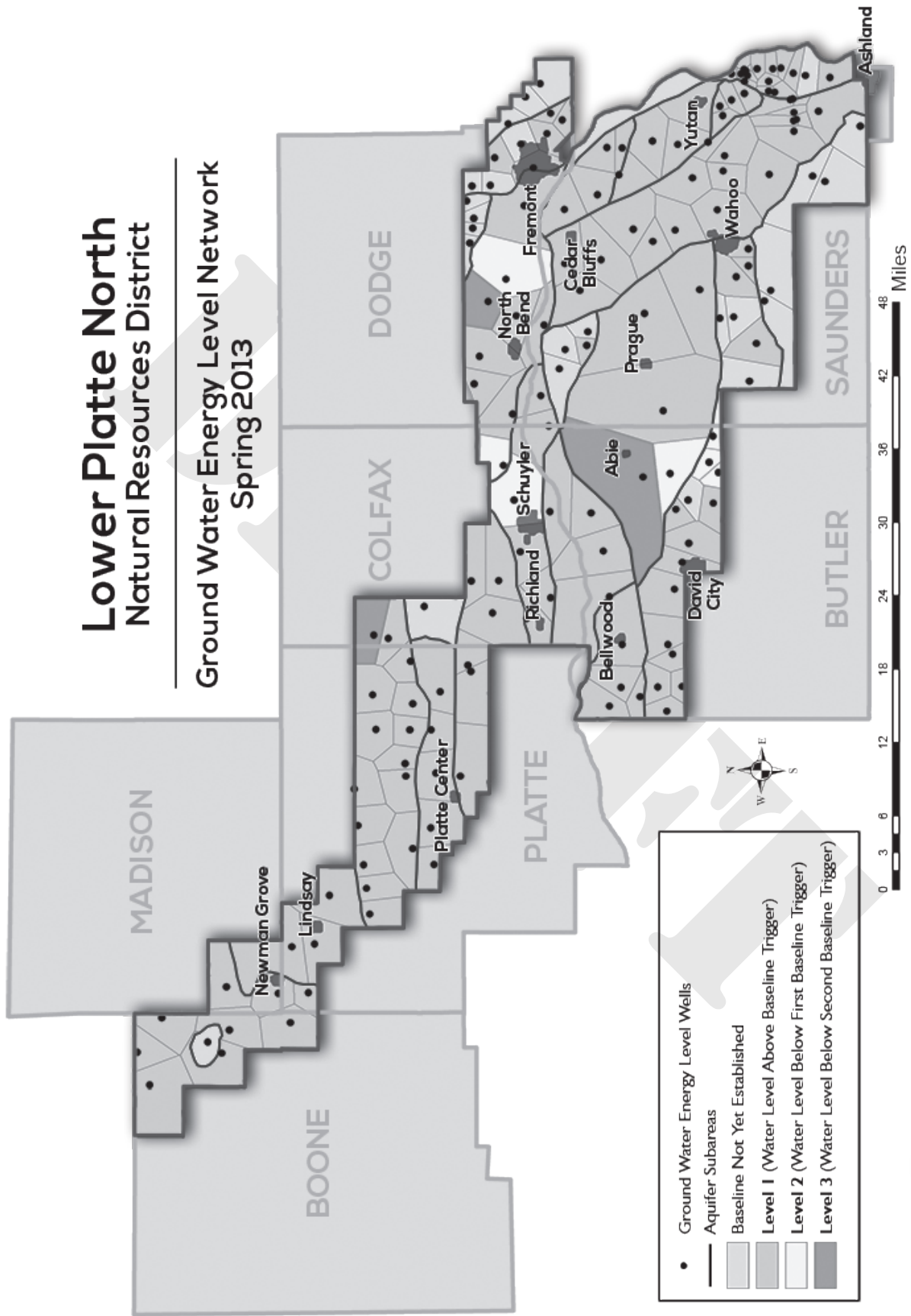
## APPENDIX A - Estimated Population by County

COUNTY	% OF COUNTY IN DISTRICT	ACRES IN DISTRICT	RURAL POPULATION IN DISTRICT	URBAN POPULATION IN DISTRICT	TOTAL	% OF FISCAL INPUT
Boone	12.6	54,473	362	--	362	2.3
Butler	44.3	165,476	2,022	3,387	5,409	11.0
Colfax	41.9	111,528	1,414	4,237	5,651	10.0
Dodge	30.2	104,245	3,100	25,215	28,315	35.7
Madison	6.3	23,086	194	770	964	1.5
Platte	38.5	169,432	2,878	723	3,571	10.5
Saunders	81.5	401,234	6,698	6,949	13,647	29.0

Twenty-eight cities, towns and villages are located within the Lower Platte North NRD, listed below with their populations:

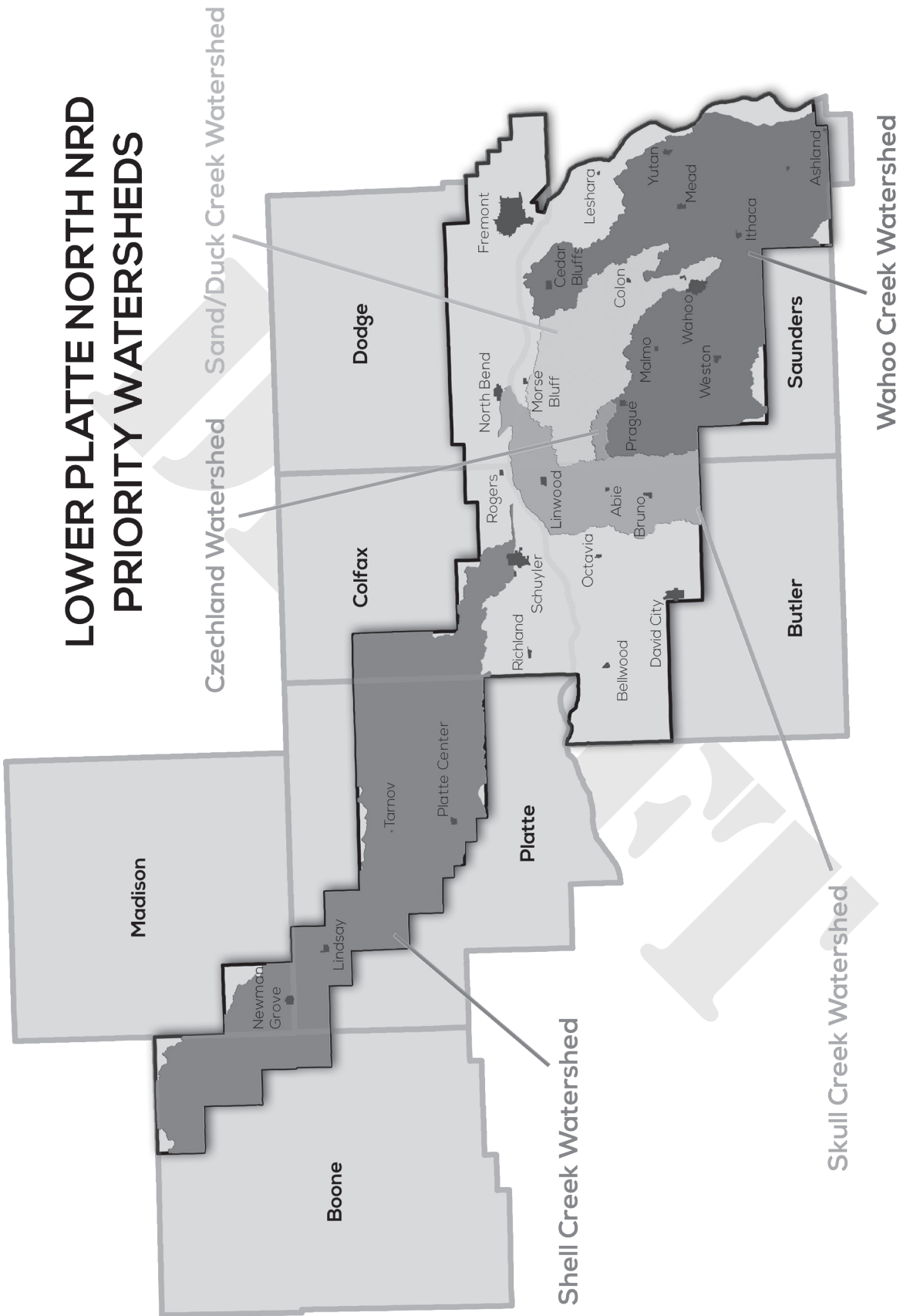
Fremont.....	23,680	Inglewood .....	286
Wahoo .....	3,681	Prague .....	282
Schuyler.....	4,052	Weston .....	299
David City.....	2,522	Morse Bluff .....	128
North Bend.....	1,249	Malmo .....	114
Ashland.....	219	Tarnov.....	141
Newman Grove .....	770	Colon.....	128
Cedar Bluffs .....	591	Leshara .....	118
Yutan.....	626	Richland.....	96
Ithaca .....	133	Linwood.....	91
Mead .....	513	Octavia .....	132
Platte Center .....	341	Rogers .....	117
Lindsay.....	321	Memphis.....	117
Bellwood .....	395	Abie .....	106







# LOWER PLATTE NORTH NRD PRIORITY WATERSHEDS





# APPENDIX E - Projected Budget (Expenses), Fiscal Years 2015-2020

Description	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
<b>ADMINISTRATION</b>						
Bonds	415	430	450	470	490	510
Dues and Membership	28,787	29,000	29,870	30,766	31,689	32,639
Fees & Licenses	8,750	9,100	9,464	9,843	10,236	10,646
GIS	2,000	2,500	3,000	3,500	4,000	4,500
Insurance	45,946	47,784	49,695	51,683	53,750	55,900
Interest Expense	10,000	10,000	10,000	10,000	10,000	10,000
Legal Notices	4,000	4,160	4,326	4,499	4,679	4,867
Maintenance Contracts	6,800	7,004	7,284	7,576	7,879	8,194
Office Supply & Expense	9,600	9,984	10,383	10,799	11,231	11,680
Computer Supply & Expense	24,400	18,000	18,720	19,469	20,248	21,057
Postage	7,000	7,280	7,571	7,874	8,189	8,517
Professional Services	83,750	84,000	84,250	84,500	85,000	85,250
Rent Expense	600	625	650	675	700	725
Support to Organizations	1,000	1,200	1,300	1,400	1,500	1,600
Telephone	13,000	13,520	14,061	14,623	15,208	15,816
Utilities	8,000	8,320	8,653	8,999	9,359	9,733
<b>INFORMATION &amp; EDUCATION</b>						
Education	2,400	2,496	2,596	2,700	2,808	2,920
Information	19,240	20,010	20,810	21,642	22,508	23,408
Scholarships & Grants	2,600	2,704	2,812	2,925	3,042	3,163
Other	3,900	4,100	4,300	4,500	4,700	4,900
<b>OPERATION/MAINTENANCE</b>						
Auto & Truck Expense	22,500	23,400	24,336	25,309	26,322	27,375
Building Maintenance	8,650	8,996	9,356	9,730	10,119	10,524
Comm. Forestry Program	2,000	2,000	2,500	2,500	3,000	3,000
Operation and Maintenance	80,550	83,772	87,123	90,608	94,232	98,001
Project Repairs	7,000	10,000	10,000	15,000	15,000	15,000
Stream Bank Stabilization	10,000	10,000	10,000	10,000	10,000	10,000
WHIP/CREP	3,155	3,000	3,000	3,000	3,000	3,000
Other	33,100	34,000	35,000	36,000	37,000	38,000
<b>PERSONNEL</b>						
Directors Expense	50,500	52,520	54,621	56,806	59,078	61,441
Directors Per Diem	40,000	41,000	42,000	43,000	44,000	45,000
Employee Benefits	351,390	365,446	380,063	395,266	411,077	427,520
Payroll Taxes	87,200	90,688	94,316	98,088	102,012	106,092
Personnel Expense	37,000	37,500	38,000	38,500	39,000	39,500
Salaries	1,127,415	1,161,238	1,196,075	1,231,957	1,268,915	1,306,983
<b>PROJECTS</b>						
Inter-governmental	126,537	50,000	50,000	50,000	50,000	50,000
Special Projects	500	25,000	25,000	25,000	25,000	25,000
Wanahoo (Includes interest)	155,000	65,000	10,000			
Other Projects (205 Projects, ect.)	355,000	350,000	350,000	350,000	350,000	350,000
<b>PR CORRIDOR ALLIANCE</b>	47,367	50,000	50,000	50,000	50,000	50,000
<b>WATER</b>						
Ground water Management Area	380,000	300,000	300,000	300,000	300,000	300,000
Ground water Programs	33,950	35,308	36,720	38,189	39,717	41,305
Regulatory	500	500	500	500	500	500
Surface Water Programs	18,000	18,000	18,500	19,000	19,500	20,000
Special Projects	86,600	100,000	100,000	100,000	100,000	100,000
Land Treatment	480,970	500,000	500,000	500,000	500,000	500,000
<b>RURAL WATER DISTRICT</b>	83,945	85,000	86,000	87,000	88,000	89,000
<b>CAPITAL IMPROVEMENTS</b>						

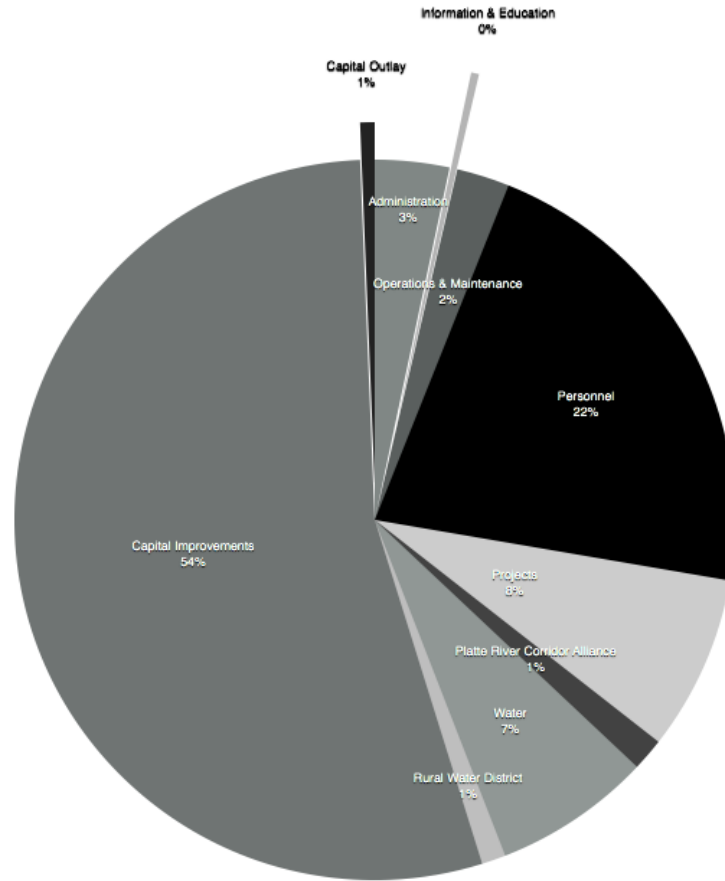
## APPENDIX F - Projected Budget (Income), Fiscal Years 2015-2020

Description	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
<b>BEGINNING CASH BALANCE</b>	806,628	800,000	800,000	800,000	800,000	800,000
<b>PROPERTY TAX</b>	3,650,000	3,600,000	3,000,000	3,000,000	3,000,000	3,000,000
<b>FEDERAL INCOME</b>						
Czechland Fisheries	20,000					
Cottonwood 319	75,000					
Water Meter Grant	215,592					
Sand & Duck Creek 319	150,000					
Shell Creek 319	47,970	50,000	50,000	50,000	50,000	50,000
Wahoo Creek 319	90,000	100,000	100,000	100,000	100,000	100,000
<b>STATE</b>						
Decommissioned Well Fund	2,200	2,000	2,000	2,000	2,000	2,000
Hazard Mitigation Update	80,000					
Natural Resource WQ Fund	40,000	36,000	36,000	36,000	36,000	36,000
NE Buffer Strip Program	12,000	12,000	12,000	12,000	12,000	12,000
NRDF - Wanahoo	5,103,081	1,175,471	219,539			
Sand Creek - Entry Road	120,000					
Wahoo Creek ET Grant	90,000	25,000				
<b>LOCAL</b>						
Chemigation	5,000	5,000	5,000	5,000	5,000	5,000
Czecland Camping	5,700	5,500	5,500	5,500	5,500	5,500
Director/Employee Reimb.	5,000	5,000	5,000	5,000	5,000	5,000
Equipment Rent	7,000	7,000	7,000	7,000	7,000	7,000
Fremont South 205	75,000					
Gain/Loss sale of assests	7,500	10,000	10,000	10,000	10,000	10,000
Game & Parks Sales	250	250	250	250	250	250
Interest	750	750	750	750	750	750
Misc. Income	45,000	70,000	70,000	70,000	70,000	70,000
NRD/NRCS Clerks	67,000	68,000	70,000	72,000	74,000	76,000
Other Sales	9,000	9,000	9,000	9,000	9,000	9,000
Rural Water Admin. Fee	3,490	3,500	3,500	3,500	3,500	3,500
Tree Sales	11,000	12,000	12,000	12,500	12,500	12,500
Wanahoo Borrow Dirt Sales	10,000					
Wanahoo Hay Sales	18,400	15,000	15,000	15,000	15,000	15,000
Water Mark Sensors	500	500	500	500	500	500
Water Reimbursements	1,830	2,000	2,000	2,000	2,000	2,000
Well Permits	5,000	5,000	5,000	5,000	5,000	5,000
W.Sarpy/Clear Creek	700,000					
Rural Water Income	86,000	90,000	90,000	90,000	90,000	90,000
<b>TOTAL</b>	<b>11,565,891</b>	<b>6,108,971</b>	<b>4,530,039</b>	<b>4,313,000</b>	<b>4,315,000</b>	<b>4,317,000</b>

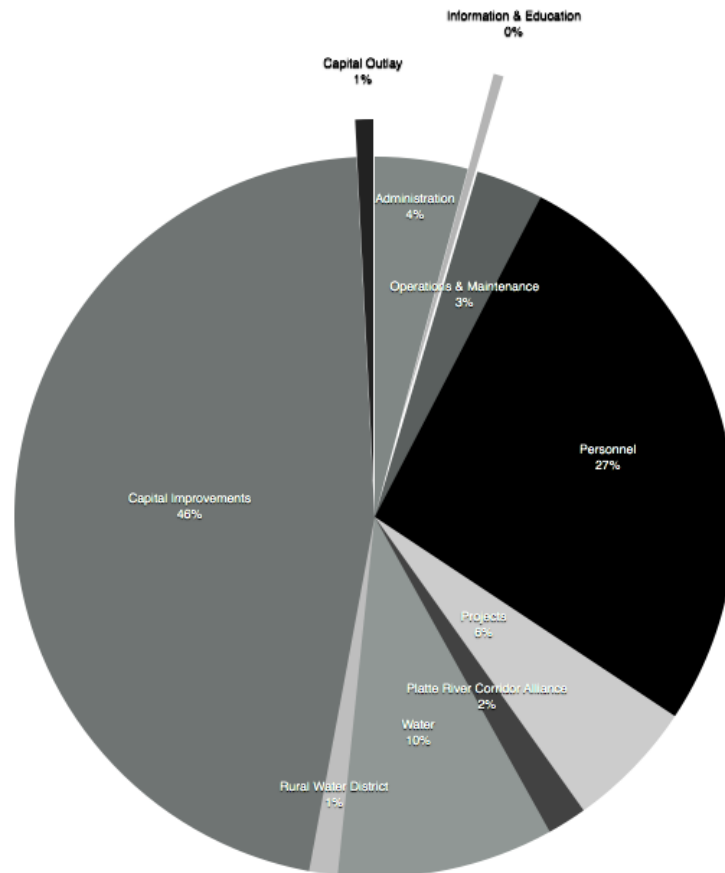


# APPENDIX G - Projected Expenses Breakdown, Fiscal Years 2014-2019

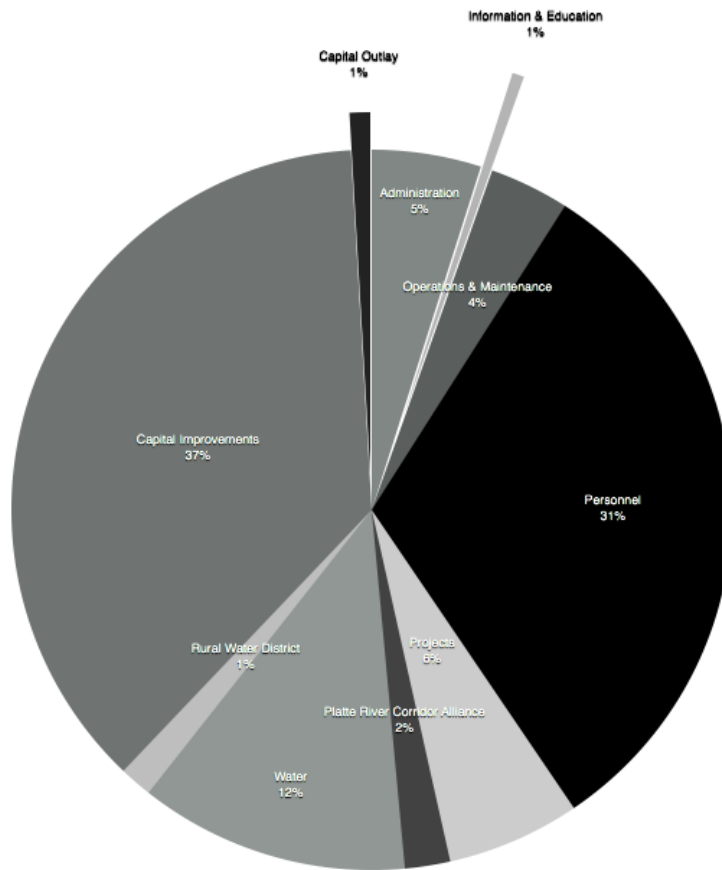
**FY 2014**  
Total Budget:  
\$7,563,504



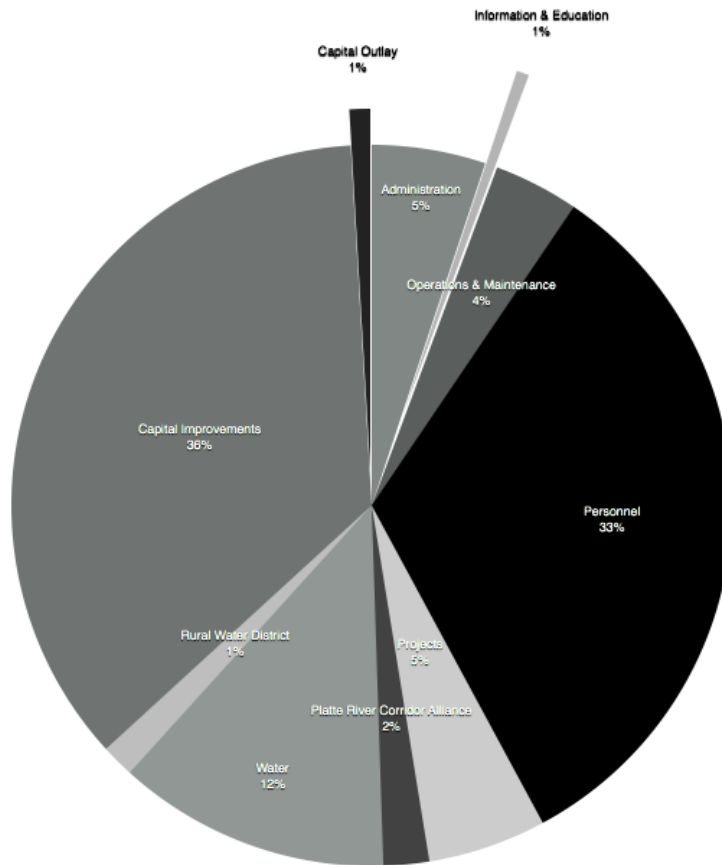
**FY 2015**  
Total Budget:  
\$6,228,057



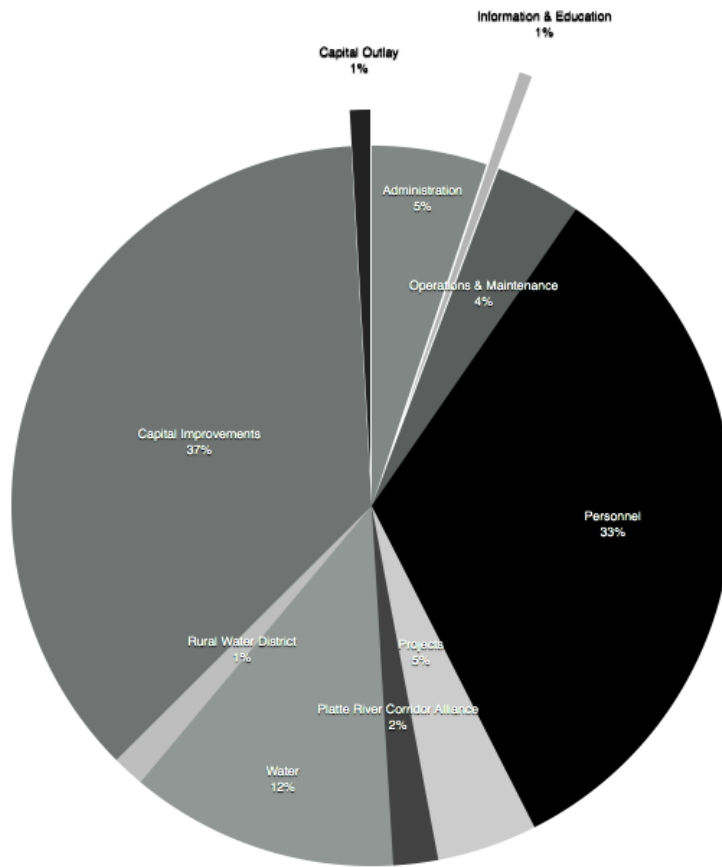
**FY 2016**  
Total Budget:  
\$5,428,713



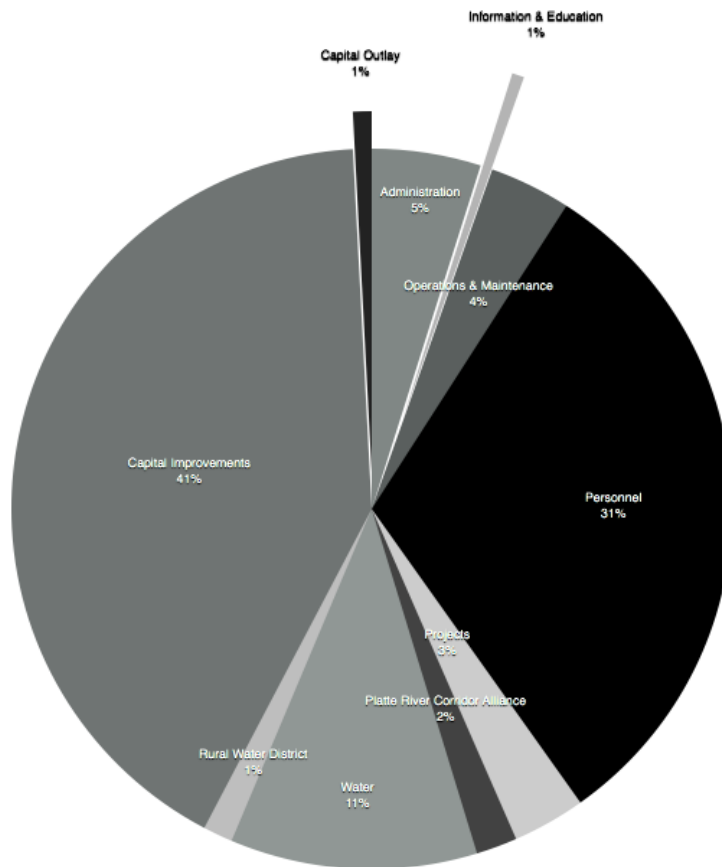
**FY 2017**  
Total Budget:  
\$5,386,477



**FY 2018**  
Total Budget:  
\$5,491,442



**FY 2019**  
Total Budget:  
\$5,985,171



Lower Platte North Natural Resources District  
 Budget to Actual Statement - Expenses (Accrual Basis)  
 For Month Ended November 30, 2014

	Account Number	Current Mo. This Year	Y.T.D. This Year	Annual Budget	(Over)Under Spent	Percent Spent
<b>405 PROJECTS EXPENSES</b>						
<i>Inter-Governmental</i>						
<i>Road Structures</i>						
	4050104	\$ -	\$ -	\$ 3,500.00	\$ 3,500.00	0.00%
	4050110	\$ -	\$ -	\$ 6,750.00	\$ 6,750.00	0.00%
	4050114	\$ -	\$ -	\$ 10,000.00	\$ 10,000.00	0.00%
	4050123	\$ 6,479.30	\$ 18,622.80	\$ 106,287.00	\$ 87,664.20	0.00%
<i>Special Projects</i>						
	4050309	\$ -	\$ -	\$ 500.00	\$ 500.00	0.00%
<i>Wanahoo</i>						
	4050505	\$ -	\$ 2,025.00	\$ 5,000.00	\$ 2,975.00	40.50%
	4050514	\$ 73,522.51	\$ 84,185.37	\$ 150,000.00	\$ 65,614.63	56.12%
<i>Other Projects</i>						
	4050702	\$ -	\$ 24,753.00	\$ 150,000.00	\$ 125,247.00	16.50%
	4050705	\$ -	\$ -	\$ 125,000.00	\$ 125,000.00	0.00%
	4050711	\$ -	\$ -	\$ 80,000.00	\$ 80,000.00	0.00%
<i>Platte River Corridor Alliance</i>						
<i>Administration</i>						
	4011101	\$ -	\$ 16,000.00	\$ 16,000.00	\$ -	100.00%
	4011103	\$ -	\$ 4,667.00	\$ 4,667.00	\$ -	100.00%
	4011106	\$ -	\$ -	\$ 2,000.00	\$ 2,000.00	0.00%
	4011110	\$ -	\$ -	\$ 5,000.00	\$ 5,000.00	0.00%
	4011115	\$ -	\$ 1,200.00	\$ 1,200.00	\$ -	100.00%
	4011116	\$ -	\$ -	\$ 4,000.00	\$ 4,000.00	0.00%
	4011119	\$ -	\$ -	\$ 500.00	\$ 500.00	0.00%
	4011121	\$ -	\$ 4,000.00	\$ 4,000.00	\$ -	100.00%
	4011122	\$ -	\$ 7,500.00	\$ 7,500.00	\$ -	100.00%
	4011124	\$ -	\$ -	\$ 2,500.00	\$ 2,500.00	0.00%
		\$ 80,001.81	\$ 162,953.17	\$ 684,404.00	\$ 521,450.83	23.81%

Lower Platte North Natural Resources District  
Budget to Actual Statement - Expenses (Accrual Basis)  
For Month Ended November 30, 2014

	Account Number	Current Mo. This Year	Y.T.D. This Year	Annual Budget	(Over)Under Spent	Percent Spent
<b>406 WATER EXPENSES</b>						
<i>Groundwater Management Plan</i>						
Cost-Share	4060101	\$ 53.00	\$ 6,101.15	\$ 226,000.00	\$ 219,898.85	2.70%
Information and Education	4060102	\$ 100.00	\$ 100.00	\$ 1,000.00	\$ 900.00	10.00%
Nitrogen Certification Classes	4060103	\$ -	\$ -	\$ 1,000.00	\$ 1,000.00	0.00%
Integrated Management Planning	4060106	\$ 2,685.73	\$ 51,736.42	\$ 132,000.00	\$ 80,263.58	39.19%
Basin Wide Plan	4060110	\$ -	\$ 20,000.00	\$ 20,000.00	\$ -	100.00%
<i>Groundwater Programs</i>						
Decommissioned Wells	4060201	\$ -	\$ 1,211.97	\$ 12,200.00	\$ 10,988.03	9.93%
GW Levels	4060203	\$ 5.16	\$ 5.16	\$ 5,000.00	\$ 4,994.84	0.10%
GW Quality Program	4060204	\$ 1,265.00	\$ 15,160.75	\$ 15,000.00	\$ (160.75)	101.07%
Mead-NOP	4060205	\$ -	\$ -	\$ 250.00	\$ 250.00	0.00%
Monitoring Wells	4060206	\$ 20.17	\$ 381.17	\$ 1,500.00	\$ 1,118.83	25.41%
<i>Regulatory</i>						
Chemigation	4060301	\$ -	\$ -	\$ 500.00	\$ 500.00	0.00%
<i>Surface Water Programs</i>						
Stream Flow	4060403	\$ -	\$ 16,016.00	\$ 18,000.00	\$ 1,984.00	93.73%
<i>Special Projects</i>						
Shell Creek Water Quality Monitoring Project	4060502	\$ -	\$ 8,050.00	\$ 26,600.00	\$ 18,550.00	0.00%
Other	4060503	\$ -	\$ -	\$ 25,000.00	\$ 25,000.00	0.00%
ENWRA	4060504	\$ -	\$ -	\$ 30,000.00	\$ 30,000.00	0.00%
ELM	4060507	\$ -	\$ 5,000.00	\$ 5,000.00	\$ -	100.00%
<i>Land Treatment</i>						
Buffer Strip Program	4050201	\$ -	\$ -	\$ 12,000.00	\$ 12,000.00	0.00%
Emergency Repair of Terraces and Dams	4050206	\$ -	\$ 280.00	\$ 5,000.00	\$ 4,720.00	5.60%
SWCP	4050207	\$ -	\$ -	\$ 20,000.00	\$ 20,000.00	0.00%
Sand/Duck Creek 319	4050209	\$ 3,300.00	\$ 5,876.19	\$ 193,000.00	\$ 187,123.81	3.04%
Trees	4050211	\$ -	\$ -	\$ 3,000.00	\$ 3,000.00	0.00%
Wahoo Creek Watershed Plan - WQ319	4050802	\$ 2,275.00	\$ 12,000.00	\$ 200,000.00	\$ 188,000.00	6.00%
Shell Creek Watershed Plan 319	4050803	\$ -	\$ 38,977.50	\$ 47,970.00	\$ 8,992.50	81.25%
Cottonwood Creek 319	4050804	\$ -	\$ 34,500.00	\$ -	\$ (34,500.00)	0.00%
<b>Total Water Expenses</b>		\$ 9,704.06	\$ 215,396.31	\$ 1,000,020.00	\$ 784,623.69	21.54%
<b>407 NRD RURAL WATER EXPENSES</b>						
<i>General Expenses</i>						
Studies	4070101	\$ -	\$ 1,000.00	\$ 2,200.00	\$ 1,200.00	45.45%
<b>Total NRD Rural Water Expenses</b>		\$ -	\$ 1,000.00	\$ 2,200.00	\$ 1,200.00	45.45%

Finding Solutions Today  
For a Secure Tomorrow

# Spectrum

Volume 42, #2  
WINTER, 2014

Papio-Missouri River Natural Resources District

## FINISHING ON TRACK

Eastern Nebraska's Largest Flood Control Project

### PLATTE RIVER FLOOD CONTROL

1993

#### CRITICAL FLOODING

Flood waters threatened well fields, Interstate 80 and Highway 6 between Omaha and Lincoln.

2000

#### PLAN IN ACTION

Western Sarpy/Clear Creek Project initially authorized in the Federal Water Resources Development Act.

2014

#### \$42 Million Project

About 20 miles of levees are being improved in this stretch of the Platte River to protect lives and property.

17,000/400

#### Acres/Homes protected

The levees on both sides of the river will provide protection for ag land and homes.

A massive flood control project for protecting the lives, property and infrastructure along the Platte River, between Omaha and Lincoln has been a long, cooperative project coordinated by valuable partnerships.

In the next year, residents of eastern Nebraska will see a major flood control project along the Platte River come to fruition.

During the last 15 years, the Western Sarpy-Clear Creek flood control project has improved levees along a 20-mile stretch of the Platte River that is vulnerable to flooding caused by ice jams. The levees in Sarpy County are finished; and the remaining work on the Saunders County side is slated for completion next year.

This \$42 million cooperative project has been in the works for a long time. In 1993, flood waters threatened critical water supply well fields for Omaha's Metropolitan Utilities District and the Lincoln Water System, as well as communications and transportation corridors, including Interstate 80 and NE Highway 6.

After this extensive ice jam flooding, the river reach upstream of Highway 6 in Sarpy and Saunders County was identified for a levee rehabilitation project by the Corps of Engineers. In 2000, Congress approved funding for flood control in the area.

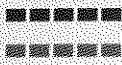
Construction started, but then was stalled throughout the years when federal funding dwindled.

Thanks to recent, much-needed federal funding through the Water Resources Development Act this enormous task will be completed with a secured \$3 million.

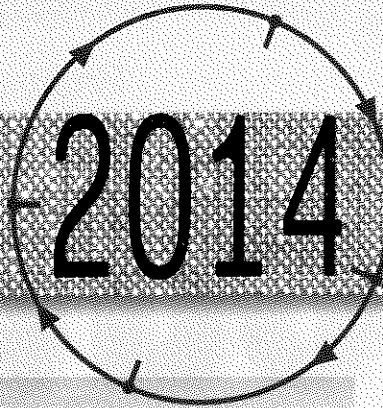
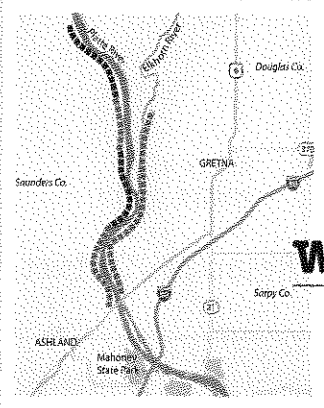
A project of this scope relies on partnerships between cooperating agencies of all kinds.

The Papio-Missouri River NRD and the adjoining NRDs on the west side of the Platte River have served as local sponsors, and have worked cooperatively with the Corps of Engineers, other local, state and federal government agencies, elected officials and adjacent landowners in this project. Federal funds are covering 65 percent of the costs, and state and local dollars are covering the rest.

Under Construction

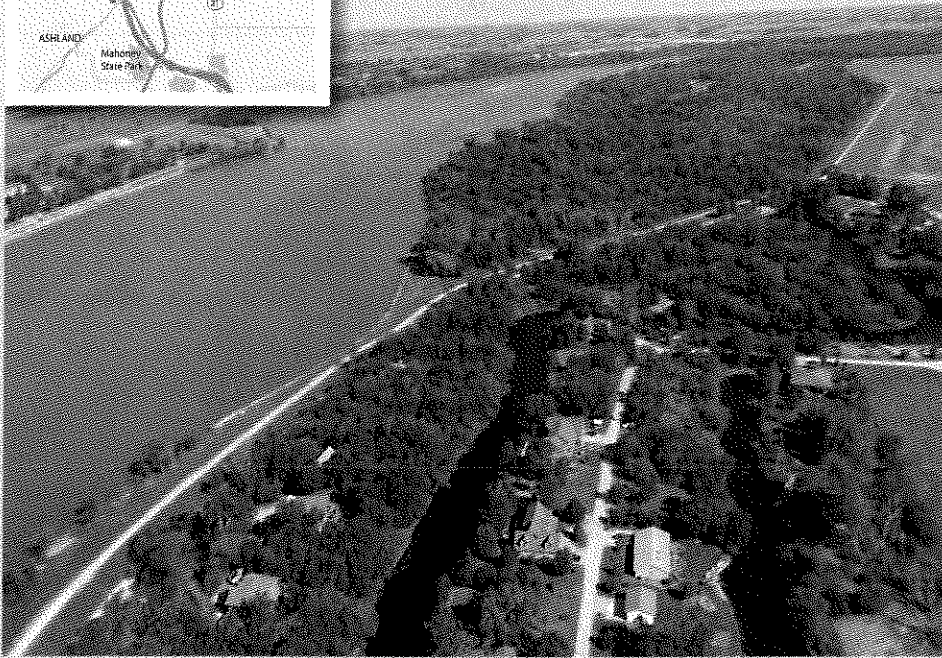


Completed



# FLOOD CONTROL ACROSS

## Western Sarpy/ Clear Creek Flood Control Project



### NRD gives THANKS:

The Papio-Missouri River Natural Resources District Board of Directors would like to thank Senator Deb Fischer along with Congressmen Lee Terry and Jeff Fortenberry for their diligence in achieving the required funding that saved local taxpayers the burden of completing this project. The Board also thanks the U.S. Army Corps of Engineers for their patience, expertise and cooperation.

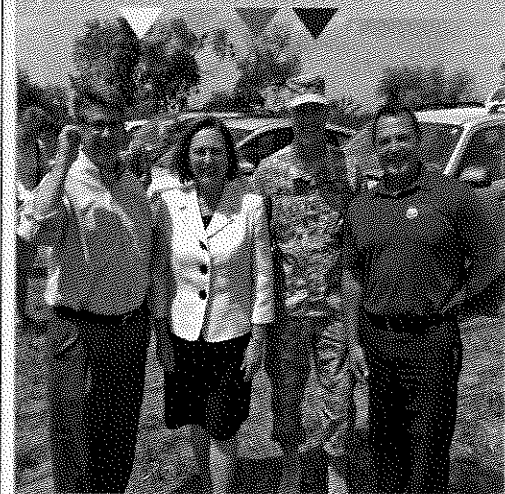
**INFRASTRUCTURE PROTECTION:** A sometimes easily overlooked benefit of effective flood protection is the safeguarding of infrastructure. Eastern Nebraskans depend on travel corridors, clean domestic water supplies, electricity, communication, and so much more. The loss of these public works facilities due to flooding would be devastating to our quality of life.

A recent engineering study showed that a potential flood in metro Omaha could result in \$190 million in damages to public infrastructure.

"Quite simply, our past investment in flood protection projects has not kept pace with human development in our rapidly urbanizing metro area," said **NRD General Manager, John Winkler**. "We can and must do more," he said.

### Some of the critical infrastructure protected by Papio NRD Flood Control projects:

- RAILROADS:** Main lines of the Union Pacific and Burlington Northern Railroad
- ROADS:** Interstate Highways and Bridges (I-80, Hwy 6, Hwy 34)
- INFRASTRUCTURE:** Fiber optic networks, potable water mains, sewer mains, electrical substations and transmission infrastructure, cable and telecommunication lines.
- DRINKING WATER:** MUD and Lincoln Water Works - drinking water production wells and treatment facilities
- BRIDGES:** Over 400 bridges in the Papillion Creek Watershed
- COMMERCIAL:** Thousands of residential and commercial properties.



above from left: Rep. Terry, Sen. Fischer, Corps Col. Joel Cross, NRD General Manager John Winkler



### THANKS to NRD:

Papillion Mayor David Black recently gave thanks "to the NRD Board Members and leadership on your wisdom in funding and building both Walnut Creek Rec Area and the newest reservoir - Prairie Queen Rec Area. I am convinced that without those two stormwater structures in place we would have been evacuating parts of the historical downtown area this summer when Papillion had 8 inches of rain. We feel the impact being at the bottom of the watershed. I've always supported those structures, but that event showed me the reality of why they are there."

<b>Mike Sousek</b>	<b>1-9-15</b>	<b>Annual Leave and Sick Leave Payout</b>				
Annual Leave	81.06	hours			2,322.49	
Sick Leave	589.68	Hours		360	6,580.66	
						8,903.15 District Owes Mike
Tuition Paid						
Spring	2,115.00					
Summer	1,098.86					
						3,213.86 Mike owes District
Rate of Pay	59,595	annual	28.65	Hourly		
						<b>5,689.29 Net - District owes Mike</b>

LOWER PLATTE NORTH NRD  
SUMMARY OF PAYMENTS  
FOR THE PERIOD 12/9/2014-1/12/2015

Date	Name	Reference	Amount
12/10/2014	CITY OF WAHOO UTILITIES	10/22-11/21/14 UTILITIES PMT	\$ 603.71
12/10/2014	CITY OF WAHOO UTILITIES	10/24-11/24/14 COLON WATER PMT	\$ 472.60
12/11/2014	MURREN, MICHAEL J.	BI-WEEKLY PAYROLL	\$ 1,556.81
12/12/2014	MIYOSHI, JOHN R.	BI-WEEKLY PAYROLL	\$ 2,519.09
12/12/2014	ANGLE, LAURENCE	BI-WEEKLY PAYROLL	\$ 1,502.68
12/12/2014	HEIMANN, ROBERT J.	BI-WEEKLY PAYROLL	\$ 1,563.16
12/12/2014	MOUNTFORD, THOMAS A.	BI-WEEKLY PAYROLL	\$ 1,900.67
12/12/2014	BREUNIG, JILL M.	BI-WEEKLY PAYROLL	\$ 1,716.05
12/12/2014	LEU, SUSAN J.	BI-WEEKLY PAYROLL	\$ 682.36
12/12/2014	ALMOND, MICHAEL S.	BI-WEEKLY PAYROLL	\$ 1,163.24
12/12/2014	HOLMBERG, PATRICIA A.	BI-WEEKLY PAYROLL	\$ 738.42
12/12/2014	DOKULIL, DANNY	BI-WEEKLY PAYROLL	\$ 258.41
12/12/2014	MILLIKEN, MARLA M.	BI-WEEKLY PAYROLL	\$ 872.47
12/12/2014	OAKLUND, RUSSELL K.	BI-WEEKLY PAYROLL	\$ 1,297.06
12/12/2014	SOUSEK, MICHAEL J.	BI-WEEKLY PAYROLL	\$ 1,599.55
12/12/2014	REZAC, KAREN M.	BI-WEEKLY PAYROLL	\$ 860.54
12/12/2014	POOLE, CHRISTOPHER L.	BI-WEEKLY PAYROLL	\$ 1,605.87
12/12/2014	BARTEK, KELLY S.	BI-WEEKLY PAYROLL	\$ 873.89
12/12/2014	CAMPBELL, JENNIFER S.	BI-WEEKLY PAYROLL	\$ 641.36
12/12/2014	SCHOMER, BRET C.	BI-WEEKLY PAYROLL	\$ 1,045.34
12/12/2014	BENAL, TYLER J.	BI-WEEKLY PAYROLL	\$ 751.86
12/12/2014	O'REILLY, MITCHELL J.	BI-WEEKLY PAYROLL	\$ 805.57
12/12/2014	THOMPSON, TROY R.	BI-WEEKLY PAYROLL	\$ 1,224.32
12/12/2014	GOTTSCHALK, ERIC P.	BI-WEEKLY PAYROLL	\$ 1,089.00
12/12/2014	EFTPS	12/12/14 FEDERAL TAX DEPOSIT	\$ 8,821.11
12/15/2014	NE DEPT OF REVENUE	NOV 14 SALES TAX PMT	\$ 179.03
12/15/2014	UNION BANK	LOC PMT/INTEREST	\$ 120,041.66
12/15/2014	LAURENCE ANGLE	GMDA EXPENSE CHECK	\$ 188.00
12/15/2014	BRET SCHOMER	GMDA EXPENSE CHECK	\$ 188.00
12/15/2014	DON VESKERNA	GMDA EXPENSE CHECK	\$ 488.70
12/15/2014	LONNIE OLSON	GMDA EXPENSE CHECK	\$ 414.70
12/15/2014	ANNA GOTTSCHALK	OFFICE CLEANING NOVEMBER	\$ 405.00
12/16/2014	MERCH SVC BKCRD	COLON RW CC PMT RANDY BANGHRT	\$ 0.32
12/16/2014	AFLAC	NOV 14 AFLAC PREMIUMS PMT	\$ 388.08
12/16/2014	SAM'S CLUB	OFFICE OTHER/CZECHLAND PMT	\$ 284.00
12/17/2014	NE DEPT. OF REVENUE	NOV 14 STATE INCOME TAX PMT	\$ 2,306.98
12/18/2014	WINDSTREAM NEBRASKA INC.	11/25-12/24/14 LOCAL PH PMT	\$ 277.96
12/18/2014	GMD #3	ADD'L GMDA REGISTRATION	\$ 250.00
12/22/2014	MERCH SVC BKCRD	COLON RW RALPH PALMER CC PMT	\$ 0.32
12/23/2014	MERCH SVC BKCRD	COLON RW DOUG ANDERSON CC PMT	\$ 0.55
12/23/2014	FREMONT SANITATION	WANAHOO REC GARBAGE NOV PMT	\$ 35.00
12/23/2014	FREMONT SANITATION	GARBAGE MAINTENANCE DEC PMT	\$ 35.12
12/24/2014	MURREN, MICHAEL J.	BI-WEEKLY PAYROLL	\$ 1,554.70
12/24/2014	BIRCH COMMUNICATIONS	NOV LONG DISTANCE/800 PMT	\$ 99.88
12/24/2014	BIRCH COMMUNICATIONS	OCT/NOV LONG DISTANCE/800 PMT	\$ 99.88
12/26/2014	MIYOSHI, JOHN R.	BI-WEEKLY PAYROLL	\$ 2,486.97
12/26/2014	ANGLE, LAURENCE	BI-WEEKLY PAYROLL	\$ 1,491.18
12/26/2014	HEIMANN, ROBERT J.	BI-WEEKLY PAYROLL	\$ 1,559.36
12/26/2014	MOUNTFORD, THOMAS A.	BI-WEEKLY PAYROLL	\$ 1,874.52
12/26/2014	BREUNIG, JILL M.	BI-WEEKLY PAYROLL	\$ 1,714.20

LOWER PLATTE NORTH NRD  
SUMMARY OF PAYMENTS  
FOR THE PERIOD 12/9/2014-1/12/2015

12/26/2014	LEU, SUSAN J.	BI-WEEKLY PAYROLL	\$ 682.36
12/26/2014	ALMOND, MICHAEL S.	BI-WEEKLY PAYROLL	\$ 1,163.24
12/26/2014	HOLMBERG, PATRICIA A.	BI-WEEKLY PAYROLL	\$ 738.43
12/26/2014	DOKULIL, DANNY	BI-WEEKLY PAYROLL	\$ 320.65
12/26/2014	MILLIKEN, MARLA M.	BI-WEEKLY PAYROLL	\$ 872.49
12/26/2014	OAKLUND, RUSSELL K.	BI-WEEKLY PAYROLL	\$ 1,296.29
12/26/2014	SOUSEK, MICHAEL J.	BI-WEEKLY PAYROLL	\$ 1,598.71
12/26/2014	REZAC, KAREN M.	BI-WEEKLY PAYROLL	\$ 860.54
12/26/2014	POOLE, CHRISTOPHER L.	BI-WEEKLY PAYROLL	\$ 1,605.28
12/26/2014	BARTEK, KELLY S.	BI-WEEKLY PAYROLL	\$ 873.90
12/26/2014	CAMPBELL, JENNIFER S.	BI-WEEKLY PAYROLL	\$ 641.36
12/26/2014	SCHOMER, BRET C.	BI-WEEKLY PAYROLL	\$ 1,045.33
12/26/2014	BENAL, TYLER J.	BI-WEEKLY PAYROLL	\$ 751.85
12/26/2014	O'REILLY, MITCHELL J.	BI-WEEKLY PAYROLL	\$ 805.58
12/26/2014	THOMPSON, TROY R.	BI-WEEKLY PAYROLL	\$ 1,224.13
12/26/2014	GOTTSCHALK, ERIC P.	BI-WEEKLY PAYROLL	\$ 1,089.00
12/26/2014	EFTPS	12/26/14 FEDERAL TAX DEPOSIT	\$ 8,922.33
12/29/2014	CREDENTIALING DIVISION	5 GROUNDWATER TECH CERTS	\$ 750.00
12/29/2014	SAINT BENEDICT CENTER	GWMP NITROGEN CLASS DEPOSIT	\$ 50.00
12/29/2014	UNION BANK	PRINCIPAL PMT WANAHOO LOAN	\$ 350,000.00
12/31/2014	MERCH SVC BKCRD	COLON RW HELEN NELSON CC PMT	\$ 1.03
12/31/2014	READYTALK	NOV CONFERENCE CALLS PMT	\$ 17.88
12/31/2014	JOHN DEERE FINANCIAL	O&M EQUIP PMT JDF	\$ 1.84
12/31/2014	BUTLER PUBLIC POWER DISTRICT	NOV 14 BPPD UTILITIES PMT	\$ 201.08
1/2/2015	UNION BANK	ACH CHARGES LPN PAYROLL/BILLS	\$ 44.00
1/2/2015	ADT SECURITY	MONTHLY SERVICE FEE-ADT	\$ 45.10
1/5/2015	AUTHNET GATEWAY BILLING	MONTHLY CC FEES	\$ 20.60
1/5/2015	MERCH SVC BKCRD	MONTHLY CC FEES	\$ 171.16
1/5/2015	DAVID CITY UTILITIES	BRUNO WATER PURCH DEC PMT	\$ 1,091.90
1/5/2015	BANKCARD PROCESSING CENTER	NOVEMBER 14 VISA PURCH PMT	\$ 1,590.70
1/6/2015	MERCH SVC BKCRD	COLON RW ERIC CAPRON CC PMT	\$ 0.75
1/6/2015	MERCH SVC BKCRD	COLON RW CC PMT ERIN HARMON	\$ 1.08
1/6/2015	FUTURE TECHNOLOGIES	JANUARY 15 INTERNET PMT	\$ 199.99
1/7/2015	GOOGLE	DECEMBER 14 GOOGLE EMAIL PMT	\$ 83.33
1/8/2015	MURREN, MICHAEL J.	BI-WEEKLY PAYROLL	\$ 1,558.47
1/9/2015	MIYOSHI, JOHN R.	BI-WEEKLY PAYROLL	\$ 2,493.96
1/9/2015	ANGLE, LAURENCE	BI-WEEKLY PAYROLL	\$ 1,523.25
1/9/2015	HEIMANN, ROBERT J.	BI-WEEKLY PAYROLL	\$ 1,565.96
1/9/2015	MOUNTFORD, THOMAS A.	BI-WEEKLY PAYROLL	\$ 1,899.27
1/9/2015	BREUNIG, JILL M.	BI-WEEKLY PAYROLL	\$ 1,732.21
1/9/2015	LEU, SUSAN J.	BI-WEEKLY PAYROLL	\$ 682.92
1/9/2015	ALMOND, MICHAEL S.	BI-WEEKLY PAYROLL	\$ 1,150.36
1/9/2015	HOLMBERG, PATRICIA A.	BI-WEEKLY PAYROLL	\$ 738.98
1/9/2015	DOKULIL, DANNY	BI-WEEKLY PAYROLL	\$ 327.41
1/9/2015	MILLIKEN, MARLA M.	BI-WEEKLY PAYROLL	\$ 872.48
1/9/2015	OAKLUND, RUSSELL K.	BI-WEEKLY PAYROLL	\$ 1,299.02
1/9/2015	SOUSEK, MICHAEL J.	BI-WEEKLY PAYROLL	\$ 1,600.94
1/9/2015	REZAC, KAREN M.	BI-WEEKLY PAYROLL	\$ 861.28
1/9/2015	POOLE, CHRISTOPHER L.	BI-WEEKLY PAYROLL	\$ 1,607.82
1/9/2015	BARTEK, KELLY S.	BI-WEEKLY PAYROLL	\$ 875.00
1/9/2015	CAMPBELL, JENNIFER S.	BI-WEEKLY PAYROLL	\$ 642.10

LOWER PLATTE NORTH NRD  
SUMMARY OF PAYMENTS  
FOR THE PERIOD 12/9/2014-1/12/2015

1/9/2015	SCHOMER, BRET C.	BI-WEEKLY PAYROLL	\$	1,072.48
1/9/2015	BENAL, TYLER J.	BI-WEEKLY PAYROLL	\$	752.71
1/9/2015	O'REILLY, MITCHELL J.	BI-WEEKLY PAYROLL	\$	806.51
1/9/2015	THOMPSON, TROY R.	BI-WEEKLY PAYROLL	\$	1,225.16
1/9/2015	GOTTSCHALK, ERIC P.	BI-WEEKLY PAYROLL	\$	1,090.11
1/9/2015	EFTPS	1/9/15 FEDERAL TAX DEPOSIT	\$	8,735.92
1/12/2015	NATIONWIDE INSURANCE CO.	DECEMBER 14 RETIREMENT	\$	12,373.35
1/12/2015	NARD	LEGISLATIVE CONFERENCE REG	\$	3,250.00
1/12/2015	NORTH BEND EAGLE	LEGAL NOTICES	\$	12.23
1/12/2015	WAHOO-WAVERLY-ASHLAND NEWSPAPERS	LEGALS/SPECIAL CONS AD	\$	493.51
1/12/2015	FREMONT TRIBUNE	LEGAL NOTICES	\$	13.09
1/12/2015	QUILL CORPORATION	OFFICE/COPIER SUPPLIES	\$	170.87
1/12/2015	SOLUTION ONE	COPIER SUPPLIES/MAINT. CONTRAC	\$	384.10
1/12/2015	AS CENTRAL SERVICES	CELL PH/AIR CARD/RW IPAD/IPADS	\$	605.04
1/12/2015	BROMM, LINDAHL, ET AL	RETAINER JANUARY	\$	450.00
1/12/2015	NEBRASKA PUBLIC HEALTH ENVIRONMENTAL LAB	NITRITE SAMPLING	\$	138.00
1/12/2015	COLUMBUS TELEGRAM	LEGAL NOTICES	\$	101.64
1/12/2015	EAKES OFFICE PLUS	COPIER SUPPLIES	\$	221.94
1/12/2015	BOMGAARS	NOV/DEC BOMGAARS PURCH	\$	109.98
1/12/2015	NARD RISK POOL ASSOCIATION	JAN 15 EMPLOYEE BENEFITS	\$	27,713.48
1/12/2015	COLFAX COUNTY CLERK	COUNTY ELECTION FEES	\$	4,712.11
1/12/2015	VILLAGE OF PRAGUE	XFR STATION CZECHLAND	\$	100.00
1/12/2015	JEO CONSULTING GROUP, INC.	HAZARD MITIGATION/WAH CR 319	\$	18,499.50
1/12/2015	BOONE COUNTY CLERK	COUNTY ELECTION FEES	\$	739.37
1/12/2015	CORNER MARKET	FUEL DECEMBER	\$	559.20
1/12/2015	SUMMIT GROUP SOFTWARE, INC.	2013 ACCOUNTING GP UPGRADE	\$	2,200.00
1/12/2015	CITY OF NORTH BEND	ROCK & JETTY PROGRAM	\$	1,717.50
1/12/2015	CORNHUSKER PRESS	2015 NARD CALENDARS	\$	311.24
1/12/2015	BUTLER COUNTY CHAMBER OF COMMERCE	CHAMBER DUES FY15	\$	94.00
1/12/2015	OLSSON ASSOCIATES	IMP SERVICES THROUGH 11/29	\$	10,496.85
1/12/2015	DON YINDRICK	ABNANDONED WELL C/S PROGRAM	\$	870.96
1/12/2015	M.E. COLLINS CONTRACTING CO	REPAIR WANAHOO SPILLWAY O&M	\$	14,820.00
1/12/2015	NEBRASKA DEPT OF REVENUE	FORM 64 LODGING TX PMT 2014	\$	297.37
1/12/2015	MIDTOWN AMOCO	FUEL DECEMBER	\$	69.68
1/12/2015	VILLAGE OF LINDSAY	NITROGEN CERT CLASS ROOM FEE	\$	75.00
1/12/2015	KELLY & WEAVER P.C.	WEAVER EXPENSE DECEMBER	\$	3,300.00
1/12/2015	RVS SOFTWARE	RVS SOFTWARE RWD BILLS	\$	62.84
1/12/2015	VILLAGE OF COLON	SEWER FEES OCT-DEC. 2014	\$	6,588.00
1/12/2015	MID-AMERICAN BENEFITS INC	FLEXIBLE SPENDING JANUARY	\$	1,001.50
1/12/2015	AGRICULTURE PARK	GWMP NITROGEN CLASS	\$	200.00
1/12/2015	KTIC AM	KTIC AD DECEMBER	\$	186.00
1/12/2015	ENWRA	2015 ENWRA DUES	\$	30,000.00
1/12/2015	NEBRASKA GAME & PARKS COMMISSION	GAME & PARK PERMITS DECEMBER	\$	630.50
1/12/2015	UNION BANK-CASH	REPLENISH PC DECEMBER	\$	2.14
1/12/2015	ANNA GOTTSCHALK	OFFICE CLEANING DECEMBER	\$	405.00
1/12/2015	NETS	E-MEETNG SOFTWARE 1/1-12/31/15	\$	2,500.00
1/12/2015	TITAN MACHINERY WAHOO	BOBCAT REP/MOWER O&M EQUIP	\$	1,119.69
1/12/2015	JAMIE YINDRICK	ABANDONED WELL C/S PROGRAM	\$	854.59
1/12/2015	JOHANNES, CLINTON C.	QUARTERLY PER DIEM	\$	629.71
1/12/2015	KAVAN, DONALD M.	QUARTERLY PER DIEM	\$	1,030.47
1/12/2015	MCDERMOTT, JAMES F.	QUARTERLY PER DIEM	\$	469.23

LOWER PLATTE NORTH NRD  
SUMMARY OF PAYMENTS  
FOR THE PERIOD 12/9/2014-1/12/2015

1/12/2015	SABATKA, RONALD F.	QUARTERLY PER DIEM	\$ 602.70
1/12/2015	SAALFELD, DAVID W.	QUARTERLY PER DIEM	\$ 711.76
1/12/2015	PIEKE, RALPH J.	QUARTERLY PER DIEM	\$ 1,179.66
1/12/2015	HANNAH, JOHN R.	QUARTERLY PER DIEM	\$ 1,064.11
1/12/2015	HILGER, ROBERT B.	QUARTERLY PER DIEM	\$ 1,494.38
1/12/2015	MEDUNA SR., ROBERT J.	QUARTERLY PER DIEM	\$ 193.52
1/12/2015	VESKERNA, DONALD	QUARTERLY PER DIEM	\$ 583.99
1/12/2015	TAYLOR, WILLIAM	QUARTERLY PER DIEM	\$ 392.43
1/12/2015	POLLARD, FRANK	QUARTERLY PER DIEM	\$ 722.03
1/12/2015	HAGERBAUMER, FRED D.	QUARTERLY PER DIEM	\$ 581.75
1/12/2015	RUZICKA, GENE	QUARTERLY PER DIEM	\$ 956.95
1/12/2015	OLSON, LONNIE	QUARTERLY PER DIEM	\$ 745.36
1/12/2015	BIRKEL, JOSEPH H.	QUARTERLY PER DIEM	\$ 658.56
1/12/2015	CLAUSEN, ROBERT L.	QUARTERLY PER DIEM	\$ 701.59
1/12/2015	BAILEY, MATT P.	QUARTERLY PER DIEM	\$ 576.14
1/12/2015	SEIER, MARK J.	QUARTERLY PER DIEM	\$ 109.76
1/12/2015	SOUSEK, MICHAEL J.	FINAL LEAVE PAYOUT-SOUSEK	\$ 4,009.21
1/12/2015	PETRIK, DAN	MONTHLY PAYROLL	\$ 286.29
1/12/2015	BOHATY, DONALD L.	MONTHLY PAYROLL	\$ 385.55
1/12/2015	GOTTSCHALK'S ATHLETIC GOODS CO	UNIFORM EXPENSE	\$ 216.50
1/12/2015	JERRY SOUKUP	SAND DUCK C/S 319 PMT	\$ 5,204.40
1/12/2015	VOBORILS	FLAT REPAIR	\$ 10.00
1/12/2015	MERCH SVC BKCRD	COLON RW REGINA HEJHAL CC PMT	\$ 0.16
1/12/2015	CITY OF WAHOO UTILITIES	11/21-12/19/14 COLON WATER PMT	\$ 451.70
1/12/2015	CITY OF WAHOO UTILITIES	11/21-12/19/14 UTILITIES PMT	\$ 676.12
<b>Total Payments 12/9/2014-1/12/2015</b>			<b>\$ 759,499.78</b>