

Water Committee Meeting
 Wednesday, June 1, 2016 5:00 PM
 Lower Platte North NRD Office
 P.O. Box 126
 Wahoo, NE 68066

1. REGULATORY

fore score and seven

1.A. GROUND WATER MANAGEMENT AREA

1.A.1. Variance Request in the Hydrologically Connected Area (Limited Development Area)

The District received one expanded water use variance application for 70 acres in the Middle Shell Creek subarea.

The District has a total of 98 applications for 6,067.61 acres.

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

No new updates.

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

The District received one expanded water use application for 34 acres in the Prague subarea. This field is adjacent to the Todd Valley subarea.

1.A.4. Well Permit Program

1.A.4.a. Well Permits Approved

No new permits were approved since the last Committee meeting.

Landowner	Number of Wells	Number of New Irrigated Acres	Type

The total number of approved permits for 2016 is 5.

Location of Approved Well Permits for 2016: Correct as of 6/1/2016

County	Irrigation - New	Irrigation - Replacement	Sum
Butler	0	0	0
Colfax	0	1	0

Dodge	0	3	0
Boone	0	0	0
Madison	0	0	0
Platte	0	0	0
Saunders	1	0	0
Total	1	4	0

1.A.4.b. Jeffery Temme Well Permit Application

Jeffery Temme has applied for a new supplemental well in the NE 1/4, NE 1/4, Section 14, T22N, R6W, Boone County, Upper Newman Grove Subarea. The new well will irrigate 156 acres that are currently being watered with well G-087266 (see attached map for a total of 212 acres). Well G-087266 will continue to irrigate 56 acres in the N 1/2, SE 1/4 of the same section. Attached is a map of the field in question, the well log for G-087266, and a copy of the application.

The committee reviewed the application and test hole well log.

1.A.5. Special Quantity Subareas

1.A.5.a. Butler - Saunders SQS (SQS #1)

There are 30 irrigation wells in this SQS -- water level has been measured in 28 of these wells. 25 of these have a flow meter; the other five wells were not used in 2015.

1.A.5.b. Platte - Colfax SQS (SQS #2)

Three informational classes for this area were held and some of these attendees were at more than one class. Most of the attendees neglected to bring their well registration number(s) to the class so cross-referencing for the correct operator for each well has taken longer. A landowner - tenant request sheet was mailed to those individuals for which no clear connection was made. Permission sheets, for measurement of their water level, have been received for about 125 wells. Landowner - tenant request sheets and permission sheets continue to be received in the mail.

1.A.5.c. SQS Flow Meter Maintenance Program

McCrometer Great Plains was asked to attend, but due to other commitments they won't be able to attend until the next Water Committee meeting.

Committee members discussed the number of wells that should have flow meters already installed and suggested that these wells should have higher priority on the meter maintenance schedule.

After the committee meeting staff pulled up information on wells that were issued well permits from May 2008 to the present, when flow meters were required to be installed. The number in SQS #1 is 7 and in SQS #2 is 46 (see attached sheets).

From October 1, 2005 to May 8, 2008 the LPNNRD required on all well permits for high capacity wells that a flow meter or time totalizer be installed. Therefore the number of wells with flow meters in both SQS areas could be higher.

1.A.5.d. Schure Flow Meter Installation Question

John Schure contacted the District regarding his flow meter installation. The meter is installed at the pivot point, but the well is also used to irrigate 5 acres with gated pipe in the SW 1/4 of the field. The irrigation pipe that feeds the gravity system connects to the discharge 3' from the well. Mr. Schure would rather not purchase a second meter for the 5 acres so he has asked the Board to provide him with an alternative option. Below is a list of possible solutions created by the staff.

- 1) Assume that 9 or 12 inches of water is pumped annually on the 5 acres. (12" is the hard cap LPSNRD has given to gravity fields in their district.)
- 2) Take the acre inches pumped under the pivot and double that number for the gravity acres. (possibly cap at a certain level)
- 3) Take the acre inches pumped under the pivot and add on an extra 15% of that number due to the inefficiency of gravity irrigation.
- 4) Not allow the water to be provided to the gravity system without first passing through the flow meter. (This would require re-working the delivery system at the well and at the pivot).

See attachments of field map and pictures taken at the well site.

The disadvantage of options 1, 2, and 3 is that additional calculations would be required to track actual water use and take these into account for readings from the flow totalizer on the meter.

After review of the information and pictures it was felt by Committee Members that option 4 was preferred since the well pump could be turned and the piping system rearranged so all water pumped could flow through the meter.

1.A.6. Lower Platte River Basin Water Management Plan Coalition (LPRBC)

The latest information from the LPRBC is that the listed water demand at the Louisville gauge has nearly doubled. This was due to an error in previous water

accounting by DNR and may mean the basin is closer to being declared fully appropriated.

Notes from the May 4, 2016 technical committee meeting are attached.

See related projects to the basin listed below under 'Special Studies'.

1.A.7. Voluntary Integrated Water Management Plan - LENRD and LPNNRD

After recent review with DNR, attached are the Goals, Objectives, and Action Items for LPN V-IMP. Annual meetings are required between DNR and LPNNRD personnel to track progress on this V-IMP. Also attached are the final recommendations by the Stakeholders Comm.

Committee Members reviewed each action items and changes are outlined on the attached document.

Steps for approval of LPNNRD V-IMP

- Water Comm. and Board approval of Goals, Objectives, and Action Items (G,O,AI of V-IMP)

- Submit to Olsson Assoc. and DNR revised G,O,AI of V-IMP as well as edited Plan.

- Review and final comments by Stakeholders Comm.

- Review and approval of Water Comm. and Board of entire V-IMP

- Submit to DNR for their final review

- Hold public hearings and final approval of V-IMP

1.A.8. Cost Share Programs

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

No new update.

1.A.8.b. Domestic Well Sample Kits

No new update.

1.A.8.c. Nebraska Agricultural Water Management Network (NAWMN)

Eight producers have ordered equipment for 2016 in our NAWMN program (see attached spreadsheet). The ordered equipment was picked up by Aaron Nygren (Colfax County Extension Educator) last Friday and he will get the orders to producers.

Lindsay CO-OP is working with eight other producers in the Shell Creek area for additional orders, but this will not be part of our program.

1.A.9. Bellwood Phase 2 Area

2016 is the fourteenth year for this Phase 2 Area. This area was reduced from 32 sections to 21 sections in 2015. The Phase 2 information will be mailed to producers during June.

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

On September 1, 2015, the ten sections immediately north of the Phase 3 area became a Phase 2 Area. Staff collected eight water samples from irrigation wells in these sections in 2015. The nitrate results ranged from 6.00 to 20.7 ppm.

1.A.11. Richland - Schuyler Phase 3 Area

2016 is the first year of this Phase 3 Area, since this area went into effect September 1, 2015. The 55 sections of this area initially was a Phase 2 Management Area, which started in 2004.

1.A.12. LPNNRD Certification

1.A.12.a. LPNNRD Operator Certification

No on-line test requests have been received since the last committee meeting and no on-line tests were completed in May.

1.A.13. Certifying Acres in Saunders and Dodge Counties

Chris Poole says he has 133 acre certifications that have not been returned by today's (June 1, 2016) deadline. Staff recommendation is to issue cease and desist orders against further irrigation at the June 13, 2016 Board meeting to take affect on June 17, 2016.

See attached spreadsheet for names of landowners and parcels.

1.B. CHEMIGATION

For 2016 we have received 464 renewals and 24 new permit applications for a current total of 488. June 1st is the deadline for renewal chemigation permits. At the end of last year we had a total of 515 permits.

County	Number of Renewals
Boone	50
Butler	63
Colfax	23
Dodge	78
Madison	6
Platte	79
Saunders	165

County	Number of New Applications
Boone	0
Butler	6
Colfax	5
Dodge	6
Madison	0
Platte	2
Saunders	5

County	Number Of Renewals
Boone	
Butler	
Colfax	
Dodge	
Madison	
Platte	
Saunders	

County	Number Of Renewals
Boone	
Butler	
Colfax	
Dodge	
Madison	
Platte	
Saunders	

County	Number Of Renewals
Boone	
Butler	
Colfax	
Dodge	
Madison	
Platt	

1.C. LIVESTOCK WASTE PERMITS

The LPNDRD has received one livestock permit applications from DEQ since the last Water Committee meeting.

Name	Livestock	Type of Permit	Legal Description
Lindhorst Livestock 103 Ash Street	Finish Swine 2,400 Head 960 A.U.	Expansion on existing operation	SW 1/4, Section 25, T20 R4W

Lindsay NE 68644			
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Lindhorst Livestock is looking to expand on a existing operation of 800 head (320 A.U.) of finish swine to a total of 2,400 head (960 A.U.).

2. GROUND WATER PROGRAMS

2.A. DECOMMISSIONED WELL PROGRAM

2.A.1. Well Estimates

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

Well Owner	Type of Well	Cost Share Estimate	County
Casey Rogers	Stock	\$393.75	Saunders
St. John's Lutheran Church	Domestic	\$981.15	Platte

2.A.2. Plugged Wells

No wells have been plugged, reviewed, or ready for cost share payment approval this month.

2.B. LOWER PLATTE NORTH NRD GROUND WATER STUDIES

2.B.1. Elkhorn Loup Model (ELM)

No new update.

2.B.2. Eastern Nebraska Water Resources Assessment (ENWRA)

Still waiting on contract from DNR for the AEM flights in both the SQS areas. They hope to fly these areas mid to late summer of this year. Spacing between flight lines is expected to be a half mile over each of the SQS areas. The helicopter company requires a 30% payment before they fly to pay some of their equipment and personnel costs. This would mean this 30% payment would have to come from FY2015-2016, but we do have money available in this fiscal year's budget.

A motion will be needed at the Board meeting to approve payment not to exceed \$125,000 for this fiscal year FY15-16 (or 30% of the total grant request of \$416,666 for the Lower Platte North NRD Aquifer Framework Mapping 2016) upon receiving an invoice from the grant Consultant.

2.B.3. Platte Elkhorn Integrated Water Monitoring

Previously the board has approved participating with Papio NRD to look at the relationship between surface and groundwater aquifers between the Platte and Elkhorn Rivers. Attached is the Interlocal Cooperative Agreement between Papio NRD and LPNNRD to formalize our previous agreement. AS you can read in the agreement most of the funding was obtained from the WSF for a two year study and LPNNRD portion is \$10,700 per year. This was initially approved in December 2015.

This study is related to the LPRBC and the ability to convey water from the upper part of the basin to the lower portion.

2.B.4. Lower Platte River Drought Contingency Plan

LPN, LPS, and Papio NRD's as well as the Cities of Omaha and Lincoln, representatives from DNR, LPRCA, and consulting firms of HDR and TFG met on May 12, 2016 to discuss the Lower Platte River Drought Contingency Plan. LPSNRD is proposing to submit a grant request to the WSF in July to study the ability of the Platte River to conduct water from the middle portions of the basin to the lower portion. Two funding scenarios are being looked at (see attached sheet) but both scenarios would total \$400,000. Scenario #1 would require \$8,000 from each partner, while scenario #2 would require \$14,812 from each.

2.C. NEW MONITORING WELLS

Downey Well drilling will likely start drilling our three new monitoring wells within the next two weeks. The sites selected are west of Fremont, but just east of the Fremont cutoff ditch. This area has a bedrock high and one of the wells here will be installed into this bedrock with estimated depth of 300 feet. The second shallower well will be installed in the upper aquifer that is fairly thin and will be about only 25 feet deep.

The second site is near Malmo and this well will be installed into the Dakota with estimated depth of 500 feet.

Two Level Troll data loggers purchased in 2015 from In-Situ have both had sensor failure. Both were under warranty and replacement loggers have been received. Two other older loggers (one from 2006, other from 2007, both sent in for evaluation) are unrepairable due to their older style circuit boards. One replacement logger has been purchased and the second one has been ordered. We have six more loggers in operation that were purchased in 2006 or 2007 and may need replacing.

2.D. FORMER ORDNANCE PLANT NEAR MEAD

The latest public availability meeting and tour was held on May 18, 2016 starting at 4:30 p.m. The latest sampling efforts looked at the Omadi Formation of the Dakota bedrock for TCE and RDX. Three sites were sampled and were found to have concentrations of both TCE and RDX at much deeper depths than previously reported. See attached NOP Fact Sheet.

When the C.O.E. drilled and sampled these wells Katie Cameron of ENWRA also sampled these wells at different depths for general water quality such as conductivity, ions, etc. While the general water quality looks encouraging several other parameters should be tested, such as arsenic and selenium which are naturally occurring.

3. SURFACE WATER PROGRAMS

3.A. PRECIPITATION GAUGING NETWORK

We only have four cooperators left in the LPN Precipitation Gauging Network and three of those are in the Prague to Weston area. I feel it is time to end this program and incorporate it into the NeRain program. NeRain has ~19 sites in our District and with sites from the High Plains Regional Climate Center I feel we still have adequate coverage. A letter was sent to each cooperator informing them that we could transfer them to the NeRain program if they are interested.

The PGN summary for 2015 is attached and from this data, it was a wet year for our District. These four cooperators reported an average of 38.9 inches for LPNNRD. The drought map, drought forecast map, and the High Plains Regional Climate Center (HPRCC) map summary for 2015 are attached.

3.B. STATE LAKES, FOR THE WEEK OF

3.B.1. Bacteria Sampling

Week of May 23rd, 2016

This week's lake beach bacteria and toxic algae results are now posted on the NDEQ web page (<http://deq.ne.gov>).

Most lakes look to be in great shape for the big holiday weekend. However, continued spring rains and the associated runoff is leaving us with six lakes this week that are exceeding the *E. coli* criteria. Most of the microcystin levels are below detection levels with the exception of a few lakes. Pawnee Lake in Lancaster County looks to be shaping up early to be a hot spot for microcystin this summer.

Bacteria

SIX LAKES tested high for *E. coli* bacteria this week. *E. coli* levels measured above 235 colonies/100 ml of sample are considered a higher risk for illness when swimming. Considering the more rapid changes in bacteria conditions, signs are not posted with these higher levels although DEQ want people to be aware and use their own judgment on their use.

Lakes with High E. coli Bacteria Levels

- **Carter Lake in Douglas County**
- **Kirkman's Cove in Richardson County**
- **Lake North in Platte County**
- **Mormon Island Lake in Hall County**
- **Valentine Mill Pond in Cherry County**
- **Willow Creek Lake in Pierce County**

3.B.2. Toxic Algae

Week of May 23rd, 2016

This week's lake beach bacteria and toxic algae results are now posted on the NDEQ web page (<http://deq.ne.gov>).

Toxic Algae

NO LAKES will be on "Health Alert" this week. It is DEQ policy that any lake that has microcystin levels over the established criterion of 20 ppb will be placed on "Health Alert" Status until such time that it has tested below 20 ppb for two continuous weeks. If a lake is under a Health Alert, signs will be posted recommending people avoid full body contact activities such as swimming, wading, skiing, jet skiing, etc. Non-contact activities such as boating, fishing, and camping are OK.

3.C. USGS WATER QUALITY MONITORING ON SHELL CREEK

Attached is the latest funding agreement with USGS on continued water quality monitoring on Shell Creek through April 1, 2017. From the last page the agreement from March 31, 2016 to March 31, 2017 estimated payment is \$16,600.

4. OTHER

4.A. LPNNRD MASTER DATABASE

Staff have met several times this last month with Phoenix Group on the Master Database and other projects such as telemetry for our data loggers and rural water systems. The current database works well but staff recommended some modifications.

4.B. LPNNRD WATER PROGRAMS BUDGET FY16-17

See attached sheet for potential test holes and monitoring well sites. Also attached is an estimated budget for FY16-17.

Current and future Water Staff focus is:

- AEM flights in both SQS areas to better map the geology of these areas. With this information we can better locate future monitoring wells in these confined aquifers.
- Prague subarea has very little information about the geology, therefore some test holes are recommended deep into the bedrock. This would serve as ground truthing information for future AEM flights and locations for future monitoring wells.

4.C. GMDA ANNUAL CONFERENCE

The next GMDA conference will be held in Yakima WA on June 29th to July 1, 2016.

Because this overlaps with the June 29, 2016 Water Committee meeting it was the opinion of the Committee Members to move the meeting to Monday June 27, 2016 to start at the usual time of 5:00 p.m.

4.D. 2014 SUMMER INTERNS

The three summer interns took the Natural Resources Ground Water Technician [NRGWT] training class and test yesterday (May 31, 2016) at the new office of UBBNRD in York. Test results should be available in 7 – 10 days.

4.E. COMMENTS FROM THE PUBLIC

Board chairman John Hannah, LPN staff members Cassi Deerson and Desirae TePoel, and Nathan Rossman of HDR were also present at the Water Committee meeting.

The Water Committee adjourned at 8:45 p.m.

T22N R6W S11

T22N R6W S12

New Well Location

T22N R6W S14

T22N R6W S13

G-087266



Registration Number G-087266, Well ID 99049

Geo Logs

FromDepth	ToDepth	Description	Color	Density	Composition
0	15	TOP SOIL & CLAY			Other
15	30	CLAY (FRACTURE)			Other
30	60	CLAY			Other
60	75	CLAY & THIN SAND STREAKS			Other
75	90	CLAY & SAND LAYERS			Other
90	105	SAND			Other
105	120	MOSTLY CLAY THIN SAND STREAKS			Other
120	135	CLAY & SAND STREAKS			Other
135	145	CLAY			Other
145	150	SAND			Other
150	165	SAND & CLAY STREAKS			Other
165	168	CLAY			Other
168	180	GRAVEL SOME COARSE SAND			Other
180	191	COARSE SAND & GRAVEL			Other
191	193	CLAY			Other
193	195	FINE GRAVEL			Other
195	210	FINE GRAVEL & COARSE SAND			Other
210	225	MEDIUM TO COARSE SAND THIN CL			Other
225	232	MEDIUM SAND LAYERS			Other
232	240	MEDIUM SAND LAYERS MIXED WITH			Other
240	252	MEDIUM SAND			Other
252	255	MEDIUM SAND & CLAY STREAKS			Other
255	265	MEDIUM SAND			Other
265	270	MEDIUM SAND & CLAY STREAKS			Other
270	285	SAND & SANDSTONE			Other
285	296	MEDIUM SAND			Other
296	300	MEDIUM SAND & WHITE CLAY LAYE			Other
300	310	FINE TO MEDIUM SAND			Other
310	315	FINE TO MEDIUM SAND & CLAY LA			Other
315	356	CLAY			Other
356	360	COARSE SAND			Other
360	390	MEDIUM TO COARSE SAND			Other
390	405	CLAY			Other
405	420	COLORRED CLAY			Other

Casing and Screen

Grout and Gravel

**APPLICATION FOR A PERMIT TO CONSTRUCT A WATER WELL
IN THE LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT**

Russell

DNR & NRD USE ONLY			
Permit No. _____	Date Approved/Denied _____	NRD Representative <u>R. Oakland</u>	
Permit Type: New, Replacement or Late _____	Date Received <u>4/15/2016</u>	Paid: Cash or Check <u>#5752</u>	
Date Post-inspected _____	Registration No. _____	Updated Form: May 2008 <u>#52.00</u>	

ALL APPLICANTS SEEKING A WATER WELL PERMIT MUST COMPLETE PAGES 1 AND 2, AND THE APPROPRIATE SECTION BASED ON THE PURPOSE OF THE WELL. (CLASS 1-4 WELL PERMIT)
 WATER WELL PERMITS FOR IRRIGATED ACRES GREATER THAN 160 ACRES IN SIZE OR TOTAL ANNUAL WATER USE BETWEEN 150 AND 300 ACRE FEET PER YEAR MUST COMPLETE PAGES 1, 2, AND 3, AND THE APPROPRIATE SECTION BASED ON THE PURPOSE OF THE WELL. (CLASS 3 WELL PERMIT)
 WATER WELL PERMITS FOR TOTAL ANNUAL WATER USE EQUAL TO OR GREATER THAN 300 ACRE FEET PER YEAR, REGARDLESS OF NUMBER OF IRRIGATION ACRES, MUST COMPLETE PAGES 1, 2, AND 4, AND THE APPROPRIATE SECTION BASED ON THE PURPOSE OF THE WELL. (CLASS 4 WELL PERMIT)

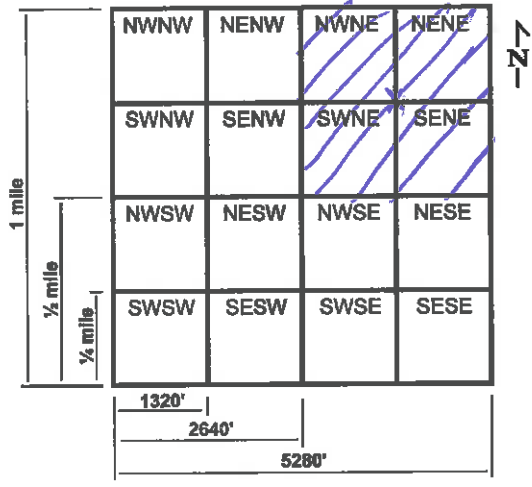
1. NAME AND ADDRESS OF LAND OWNER: <u>JEFFERY J. TEMME</u> <u>2656 STATE HWY 32</u> <u>PETERSBURG, NE 68662</u> Phone: <u>402-843-8440</u>	NAME AND ADDRESS OF CONTACT: <u>JEFFERY J. TEMME</u> <u>2656 STATE HWY 32</u> <u>PETERSBURG, NE</u> Phone: <u>402-843-8440</u>
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2. PURPOSE OF NEW WATER WELL (indicate one):

<input checked="" type="checkbox"/> Irrigation (Complete section A)	<input type="checkbox"/> Dewatering (Over 30 days, Complete section B)
<input type="checkbox"/> Livestock (Complete section C)	<input type="checkbox"/> Domestic (Irr. on one acre or larger, Complete section D)
<input type="checkbox"/> Industrial (Complete section E)	<input type="checkbox"/> Public Water Supply (Complete section F)
<input type="checkbox"/> Recovery or Remediation (Complete section G)	
<input type="checkbox"/> Other (specify) _____	(Complete section H)

3. IDENTIFY LOCATION OF PROPOSED WELL:

A. BOONE County, NE 1/4 of the NE 1/4 of Section 14, Township 22 North, Range 6 East West (circle one)



B. The box at the right represents one square mile, (section). Indicate with an "X", the proposed location of the well. Outline the proposed water use area. If the water is to be used outside the above written legal description, give legal description of water use area, 1/4 of the NE 1/4 of Section 14, Township 22 North, Range 6 East West

C. The well will be located 1290 feet from the North/South section line, and will be 1290 feet from the East/West section line. Or enter Lat. / Long.
 Latitude Degree _____ Minute _____ Second _____
 Longitude Degree _____ Minute _____ Second _____

4. REPLACEMENT AND ABANDONED WELL INFORMATION:

A. Is this a replacement well? Yes, No, If yes, fill out the rest of this section.
 B. Registration number of well to be replaced: _____
 C. Well to be replaced was last operated (month/year): _____
 D. Replacement well is _____ feet from original well.
 E. Decommissioning of Original well on (month/day/year): _____
 F. If water use is for irrigation, list the number of acres watered by the original well: _____
 G. If water use is for irrigation, will replacement well, water the same tract of land as the decommissioned well?
 Yes, No, If No, list the number of additional acres _____ and legal description _____ 1/4 of the _____ 1/4 of Section _____, Township _____ North, Range _____ East/West. (circle one)

- A replacement water well must deliver water to the same tract of land as the original water well, pump from a comparable aquifer, and yield approximately the same gallons per minute and total annual water use as the original water well.

5. SPECIFICATIONS OF INTENDED WELL AND PUMP:

- A. Approximate date when construction will begin (month/day/year): OCT, 10 2016
- B. Expected total well depth: 300 feet.
- C. Well Casing Diameter: 32 inches.
- D. Pump Column Diameter: 8 inches.
- E. Estimated pumping capacity: 800 GPM.
- F. Expected total annual water use in Acre Inches / Year _____ or Total Gallons / Year 21,1200
- G. The system is to be powered by Electric Fuel
- H. Will the well be used in a system with other wells? Yes, No. If Yes, How many _____
List well registration number and legal description of each well in Section 6 below.
- I. Name of Well Driller: _____ (Please attach test hole log, if available.)

6. List additional information requested in this Section or attached additional sheet.

will water 160 @ presently one well
waters 320

present well waters

7. Addition information and requirements for Lower Platte North NRD review.

- Attach current tax assessor records including map, parcel number, and current land use such as irrigated acres.
- Attach aerial photo showing location of water source(s) and area water or reuse water is to be used.
- All new and replacement water wells must install a District approved flow meter and report water pumped annually to the LPNNRD by January 31st of the following year.
- Water well permit conditions maybe required for approval by the Lower Platte North NRD for each individual well.

Assessor Records irrigated acres

8. I certify that I am familiar with the information contained in this application, and it's restrictions, rules and regulations and that to the best of my knowledge and belief such information is true, complete and accurate.

Date Apr. 1 14 2016 Signature of Applicant J. Temme
 Signature of Well System Operator, if different than Applicant _____
 NRD Certification Number of Landowner or Operator Kyle 5410 (Required for irrigation, livestock, Kyle
 domestic (with irrigation on one acre or more of land), industrial, and public water supply wells.) LARSON,

9. Lower Platte North NRD Use Only. Comments by District Representative.

Present well, G-087266 irrigates the NE 1/4 and N 1/2 SE 1/4 of Section
14-T22N-R6W. New well for the NE 1/4 only with the old well
to continue irrigation of N 1/2 SE 1/4.
Well Temme is buying all this land from William Becker with sale to
close on Monday, April 19, 2016. I met with Mr Temme in the
office of LPNNRD on 4/15/2016. Russell Oakland

Brett. 11:00

**APPLICATION FOR A PERMIT TO CONSTRUCT A WATER WELL
IN THE LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT**

**WATER WELL PERMIT FOR IRRGATED ACRES GREATER THAN 160 ACRES IN SIZE OR TOTAL
ANNUAL WATER USE BETWEEN 150 AND 300 ACRE FEET PER YEAR, PROVIDE INFORMATION
REQUESTED ON PAGES 1, 2, AND 3. (CLASS 3 WELL PERMIT)**

10. WATER SOURCE INFORMATION:

In a TWO-mile radius around the water source location, provide the following information to the LPNNRD in both paper copy and electronically in Excel Spreadsheet (Microsoft) or Access Database (Microsoft) format.

- A. List of all registered wells in this area giving registration number, well identification number, legal description, latitude / longitude or UTM coordinates in NAD 83, elevation in feet above mean sea level, and well log for each well.
 - B. List of all test holes in the area that have been published by Conservation and Survey Division of the University of Nebraska.
 - C. List of all surface water rights in this area giving appropriation number, priority date, legal description, use, status, current total acres (if applicable), and grant amount.
-

11. WATER USE LOCATION INFORMATION:

In the location where the water will be used, provide the following information to the LPNNRD in both paper copy and electronically in Word (Microsoft) format.

- A. Description of expanded water use including: latitude / longitude or UTM coordinates in NAD 83 of water use location and timeframe or schedule when water will be used.
 - B. Amount of water that will be reused or recycled at this new location.
 - C. Description of how water will be used at this new location, i.e. process water vs. cooling water, etc. and estimated total annual water use for each purpose.
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**APPLICATION FOR A PERMIT TO CONSTRUCT A WATER WELL
IN THE LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT**

**WATER WELL PERMIT FOR TOTAL ANNUAL WATER USE EQUAL TO OR GREATER THAN 300 ACRE
FEET PER YEAR, REGARDLESS OF NUMBER OF IRRIGATED ACRES, PROVIDE INFORMATION
REQUESTED ON PAGES 1, 2, AND 4. (CLASS 4 WELL PERMIT)**

12. WATER SOURCE INFORMATION:

In a FIVE-mile radius around the water source location, provide the following information to the LPNNRD in both paper copy and electronically in Excel Spreadsheet (Microsoft) or Access Database (Microsoft) format.

- A. List of all registered wells in this area giving registration number, well identification number, legal description, elevation in feet above mean sea level, latitude / longitude or UTM coordinates in NAD 83, and well log for each well.
 - B. List of all test holes in the area that have been published by Conservation and Survey Division of the University of Nebraska.
 - C. List of all surface water rights in this area giving appropriation number, priority date, legal description, use, status, current total acres (if applicable), and grant amount.
-

13. WATER USE LOCATION INFORMATION:

In the location where the water will be used, provide the following information to the LPNNRD in both paper copy and electronically in Word (Microsoft) format.

- A. Description of expanded water use including: latitude / longitude or UTM coordinates in NAD 83 of water use location and timeframe or schedule when water will be used.
 - B. Amount of water that will be reused or recycled at this new location.
 - C. Description of how water will be used at this new location, i.e. process water vs. cooling water, etc. and estimated total annual water use for each purpose.
-

14. AQUIFER PUMP TEST:

In the location of the proposed water source a District approved aquifer pump test is to be performed to obtain geologic data that will be used in the ensuing ground water modeling effort. Data from the pump test is to be reported to the LPNNRD in both paper copy and electronically in Excel Spreadsheet (Microsoft) or Access Database (Microsoft) format.

- A. Description of pumping well should include legal description of well, latitude / longitude or UTM coordinates in NAD 83, elevation of well in feet above mean sea level, total amount of water pumped, gallons per minute during pump test, duration of pump test, well construction, well log, water discharge location and method.
 - B. Description of each monitoring well should include legal description of well, latitude / longitude or UTM coordinates in NAD 83, spacing in feet and direction from pumping well, elevation of well in feet above mean sea level, well log, and well construction.
 - C. Depth to bedrock, bedrock material, and name of geologic formation.
-

15. GROUNDWATER MODEL:

In a FIVE-mile radius of the location of the proposed water source a ground water model using MODFLOW software, or similar software approved by LPNNRD, is to be done. Data from the ground water model is to be reported to the LPNNRD in both paper copy and electronically using the appropriate software.

- A. Model should list boundary conditions used, grid size, include all high capacity wells in modeled area, streams and rivers in the modeled area, expected recharge rates, location and flow amounts, hydrologic conductivity and transmissivity values used.
 - B. At least one iteration, reviewed and approved by LPNNRD, should model steady state conditions over a five-year period with a no flow boundary, and little or no recharge to simulate drought conditions.
-

**APPLICATION FOR A PERMIT TO CONSTRUCT A WATER WELL
IN THE LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT**

PURPOSE OF WELL

IRRIGATION WELLS (SECTION A)

- A. How many acres will be irrigated? 156 acres
B. Crops to be planted: Corn/Soybeans Crop rotation schedule every other year
C. Type of irrigation system. Center Pivot, Gravity, Other (specify) _____
D. The irrigation system is to be powered by Electric Fuel
E. Expected total annual consumptive water use in Acre Inches / Year 9-11 or
Total Gallons / Year _____
F. Will Fertilizer, Chemicals or Animal waste be applied through the system? Yes, No

DEWATERING WELLS OVER 30 DAYS (SECTION B)

- A. Purpose of dewatering well, such as installation of building foundation, etc. _____
B. Expected total number of days the dewatering well will be in use _____
C. Approximate dates (month/day/year) in operation: Start _____ End _____
D. Legal description of water discharge location: _____ ¼ of the _____ ¼ of Section _____, Township _____ North, Range _____ East/West and name of river, stream or water body _____
E. Will discharge water be used for another purpose, such as livestock, irrigation, etc.? Yes, No
If Yes, list purpose, location and expected total amount of water use in acre-inches / year or total gallons / year.

LIVESTOCK WELLS (SECTION C)

- A. Name of facility _____
B. Type of Livestock: Feeder Cattle, Dairy Cattle, Swine over 55 lbs., Swine under 55 lbs.,
 Sheep, Poultry, Horses
C. Average number of livestock per year _____ and average weight per animal _____ lbs.
D. Peak number of livestock _____ and time of year _____
E. Is facility approved by Nebraska Department of Environmental Quality? Yes, No. If Yes, list NDEQ certification IIS number _____ If No, complete the rest of this section.
F. Type of facility: Open lot, Covered Building
G. If facility is Open lot, list soil type _____
H. Estimated depth to ground water under feedlot _____ ft.
I. Describe manure collection system of feedlot _____

J. Name and distance of nearest surface watercourse from feedlot _____
K. For each manure land application site, list legal description and size in acres, method of application, and distance from feedlot operation. _____

DOMESTIC WELLS WITH IRRIGATION ON ONE ACRE OR MORE (SECTION D)

- A. Check all that apply:
a. Water use: Lawn and number of acres to be irrigated _____ acres.
b. Water use: Commercial garden and number of acres to be irrigated _____ acres.
c. Water use: Tree Farm and number of acres to be irrigated _____ acres.
d. Water use: Type of livestock _____ and number _____
B. Type of irrigation system. Sprinkler, Drip Tape, Other (specify) _____
C. If applicable, give Street address and town _____

* One acre equals 43,560 square feet.

INDUSTRIAL AND COMMERCIAL WELLS (SECTION E)

- A. Name of facility _____
- B. Products produced by facility _____
- C. In Section 6 or on a separate sheet of paper, list well registration number and legal description of current wells supplying water to this facility.
- D. In Section 6 or on a separate sheet of paper, provide a short description how water is used within the facility and the expected annual amount of water for each use. For example: "The manufacturing plant will use 45% of total annual water use, or 1.45 million gallons per year, for electroplating of galvanized pipe and the remaining 55% of total annual water use, or 1.77 million gallons per year, will be used for non-contact cooling water throughout the plant".
- E. Will any of the used water or waste water from this facility be re-used for another purpose? Yes, No.
If Yes, list purpose, location and expected total amount of water use in acre-inches / year or total gallons / year.

PUBLIC WATER SUPPLY WELLS (SECTION F)

- A. On a separate sheet of paper, list the well registration numbers and legal description of current wells supplying water to this community.
- B. Attach a list of the five largest industrial water users that your community supplies water to, and the total annual amount of water supplied to each of these industries for the last five years.
- C. For these same industries list the total annual amount of water returned to the community as waste water for each of the last five years.
- D. Will waste water be used for another purpose, such as livestock, irrigation, etc.? Yes, No
If Yes, list purpose, location and expected total amount of water use in acre-inches / year or total gallons / year.

- E. Attach a list of the golf courses that the community supplies water to and list the location and number of acres for each one.

RECOVERY OR REMEDIATION WELLS (SECTION G)

- A. Reason for recovery or remediation well, i.e. leaking underground storage tank. _____
- B. Contaminates of concern _____
- C. Treatment method of contaminates _____
- D. Approximate dates (month/day/year) in operation: Start _____ End _____
- E. Legal description of water discharge location: $\frac{1}{4}$ of the $\frac{1}{4}$ of Section , Township North, Range East/West and name of river, stream or water body _____
- F. Will cleanup water be used for another purpose, such as livestock, irrigation, etc.? Yes, No
If Yes, list purpose, location and expected total amount of water use in acre-inches / year or total gallons / year.

OTHER WELLS (SECTION H)

- A. Purpose of water use _____
 - B. Will the well be used for one calendar year or less? Yes, No
 - a. If Yes, list approximate dates (month/day/year) the well will be in operation: Start _____
End _____
 - b. If No, list the approximate dates (months) or seasons of the calendar year that well is expected to be in peak or highest use. _____
 - C. Legal description of water discharge location: $\frac{1}{4}$ of the $\frac{1}{4}$ of Section , Township North, Range East/West and name of river, stream or water body _____
-

✓

This form must be completed in full and accompanied by a non-refundable \$50.00 filing fee (payable to the Lower Platte North Natural Resources District). In addition, for Class 3 well permits an added fee of \$250.00 is required for District review. For Class 4 well permits an added fee of \$500.00 is required for District review. Forward this application and filing fees to:

**Lower Platte North Natural Resources District
P.O. Box 126
Wahoo, NE 68066
Phone: (402) 443-4675**

Please take the time and fill out the information correctly. The District will return an incomplete or defective application, with 60 days being allowed for resubmission. The District shall issue all permits with conditions attached, or denied not later than 30 days after receipt of a complete and properly prepared application.

WATER WELL PERMIT RESTRICTIONS

1. A well permit is required prior to the construction of a water well. If construction of a water well is commenced prior to obtaining a permit, a late permit must be completed and accompanied by a \$250.00 application fee. Construction or operation of a new water well without an approved water well permit shall result in the District issuing a 'cease and desist order' against further construction or use of that water well.
2. An irrigation well shall not be constructed within 1000 feet of any registered industrial or public water supply well or within 600 feet of a registered irrigation well; A public water supply well shall not be constructed within 1000 feet of any registered irrigation, industrial or other public water supplier's well; An industrial well shall not be constructed within 1000 feet of any registered irrigation, industrial or public water supply well pursuant to §46-609 and §46-651. These spacing restrictions shall not apply to water wells owned by the same person. Any person may apply to the Nebraska Department of Natural Resources for a special permit to drill a water well without regard to the spacing requirements pursuant to §46-653. The District may adopt stricter well spacing requirements based on different aquifer subareas. Check with the District office if you have any questions.
3. This permit does not register the well with the Department of Natural Resources. All wells are required to be registered by the well driller with the Nebraska Department of Natural Resources within 60 days after the well is completed.
4. A replacement water well is one, which replaces an abandoned water well that has been operated within the last three years, and is constructed to water the same tract of land as the abandoned water well that is being replaced. A replacement water well must be pumping from a comparable aquifer and yield approximately the same gallons per minute and total annual water uses as the original water well it is replacing. As of January 1, 1997, both new and replacement wells need a permit from the Lower Platte North Natural Resources District.
5. Consumptive water use in acre-inches is determined from the Department of Natural Resources (DNR) Net Corn Crop Irrigation Requirement map or a similar map produced by the University of Nebraska.
6. If the well is being replaced it must be properly abandoned according to state guidelines. A copy of these guidelines is available from the Lower Platte North NRD.
7. If the water well is not constructed within a one-year period from the date of approval, a new permit is needed.
8. Water wells may not be drilled within 50 feet of a stream bank without first obtaining a surface water right for that water withdrawal from the Department of Natural Resources pursuant to §46-637.
9. Any person who, on or after January 1, 1997, commences or causes construction of such a well for which the required permit has not been obtained, or who knowingly furnishes false information regarding such a permit, shall be guilty of a Class IV misdemeanor pursuant to §46-602.01 and §46-613.02.
10. Permits are not required for test holes or temporary dewatering wells (30 days or less). Permits are needed for water wells designed to pump 50 gallons per minute or less in Level 3 and Stay management areas.
11. Tax assessor records submitted with water well permit must include map, parcel number and an accurate account of current land use, such as irrigated acres.
12. With the well permit application, submit 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.
13. Any person, who knowingly furnishes false information regarding a water well permit, shall be subject to the imposition of penalties imposed through the controls adopted by the District pursuant to §46-746.
14. All new or replacement water wells must install a District approved flow meter and report water pumped annually in acre-inches per year or total gallons per year on LPNNRD approved forms by January 31st of each following year.

15. If multiple water sources are used, landowner must supply flow records from each water source in acre-inches per year or total gallons per year on LPNNRD approved forms by January 31st of each following year.
16. Water well permit applications require that the applicant or operator of irrigation, livestock, domestic (with irrigation on one acre or more of land), industrial, and public water supply wells by NRD certified.

**** Landowners must list new irrigated acres with the County Assessor, update the DNR well registration, and comply with any additional conditions within 90 days of LPNNRD approval of this water well permit. LPNNRD staff may perform a site visit to verify information provided in the well permit application. ****

ATTENTION!

If you have a tenant, manager, or someone else who does the actual production farming using the water from the irrigation well on your land in the

Platte-Colfax Special Quantity Subarea #2

please complete the information in the boxes below.

Landowner information:	
Name	_____
Address	_____
City, ST, Zip	_____
Phone #	_____
Legal Description	_____
Well Registration number(s)	_____

Tenant information:	
Name	_____
Address	_____
City, ST, Zip	_____
Phone #	_____

Return this sheet to: Lower Platte North NRD
511 Commercial Park Road
P. O. Box 126
Wahoo, NE 68066

Thank you. If you have questions please call our office at (402) 443-4675.

**Irrigation Wells in Butler-Saunders SQS with Well Permits
issued after May 8, 2008**
These should have flow meters installed

T15N, R3E, Section 1, 12, 13, 24, 25, 36

Section 1 = 0
Section 12 = 0
Section 13 = 0
Section 24 = 0
Section 25 = 0
Section 36 = 1 / G-167693

T15N, R4E, Sections 1-36

Section 27 = 1 / G-168104
Section 33 = 1 / G-057853
Section 34 = 1 / G-167713
Section 35 = 2 / G-153579, G-169044

T15N, R5E, Sections 4-9, 16-36

None

T16N, R3E, Sections 25, 26

None

T16N, R4E, Sections 25-36

Section 32 = 1 / G-064907

T16N, R5E, Sections 30-32

None

From October 1, 2005 to May 8, 2008 the LPNDRD required on all well permits for high capacity wells that a flow meter or time totalizer be installed.

After May 8, 2008 the LPNDRD required that for all replacement and new well permits that a flow meter had to be installed.

There are 30 irrigation wells in this SQS and 7 wells were issued well permits after May 8, 2008 and therefore 7 of these should have meters installed. That leaves 23 wells that will or likely will need flow meters.

**Irrigation Wells in Platte-Colfax SOS with Well Permits
issued after May 8, 2008**
These should have flow meters installed

T18N, R1W, Sections 1-12

Section 4 = 1 / G-001660
Section 5 = 1 / G-155420
Section 7 = 1 / G-166253

T18N, R1E, Sections 1-12

Section 3 = 2 / G-164614 / G-164615
Section 4 = 1 / G-164613
Section 10 = 1 / G-166375

T18N, R2E, Sections 3-10

Section 6 = 1 / G-161854
Section 7 = 2 / G-157921, G-163202

T19N, R2W, Sections 1-12

Section 5 = 2 / G-162011, G-165985
Section 7 = 2 / G-036632, G-152502
Section 9 = 1 / G-136029
Section 10 = 1 / G-155017

T19N, R1W, Sections 1-16, 21-28, 33-36

Section 4 = 1 / G-032023
Section 6 = 1 / G-034187
Section 7 = 1 / G-162106
Section 8 = 1 / G-153011
Section 11 = 1 / G-161226
Section 13 = 1 / G-155258
Section 21 = 2 / G-166254, G-111373
Section 22 = 1 / G-149812 maybe but well permit issued just before May 8, 2008
Section 24 = 1 / G-057182
Section 26 = 1 / G-051317
Section 27 = 1 / G-002222
Section 33 = 1 / G-167076

T19N, R1E, Sections 1-36

Section 8 = 2 / G-166098, G-163452
Section 11 = 1 / G-029088
Section 14 = 1 / G-161227
Section 28 = 1 / G-116530
Section 33 = 1 / G-046652

T19N, R2E, Sections 3-10, 15-22, 27-34

Section 4 = 1 / G-156413

Section 5 = 1 / G-164643

Section 7 = 2 / G-056937, G-001292

Section 17 = 1 / G-160990

Section 18 = 1 / G-155727

Section 28 = 1 / G-166047

Section 29 = 1 / G-166094

Section 30 = 1 / G-156018

Section 32 = 1 / G-167159

Section 33 = 1 / G-167111

Section 34 = 1 / G-152943

Note: 9 of these wells are new wells, the rest are replacement

From October 1, 2005 to May 8, 2008 the LPNNRD required on all well permits for high capacity wells that a flow meter or time totalizer be installed.

After May 8, 2008 the LPNNRD required that for all replacement and new well permits that a flow meter had to be installed.

There are 300 irrigation wells in this SQS and 46 wells were issued well permits after May 8, 2008 and therefore 46 of these should have meters installed. That leaves 254 wells that will or likely will need flow meters.

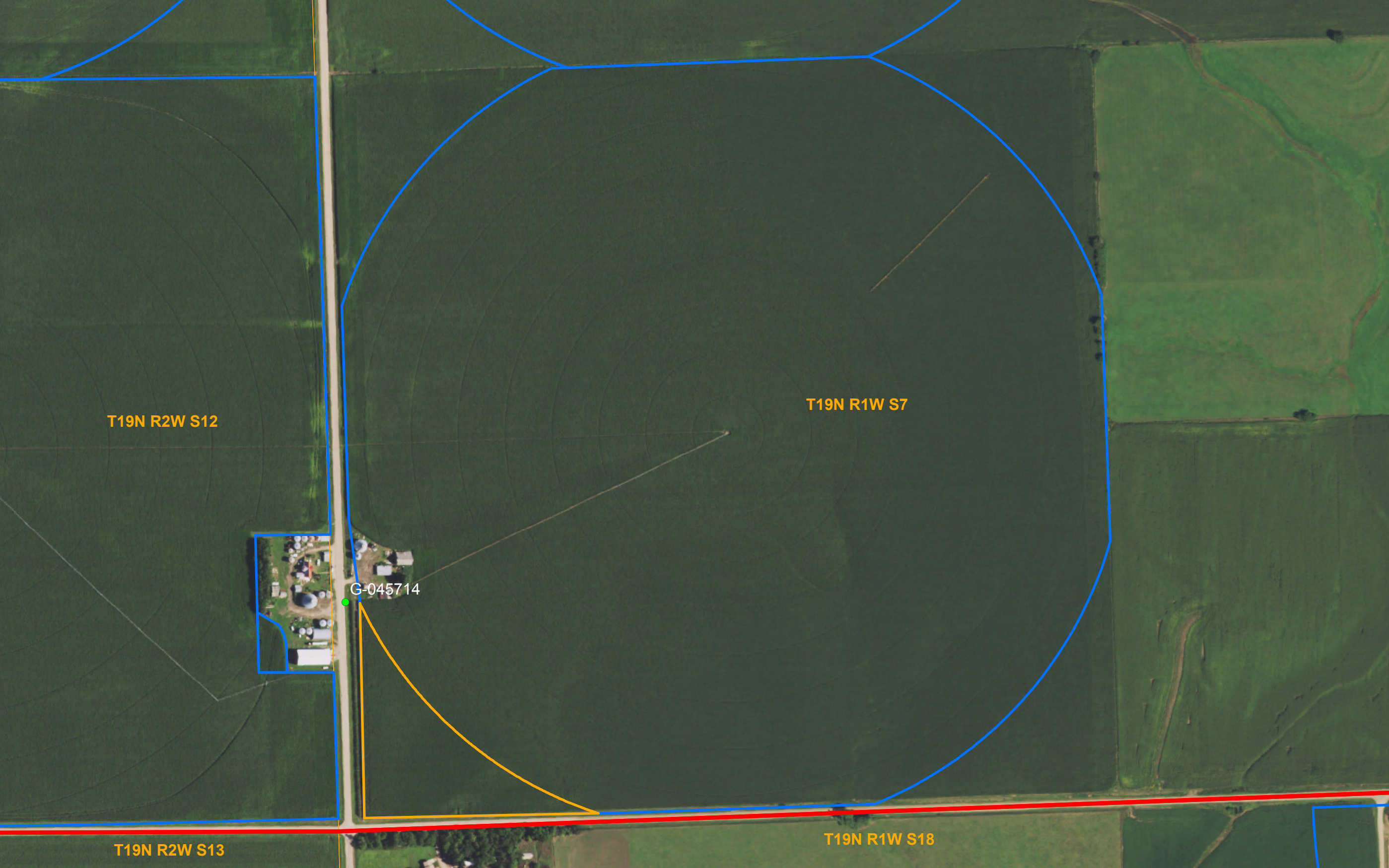
T19N R2W S12

T19N R1W S7

G-045714

T19N R2W S13

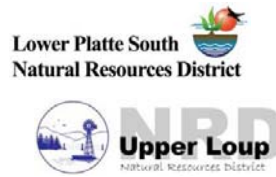
T19N R1W S18











SUMMARY

**Lower Platte River Basin Water Management Plan Coalition
Technical Committee Meeting
May 4, 2016, 10:00 to 1:00 P.M.
Offices of Lower Loup NRD
2620 Airport Rd, Ord, NE**

In Attendance: S. Rock (HDR), A. Rupe (JEO), J. Engel (HDR), P. Woodward (PMRNRD), M. Petermann (PMRNRD), D. Wilcox (NARD), M. Sousek (LENRD), D. Ehrman (LPSNRD), D. Schulz (LPSNRD), A. Baum (ULNRD), Jessie Winter (NDNR), Jennifer Schellpeper (NDNR), Kate Tillotson (UENRD), Dennis Schueth (UENRD), Tylr Naprstek (LLNRD), Russ Callan (LLNRD), Butch Koehlmoos (LLNRD), Jessie Bradley (TFG)

I. **Brief Review of Methodology for Basin Accounting.**

- a. Presentation on the progress of the analysis up through Nov. 2015. Review of how the NDNR INSIGHT methodology accounts for supplies and demands as well as how excess supply is calculated and how that is tied to the fully appropriation determination.
- b. Review on how the Basin Accounting added additional demand scenarios including the “with and without” hydropower scenarios as well as the 80% streamflow at Louisville.
- c. Last November the technical/management group was focusing on the 80% streamflow at Louisville demand scenario and excess supply numbers by basin as a benchmark for future development. The group had not yet reached consensus on how this accounting should be used – as a guideline for future development or setting firm numbers for future development. There was general consensus that accounting would be used for tracking supplies and uses in the basin and would support water transfers and reporting.

II. **Summary of changes to INSIGHT.** The group was updated about changes that have occurred to INSIGHT since we last met in November 2015.

- a. A referencing error was found by in the DNR’s supporting files that feed into the INSIGHT data that directly affect the calculation of the 80% streamflow at Louisville.
- b. Once corrected, the demand associated with maintaining an 80% streamflow at Louisville nearly doubled.
- c. This has a direct impact on all numbers previously presented as part of the basin accounting.
- d. Beginning in December 2015, an independent QC of the DNR INSIGHT supporting files was conducted.
- e. While not frequent, some errors were discovered that will impact the Lower Platte basin numbers; although the biggest driver to the changes in the numbers is the original error found (the 80% SF at LV).



III. **Updated Basin Accounting with Changes.** The updated (draft) basin accounting numbers using the new INSIGHT results were shared with the group.

Demands (25yr AVG)	SWD (AF)	GWCU (AF)	Hydro (AF)	Max(Instr/ Induced GW) (AF)	Max(Instr/ Induced GW/ 80% LV) (AF)
Lower Platte Subbasins	320,279	296,471	-	1,012,138	4,245,582
Loup Basin	217,348	429,479	1,855,850	-	-
Elkhorn Basin	19,315	336,683	-	-	-

25yr AVG Annual SF @ LV (AF)=	5,306,977
80% x [25yr AVG Annual SF @ LV] (AF)=	4,245,582
19% x [25yr AVG Annual SF @ LV] (AF)=	1,008,326

BIG PICTURE - FULL LOWER PLATTE BASIN	Loup Hydro Demand	Instream Demand	Induced GW Demand	80% SF at LV	Annual Supply (AF)	Annual Demand (AF)	Annual Excess (AF)
Hydro Demand Applied (with 80% LV)	X	X	X	X	4,729,422	5,865,157	(1,135,735)
Hydro Demand Applied (without 80% LV)	X	X	X		4,729,422	3,475,425	1,253,997
Max (Instream, 80% LV, Induced GW Recharge)		X	X	X	4,729,422	5,865,157	(1,135,735)
Max (Instream, Induced GW Recharge)		X	X		4,729,422	2,631,713	2,097,709

Much discussion centered on the decision to use 80% as a demand scenario and its appropriateness. For comparison, the instream flow demand scenario (capped to historic undepleted streamflow and reduced to reflect 1993 GWCU) is approximately 20% of the streamflow at Louisville. Realizing that the instream flow demand is reduced by historic streamflow, the group wanted to review other demand options such as:

- a. What % of streamflow at Louisville corresponds to the full instream flow demand (not capped to historic streamflow or adjustment to reflect 1993 GWCU)
- b. What % of streamflow at Louisville corresponds to zeroing out the excess supply in the basin?
- c. How does varying % of streamflow at Louisville correlate to excess flow in the subbasin level?
- d. Some discussion on whether the flow value being used at LV should also be reduced by the 1993 GWCU to account for depletions that have yet to be reflected in the gage?

The group requested the spreadsheet tool be set up to generate plots of excess supply vs. % streamflow at Louisville for both with and without hydropower scenarios. A function will be generated for each subbasin based on the curve and allow the user to estimate excess supply by varying % of streamflow at Louisville.



IV. **Path Forward.** The meeting concluded with a discussion of the purpose of the accounting in the Basin Plan. The general themes that emerged from the discussion included:

- a. The Plan can utilize the basin accounting to set “bookends” within which to operate (e.g. support NRDs in decisions to grant new uses). These would be a recommendation and it was recognized that not all NRDs are comfortable with setting hard limits.
- b. Would provide some framework within which to operate to provide protection/certainty to both upstream/downstream basins.
- c. Support water transfer activities
- d. Provide a ledger/scorecard to evaluate the basin activities as move forward. Way to quantify impacts to basin (positive or negative) going forward.

V. **Upcoming Schedule**

- a. Management Committee Meeting – TBD; Doodle poll will be sent out
- b. Draft Report tentative by May 31 to Technical Committee
- c. Draft Plan tentative by June 15

VI. **Other**

VII. **Adjourn**

LPNNRD Goals and Objectives for Voluntary Integrated Water Management Plan

Updated with Stakeholder Advisory Committee, DNR and NRD Input

Input from Stakeholders Highlighted

Goal 1: Develop and Maintain a District-Wide Water Inventory

Goal 1 is designed to provide valuable water supply information to the Lower Platte North NRD and NDNR. NDNR may use the inventory information gathered to support the annual evaluation for the Lower Platte Basin. Both the Lower Platte North NRD and NDNR will use this information to enhance their understanding of water supplies within the District.

Goal 1 Objectives:

- 1.1 Conduct data collection and analyses of current and potential new water supplies utilizing the best available information, data, and science, and considering technological advances that may occur in the future.
 - *Develop a database of current groundwater and surface water supplies.*
 - *Use the best available science, such as AEM, etc., and data to identify district-wide aquifer distribution, including the distribution of bedrock, perched and pocket aquifers.*
 - *Develop a database of current water quality problem areas, which can influence a clean and useable water supply.*
 - *Use the best available data and methods to refine delineations of hydrologically connected surface and groundwater.*
 - *Evaluate the potential to augment existing supplies by accessing additional waters both within and outside of the district, such as through recharge projects, or by improving existing or adding new water storage/conveyance infrastructure.*
 - *Evaluate short-term and long-term climate variability and effects on water supply.*
 - *Evaluate new technology such as weather modification programs that support water management goals.*
 - *Attend local and national water conferences to learn about new methods of water accounting, management, and technology.*
- 1.2 Determine District's inflows and outflows, both surface water and groundwater, and changes in storage.
 - *Continue surface water and groundwater monitoring across the District.*
 - *Use surface water and groundwater measurements and models to estimate District inflows and outflows.*
 -
 - *Identify data gaps in monitoring networks (for example, precipitation, stream flow, and groundwater level networks etc.).*
 - *Use the best available data and methods to develop an inventory of drain tiles and estimate their impact to overall water supply.*
- 1.3 Coordinate District databases to better utilize staff time, improve District water management efficiencies, and assist with public outreach.

Goal 2: Develop and Maintain a District-Wide Water Demand Inventory

Goal 2 is designed to provide valuable water use information to the Lower Platte North NRD and NDNR. This information will be used to enhance the understanding of water demands within the District. The information may also be used to support evaluations of the Lower Platte Basin.

Goal 2 Objectives:

- 2.1 Evaluate current and project future water demands due to municipal, agricultural, industrial, hydropower, and instream flow uses or requirements.
 - *Develop standard protocols to ensure municipal water supply reports and forecasts are integrated into a district-wide database.*
 - *Continue certification of irrigated acres, well metering, and reporting requirements to track current water demands.*
 - *Evaluate historical and future land use/cover changes, for example, agricultural to urban or adoption of conservation practices, and the effects on water demand.*
 - *Coordinate with the NDNR to identify surface water rights for potential prioritization in NDNR adjudication investigations.*
 - *Evaluate assumptions of water consumption vs. population growth and use new assessment to estimate future water demands.*
 - *Evaluate current and project future water demands for environmental concerns such as wildlife habitat and instream flow needs both within the District and for downstream requirements.*
 - *Evaluate potential future water demands for hydropower.*

- 2.2 Evaluate current water demands and estimate future impacts due to surface or groundwater quality concerns.
 - *Estimate effects on demands due to environmental mitigation activities that utilize large quantities of water (for example, industrial facilities and Former Ordnance Plant clean-up).*
 - *Estimate effects on demands in scenarios where municipal wells are moved to hydrologically connected areas to improve quality.*

Goal 3: Develop and Implement Water Use Policies and Practices With The Purpose of Achieving and Sustaining a Balance Between Water Uses and Supplies.

Goal 3 is designed to develop and implement water management policies and practices that could potentially provide for additional water resources development opportunities while protecting existing surface and groundwater uses.

Goal 3 Objectives:

- 3.1 Evaluate effectiveness of policies, practices, and/or programs to sustain and increase water supply, while considering the effects of water quality on supply.
 - *Evaluate benefits and limitations of practices focused on reuse of rain, storm, waste, industrial, or irrigation water.*
 - *Evaluate potential effectiveness of a District-wide water banking program to minimize water conflicts between different water users, whether that is surface water vs groundwater or between different groundwater users, etc.*
 - *Update rules and regulations regarding transfers, variances, well permits, water banking, or other actions of water management to better preserve the District's water resources. An example of when an update may be needed is to accommodate new technologies such as new drilling and well installation techniques.*
- 3.2 Develop programs and/or guidelines to conserve water within municipalities, agricultural use, and industrial applications.
 - *Develop cost-share programs for irrigation conservation, such as gravity to pivot irrigation systems, high pressure to low pressure systems, or installing sub-surface drip irrigation systems.*
 - *Use new and existing studies and data to establish specific guidelines for sustainable development of major and minor aquifers.*
 - *Develop urban cost-share incentive programs to encourage indoor and outdoor water conservation.*
 - *Encourage municipalities and industrial users to develop water conservation plans.*

Goal 4: Develop and Implement Public Outreach Programs.

Goal 4 is designed to ensure that the general public is better informed about water conservation and effective use across the District. Currently the Lower Platte North participates in numerous education and informational programs and any new programs developed as part of this goal will be coordinated with current programs to ensure there is no overlap.

Goal 4 Objectives:

- 4.1 **Communicate to the Public that Nebraska has a great supply of water and we need to continue to manage it well.**
- *Maintain District certification classes to update producers on current water conditions, fertilizer practices, potential State Legislation and changes in District and State water management issues.*
 - **Educate the public on the benefits and limitations of riparian vegetation management activities.**
 - **Quantify water use efficiencies (monetary and water quantity savings) and disseminate through public education programs.**
 - *Maintain public education programs such as county fairs, newsletters, newspaper articles, radio spots, public notices, fliers, and District and NRDR websites.*
 - *Develop computer programs and mobile applications “apps” to educate homeowners on ways to conserve water in the home, garden, and lawn through planting of more drought resistance plants and/or different landscaping practices. Explore the use of “apps” to assist producers in different water conservation practices.*
 - *Explore information sharing systems such as website development between District personnel and Water Users in the District. These websites could be used to track precipitation patterns, crop ET requirements, soil moisture levels, rotation of pumping between water users to reduce peak aquifer demands, ‘real-time’ groundwater energy level sites in important aquifers or subareas, and current stream flow conditions.*
 - *Explore public education through television and social media such as Facebook, Twitter, etc. to inform the public on current and projected programs of the District.*

Goal 5: Coordinate with Lower Platte River Basin NRDs to Develop a Water Management Plan for the Lower Platte Basin that Maintains a Balance Between Current and Future Water Supplies and Demands

Goal 5 Objectives:

- 5.1 Actively participate in Lower Platte River Basin Coalition water management planning activities.
- *Cooperate on water management studies and planning with the Lower Platte River Basin Coalition.*
 - *Coordinate with Eastern Nebraska Water Resources Assessment on water management activities.*
 - *Evaluate federal, statewide, and/or local funding options for basin-wide water management activities.*
- 5.2 Identify and evaluate potential conjunctive management projects and activities within the Lower Platte River Basin.
- *Review and analyze existing studies of water storage opportunities in the Lower Platte River Basin and conduct additional multi-agency studies as appropriate.*
 - *Evaluate the potential for conjunctive management programs or project opportunities to mitigate new uses such as water rights leases, interference agreements, augmentation projects, conjunctive use management, or use retirement.*
- 5.3 Identify and evaluate additional water resource supplies.
- *Coordinate with other entities to identify and study opportunities for the development of transfers, variances, water banking, and other actions of water management to potentially be used across the entire Lower Platte River Basin.*
- 5.4 Work with the appropriate agencies to identify streamflow necessary to protect and maintain public water supply, fish and wildlife, habitat, and public recreation.
- *Review and assess the benefits from instream flow protection.*
 - *Continue riparian vegetation management activities.*

Lower Platte North NRD Voluntary Integrated Water Management Plan

Modified at Water Committee June 1, 2016

Goal 1: Develop And Maintain a District-wide Water Supply Inventory		
Objective	Action Item	Assigned To
Objective 1.1: Conduct data collection and analyses of current and potential new water supplies using the best available information, data, and science, and considering technological advances that may occur in the future	1.1.1 Develop a database of current groundwater and surface water supplies.	NRD & DNR
	1.1.2 Use the best available science, such as remote sensing technologies, etc., and data to identify District-wide aquifer distribution, including the distribution of bedrock and perched and pocket aquifers.	NRD
	1.1.3 Develop a database of current water quality problem areas, which can influence a clean and usable water supply.	NRD
	1.1.4 Use the best available data and methods to refine delineations of hydrologically connected surface and groundwater.	DNR
	1.1.5 Evaluate the potential to augment existing supplies by accessing additional waters both within and outside of the District, such as through recharge projects, or by improving existing or adding new water storage/conveyance infrastructure, or through brackish water supplies.	NRD & DNR
	1.1.6 Evaluate short-term and long-term climate variability and potential effects on water supply.	NRD
	1.1.7 Evaluate new technologies and new methods of water accounting that support water management goals.	NRD
	1.1.8. Coordinate District databases to better utilize staff time, improve District water management efficiencies, and assist with public outreach.	NRD
Objective 1.2: Determine the District's inflows and outflows, both surface water and groundwater and changes in storage	1.2.1 Continue surface water and groundwater monitoring across the District.	NRD & DNR
	1.2.2 Use surface water and groundwater measurements and models to estimate District inflows and outflows.	NRD & DNR
	1.2.3 Identify data gaps in monitoring networks (for example, precipitation, stream flow, and groundwater level networks, etc.).	NRD
	1.2.4 Use the best available data and methods to develop an inventory of drain tiles and estimate their impact to overall water supply.	NRD

Goal 2: Develop and maintain a District-wide water demand inventory

Objective	Action Item	Assigned To
<p>Objective 2.1: Evaluate current water demands and project future water demands that are or could be influenced by municipal, agricultural, industrial, hydropower, and instream flow requirements</p>	2.1.1 Develop standard protocols to ensure municipal water supply reports and forecasts are integrated into a District-wide database.	NRD
	2.1.5 2 Evaluate how population growth, and how potential water reuse could influence when considering assumptions of per capita water use, affects versus, and use new assessment to estimate future water demands.	NRD
	2.1.2 3 Continue certification of irrigated acres, well metering, and reporting requirements to track current water demands.	NRD & DNR
	2.1.3 4 Evaluate historical and future land use/cover changes, such as agricultural to urban or adoption of conservation practices, and the effects on water demand.	NRD & DNR
	2.1.4 5 Coordinate with the NDNR to identify surface water rights for potential prioritization in NDNR adjudication investigations.	NRD & DNR
	2.1.6 Evaluate current water demands and project future water demands for environmental concerns such as wildlife habitat and instream flow needs both within the District and for downstream requirements.	NRD & DNR
	2.1.7 Evaluate potential future water demands for hydropower.	NRD & DNR
<p>Objective 2.2: Evaluate current water demands and estimate future impacts due to surface or groundwater quality concerns</p>	2.2.1 Estimate effects on demands due to environmental mitigation activities that utilize large quantities of water (for example, industrial clean-up operations and Former Ordnance Plant cleanup).	NRD
	2.2.2 Estimate effects on demands in scenarios where municipal wells are moved to hydrologically connected areas to improve quality.	NRD & DNR

Goal 3: Develop and implement water use policies and practices with the purpose of achieving and sustaining a balance between water uses and supplies		
Objective	Action Item	Assigned To
Objective 3.1: Update policies, practices, and/or programs to maintain and improve water supply and water quality as it affects supply	3.1.1. Where feasible, promote practices focused on reuse of rain, storm, waste, industrial, or irrigation water.	NRD
	3.1.2. Develop a District-wide water banking program to minimize water conflicts between different water users and sources.	NRD & DNR
	3.1.3 Cooperate with other entities to identify, evaluate and prioritize locations and types of feasible conjunctive water management water use projects (Both NRD and DNR)	NRD & DNR
	3.1.4. Periodically review NRD rules and regulations, to ensure these are up-to-date with current data and technologies, and the IMP.	NRD
Objective 3.2: Develop programs and/or guidelines to conserve water within municipalities, agricultural use, and industrial applications	3.2.1 As needed, implement cost-share programs for irrigation conservation, such as flow metering and sub-surface drip irrigation systems	NRD & DNR
	3.2.2 Use new and existing studies and data to establish specific guidelines for sustainable development of major and minor, and pocket aquifers.	NRD
	3.2.3 Collaborate with municipalities and industrial users on development or refinement of water conservation plans, such as water reuse.	NRD

Goal 4: Communicate to the public that Nebraska has a great supply of water, and we need to continue to manage it well

Objective	Action Item	Assigned To
<p>Objective 4.1: Maintain existing public outreach activities and programs</p>	<p>4.1.1 Maintain District certification classes to update producers on current water conditions, fertilizer best management practices, potential state legislation, and changes in District and state water management issues.</p>	<p>NRD</p>
	<p>4.1.2 Maintain public education programs such as county fairs, newsletters, newspaper articles, radio spots, public notices, fliers, and District and NDNR websites.</p>	<p>NRD & DNR</p>
	<p>4.1.3 Continue to cooperate with UNL Extension to utilize and explore the use of mobile applications ("apps") to assist producers in different water conservation practices.</p>	<p>NRD & DNR</p>
<p>Objective 4.2: Incorporate new data, technologies, and programs to expand public communications</p>	<p>4.2.1 Develop new materials and/or activities to educate the public on the benefits and limitations of riparian vegetation management.</p>	<p>NRD & DNR</p>
	<p>4.2.2 Develop computer programs and/or mobile applications ("apps") to To educate homeowners on ways to conserve water in the home, garden, and lawn through planting of more drought-resistant plants and/or different landscaping practices.</p>	<p>NRD</p>
	<p>4.2.3 Explore information-sharing systems such as website development between District personnel and water users in the District. These websites could be used to track precipitation patterns, crop evapotranspiration (ET) requirements, soil moisture levels, rotation of pumping between water users to reduce peak aquifer demands, real-time groundwater energy level sites in important aquifers or subareas, and current stream flow conditions.</p>	<p>NRD</p>
	<p>4.2.4 Quantify water use efficiencies (monetary and water quantity savings) and disseminate through public education programs to enhance productivity.</p>	<p>NRD</p>
	<p>4.2.5 Explore public education through television and social media such as Facebook, Twitter, etc. to inform the public about current and projected programs of the District.</p>	<p>NRD</p>

Goal 5: Coordinate with Lower Platte River Basin NRDs, and appropriate groups and agencies to develop a water management plan for the Lower Platte River Basin that maintains a balance between current and future water supplies and demands

Objective	Action Item	Assigned To
<p>Objective 5.1: Continue active participation in Lower Platte River Basin Coalition water management planning activities</p>	5.1.1 Cooperate on water management studies and planning with the Lower Platte River Basin Coalition.	NRD & DNR
	5.1.2 Evaluate federal, statewide, and/or local funding options for basin-wide water management activities.	NRD & DNR
	5.1.3 Coordinate to develop and implement transfer and water banking systems that are compatible between the NRD and the LPRBC	NRD & DNR
<p>Objective 5.2: Coordinate to expand conjunctive management opportunities to mitigate new uses</p>	5.2.1 Review and analyze existing studies of water storage opportunities in the Lower Platte River Basin and conduct additional multi-agency studies as appropriate.	NRD & DNR
	5.2.2 Evaluate benefits and limitations of potential conjunctive management projects such as water rights leases, interference agreements, augmentation projects, conjunctive use management, or water use retirement.	NRD & DNR
<p>Objective 5.3: Coordinate with Eastern Nebraska Water Resources Assessment (ENWRA) to increase knowledge about existing groundwater supplies and connection to surface water</p>	5.3.1 Continue active participation in ENWRA meetings, studies and activities.	NRD & DNR
	5.3.2 Evaluate whether ENWRA data can improve modeling of hydrologically connected areas on a large scale.	DNR

Objective 5.4: Strengthen coordination with other agencies on efforts to sustain or increase Lower Platte River flows	5.4.1 Work with the appropriate agencies to identify streamflow necessary to protect and maintain public water supply, fish and wildlife, habitat, and public recreation. all downstream needs according to statutory priorities.	NRD & DNR
	5.4.2 Coordinate to review and assess benefits and limitations of protecting Lower Platte River flows through an existing instream flow permits.	NRD & DNR
	5.4.3 Continue to coordinate with other agencies on riparian vegetation management activities.	NRD

Changes made to the following Action Items:

1.2.4	3.2.1
2.1.2	4.1.1
2.1.3	4.2.2
2.1.4	4.2.4
2.1.5	5.2.2
2.1.6	5.4.1
2.1.7	5.4.2

LPNNRD NAWMN – 2016			# of	# of	# of	# of	# of	Total	NRD	Producer		
First Time or	Watermark		Digital	Data	# of	Handle	Backsaver	Bill	Portion	Portion		
<u>Past Participant</u>	<u>Name</u>	<u>Cell Phone</u>	<u>Sensors</u>	<u>Lengths</u>	<u>Meters</u>	<u>Loggers</u>	<u>ET Gages</u>	<u>Probe</u>	<u>Probe</u>	<u>Bill</u>	<u>Portion</u>	<u>Portion</u>
New Participant	Raymond Hemmer		6	2-1 ft, 2-2 ft, 2-3 ft	1				1	\$ 874.00	\$ 386.00	\$ 488.00
New Participant	Joseph Classen		3	1-1 ft, 1-2 ft, 1-3 ft					1	\$ 587.00	\$ 293.50	\$ 293.50
New Participant	Gary Mausbach	402-920-3382	3	1-1 ft, 1-2 ft, 1-3 ft	1				1	\$ 772.00	\$ 386.00	\$ 386.00
New Participant	Tony Labenz		3	1-1 ft, 1-2 ft, 1-3 ft	1					\$ 287.00	\$ 143.50	\$ 143.50
New Participant	Gary Schumacher		3	1-1 ft, 1-2 ft, 1-3 ft	1				1	\$ 772.00	\$ 386.00	\$ 386.00
Past Participant	Kevin Herchenbach		4	1-1 ft, 1-2 ft, 2-3 ft						\$ 136.00	\$ -	\$ 136.00
Past Participant	Justin Krafka		9	3-1 ft, 3-2 ft, 3-3 ft						\$ 306.00	\$ -	\$ 306.00
Past Participant	Michael Classen		1	3 ft sensor						\$ 34.00	\$ -	\$ 34.00
# of Producers – 8												
			Total		Total	Total	Total	Total	Total			
	Total Needed		32		4	0	0	0	4			
	On hand		18		1			1				
	Need to Order		14		3				4			
									Total	Total	Total	
									\$ 3,768.00	\$ 1,595.00	\$ 2,173.00	

NUMBER OUTSTANDING	CERTIFICATION ID	LANDOWNER NAME
1	NE155-1608E32-0003	ADAMS/JUSTIN E
2	NE155-1608E32-0002	ADAMS/LEO & CYNTHIA
1	NE155-1409E36-0001	ANDERSON, CHARLES J & MARY L
1	NE155-1607E25-0001	ANDERSON, MARIAN & RONALD W
1	NE155-1309E16-0002	ANDERSON, R BURR, Tree
1	NE155-1408E21-0006	ART CAMENZIND FARMS, LLC
1	NE155-1706E34-0001	BAKER, SUSAN VECH
2	NE155-1705E36-0009	BERANEK, VIRGINA
1	NE155-1607E27-0001	BETHLEHEM LUTHERAN CHURCH
7	NE155-1607E33-0001	BRANDT, BILL LEE & ALESE ELAINE
2	NE155-1507E29-0001	CHAPEK, ERNEST & MARIE
1	NE155-1508E34-0001	CHRISTENSEN, ELLEN G
2	NE155-1405E13-0001	CUDA, LARRY
2	NE155-1508E32-0001	DARLING INTERNATIONAL INC
2	NE155-1705E30-0003	DAWSON FARM & RANCH, LLC
1	NE155-1705E23-0001	DOLEZAL & HAMPL INC
3	NE155-1707E31-0003	FAIRBANKS AG-LAND LLC
1	NE155-1309E10-0001	FRICKE, ROBERT C
1	NE155-1409E22-0003	HELDT, LARRY & WIFE
1	NE155-1409E9-0001	HELDT, MICHAEL G & DEBORAH A
1	NE155-1606E6-0004	HINES, JOHN & NANCY
1	NE155-1607E25-0002	HOAGLAND, FERNE S (REVOC TRUST
1	NE155-1607E20-0007	HOLTORF, MELVIN C & LEONA M
3	NE155-1407E34-0001	JANSA FARMS LLC
2	NE155-1508E15-0002	JOHNSON, SHEILA
3	NE155-1609E29-0001	KAMMERER, DONALD H & WF
1	NE155-1505E32-0001	KASTL, TIMOTHY R
1	NE155-1406E6-0002	KELLNER, ANTHONY J & SHERRY
1	NE155-1506E30-0001	KELLNER, DANIEL J & DAWN
2	NE155-1405E1-0001	KELLNER, DAVID P & VALERIE J
7	NE155-1506E30-0002	KELLNER, JAMES & NORDENE, Tree
2	NE155-1607E6-0004	KERRIGAN, AUDRE L
1	NE155-1606E22-0001	KUCERA, BRIAN P
2	NE155-1407E8-0003	LANIK, ROBERT J TRUSTEE OF
1	NE155-1407E17-0001	LANIK, VIRGINIA A 7 JULIUS
2	NE155-1409E10-0006	LANOHA PACIFIC DEVELOPMENT INC
1	NE155-1409E10-0005	LANOHA Q DEVELOPMENT INC
1	NE155-1606E6-0005	LEES, RUTHANN F
1	NE155-1509E17-0002	LORENZ, CHARLES I & CINDY L
2	NE155-1407E16-0002	LUDVIK, RICHARD F & KAREN A
1	NE155-1507E25-0006	LUERS, JANELLE ETAL
1	NE155-1607E1-0002	MACKLIN/JOHN E & JANET E

1 NE155-1607E14-0003	MAHRT, PEARL M ETAL LIFE ESTATE
4 NE155-1407E2-0004	MALCHOW, ARDVEN B & KATHRYN F
1 NE155-1406E36-0002	MALOUSEK, ROBERT L & ROXANE J
2 NE155-1408E13-0001	MEAD CATTLE COMPANY LLC
1 NE155-1406E8-0002	MEDUNA, RAYMOND J, Tree
1 NE155-1608E2-0002	MILLER, GORDON H & WIFE
1 NE155-1407E24-0002	MOLINE, CRAIG M & TRACI J
3 NE155-1508E13-0003	NELSON, ROBERT L
3 NE155-1507E24-0004	NICE ANGELL, LLC
2 NE155-1408E4-0003	NYGREN, DALE & KRISTEN
1 NE155-1406E2-0003	PEMBERTON, LYNDA A & BRIAN H
1 NE155-1409E25-0001	PIKE, DANIEL R & JULIE A
2 NE155-1707E33-0001	PIKE, ELAINE L
4 NE155-1608E23-0003	POPKEN, MARVIN F & WIFE
2 NE155-1608E32-0004	RUZICKA, RAYMOND C (IRREV TRST)
1 NE155-1607E3-0002	SCHNEBEL, ELAINE (ETAL
1 NE155-1408E34-0002	SCHULTZE, REX & MARK TR
1 NE155-1508E29-0007	SHANAHAN, TIMOTHY L & BARBARA G
1 NE155-1607E3-0007	SMART, JAMES M (ETAL
1 NE155-1505E32-0003	SNITILY, JOHN E
2 NE155-1608E34-0004	STEINBACH, NICHOLAS L & KARI KAY
2 NE155-1608E16-0004	STORER, TERRI (& ETAL
1 NE155-1607E8-0006	SUKSTORF, CHAD L & TAMMY S
1 NE155-1507E30-0004	SWANSON, TERRY W & JUDITH A, Tree
1 NE155-1406E16-0002	VASA, TIMOTHY
1 NE155-1409E14-0002	WAGEMAN, E JOHN, Tree
1 NE155-1705E20-0004	WEHLING, JAMES L
1 NE155-1606E14-0005	WESELY, MICHAEL ETAL
3 NE155-1607E16-0007	WIEGAND, DEBORAH L & REBECCA S CHROMY
9 NE155-1607E9-0002	WIEGAND, RODNEY W
2 NE155-1707E33-0002	WIEGAND-PETERSON, VELMA
1 NE155-1607E10-0004	WILHELM, EMIL
1 NE155-1607E4-0006	WILHELM, GRACE E
1 NE155-1607E34-0004	WOITA, RAYMOND W & WIFE

133 Total

ADDRESS	CITY	STATE
1040 COUNTY ROAD Q	MEAD	NE
1310 COUNTY ROAD R	COLON	NE
1018 OXBOW DR	ASHLAND	NE
Attn: RONALD W ANDERSON 1947 COUNTY ROAD 16	COLON	NE
10 CHERRY LN	MOUNTAIN TOP	PA
10406 STATE ST	OMAHA	NE
2659 COUNTY RD 21	CEDAR BLUFFS	NE
PO BOX 124	MORSE BLUFF	NE
504 W 8TH	WAHOO	NE
2205 ESTES	FREMONT	NE
1865 COUNTY ROAD M	WAHOO	NE
% JANET BRABEC 3110 CHERRYWOOD DRIVE	FREMONT	NE
112 W 15TH	WAHOO	NE
Attn: GRANT THORNTON PO BOX 59365	SCHAUMBURG	IL
ATTN: Great Plains Mngmnt Co, LLC		
P O BOX 1354		
	COLUMBUS	NE
PO BOX 523	NORTH BEND	NE
% MICHAEL D FAIRBANKS 11556 TODD DR	BLAIR	NE
1652 E RIDGEWAY	ASHLAND	NE
PO BOX 123	YUTAN	NE
621 COUNTY ROAD K	YUTAN	NE
4806 CRANLEROOK DR E	COLLEYVILLE	TX
% BARBARA H WILLIAMS		
14 BOUNTY ROAD E	BENBROOK	TX
650 W 21ST * APT 107	FREMONT	NE
4624 SHIRL CT	LINCOLN	NE
4960 E 92ND ST	KEARNEY	NE
3 CHENAULT DR	MT STERLING	KY
3341 Y RD	BRUNO	NE
2564 COUNTY ROAD L	WESTON	NE
2690 COUNTY ROAD N	WESTON	NE
942 N ORANGE	WAHOO	NE
2655 COUNTY ROAD L	WESTON	NE
415 W 16TH	FREMONT	NE
2348 COUNTY ROAD 17	CEDAR BLUFFS	NE
6520 PONDEROSA CIR	LINCOLN	NE
1410 CONCORD CIR	WAHOO	NE
19707 W CENTER ROAD	OMAHA	NE
19111 W CENTER RD	OMAHA	NE
9041 RAVEN OAKS DR		
	OMAHA	NE
508 JOAN CIR	YUTAN	NE
847 HIGHWAY 77	WAHOO	NE
% NEIL R LUERS LIFE ESTATE 1652 COUNTY ROAD 15	WAHOO	NE
2507 ESTES LANE	FREMONT	NE

ATTN: DEAN MAHRT		
980 COUNTY ROAD W LOT T-1017	FREMONT	NE
TRUSTEES 1519 COUNTY ROAD P	COLON	NE
3914 BROWNING DR	WAHOO	NE
1344 COUNTY ROAD 10	MEAD	NE
Attn: KAREN PLYBON 517 E 12TH	WAHOO	NE
1050 COUNTY ROAD X	FREMONT	NE
917 COUNTY ROAD 15	WAHOO	NE
928 COUNTY ROAD O	MEAD	NE
Attn: KIM ANGELL & JODI NICE 663 N 132ND ST #122	OMAHA	NE
1259 COUNTY ROAD L	MEAD	NE
1307 W 12TH	FREMONT	NE
211 S 22ND STREET	ASHLAND	NE
1740 COUNTY ROAD X	CEDAR BLUFFS	NE
2361 COUNTY ROAD 10	FREMONT	NE
Attn: FREMONT NATIONAL BANK 610 N MAIN ST	FREMONT	NE
901 HOMESTEAD DR #APT 2B5	ALVA	OK
233 S 13TH #STE 1400	LINCOLN	NE
340 E 11TH	WAHOO	NE
8411 N 96TH	OMAHA	NE
1750 COUNTY ROAD 29	PRAGUE	NE
2210 COUNTY ROAD 12	FREMONT	NE
Attn: ERNEST O BALTZ - LIFE ESTATE 2307 PARKVIEW DR	FREMONT	NE
1967 COUNTY ROAD U	CEDAR BLUFFS	NE
1665 COUNTY ROAD 19	WAHOO	NE
2374 COUNTY ROAD J	WESTON	NE
** of Living Trust ** 1248 COUNTY ROAD 5	ASHLAND	NE
P O BOX 235	RAYMOND	NE
ATTN: ELIZABETH WESELY PO BOX 276	CEDAR BLUFFS	NE
% BOB L & DONNA M WIEGAND-LF EST P O BOX 192	CEDAR BLUFFS	NE
2644 COUNTY ROAD 17	CEDAR BLUFFS	NE
2766 COUNTY ROAD 18	CEDAR BLUFFS	NE
208 N 8TH	ST EDWARDS	NE
208 N 8TH	ST EDWARDS	NE
PO BOX 7	COLON	NE

ZIP	PARCEL ID	ACRES
68041-4013	003135502	100.80
68018-4018	003135503	2.84
68003-1264	003741000	28.06
68018-4062	002177502	117.23
18707	003564500	139.57
68122	002599501	50.23
68015	001534500	29.33
68648-0124	000738000	39.86
68066-1503	002181000	68.69
68025-3757	002301000	33.19
68066-5505	002133000	49.08
68025-6285	002825000	63.59
68066-1019	000218000	55.03
60159-0365	002815500	16.86
68602-1354	000686000	65.82
68649-0523	000708000	9.23
68008-6387	002397000	34.07
68003-0217	003548500	87.54
68073-3075	003711001	34.85
68073-5046	003679000	58.49
76034-4359	001398500	15.52
76132-1002	002253000	59.07
68025	002234500	25.80
68516	001874000	67.91
68847	002758500	67.32
40353	004087500	29.84
68014	000455000	27.23
68070-4100	000877500	65.31
68070-4029	001120500	64.77
68066-1740	000245500	65.41
68070-4101	001122500	64.78
68025-3340	002331001	79.43
68015-3236	001319000	33.85
68510-4149	001889500	34.34
68066-1714	001891000	35.48
68130-2904	003686500	68.00
68130-2804	003687500	77.25
68152-1758	001399000	102.50
68073	004011000	6.32
68066	001839505	31.15
68066-5523	002053501	49.73
68025-3777	002429503	65.05

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68018-4063	001927000	59.78
68066-1456	000948002	32.36
68041-4036	002698000	86.27
68066	000885500	91.33
68025-7944	003002000	10.36
68066-4028	001723000	55.95
68041-4021	002748500	58.35
68154	002046600	37.15
68040-4047	002676000	35.36
68025-3835	000902502	42.86
68003-1645	003613501	36.73
68015-3298	002408000	20.33
68025-7939	003140500	99.51
68025	002860500	143.09
73717	002317000	50.62
68508-2003	002653500	113.16
68066-1311	002808000	43.72
68122-2306	005095000	15.66
68050-6383	000455001	30.45
68025	002881501	40.36
68025-4519	003012500	55.60
68015	002207500	59.17
68066	002134000	138.22
68070	006895500	34.45
68003-6025	003700000	48.84
68428-0235	000661000	120.70
68015	001316500	59.10
68015-0192	002218500	33.25
68015	002212500	73.61
68015	002405000	97.10
68660-	002215001	67.00
68660-	002321001	63.31
68018-0007	002187000	32.17

INTERLOCAL COOPERATION ACT AGREEMENT

between

LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT

And

PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT

For

**PLATTE AND ELKHORN RIVER VALLEY INTEGRATED WATER
MONITORING**

THIS AGREEMENT (“**THIS AGREEMENT**”) is entered into by and between the **LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT (“LPNNRD”)** and the **PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT (“P-MRNRD”)**. The LPNNRD and the P-MRNRD are referred to collectively hereinafter as “**PARTIES**” and individually as a “**PARTY**”.

WHEREAS, the P-MRNRD intends to enter into a joint funding agreement with the U.S. Geological Survey’s (“USGS”), Nebraska Water Science Center for real-time continuous monitoring of the groundwater levels between the Platte River streamflow gage near Leshara, NE and the Elkhorn River streamflow gage at Waterloo, NE. The complete study of this data will include its interpretation and analysis, collection of historic ground water levels and streamflows, multiple groundwater level readings, ground water surface contouring, Elkhorn River bed and bank conductance, and analysis of recharge and retiming of groundwater between the rivers. The **PARTIES** now desire to enter into **THIS AGREEMENT** to complete this study and publish a final interpretive report (the “**PROJECT**”).

NOW, THEREFORE, the **PARTIES** do hereby agree as follows:

1. BENEFITS. The **PARTIES** do hereby find, determine and agree that the **PROJECT** will be of general benefit to the **PARTIES**, with only incidental special benefits.

2. PROJECT PARTICIPANTS. The **PROJECT** shall be undertaken by the **PARTIES**, as provided herein, without any separate entity being created, and the duties and responsibilities of the **PARTIES** with respect to the **PROJECT** shall be as defined by **THIS AGREEMENT**. The P-MRNRD shall be the lead organization and manage the **PROJECT**.

3. TECHNICAL REVIEW COMMITTEE. Each of the **PARTIES** shall be provided the opportunity to include a member or members of such **PARTY’S** staff to the **TECHNICAL REVIEW COMMITTEE (REVIEW COMMITTEE)**. The **REVIEW COMMITTEE** shall be responsible for providing technical guidance for the **PROJECT**, and shall have an opportunity to review and provide comments to the report and data.

4. MONETARY CONTRIBUTIONS BY PARTIES. LPNNRD shall pay to the P-MRNRD the amount of \$10,700 for each year for two successive years prior to

August 31st of each year. The first payment shall be received by the P-MRNRD by August 31, 2016.

P-MRNRD shall pay non-reimbursed costs in an amount not to exceed \$21,400 for the PROJECT.

In the event, the Parties, either individually or jointly, reasonably believe the actual, non-reimbursed costs of the PROJECT will exceed the monetary contributions set forth in this paragraph, the Parties shall negotiate, in good faith, revisions to the PROJECT so that non-reimbursed costs are reduced and/or the non-reimbursed costs are divided evenly between the Parties.

5. INVOICES. By July 15, 2016 and thereafter by July 15, 2017, the P-MRNRD will prepare and submit an annual invoice to LPNNRD for the contribution detailed in Paragraph 4, above. The LPNNRD may request from P-MRNRD and P-MRNRD shall provide records of actual expenditures related to the PROJECT.

6. USGS CO-OP CONTRIBUTION FUNDS. P-MRNRD intends to enter into an agreement with USGS to complete the PROJECT for a total cost of approximately \$245,000, and expects to receive a credit of approximately \$66,000 in cost-share from USGS for the PROJECT, with \$33,000 provided in USGS' fiscal year 2016, and \$33,000 provided in USGS' fiscal year 2017 (collectively the "USGS CONTRIBUTION").

In the event, P-MRNRD does not receive the USGS CONTRIBUTION, whether in the total amount expected or any portion of an individual contribution during a fiscal year, P-MRNRD shall have the right, in its sole and exclusive discretion, to terminate THIS AGREEMENT upon thirty days written notice to the LPNNRD. Upon such termination, the P-MRNRD shall have no further obligations or duties related to THIS AGREEMENT.

Also upon such termination, the LPNNRD shall reimburse the P-MRNRD for fifteen percent (15%) of any non-reimbursed PROJECT costs already incurred by the P-MRNRD prior to termination. Upon payment to the P-MRNRD of fifteen percent (15%) of any non-reimbursed PROJECT costs, the LPNNRD shall have no further obligations or duties under THIS AGREEMENT.

7. AUTHORITY FOR APPROVALS.

a) Approvals by the LPNNRD, and other LPNNRD discretionary actions contemplated by THIS AGREEMENT, are authorized to be provided by the General Manager of the LPNNRD; and,

b) Approvals by the P-MRNRD, and other P-MRNRD discretionary actions contemplated by THIS AGREEMENT, are authorized to be provided by the General Manager of the P-MRNRD.

8. PUBLIC AVAILABILITY OF DATA AND REPORT. The PARTIES acknowledge that all data collected for this PROJECT and the resulting report shall be public records, and no party shall claim any intellectual property rights in any such documents.

9. TERM AND DURATION. THIS AGREEMENT shall be in force and effect from and after its execution by all PARTIES and shall remain in effect until the occurrence

of the earliest of the following events: (1) the completion of the PROJECT; or (2) the termination of the AGREEMENT pursuant to Paragraph 7, above, and/or Paragraph 10, below.

10. ADDITIONAL FUNDING SOURCES. In addition to the USGS CONTRIBUTION, the P-MRNRD has applied for additional funding from two separate state agencies. First, P-MRNRD submitted an application to the Nebraska Department of Natural Resources' INSIGHT Data Enhancement Program ("IDEP") seeking \$72,000 in funds for the PROJECT. Second, P-MRNRD submitted an application to the Nebraska Natural Resources Commission's Water Sustainability Fund ("WSF") seeking \$64,200. P-MRNRD makes no representation concerning the likelihood of said application(s) receiving funding from the respective state agency.

In the event the IDEP and WSF, either individually or collectively, applications are denied funding or the amount granted is less than the amounts applied for this PROJECT, the P-MRNRD shall have the right, in its sole and exclusive discretion, to terminate THIS AGREEMENT upon thirty days written notice to the LPNNRD. Upon such termination, the P-MRNRD shall have no further obligations or duties related to THIS AGREEMENT.

Also upon such termination, the LPNNRD shall reimburse the P-MRNRD for fifteen percent (15%) of any non-reimbursed PROJECT costs already incurred by the P-MRNRD prior to termination. Upon payment to the P-MRNRD of fifteen percent (15%) of any non-reimbursed PROJECT costs, the LPNNRD shall have no further obligations or duties under THIS AGREEMENT.

11. NON-DISCRIMINATION. The PARTIES shall not, in the performance of THIS AGREEMENT, discriminate or permit discrimination in violation of federal or state laws or local ordinances because of race, disability, color, sex, age, political or religious opinions, affiliations or national origin.

12. APPLICABLE LAW. The PARTIES shall follow all applicable federal and state statutes and regulations in carrying out the faithful performance and terms of THIS AGREEMENT.

13. SEVERABILITY. In the event any portion of THIS AGREEMENT is held invalid or unenforceable for any reason, it is agreed that any such invalidity or unenforceability shall not affect the remainder of THIS AGREEMENT and the remaining provisions shall remain in full force and effect, and any court of competent jurisdiction may so modify any objectionable provision of THIS AGREEMENT so as to render it valid, reasonable, and enforceable.

14. CAPTIONS. Captions used in THIS AGREEMENT are for convenience and not for use in the construction of THIS AGREEMENT.

15. COUNTERPARTS. THIS AGREEMENT may be executed in any number of counterparts, all of which taken together shall constitute one and the same instrument. Each PARTY hereto agrees that facsimile or other electronic signatures shall be considered legal and binding with respect to THIS AGREEMENT.

16. WAIVER. No delay or failure by any PARTY hereto to exercise any right under THIS AGREEMENT, and no partial or single exercise of that right, shall constitute a waiver of that or any other right unless otherwise expressly provided herein. A valid waiver by any PARTY hereto must be in writing and executed by the waiving PARTY.

17. ENTIRE AGREEMENT. Each PARTY hereto acknowledges that THIS AGREEMENT contains the entire agreement between the parties hereto, and the terms of THIS AGREEMENT are contractual in nature in all respects and not a mere recital. Each PARTY hereto further acknowledge that it has not made any representations or promises related to the subject matter of THIS AGREEMENT that have not been made part of THIS AGREEMENT.

[SIGNATURE PAGES FOLLOW]

IN WITNESS WHEREOF

The LPNNRD has executed THIS AGREEMENT on _____, 2016,
pursuant to resolution duly adopted by its Board of Directors.

**LOWER PLATTE NORTH NATURAL
RESOURCES DISTRICT**

By _____
General Manager

[ADDITIONAL SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF

The P-MRNRD has executed THIS AGREEMENT on May 12, 2016, pursuant to resolution duly adopted by its Board of Directors.

**PAPIO-MISSOURI RIVER NATURAL
RESOURCES DISTRICT**

By  _____
General Manager

Interlocal Agreement for - Platte and Elkhorn River Valley Integrated Water Monitoring

In December 2015 the board approved participating with Papio NRD for studying the surface/ground water relationship between the Platte and Elkhorn Rivers (see attachment). We now need to approve the Interlocal agreement for the study.

To approve the Interlocal Agreement with Papio-Missouri River NRD for “Platte and Elkhorn River Valley Integrated Water Monitoring” as attached to the Water Committee Minutes and authorize the General Manager to execute the agreement.

Total Costs For BOR Drought Contingency Plan Grant \$ 400,000

Scenario 1

BOR Grant Successful, WSF Grant Successful, DNR contribution \$100,000

BOR	\$	200,000		
WSF	\$	60,000		
DNR	\$	100,000		
ILCA - 5 parties	\$	40,000	\$	8,000 per party
Total	\$	400,000		based on equal split

\$40,000 match could be used to secure \$60,000 from water sustainability fund to meet \$100,000 local (excluding DNR) match requirement

Scenario 2

BOR Grant Successful,

BOR		
WSF		
DNR		
ILCA - 5 parties		
Total		

\$74,075 match could be used to secure \$200,000 local (including DNR) match requirement

* Any outside public involvement assistance to meet requirements for the BOR grant would need to be covered via a separate grant. Data collection installation would be in addition to the \$400,000; => \$400,000 (BOR Drought Plan) + \$40,000 (Data Collection)

, WSF Grant Successful, DNR contribution equal to Local contribution

\$	200,000		
\$	111,113		
\$	14,815		
\$	74,075	\$ 14,815	per party
\$	400,003		based on equal split

re used to secure \$111,113
lity fund to meet
ng DNR) match requirement

within the \$400,000 BOR grant
(a installation) = \$440,000 total

Total Phase II costs \$ **360,000**

Scenario 1

No BOR Grant, WSF Grant Successful, DNR contribution \$100,000

BOR	\$	-	
WSF	\$	156,000	
DNR	\$	100,000	
ILCA - 5 parties	\$	104,000	\$ 20,800 per party
Total	\$	360,000	based on equal split

\$104,000 match could be used to secure \$156,000 from water sustainability fund

Scenario 2

No BOR Grant

BOR
WSF
DNR
ILCA - 5 parties

\$133,335 n from water

Grant, WSF Grant Successful, DNR contribution equal to Local contribution

	\$	-		
	\$	200,002		
	\$	26,667		
Parties	\$	133,335	\$ 26,667	per party
Total	\$	360,004		based on equal split

Grant could be used to secure \$200,002
- sustainability fund

Total Phase II costs	\$ 360,000
Data Collection Costs	\$ 40,000
TOTAL Costs	\$ 400,000

Scenario 1

No BOR Grant, WSF Successful, DNR contribution \$100,000

BOR	\$ -	
WSF	\$ 180,000	
DNR	\$ 100,000	
ILCA - 5 parties	\$ 120,000	\$ 24,000 per party
Total	\$ 400,000	based on equal split

\$120,000 match could be used to secure \$180,000 from water sustainability fund

Scenario 2

No BOR Grant, WSF Successful, DNR contribution \$100,000

BOR	
WSF	
DNR	
ILCA - 5 parties	
Total	

\$148,150 match could be used from water sustainability fund

* Assumes \$40,000 for additional data collection installations. Data collection performed by Consortium members

successful, DNR contribution equal to local contribution

\$	-		
\$	222,225		
\$	29,630		
\$	148,150	\$ 29,630.00	per party
\$	400,005		based on equal split

be used to secure \$222,225
lity fund

bers

BUDGET

	Year	Budget Category	Estimated Quantity	Cost
One Deep Well at Prague Uplands (P-3 location)	FY 2016	One Deep Dakota Monitoring Well Installation (larger diameter hole to accommodate well install and additional reaming), Setting Surface Casing (60 feet), Well Development, Cover & Pad (up to approx. 500 feet)	1	\$ 32,100
		P-3 Subtotal		\$ 32,100
	Year	Budget Category	Estimated Quantity	Cost
Two Wells at North Bend (NB-1 location)	FY 2016	One Dakota Monitoring Well Installation (larger diameter hole to accommodate well install and additional reaming), Setting Surface Casing (20 feet), Well Development, Cover & Pad (up to approx. 300 feet)	1	\$ 10,750
		One Shallow Monitoring Well Installation (up to 25 feet deep)	1	\$ 1,750
		NB-1 Subtotal		\$12,500
TOTAL				\$44,600

Notes: Estimated costs are not to exceed and actual billing amounts will be based on invoices received by the selected subcontractor for actual footages drilled. A Request For Proposal (RFP) is planned for release by CSD in spring 2016. CSD will coordinate e-logging NB-1 and designing screen intervals during the well installation work.

Additionally, ENWRA has budgeted funds to credit back each of the ENWRA NRDs, including the LPNNRD on this project, \$9,150 on the FY17 ENWRA dues for test hole work done along ENWRA Airborne Electromagnetic (AEM) Survey reconnaissance lines.

Potential Site Locations by the Lower Platte North NRD
 Test Holes and Monitoring Wells

Test Hole	Test Hole Priority	Also Monitoring Well and Priority	Subarea	Comments
Sec. 3, T17N, R7E, SE of NE / half mile line	Completed	Yes, high	North Bend	East of Fremont Cutoff Ditch / NB#1
Sec. 22, T19N, R2E, NW	Completed	No	Middle Shell Creek	Sec. 23 no registered wells, LENRD Sec. 14 one irrigation well in NW1/4, LENRD / MSC#1
Sec. 9, T18N, R2E	High if no log	Yes, Existing, old domestic well	Shell Creek Uplands	Clint Johannes site, old domestic well, well log?
Sec. 5, T18N, R2E NE of NW	High	?	Shell Creek Uplands	Prefer TH along north county road in the middle / SCU#2
Sec. 21, T16N, R6E NW	Completed	?	Prague	P#1
Sec. 33, T16N, R6E SE of SW	High	?	Prague	P#2
Sec. 21, T15N, R6E NE of NW	Completed	?	Prague	P#3
Sec. 8, T15N, R5E SE of NW UP-22	High	Existing stock well	Prague	UP-22 Galen Jambor well, no log, nearest well 0.65 miles east G-150701 P#4
Sec. 5, T16N, R5E NE of NW	High	?	Prague	P#5
Sec. 20, T16N, R5E NW of NE	High	?	Prague	P#6
Sec. 32, T16N, R5E SE of SW	Completed	?	Prague	P#7
Sec. 20, T15N, R5E NW of NW	High	?	Prague	P#8

NOTE: Green highlights are potential locations for Options A through D

FACT Sheet

Former Nebraska Ordnance Plant ■ Mead, Nebraska

Bedrock Assessment

As part of the U.S. Army Corps of Engineers (USACE) commitment to public safety, water supply wells that are within one mile from the delineated groundwater contamination plumes are sampled on a regular basis. There are currently 75 water supply wells in the sampling program. Water supply wells located less than one mile from the delineated groundwater contamination plumes are in the one-mile buffer zone and are sampled once a year. Water supply wells located less than one-half mile from the delineated groundwater contamination plumes are in the half-mile buffer zone and are sampled twice a year. Currently, there are 72 water supply wells with no detections of Department of Defense (DOD) contaminants above the defined safe drinking water levels established by the U.S. Environmental Protection Agency (EPA) and Nebraska Department of Environmental Quality. Three water supply wells currently have concentrations of trichloroethene (TCE) and/or hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) above the project action levels (TCE – 5 micrograms per liter [$\mu\text{g/L}$] and RDX – 2 $\mu\text{g/L}$) and have a whole house granular activated carbon unit installed to treat the water.

If at any point a water supply well in the sampling program is confirmed to contain TCE and/or RDX above their respective action levels, then either a whole house granular activated carbon unit will be installed or bottled water will be provided to ensure protectiveness of the resident. The whole house granular activated

carbon unit will be maintained by the USACE at no cost to the landowner. Water supply wells that have a whole house granular activated carbon unit installed are sampled at the inlet and outlet of the treatment unit during each sampling event to monitor the effectiveness of treatment. The results of all water supply well testing are sent directly to each landowner.

In addition to the regular sampling of water supply wells conducted by the USACE, the EPA sampled over 140 water supply wells in 2009 that were located outside the one-mile buffer zone. There were no detections of DOD contaminants in any of those water supply wells.

The USACE is planning on conducting an updated well inventory in the Fall of 2016.

Bedrock Aquifer Groundwater Monitoring Wells

In Spring 2016, the USACE installed three new clusters with three new monitoring wells each into the bedrock aquifer. These nine new bedrock monitoring wells (see figure on back of fact sheet) are collocated with three existing groundwater monitoring well clusters MW-90, MW-180, and MW-157. The new bedrock monitoring well clusters were installed deeper into the bedrock aquifer compared to the existing monitoring wells.

Following the installation, the nine new bedrock monitoring wells were sampled and the results showed concentrations of TCE and RDX above the action levels.

May 2016

For more information or any questions concerning the former Nebraska Ordnance Plant project, please contact:

Office of Public Affairs
U.S. Army Corps of Engineers
Kansas City District
601 East 12th Street
Kansas City, Missouri 64106
Phone: (816) 389-3846

or go to the project website at:

<http://www.nwk.usace.army.mil/Missions/Environmental/EnvironmentalProjects/NOP.aspx>

Information repository documents are available for review at:

Mead Public Library
316 South Vine Street
Mead, Nebraska 68041
Phone: (402) 624-6605

Hours

Tuesday: 10 a.m. - 1 p.m. and 2-6 p.m.
Wednesday: 4-8 p.m.
Thursday: 10-11 a.m. and 2-6 p.m.
Saturday: 10 a.m. - 2 p.m.



**US Army Corps
of Engineers** ®

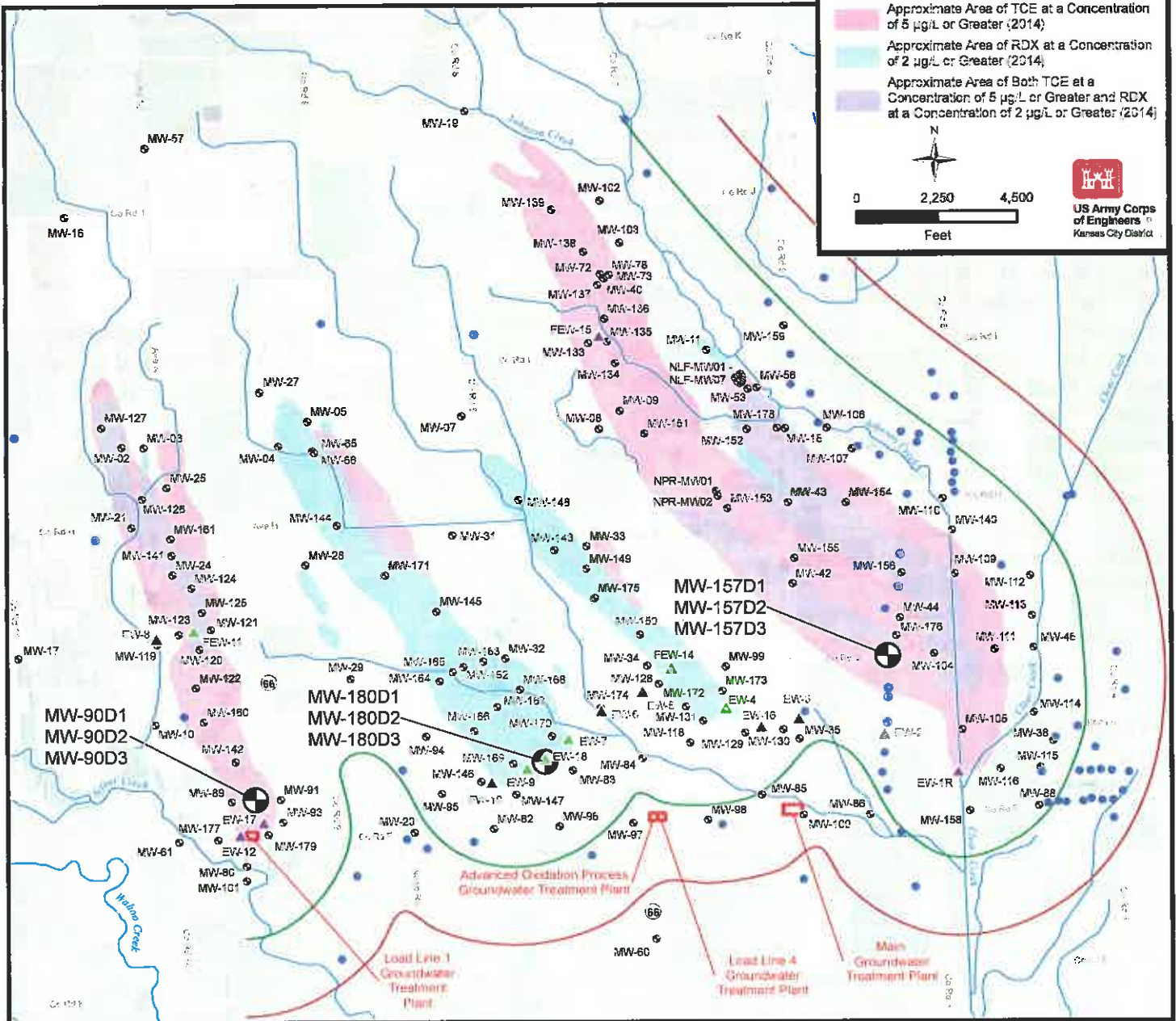
FACTSheet

(Continued)

Based on those results, additional bedrock monitoring wells will be installed downgradient from the newly installed bedrock monitoring well clusters. The installation of the new downgradient bedrock monitoring wells is anticipated to begin in late Summer 2016. All of the

new bedrock monitoring wells will be sampled and added to the sitewide groundwater monitoring program.

The results of the groundwater samples collected from those new downgradient bedrock monitoring wells will help guide the decision process for planning additional field activities related to the bedrock aquifer.



Lower Platte North Natural Resources District

2015 Precipitation Gauging Network

<i>Operator</i>	<i>Location</i>	<i>Jan.</i>	<i>Feb.</i>	<i>March</i>	<i>April</i>	<i>May</i>
Duane Siffring	Bellwood	0.84	0.55	0.38	3.35	3.72
Lindsay Coop (Jacob Hall)	Lindsay N.R.D.			0.40	2.83	3.26
Kenneth Polacek	Prague N.R.D.	0.16	0.64	0.69	4.60	7.50
Frank Sousek	Prague (27-16-5)	0.00	0.64	0.33	4.21	7.75
Gene Kros	Weston				3.62	8.40
	Monthly Average	0.33	0.61	0.45	3.72	6.13
	Regional Average					
		* Precip Estimated as: Precip(inches) = Snow Depth(inch)				

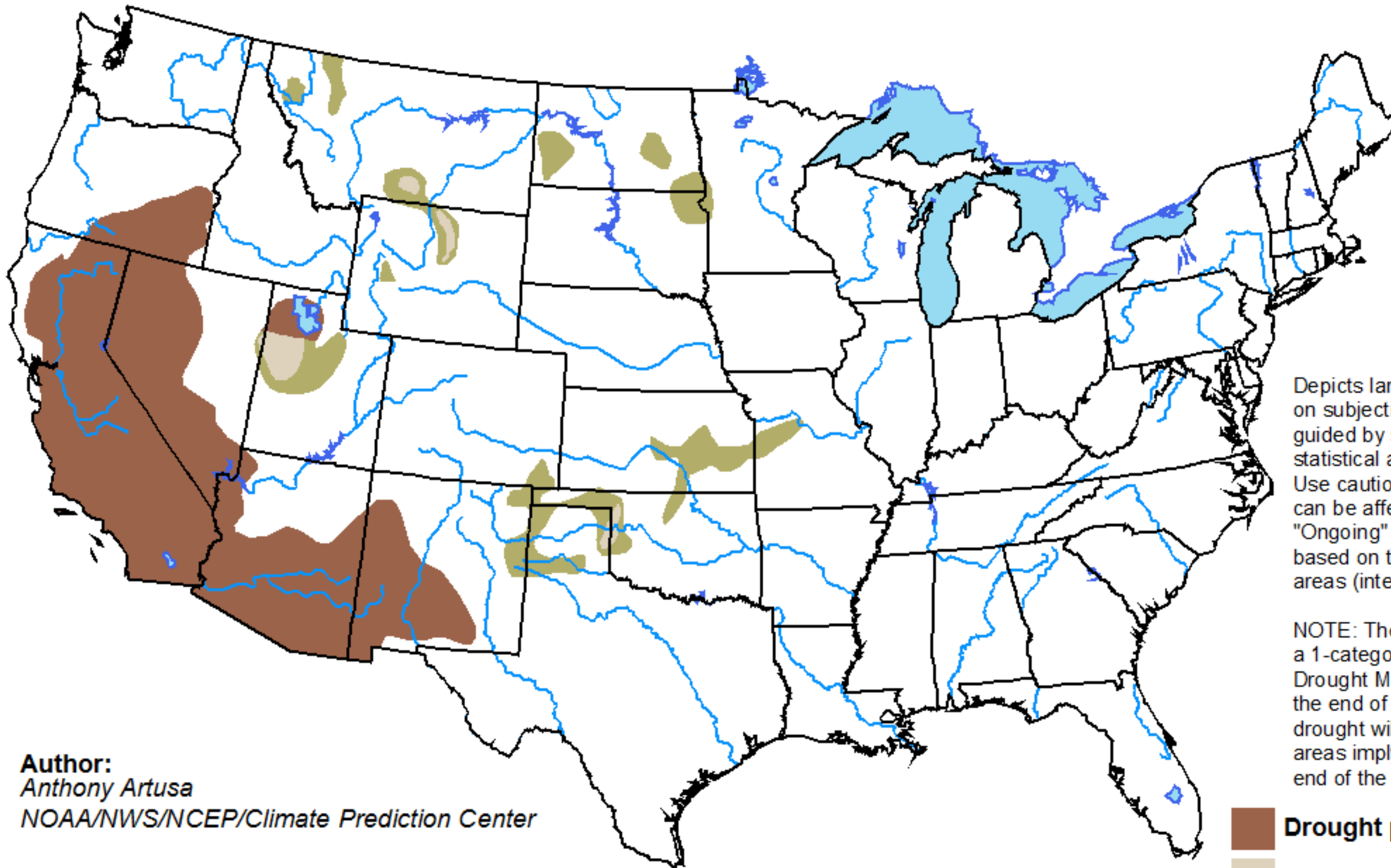
*Rainfall estimated as
precip=snow * 0.08

<i>June</i>	<i>July</i>	<i>August</i>	<i>Sept.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>	<i>Total</i>
6.06	3.74	8.70	2.52	0.79	1.96	2.63	35.24
3.99							N/A
6.00	5.30	8.45	2.75	0.60	2.70	3.41	42.80
5.70	5.25	8.20	3.05	0.60	2.42	2.58	40.73
5.91	2.87	8.94	3.82	0.64	3.01	3.49	N/A
5.53	4.29	8.57	3.04	0.66	2.52	3.03	
							38.88
nes) * .08							

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period





Valid for April 21 - July 31, 2016
Released April 21, 2016

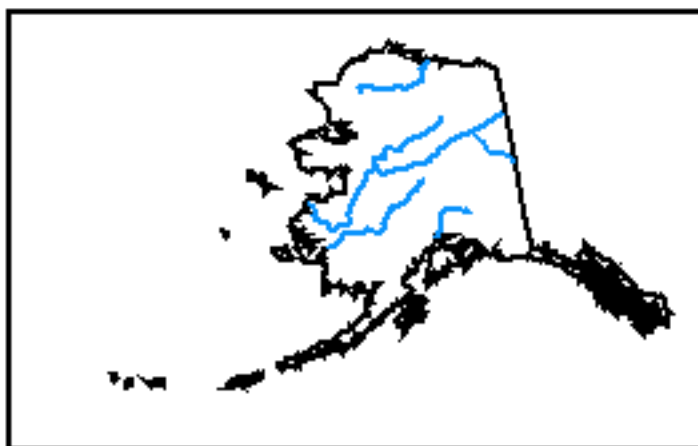


Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

Author:
Anthony Artusa
NOAA/NWS/NCEP/Climate Prediction Center

-  Drought persists
-  Drought remains but improves
-  Drought removal likely
-  Drought development likely



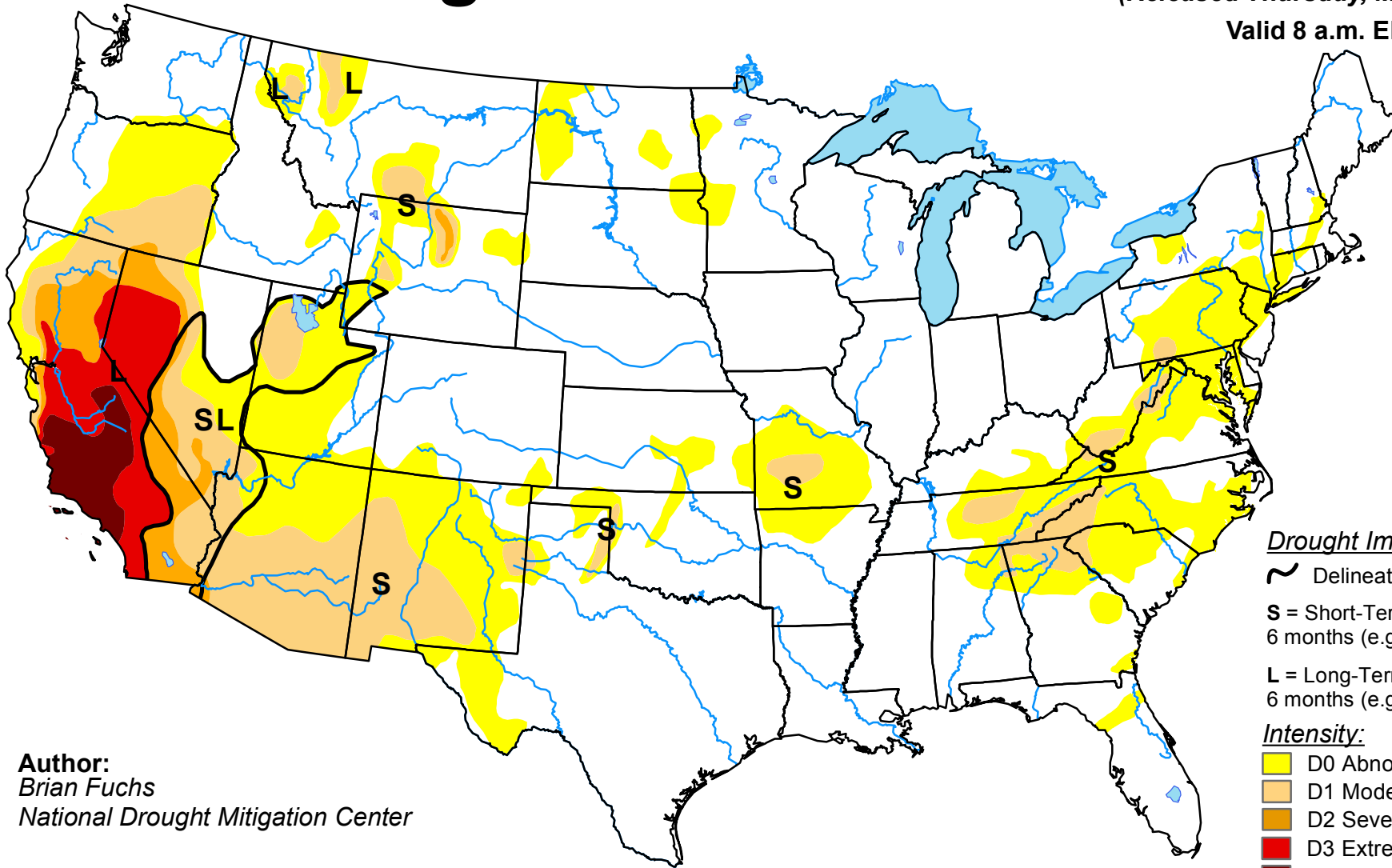
<http://go.usa.gov/3eZ73>

U.S. Drought Monitor

May 3, 2016

(Released Thursday, May 5, 2016)

Valid 8 a.m. EDT



Author:
Brian Fuchs
National Drought Mitigation Center

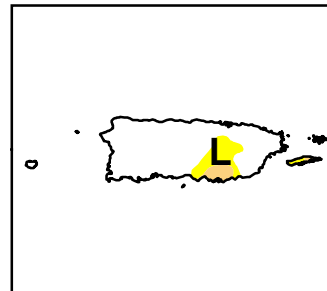
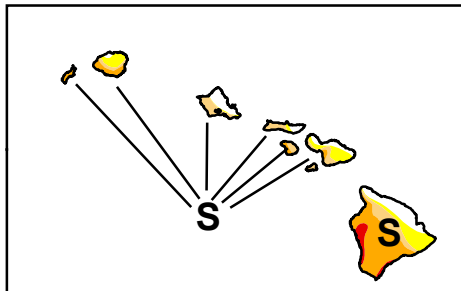
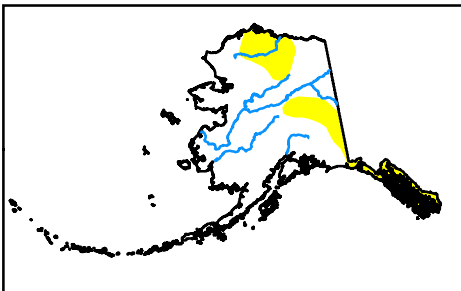
Drought Impact Types:

- ~ Delineates dominant impacts
- S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



<http://droughtmonitor.unl.edu/>

Form 9-1366
(Oct. 2005)

**U.S. Department of the
Interior
U.S. Geological Survey
Joint Funding Agreement
FOR
WATER RESOURCES INVESTIGATIONS**

Customer #: 600000136
Agreement #: 14EMNE000250
Project #: NR009MW
TIN #: 47-0542716
Fixed Cost Agreement Yes No

THIS AGREEMENT is entered into as of the **1st day of April 2014** by the **U.S. GEOLOGICAL SURVEY, UNITED STATES DEPARTMENT OF THE INTERIOR**, party of the first part, and the **LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT**, party of the second part.

1. The parties hereto agree that subject to availability of appropriations and in accordance with their respective authorities there shall be maintained in cooperation **seasonal continuous water quality monitoring at Shell Creek near Columbus, Nebraska**, herein called the program. The USGS legal authority is 43 USC 36C; 43 USC 50; and 43 USC 50b.
2. The following amounts shall be contributed to cover all of the cost of the necessary field and analytical work directly related to this program. 2(b) includes In-Kind Services in the amount of \$0.
 - (a) **\$23,400** by the party of the first part during the period
April 1, 2014 to **April 1, 2017**
 - (b) **\$64,900** by the party of the second part during the period
April 1, 2014 to **April 1, 2017**
 - (c) Additional or reduced amounts by each party during the above period or succeeding periods as may be determined by mutual agreement and set forth in an exchange of letters between the parties.
 - (d) The performance period may be changed by mutual agreement and set forth in an exchange of letters between the parties.
3. The costs of this program may be paid by either party in conformity with the laws and regulations respectively governing each party.
4. The field and analytical work pertaining to this program shall be under the direction of or subject to periodic review by an authorized representative of the party of the first part.
5. The areas to be included in the program shall be determined by mutual agreement between the parties hereto or their authorized representatives. The methods employed in the field and office shall be those adopted by the party of the first part to insure the required standards of accuracy subject to modification by mutual agreement.
6. During the course of this program, all field and analytical work of either party pertaining to this program shall be open to the inspection of the other party, and if the work is not being carried on in a mutually satisfactory manner, either party may terminate this agreement upon 60 days written notice to the other party.
7. The original records resulting from this program will be deposited in the office of origin of those records. Upon request, copies of the original records will be provided to the office of the other party.

Form 9-1366
continued

U.S. Department of the Interior
U.S. Geological Survey
Joint Funding Agreement

Customer #: 600000136
Agreement #: 14EMNE000250
Project #: NR009MW
TIN #: 47-0542716

- 8. The maps, records, or reports resulting from this program shall be made available to the public as promptly as possible. The maps, records, or reports normally will be published by the party of the first part. However, the party of the second part reserves the right to publish the results of this program and, if already published by the party of the first part shall, upon request, be furnished by the party of the first part, at costs, impressions suitable for purposes of reproduction similar to that for which the original copy was prepared. The maps, records, or reports published by either party shall contain a statement of the cooperative relations between the parties.
- 9. USGS will issue billings utilizing Department of the Interior Bill for Collection (form DI-1040). Billing documents are to be rendered quarterly. Payments of bills are due within 60 days after the billing date. If not paid by the due date, interest will be charged at the current Treasury rate for each 30 day period, or portion thereof, that the payment is delayed beyond the due date. (31 USC 3717; Comptroller General File B-212222, August 23, 1983).

U.S. Geological Survey
United States
Department of the Interior

Lower Platte North Natural Resources District

USGS Point of Contact

Customer Point of Contact

Name: Matt Moser
Address: 5231 South 19 St.
Lincoln, NE 68512

Name: Tom Mountford
Address: PO Box 126
Wahoo, NE 68066

Telephone: 402-328-4184
Email: mmoser@usgs.gov

Telephone: 402-443-4675
Email: tmountford@lpnrd.org

Signatures

Signatures

By Robert Swanson Date 2/5/14
Name: Robert B. Swanson
Title: NEWSC Director

By _____ Date _____
Name:
Title:

By _____ Date _____
Name:
Title:

By _____ Date _____
Name:
Title:

Billing Date	Amount	Federal Fiscal Year
3/31/2014	\$5,367.00	2014
6/30/2014	\$5,367.00	2014
8/31/2014	\$5,366.00	2014
	\$16,100.00	
12/31/2014	\$5,250.00	2015
3/31/2015	\$5,250.00	2015
6/30/2015	\$5,250.00	2015
8/30/2015	\$5,250.00	2015
	\$21,000.00	
12/31/2015	\$5,600.00	2016
3/31/2016	\$5,600.00	2016
6/30/2016	\$5,600.00	2016
8/31/2016	\$5,600.00	2016
	\$22,400.00	
12/31/2016	\$2,700.00	2017
3/31/2017	\$2,700.00	2017
	\$5,400.00	
Total Billings	\$64,900	

Potential Site Locations by the Lower Platte North NRD
Test Holes and Monitoring Wells

Test Hole	Test Hole Priority	Also Monitoring Well and Priority	Subarea	Comments
Sec. 3, T17N, R7E, SE of NE / half mile line	Completed	Yes, high	North Bend	East of Fremont Cutoff Ditch / NB#1
Sec. 22, T19N, R2E, NW	Completed	No	Middle Shell Creek	Sec. 23 no registered wells, LENRD Sec. 14 one irrigation well in NW1/4, LENRD / MSC#1
Sec. 9, T18N, R2E	High if no log	Yes, Existing, old domestic well	Shell Creek Uplands	Clint Johannes site, old domestic well, well log?
Sec. 5, T18N, R2E NE of NW	High	?	Shell Creek Uplands	Prefer TH along north county road in the middle / SCU#2
Sec. 21, T16N, R6E NW	Completed	?	Prague	P#1
Sec. 33, T16N, R6E SE of SW	High	?	Prague	P#2
Sec. 21, T15N, R6E NE of NW	Completed	?	Prague	P#3
Sec. 8, T15N, R5E SE of NW UP-22	High	Existing stock well	Prague	UP-22 Galen Jambor well, no log, nearest well 0.65 miles east G-150701 P#4
Sec. 5, T16N, R5E NE of NW	High	?	Prague	P#5
Sec. 20, T16N, R5E NW of NE	High	?	Prague	P#6
Sec. 32, T16N, R5E SE of SW	Completed	?	Prague	P#7
Sec. 20, T15N, R5E NW of NW	High	?	Prague	P#8

NOTE: Green highlights are potential locations for Options A through D

WATER PROGRAMS BUDGET					
FY15-16 BUDGET (Proposed) For planning next's year budget					
Account			(FY16-17)	165019	165200
Number		Program	Budget	Capital Improv.	Capital Outlay
6		WATER PROGRAMS BUDGET	1,277,550	10,000	110,000
100		Ground Water Management Area	308,000	0	0
	101	Cost Share	250,000		
	102	Inform. and Ed.	1,000		
	103	NRD Cert. Classes	2,000		
	104	Permits	0		
	105	Other	0		
	106	Integrated Man. Plan	25,000	0	
	107	Water Cons. Classes	0		
	110	Basin Wide Plan	20,000		
new >>	111	Flow Meter Maintenance	10,000		
			0		
200		Ground Water Programs	29,750	10,000	60,000
	201	Decommissioned Wells	12,500		
	202	GIS			
	203	GW Levels & Flow Meters	2,000		
	204	GW Quality Program	15,000		
	205	Mead-NOP	250		
	206	Monitoring Wells	0	10,000	60,000
	207	Registered Wells	0		
	208	Vadose Zone Samp.	0		
	209	Other	0		
	210	Livestock Sampling	0		
	211	Gzl & Homestead Wells	0	0	
	212	GW Projects Sinking Fund	0	0	
300		Regulatory	500	0	0
	301	Chemigation	500	0	
	302	Irrigation Runoff	0		
	303	Other	0		
400		Surface Water Programs	20,000	0	0
	401	Platte River Ice Mont	0		
	402	Prec. Gauging Network	0		
	403	Stream Flow	20,000		
	404	Other	0		
	405	Ne-Rain Network	0		
500		Special Projects	919,300	0	50,000

	501	GW Subarea	0		
	502	Shell Creek WQ Proj.	24,000		
	503	Test Holes	0		50,000
	504	ENWRA	30,000		
	505	Saturated Thick. Map	0		
	506	Modeling Platte V.	0		
	507	ELM	5,000		
new >>	508	AEM flights in SQS area	712,000		
new >>	509	GW elevation Wann Subarea	10,000		
new >>	510	Tile drain study	30,000		
new >>	511	Update Farm Process model			
new >>	512	SENSE program	26,500		
new >>	513	Platte-Elkhorn Int. Water Mon.	10,700		
new >>	514	Drought Contingency Plan	14,850		
new >>	514	Master Database	56,250		
			0		
	600	Wellhead Protection	0		
	601	Field Support	0		
	602	Information Education	0		
	603	Training	0		
	604	Other	0		

