




Memorandum

Date: February 13, 2019
To: Each Director
From: Paul D. Zillig, General Manager 
RE: Water Resources Subcommittee Meeting Minutes.

The Water Resources Subcommittee met in the NRD Office at 5:30 p.m. on Tuesday, February 12, 2019. Subcommittee members present included Bob Andersen, Vern Barrett, Don Jacobson, Karen Amen, Greg Osborn, and Chelsea Johnson. Others present included Larry Ruth, Katie Cameron, Dan Schulz, Ryan Rezac, Dick Ehrman, David Potter and myself.

Chair Andersen called the meeting to order and called on Katie Cameron to report on the proposed agreement with UNL Conservation & Survey Division for deep test hole drilling for the AEM project. Cameron reviewed the attached agreement and reported that the holes would be approximately 300 feet deep and funding for this work is included in the NRD budget (\$25,000) and the ENWRA budget (\$9,150). The drilling locations are being finalized, Ehrman reviewed the proposed locations as shown on the attached map. The Subcommittee discussed the proposed work and the challenges of the work. It was moved by Osborn, seconded by Barrett, and unanimously approved by the Subcommittee to **recommend the Board of Directors approve the Cooperative Agreement with UNL Conservation and Survey Division to provide test-hole drilling services at a cost not to exceed \$34,150, pending legal counsel review.**

The next item on the agenda was for Schulz to report on staff's annual review of our existing ground water best management practice cost-share programs. Schulz reviewed the attached memo from Steve Herdzina, Ryan Rezac and Chris Witthuhn explaining their review of the current programs. Staff recommendation is to update the maximum limit for the NRDs Fertilizer Meter Program from \$5,000 to \$6,500 for the District-wide program (50% cost-share) and from \$7,500 to \$10,000 for the Lower Salt Creek Ground Water Reservoir and all Community Water System Protection Areas (75% cost-share). All other costs were not in need of any updates this year. It was moved by Jacobson, seconded by Amen and unanimously approved by the Subcommittee to **recommend the Board of Directors increase the maximum limit for the Fertilizer Meter Cost-share Program to \$6,500 for the District-wide program and \$10,000 for the Community**



Water System Protection Areas and Lower Salt Creek Ground Water Reservoir areas.

The next item on the agenda was a report by Ryan Rezac on water use in the Dwight-Valparaiso-Brainard Special Management Area. Rezac reported on rainfall, the water use thru the second year of the 3 year allocation, and that water use is well within the allocation limits. Staff reported that the DVB SMA Advisory Group will meet again this spring and we anticipate discussion about changing from a set 3 year allocation to a 3 year rolling allocation, consideration of establishing an allocation per acre of irrigated land independent upon whether it is sprinkler/pivot or surface/furrow irrigation, and to determine if there is a need to increasing the penalties for 2nd and 3rd time violators.

Ehrman reported that the Ground Water Annual review will be ready to present to the Subcommittee/Board in March. Potter reported on the Upper Salt 3-A landrights hearing in Sprague, the status of the Oak-Middle 82-B watershed rehab project and the need to extend the agreement, and that Don Ficke has applied for EQIP (Federal assistance from NRCS) for his proposed stream stability project.

There being no additional business the meeting adjourned at 6:15 pm.

PDZ/pz

cc: Steve Seglin

COOPERATIVE AGREEMENT
between the
LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT
and
THE BOARD OF REGENTS OF THE UNIVERSITY OF NEBRASKA ON BEHALF OF
THE UNIVERSITY OF NEBRASKA-LINCOLN THROUGH ITS
CONSERVATION AND SURVEY DIVISION,
SCHOOL OF NATURAL RESOURCES

THIS AGREEMENT, is made and entered into this _____ day of _____, 2019, by the Lower Platte South Natural Resources District (hereinafter referred to as the LPSNRD) and the Conservation and Survey Division, School of Natural Resources of the University of Nebraska-Lincoln (hereinafter referred to as the CSD).

The LPSNRD and the CSD, in accord with their ongoing program responsibilities, desire to participate in a CSD test-hole drilling program to (1) Provide test-hole drilling equipment, supplies and expertise for obtaining subsurface geologic and hydrogeologic information within the LPSNRD boundaries and (2) Provide bore-hole geophysical logging equipment, supplies and expertise for obtaining measurements of physical and electrical properties within test-holes drilled at each site.

THEREFORE, IT IS MUTUALLY AGREED THAT:

- (1) **COOPERATION:** The LPSNRD and the CSD desire to cooperate and collaborate to accomplish the study objectives mutually agreed upon.
- (2) **PERIOD:** This agreement shall begin upon approval by LPSNRD and will continue for a period of one (1) year.
- (3) **STATEMENT OF WORK:** Certain portions of the study require a significant level of technical expertise and interpretation from the CSD. These include elements as listed in the attached proposal, herein referred to as Attachment #1.
- (4) **LPSNRD CONTRIBUTIONS:** As hereinafter limited, the LPSNRD shall contribute such of its funds, facilities, equipment, materials and personnel as it deems suitable and appropriate to accomplish the objectives of the study. The LPSNRD shall provide funds to the CSD to support costs directly related to test-hole drilling and geophysical logging expenditures. The costs include CSD logging services for 3 to 5 test-hole locations and will not exceed the amount of thirty four thousand one hundred fifty dollars (\$34,150). A breakdown of estimated costs is included in Attachment #1.
- (5) **CSD CONTRIBUTION:** The CSD shall utilize funds provided by the LPSNRD and such of its own funds for facilities, equipment, materials and personnel as it deems suitable to conduct the investigation and analysis called for in this Agreement. Hydrogeological expertise will be contributed to the project for sampling, logging, and potential well designs (if applicable).

- (6) **PRINCIPAL INVESTIVATORS:** Matt Marxsen, lead driller of CSD shall be the principal investigator for the project (50%). Kathleen Cameron, Eastern Nebraska Water Resources Assessment (ENWRA) Coordinator/CSD Hydrogeologist and Dana Divine CSD Hydrogeologist will be the co-principal investigators for the project (25% each).
- (7) **PUBLICATION:** Both parties shall have the right to announce and publish the results, facts, or conclusions of cooperative work under the terms of the Agreement, provided such announcement or publication shall expressly recognize the cooperation of the other party and provided such publication shall not indicate approval of the results, facts or conclusions by the other party. It is recognized that the CSD is obligated to maintain public access to data obtained in this study.
- (8) **LIABILITY:** Each party agrees that it will be responsible for its own acts and the results thereof and shall not be responsible for the acts of the other parties and the results thereof. Each party therefore agrees that it will assume all risk and liability to itself, its agents or employees, for any injury to persons or property resulting in any manner from the conduct of its own operations, and the operations of its agents or employees, under this Agreement, and for any loss, cost, damage, or expense resulting at any time from any and all causes due to any act or acts, negligence, or the failure to exercise proper precaution of or by itself or its own agents or its own employees while occupying or visiting the premises under and pursuant to this Agreement.
- (9) Attachment #1 is hereby incorporated in and made a part of this Agreement the same as if it had been specified herein verbatim.

LOWER PLATTE SOUTH
NATURAL RESOURCES DISTRICT

By _____ Date _____

CONSERVATION & SURVEY DIVISION
OF THE UNIVERSITY OF NEBRASKA

By _____ Date _____

THE BOARD OF REGENTS OF THE
UNIVERSITY OF NEBRASKA, UNL

By _____ Date _____

ATTACHMENT #1

Test-hole Drilling, Sampling, and Logging Program for the Lower Platte South Natural Resources District

The Lower Platte South Natural Resources District (LPSNRD) has a complex assemblage of aquifers which supply most of the water used for irrigation and drinking. The LPSNRD has future plans to drill test-holes and record down-hole data to establish baseline information about groundwater quality, quantity, and aquifer composition.

Conservation and Survey Division (CSD) scientists will perform preliminary hydrogeologic analyses to determine the most appropriate drilling sites. These will be reviewed with the LPSNRD staff that will be responsible for obtaining landowner permission for site access for test-hole drilling.

CSD will drill or will hire a licensed water well contractor to drill the test-holes. The LPSNRD will provide staff on-site during drilling to interact with the public and assist the geologists as needed. At the time of drilling, samples will be collected by CSD geologists to adequately represent the types of material encountered during the drilling operation. These samples will be described both in the field and in the laboratory to determine the lithologic composition and stratigraphic nomenclature of the test-hole. Once the interpretation phase is complete, the samples will be placed in CSD’s test-hole repository future use and the information obtained will be entered into the statewide test-hole database maintained by the CSD.

At the completion of drilling operation for each test-hole, a geophysical log suite will be obtained using CSD’s equipment and personnel. Measurements will include natural gamma, single-point resistance, spontaneous potential, 16- and 64-inch normal resistivity, lateral resistivity, fluid resistivity and fluid temperature. The geophysical log suite will aid in the interpretation of lithology and, in some instances, provide information on hydraulic properties of various units encountered within the test-hole.

Budget

Year	Budget Category	Estimated Quantity	Cost
One (FY19)	Equipment (Test-hole Drilling and Geophysical Logging)	3-5 test-holes (~2,300 feet)	\$24,600.00
	Labor (Drill Crew)		\$7,050.00
	Expenses (Crew Travel and Drill Supplies)		\$2,500.00
	Subtotal		\$34,150.00

Note: CSD equipment, crew labor and personnel travel costs will be invoiced according to the actual quantities accomplished at current CSD rates (estimated around \$15/foot on these Dakota holes. **Invoice amounts will not exceed \$34,150.** LPSNRD is scheduled for a **\$9,150.00 dues credit** from ENWRA in fiscal year (FY) 2019 for these proposed test-holes along airborne electromagnetic (AEM) survey flight lines.

Budget table

2018 CSD Test Hole Drilling Estimates				
Estimated	Unit Costs	Quantities	Item Costs	Category Costs
Equipment & Crew				
Mileage-Rig	\$0.65	216	\$140.40	
Support Truck	\$0.65	864	\$561.60	
Support Truck	\$0.65	216	\$140.40	
Water Truck	\$0.65	648	\$421.20	
Logging Truck	\$0.65	648	\$421.20	
Days Used & Per Foot				
Support Truck/Trailer per day	\$35.00	16	\$560.00	
Support Truck per day	\$11.00	7	\$77.00	
Water Truck per day	\$40.00	15	\$600.00	
Logging Unit per day	\$11.00	15	\$165.00	
Logging Unit Footage	\$1.00	2,330	\$2,330.00	
Drill Footage	\$4.00	2,330	\$9,320.00	
Extra per foot, Deep Dakota:	\$4.25	2,330	\$9,902.50	
		Subtotal	Equipment	\$34,639.30
Drilling Crew Rotary (/day)	\$350.00	15	\$5,250.00	
Student worker (/hour)	\$12.00	150	\$1,800.00	
		Subtotal	Labor	\$7,050.00
Supplies	\$500.00	5	\$2,500.00	
		Subtotal	Supplies	\$2,500.00
			Total CSD Direct:	\$34,189.30
Travel notes: should be able to mobilize from Lincoln each day, assumes 3 days per hole and ~3-5 holes				
Footage on 5 holes 360-550 ft deep:				
	2,330		2,330	

Miles Calculations:

water	648	
rig	216	
support truck	864	
logging truck	648	
	one way	RT
1 I-80 Millford	18	36
2 West Pawnee	21	42
3 SW Branched Oak	21	42
4 BranchedOak_westNt	24	48
5 MeadowLark	27	54
6 SpringCreekParairie	20	40
7 Blank Spot	24	48

\$14.67 AVERAGE PER FOOT COSTS

ID	Ground	Kd Top	Kd bott	Drill Depth
1 I-80 Millford	1439	1320	960	479
2 West Pawnee	1430	1285	950	480
3 SW Branched Oak	1441	1270	980	461
4 BranchedOak_westNt	1310	1200	950	360
5 MeadowLark	1405	1200	980	425
6 SpringCreekParairie	1384	1200	944	468
7 Blank Spot	1520	1320	970	550

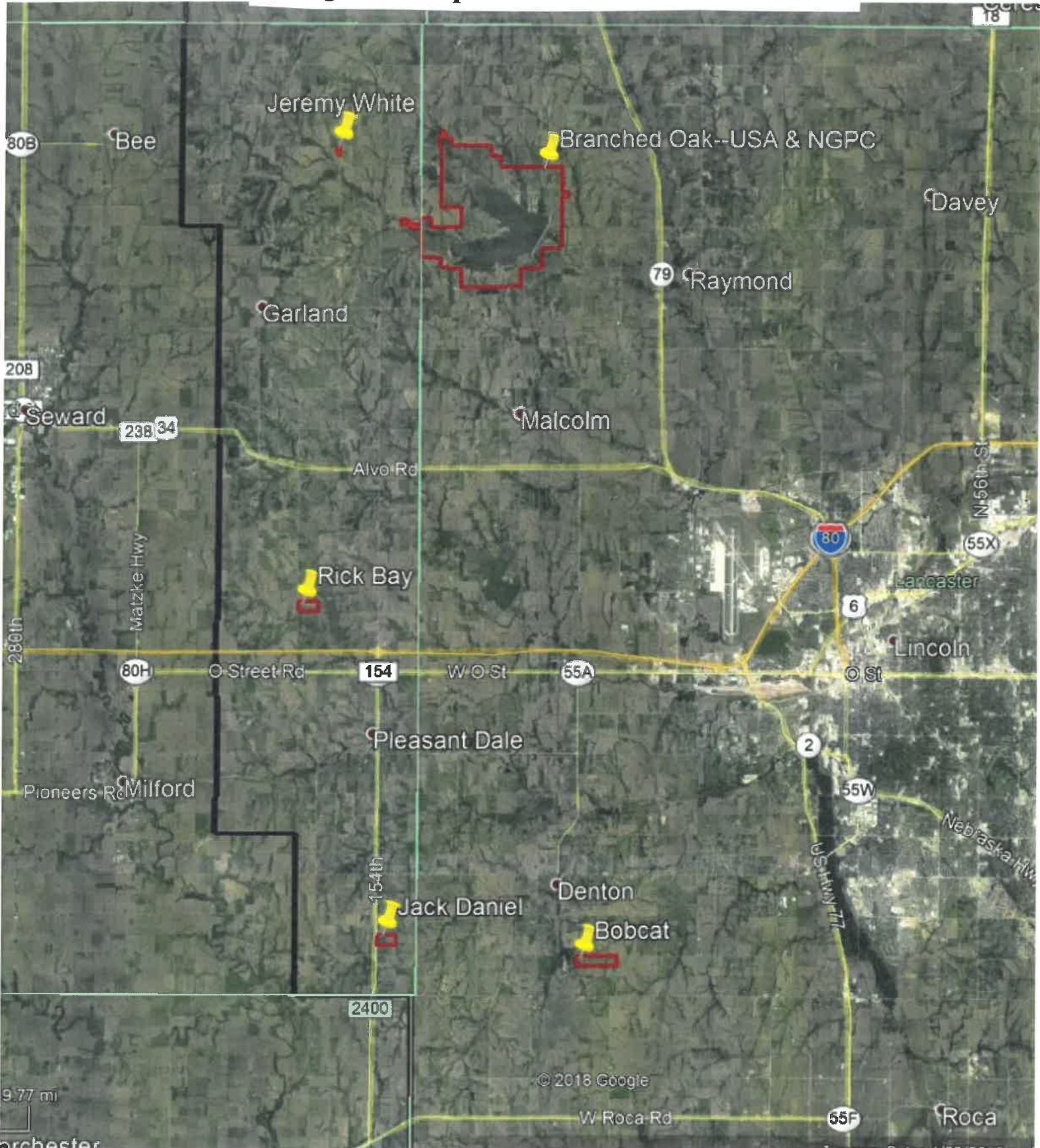
FROM AGREEMENT

Year	Budget Category	Estimated Quantity
One	Equipment (Test-hole Drilling and Geophysical Logging)	3-5 test-holes (~2,300 feet)
(FY 19)	Labor (Drill Crew)	
	Expenses (Crew Travel and Drill Supplies)	
		Subtotal

3223

2330

Spring 2019 Deep Test Hole Locations - estimated





LOWER PLATTE SOUTH

natural resources district

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

Final Memorandum

Date: February 12, 2019
To: Water Resources Subcommittee
From: Steve Herdzina, Ryan Rezac, Chris Witthuhn, Ground Water Staff
Subject: Groundwater BMP Cost-share Rate Adjustments

The District is determining any possible rate adjustments for groundwater BMP cost-share. There are five programs that are being reviewed by the ground water staff that oversees them. Steve Herdzina is responsible for the fertilizer meter program, spring nitrogen application program (SNAP), and soil sampling program. Ryan Rezac is responsible for the water meter program and Chris Witthuhn for water well decommissioning.

The current fertilizer meter cost-share rate is 50% up to \$5,000 district wide and 75% up to \$7,500 for the Lower Salt Creek Ground Water Reservoir (LSCGWR) and for all Community Water System Protection Areas (CWSPA's). The District made payments on 7 fertilizer meter applications the previous calendar year, 4 of which exceed the maximum rate. Based on the completed payments, the rates would increase to a maximum limit of \$6,500 district wide and \$9,750 for the targeted areas. An adjustment to the current maximum cost-share rate could be considered resulting in an increase to the amount paid to the applicant. Staff recommends that the Board of Directors increase the maximum limit for the Fertilizer Meter Cost-Share Program to \$6,500 for the District-wide area and \$10,000 for the Community Water System Protection Areas & Lower Salt Creek Ground Water Reservoir areas.

Attached to this memo is a chart showing the success of the fertilizer meter program since its inception. The District has provided assistance on 164 applications to date.

The SNAP cost-share rate was created to encourage spring application of nitrogen fertilizer in lieu of fall application. There are several components to the program and all components were analyzed while considering a potential rate increase. The District has made payments on 8 separate SNAP applications the previous calendar year. The current rates are achieving the desired cost-share goal for this program. Based on the District's annual review of the SNAP Program, Staff is proposing no changes to the program for calendar year 2019.

The current soil sampling cost-share rate is 90% up to \$1,000. The District has made payment on 3 soil sampling applications the previous calendar year. The current rates are achieving the desired cost-share



LOWER PLATTE SOUTH natural resources district

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

goal for soil sampling. Based on the District's annual review of the Soil Sampling Program, Staff is proposing no changes to the program for calendar year 2019.

The current water meter cost-share rate is 50% up to \$650. The District did not receive any water meter applications the previous calendar year. The current rates are achieving the desired cost-share goal for water meters. Based on the District's annual review of the Water Meter Program, Staff is proposing no changes to the program for calendar year 2019.

The District has approved 26 applications for Water Well Decommissioning and of those has currently completed 10. The District has payment rates based on the individual components used in the decommissioning. The District has reviewed these costs for calendar year 2018 and found that there is a large variation in the cost of materials and billing methods. The average cost share rate is 67% District-wide (7 wells) and 100% in CWSPA's (3 wells). The wells that have been completed have all been completed by local water well contractors. The District is very close to cost-sharing on its 1000th well and may have already done so at the time of this subcommittee meeting. Based on the District's annual review of the Well Decommissioning Program, Staff is proposing no changes to the program for calendar year 2019.

Recommended motion: That the Board of Directors increase the maximum limit for the Fertilizer Meter Cost-Share Program to \$6,500 for the District-wide area and \$10,000 for the Community Water System Protection Areas & Lower Salt Creek Ground Water Reservoir areas. No additional changes are recommended to any of the other ground water cost-share programs for calendar year 2019.

Enc. Historical fertilizer meter info chart

Fertilizer Meter Trends

