Projects Committee Meeting
Thursday, September 2, 2021 7:30 AM
Lower Platte North NRD Office
P.O. Box 126
Wahoo, NE 68066

1. UNFINISHED BUSINESS
   There is no unfinished business to address.
2. SWCP

   A. SWCP Application Approvals
      No application approvals presented.
   B. SWCP Payments
      No payments presented.
   C. SWCP Cancellations
      No application cancelations presented.
   D. Wahoo Creek Cost Share Approvals
      No applications presented.
3. WATERSHEDS

   A. Shell Creek

      1. Shell Creek Environmental Enhancement Plan Implementation
         As previously reported, Pruss Construction has completed tree removal on the Shell Creek South Channel Improvement/Benching Project and will finish the project work after fall harvest. U.P. Railroad has completed their bridge replacement project near Country Road 15.

         As part of the Shell Creek Watershed Water Quality Plan Phase II, JEO continues to work with NDEE on the Plan update. Attached is JEO's $6,953 invoice and progress report. After this payment, $15,317.50 will remain under our $31,630 contract. We are requesting NDEE reimbursement for this expense.
         a. Shell Creek Grant Funding Update

         b. Shell Creek Septic System Upgrade application

         c. KEITH
            RUNGE
         d. $4,800.00

   B. Wahoo Creek Watershed

      1. Wahoo Creek Dam Site Planning Update & FYRA Invoices
         Janel Kaufman reports that state NRCS economist (Doug Christensen) has reviewed the economic write-up for the Wahoo Creek Watershed Plan and didn't have any comments. FYRA has finished removing Site 83 and finalizing the other comment responses in the document and submitted it to NRCS. She mentioned there were a ton

of comments and changes between updated econ and the site removal, so there will be some clean up that will need to happen after NRCS reviews the additions/changes. Attached is JEO 8/23/21 invoice totaling $6,791.25. After this payment, $24,355.25 will remain under contract.

2. Wahoo Creek Watershed Water Quality Plan Phase II
   Attached is JEO's August 27, 2021, $710 invoice and progress report for work completed on the Wahoo Creek Watershed Plan update. This expense will be reimbursed by NDEE. After this payment, $15,560.50 will remain under contract.

   A project that is being supported by NET and NDEE grant funding is the Czechland Lake Shoreline/Railroad Road Stabilization Project. Attached is a $174,763.07 invoice from Saunders County for our portion of the project expense. Also attached is the county's contribution toward the construction and pictures of the completed project. The county is also contributing their engineering expenses, and that amount is forthcoming. The committee is asked for a recommendation for payment.
3. Olsson Design Update and Invoice
   No new information to report. Olsson remained on hold for completing Dam designs until the Wahoo Creek Watershed Plan is approved by NRCS.

4. JOINT WATER MANAGEMENT ADVISORY BOARD

A. Platte River Cameras/Sensors Project
   At our joint Partner Zoom Meeting on August 13th, the participants reviewed options for establishing cameras and sensors along the Platte River later this year (November 2021 is the goal). After much discussion, it was decided that the best long-term option was to work with USGS for providing this service. While there will more initial local expense for equipment and for continued monitoring, the big advantage is USGS would handle everything without requiring LPNNRD to coordinate with two or more vendors to provide the same services (equipment purchase, operation & maintenance of equipment, website establishment & upkeep, etc.). There is also peace of mind that USGS has proven experience and an excellent track record for quickly taking care of problems when they arise. Since the initial equipment costs will be higher, PMRNRD has offered to provide additional monetary assistance towards the equipment purchase to bring costs down for the other local partners.

   Jason Lambrecht and Ben Dietsch, USGS, joined the LPNNRD's Projects Committee meeting (Zoom) to discuss their proposal for moving forward. Attached is a draft USGS agreement and a draft Interlocal Agreement between LPNNRD, PMRNRD, Dodge County and City of Fremont to share the local expenses.

B. Platte River Breach Repair (Fremont Rod & Gun) Project
   This project has been substantially completed and a project walkthrough was held on August 20th. JEO is working with the contractor on a few remaining items. LPNNRD has committed up to $50,000 toward the local project expense.

C. Rawhide Creek Work Plan-Environmental Assessment - Consultant Selection
   As reported last month, the Dodge County Attorney recommended not to accept the Burns and McDonnell proposal and readvertise for new Requests for Proposals

(RFP's). Dodge County, LPNNRD and Fremont representatives met on August 17 to discuss RFP proposals received for completing the Wateshed Plan Environmental Assessment for the Rawhide Creek Watershed. Two firms submitted proposals (FYRA, &JEO) as attached. Burns & McDonnell decided not to resubmit a proposal. The review committee acknowledged that both firms are highly qualified to complete the work. After much discussion and weighting the strengths of both firms and their project approach, the group recommendation was for Dodge County to consider hiring JEO to complete the watershed assessment.

As mentioned, NRCS has obligated funds for planning and conceptual design costs for surveys and investigations, environmental studies, evaluation of alternatives, and preparation of plans and design prior to the authorization of assistance for the installation of works of improvement. The assessment will evaluate feasible flood reduction projects that can hopefully be eligible for future federal Watershed Flood Prevention Operations (WFPO) program. While LPNNRD is a participating partner, this planning effort is 100% funded by NRCS, so we have not obligated any funding at this point.

5. HAZARD MITIGATION PLAN UPDATE

Becky Appleford, JEO, sent a adoption resolution from the Linwood Fire Department as part of the Lower Platte North NRD Hazard Mitigation Plan (passed August 24, 2021). It is her understanding that the final day for jurisdictions to adopt this plan was August 25, 2021. As such, we have collected and sent 54 of the 55 possible jurisdictional adoption resolutions. Please note the East Central District Health Department is the only jurisdiction that has not provided a resolution to us. However, they are now participating in the Lower Loup NRD Hazard Mitigation Plan.

As reported a few months ago, our HMP plan update has been approved by NEMA/FEMA with the next HMP update being required in five years.

6. EROSION AND SEDIMENT RULES AND REGULATIONS

7. OTHER

A. SID No. 8 (Woodcliff Lakes) Project Assistance Request - 8:00 a.m.
Attached is SID No. 8 latest project assistance request for a new bank stabilization project at Woodcliff Lakes. Their request is for up to 50% of the total project cost of $216,185, or $108,092.50. Jake Miyosky, JEO, joined the meeting to discuss SID No. 8's request. The committee took no action, but plans to visit the Woodciff Project area on September 9th, starting at 3:30p.m.

B. Wolfe Sediment Removal
The LPNNRD was notified that Drew Wolfe is nearing completion of a sediment removal contract with FSA in relation to the 2019 flood. Elliott and Bailey updated the committee on this project. While we have no objection to this work, the LPNNRD is not involved and does not have any official jurisdiction over the work. However, we may be asked to send a letter explaining this to FSA.

C. Long Range Plan - FY 2022
It is that time again to approve our Long Range Plan which is updated annually. The plan, which is a State requirement, outlines what we accomplished in FY 2021 and what our plans are looking forward from FY 2022 to F Y 2027. Please review the attached draft and give input by the September 13th Board Meeting where Board approval will be requested.

8. ADJOURNMENT
The Projects Committee adjourned at 9:15 a.m.

Engineering | Architecture | Surveying | Planning

JEO CONSULTING GROUP

Invoice

August 27, 2021
Project No: R210166.00
Invoice No: 126853
Invoice Amount: 6,953.00

Lower Platte North NRD
511 Commercial Park Road
PO Box 126
Wahoo, NE 68066

Project Manager Adam Rupe

Project R210166.00 Lower Platte North NRD: Shell Creek Watershed Plan Update

Professional Services through August 20, 2021

	Contract Amount	Percent Complete	Billed-to-Date	Previous Billing	Current Billing
Lump Sum Phase(s)					
Task 1: Evaluate Water Quality Data	$4,540.00	100 %	$4,540.00	$2,540.00	$2,000.00
Task 2: Quantify Pollutant Loads	$13,240.00	70 %	$9,240.00	$5,240.00	$4,000.00
Task 3: Quantify Pollutant Reductions	$11,420.00	6 %	$710.00	0.00	$710.00
Task 4: Project Management	$2,430.00	75 %	$1,822.50	$1,579.50	$243.00
Additional Services	0.00		0.00	0.00	0.00
Total	**$31,630.00**		**$16,312.50**	**$9,359.50**	**$6,953.00**
			Total Amount Due Upon Receipt :		**$6,953.00**

Email Invoice to: tmountford@lpnnrd.org and jbreunig@lpnnrd.org

ENGINEERING ■ ARCHITECTURE ■ SURVEYING ■ PLANNING

Monthly Progress Report
Shell Creek Watershed WQMP Update
Lower Platte North NRD

JEO Project #: 210166.00
Through: July 26, 2021

1. **Work completed during current period**
   - Ongoing coordination with LPNNRD and NDEE.
   - Internal project management.
   - Continue compiling data on BMP implementation records.

2. **Planned accomplishments for next period**
   - Complete data gathering on BMPs.
   - Refine water quality model and existing loads.

3. **Project schedule**
   - Project is on schedule

4. **Information needed from project partners**
   - None at this time

5. **Next Meeting Date and Time**
   - None at this time

6. **Other Notes**
   - Project team will continue to monitor COVID-19 health directives and recommendations, as they may relate to any meetings

Please contact Adam Rupe at 402.322.0377 or at arupe@jeo.com for any questions or concerns regarding this progress report

FYRA Engineering, LLC
12702 Westport Parkway, Suite 300
Omaha, NE 68138
402-502-7131

Lower Platte North NRD
Tom Mountford
511 Commercial Park Road
Wahoo, NE 68066

Invoice number: 022-065
Date: 08/23/2021

Project: 022-17-02 WAHOO CREEK WATERSHED PLAN/EA

For Services Through August 13, 2021

MAINTAIN ADMIN RECORD

	Hours	Rate	Billed
Engineer Intern			
Anna Bakke	0.50	$110.00	$55.00

ADDITIONAL SERVICES WATERSHED PLAN EA

	Hours	Rate	Billed
Senior H&H Engineer			
Robert Gregalunas	1.25	$205.00	$256.25

SITE 83 REMOVAL

	Hours	Rate	Billed
Senior Environmental Engineer			
Janel Kaufman	40.50	$160.00	$6,480.00

Invoice total	**$6,791.25**

Make all checks payable to:
FYRA Engineering, LLC
12702 Westport Parkway, Suite 300
Omaha, NE 68138

FYRA ENGINEERING

INVOICE SUMMARY

Description	Contracted Fee	Previously Billed	This Invoice	Total To Date	% Complete
Coord Meetings w/LPNNRD	$5,724.00	$16,175.49	$0.00	$16,175.49	282.59
Coord Meetings w/NRCS	$8,904.00	$11,366.25	$0.00	$11,366.25	127.65
Project Meetings	$49,372.00	$23,605.04	$0.00	$23,605.04	47.81
Monthly Invoicing/Schedule	$7,875.00	$13,550.50	$0.00	$13,550.50	172.07
Project Scoping	$7,170.00	$7,068.75	$0.00	$7,068.75	98.59
Plan Review	$6,740.00	$24,541.09	$0.00	$24,541.09	364.11
Develop, Write & Summarize Plan	$60,100.00	$83,011.48	$0.00	$83,011.48	138.12
Maintain Admin Record	$3,560.00	$859.25	$55.00	$914.25	25.68
Develop and Describe Purpose & Need	$2,320.00	$1,820.00	$0.00	$1,820.00	78.45
19239.2Formulate, Describe & Compare Alternatives	$27,270.00	$19,239.25	$0.00	$19,239.25	70.55
Collect & Analyze Social/Demographic Data	$1,435.00	$1,562.50	$0.00	$1,562.50	108.89
Historic & Cultural Resources	$675.00	$9,869.00	$0.00	$9,869.00	1,462.07
Prime & Unique Farmland	$675.00	$2,404.75	$0.00	$2,404.75	356.26
Identify Wetlands & Other Water Bodies	$117,145.00	$102,862.36	$0.00	$102,862.36	87.81
Collect Soils Data	$810.00	$0.00	$0.00	$0.00	0.00
Identify and Anlyze Soil Erosion	$810.00	$1,952.75	$0.00	$1,952.75	241.08
Collect & Analyze Floodplain Data	$3,900.00	$6,521.00	$0.00	$6,521.00	167.21
Collect & Analyze Data on Critical Areas	$6,300.00	$3,071.00	$0.00	$3,071.00	48.75
Identify Land Use and Crop Inventory	$810.00	$1,125.00	$0.00	$1,125.00	138.89
T&E Species & Migratory Birds	$11,500.00	$12,192.50	$0.00	$12,192.50	106.02
Consumptive Use Data	$1,840.00	$1,366.50	$0.00	$1,366.50	74.27
Effects on Public Health & Safety	$4,440.00	$1,936.00	$0.00	$1,936.00	43.60
Effects to Homes/Bus/Ag	$4,440.00	$4,124.75	$0.00	$4,124.75	92.90
Cummulative Impacts	$11,080.00	$2,821.25	$0.00	$2,821.25	25.46
Federal, State & Local Permits	$1,790.00	$1,775.00	$0.00	$1,775.00	99.16
38Relationship/Conflicts w/Other Plans	$4,460.00	$3,822.50	$0.00	$3,822.50	85.71
Interagency & Public Involvement	$2,940.00	$5,197.02	$0.00	$5,197.02	176.77
Risk & Uncertainty	$4,880.00	$4,292.00	$0.00	$4,292.00	87.95
Preferred Alternatives Discussion	$11,840.00	$14,006.00	$0.00	$14,006.00	118.29
Mitigation Features	$6,760.00	$4,486.00	$0.00	$4,486.00	66.36
Hydrologic Investigation	$26,460.00	$33,403.25	$0.00	$33,403.25	126.24
Economic Data & Discussion	$14,640.00	$51,211.00	$0.00	$51,211.00	349.80
Installation & Financing	$2,600.00	$775.00	$0.00	$775.00	29.81
Operations, Maintenance & Replacment	$3,240.00	$740.00	$0.00	$740.00	22.84
Project Maps	$24,850.00	$28,438.25	$0.00	$28,438.25	114.44
Utility Investigations	$5,200.00	$1,940.00	$0.00	$1,940.00	37.31
Recreation Site 77 Planning	$7,350.00	$0.00	$0.00	$0.00	0.00
Interagency Scoping Mtg	$10,720.00	$6,396.50	$0.00	$6,396.50	59.67

FYRA
ENGINEERING

INVOICE SUMMARY

Description	Contracted Fee	Previously Billed	This Invoice	Total To Date	% Complete
Agency Coord	$7,680.00	$6,181.00	$0.00	$6,181.00	80.48
Breach Analysis	$26,343.00	$36,054.50	$0.00	$36,054.50	136.87
Hydraulics/Structure Sizing	$19,244.00	$30,321.25	$0.00	$30,321.25	157.56
Develop Land Rights & Structure Costs	$29,784.00	$29,048.25	$0.00	$29,048.25	97.53
Land Rights Assessment	$4,534.00	$1,496.25	$0.00	$1,496.25	33.00
Site Survey	$14,779.00	$5,080.00	$0.00	$5,080.00	34.37
Additional Services Watershed Plan EA	$48,000.00	$6,033.02	$256.25	$6,289.27	13.10
Additional Services-Economic-Project Management	$8,329.00	$5,550.00	$0.00	$5,550.00	66.63
Additional Services-Econcomics-Flood Damage Reduction Economics	$64,690.00	$66,770.50	$0.00	$66,770.50	103.22
Additional Services-Economics-Revised Plan Economics	$22,450.00	$10,187.75	$0.00	$10,187.75	45.38
Site 83 Removal	$22,305.00	$3,365.00	$6,480.00	$9,845.00	44.14
Total	**$740,763.00**	**$709,616.50**	**$6,791.25**	**$716,407.75**	**96.71**

Aging Summary

Invoice Number	Invoice Date	Outstanding	Current	Over 30	Over 60	Over 90	Over 120
022-063	07/26/2021	5,160.00	5,160.00				
022-065	08/23/2021	6,791.25	6,791.25				
	Total	11,951.25	11,951.25	0.00	0.00	0.00	0.00

Engineering | Architecture | Surveying | Planning

JEO CONSULTING GROUP

Invoice

August 27, 2021
Project No: R170124.00
Invoice No: 126852
Invoice Amount: 710.00

Lower Platte North NRD
511 Commercial Park Road
PO Box 126
Wahoo, NE 68066

Project Manager Adam Rupe

Project R170124.00 Lower Platte North NRD Wahoo Creek WQMP Update

Professional Services through August 20, 2021

	Contract Amount	Percent Complete	Billed-to-Date	Previous Billing	Current Billing
	0.00		0.00	0.00	0.00
Lump Sum Phase(s)					
Task 1: Evaluate Water Quality Data	$4,540.00	100 %	$4,540.00	$4,540.00	0.00
Task 2: Quantify Pollutant Loads	$13,240.00	70 %	$9,240.00	$9,240.00	0.00
Task 3: Quantify Pollutant Reductions	$11,420.00	6 %	$710.00	0.00	$710.00
Task 4: Project Management	$2,430.00	65 %	$1,579.50	$1,579.50	0.00
Total	**$31,630.00**		**$16,069.50**	**$15,359.50**	**$710.00**
		Total Amount Due Upon Receipt :			**$710.00**

Email Invoice to: tmountford@lpnnrd.org and jbreunig@lpnnrd.org

ENGINEERING ■ ARCHITECTURE ■ SURVEYING ■ PLANNING

Monthly Progress Report
Wahoo Creek Watershed WQMP Update
Lower Platte North NRD

JEO Project #: 170124.00
Through: August 23, 2021

1. **Work completed during current period**
   - Ongoing coordination with LPNNRD and NDEE.
   - Internal project management.
   - Continue compiling data on BMP implementation records.

2. **Planned accomplishments for next period**
   - Complete data gathering on BMPs.
   - Refine water quality model and existing loads.

3. **Project schedule**
   - Project is on schedule

4. **Information needed from project partners**
   - None at this time

5. **Next Meeting Date and Time**
   - None at this time

6. **Other Notes**
   - Project team will continue to monitor COVID-19 health directives and recommendations, as they may relate to any meetings

Please contact Adam Rupe at 402.322.0377 or at arupe@jeo.com for any questions or concerns regarding this progress report

Saunders County Highway Dept.

DATE August 31, 2021

426 N. Broadway
Wahoo, NE 68066
(402) 443-8124

Bill To:
Lower Platte North NRD
511 Commercial Park Road
P.O. Box 126
Wahoo, NE 68066

Description	AMOUNT
Czechland Lake RipRap C-78(860)	
Gana Trucking & Excavating, Inc. 3,121.41 tons Type B Riprap delivered	$167,963.07
ASP Enterprises Mirafi 180N Non-Woven Geotextile & staples	$6,800.00
TOTAL	$ 174,763.07

If you have any questions concerning this invoice, please feel free to contact us.

INVOICE

ASP Enterprises
6620 NW Toni Drive
Des Moines, IA 50313
Phone: 515-289-1271

Reference No.:	**ASP166352**
Date:	15-Jul-2021
Due Date:	14-Aug-2021
Customer ID:	109589
Ordered By:	Andy
Phone:	402-443-8124
Salesperson:	Lynn Ewoldt

BILL TO:	SHIP TO:
Saunders County Highway Dept. 426 N. Broadway Wahoo NE 68066	Customer Pick Up 15263 Cooper Street Omaha NE 68138

CUSTOMER PO	TERMS	CONTACT
8600	NET 30 DAYS	Tamie Judkins
SO NUMBER: ASP164583	SHIPMENT NUMBER: ASP164061	JOB: Checkland Lake
SHIP VIA:	CPU	

NO.	ITEM	QTY.	UOM	UNIT PRICE	EXTENDED PRICE
1	30531054: Mirafi 180N Non-Woven Geotextile 15'x300'-500sy	9.00	ROLL	750.0000	6,750.00
2	42501014: 6"x1"x6" Turf Staples 11 Gauge 1000/box	1.00	BOX	50.0000	50.00

JUL 19 21

Signature:

Payment Details

Payment Date	Payment Ref	Payment Nbr	Payment Method	Account/Card	Payment Amount

Sales Total:	6,800.00
Tax Total:	0.00
Total:	**6,800.00**

Order Total

Paid Amount

Total Balance

ASP Enterprises Invoice Terms and Conditions:

All returns are subject to a 25% restocking charge. A restocking fee will be applied to all returns after 30 days of purchase. Return tickets are subject to change upon inspection and approval of materials returned. Credit must appear on account before any cash or check will be issued. All special order products require a signed purchase order or prepaid invoice before ordering product. All special order products are non-returnable. Please allow for extended lead time. All returns must be stacked as original and undamaged.

The goods and products and (if any) services delivered pursuant to this invoice are subject to the Terms and Conditions shown on the reverse side hereof.

Gana Trucking and Excavating Inc

Phone 402-794-5000
2200 W Panama Rd.
Martell Ne 68404

Invoice

Date	Invoice #
8/19/2021	52562

Bill To
Mainelli Wagner 6920 Van Dorn Lincoln, NE 68506

We now accept credit cards! A 3.5% Processing fee may apply.

P.O. No.	Terms	Sales Rep
	Due on receipt	TL

Quantity	Description	Rate	Amount
	Job: Saunders County C-78 (860), Czech Lake Riprap Gana Job #21259		
3,121.41	Tons Type "B" Riprap Delivered	53.81	167,963.07

AUG 2 5 2021

All invoices not paid within 30 days of the date of this invoice are subject to a monthly charge of 1.33% (16% per year) and any other charges that are contractually or statutorily allowed. Unless disputed in writing within 30 days of the date of this invoice all charges will be deemed valid and acceptable. Acceptance by Gana Trucking & Excavating, Inc. of any amount less than the total amount invoiced does not constitute a release of the remaining amount.

Subtotal	$167,963.07
Sales Tax (0.0%)	$0.00
Payments/Credits	$0.00
Balance Due	$167,963.07

SAUNDERS COUNTY LABOR/EQUIPMENT/MATERIAL COSTS					
CZECHLAND LAKE C-78(860)					
2021	6-17 to 7-2	7-6 to 7-20	7-21 to 8-10	8-11 to 8-23	**TOTAL LABOR**
Labor	$ 4,132.68	$ 4,279.02	$ 3,112.40	$ 3,588.68	$ 15,112.78
	6-17 to 7-2	7-6 to 7-20	7-21 to 8-10	8-11 to 8-23	**TOTAL EQUIP**
Equipment costs	$ 13,144.73	$ 11,200.49	$ 6,627.81	$ 9,951.06	$ 40,924.09
	6-17 to 7-2	7-6 to 7-20	7-21 to 8-10	8-11 to 8-23	**TOTAL MATERIAL**
Material costs	$ -	$ 390.05	$ -	$ 2,770.70	$ 3,160.75
Engineering costs - Mainelli Wagner & Associates					$ 11,986.40
				TOTAL	**$ 71,184.02**

CZECHLAND LAKE C-78(860)

2021	6/17	6/18	6/21	6/22	6/23	6/28	6/29	6/30	7/1	7/2	HRS	RATE	TOTAL
Mark Rosencrantz	8	8	8.25	8	8	8	8	8	8	0	**72.25**	$ 24.49	$ 1,769.40
Calvin Caha	8	8	8	8	8	0	0	0	0	0	**40**	$ 17.85	$ 714.00
Jason Holtz	8	8	8	8	8	8	8	0	8	8	**72**	$ 18.94	$ 1,363.68
Rodney Patocka	0	0	0	0	0	0	0	8	8	0	**16**	$ 17.85	$ 285.60
													$ 4,132.68

	6/17	6/18	6/21	6/22	6/23	6/28	6/29	6/30	7/1	7/2	HRS	RATE	TOTAL
Unit #4 (8807)	0	1	0.75	0	0	0	0	0	0	0	**2**	$ 22.64	$ 39.62
Unit #8 (8808)	2	1	0.75	1	0.75	1	1	0	1	1	**10**	$ 22.99	$ 218.41
Unit #14 (8792 & 8591)	1	0	0	0	0	0	0	0	0	0	**1**	$ 66.35	$ 66.35
Unit #17 (8807)	0	0	0	0.75	0.75	1	1	1	1	0	**6**	$ 22.64	$ 124.52
Unit #202 (8331)	1	3	4.5	3.4	3.8	0	1.4	0	4.5	0	**22**	$ 63.63	$ 1,374.41
Unit #302 (8382)	0	2	5	5	4.7	3.9	1.3	4.9	4.4	2	**33**	$ 69.24	$ 2,298.77
Unit #303 (8253)	0	1	4.5	3.7	3.8	0	4	0	0	0	**17**	$ 153.35	$ 2,606.95
Unit #500 (8521)	0	2.5	4.5	3.9	4.7	5	1.4	4.4	4.5	0	**31**	$ 133.80	$ 4,134.42
Unit #502 (8521)	2	0	4.25	4.2	5.5	0	0	0	0	1.1	**17**	$ 133.80	$ 2,281.29
													$ 13,144.73

Total Labor	$ 4,132.68
Total Equipment	$ 13,144.73
TOTAL	**$ 17,277.41**

CZECHLAND LAKE C-78(860)

2021	7/6	7/7	7/8	7/9	7/12	7/14	7/15	7/16	7/19	7/20	HRS	RATE	TOTAL
Mark Rosencrantz	8	8	8	8	8	8	8	0	8	8	**72**	$ 24.49	$ 1,763.28
Calvin Caha	8	8	8	8	0	8	8	8	8	8	**72**	$ 17.85	$ 1,285.20
Jason Holtz	8	8	8	8	8	0	0	8	8	8	**64**	$ 18.94	$ 1,212.16
Kevin Grant	0	0	0	1	0	0	0	0	0	0	**1**	$ 18.38	$ 18.38
Rodney Patocka	0	0	0	0	0	0	0	0	0	0	**0**	$ 17.85	$ -
													$ 4,279.02

	7/6	7/7	7/8	7/9	7/12	7/14	7/15	7/16	7/19	7/20	HRS	RATE	TOTAL
Unit #4 (8807)	0	0	0	0	0	0	0	0	0	0	**0**	$ 22.64	$ -
Unit #8 (8808)	0.75	1	1	1	1.5	1	1	2	1	1	**11**	$ 22.99	$ 258.64
Unit #14 (8792 & 8591)	0	0	0	0	0	0	0	0	0	0	**0**	$ 66.35	$ -
Unit #17 (8807)	0.75	1	1	1	1	1	1	0	1	1	**9**	$ 22.64	$ 198.10
Unit #35 ((8792 & 8591)	0	0	0	1	0	0	0	0	0	0	**1**	$ 66.35	$ 66.35
Unit #202 (8331)	6.3	0	0.5	0	0	0	0	1.4	0.9	0	**9**	$ 63.63	$ 579.03
Unit #302 (8382)	5.1	1.3	6.3	5.2	2.5	0	0	3.8	4.5	4.1	**33**	$ 69.24	$ 2,271.07
Unit #303 (8253)	0	0	0	0	0	0	0	0	0	0	**0**	$ 153.35	$ -
Unit #500 (8521)	4.3	1.2	5	5.1	2.4	0	0	3.3	5.5	5.1	**32**	$ 133.80	$ 4,268.22
Unit #502 (8521)	6.8	1	4.8	4.2	0	0	0	0	4.8	5	**27**	$ 133.80	$ 3,559.08
													$ 11,200.49

MATERIALS:

Bluff Gravel — 26.9 tons gravel @ $14.50 = $390.05

Total Labor	$ 4,279.02
Total Equipment	$ 11,200.49
Total Matierals	$ 390.05
TOTAL	**$ 15,869.56**

CZECHLAND LAKE C-78(860)

2021	7/21	7/23	7/26	8/3	8/4	8/5	8/6	8/9	8/10	HRS	RATE	TOTAL
Mark Rosencrantz	8	8	0	8	8	8	0	8	9.5	**57.5**	$ 24.49	$ 1,408.18
Calvin Caha	0	8	8	8	8	8	8	8	9.5	**65.5**	$ 17.85	$ 1,169.18
Jason Holtz	8	4.25	0	8	0	0	8	0	0	**28.25**	$ 18.94	$ 535.06
Rodney Patocka	0	0	0	0	0	0	0	0	0	**0**	$ 17.85	$ -
												$ 3,112.41

	7/21	7/23	7/26	8/3	8/4	8/5	8/6	8/9	8/10	HRS	RATE	TOTAL
Unit #4 (8807)	0	0	0	1	0	0	0	0	0	**1**	$ 22.64	$ 22.64
Unit #8 (8808)	1	1	1	1	1	1	1	1	1	**9**	$ 22.99	$ 206.91
Unit #14 (8792 & 8591)	0	0	0	0	0	0	0	0	0	**0**	$ 66.35	$ -
Unit #17 (8807)	1	1	0	0	0	0	0	0	0	**2**	$ 22.64	$ 45.28
Unit #202 (8331)	0	5.6	5.6	0.3	1.8	4.2	1.9	6.3	7.6	**33**	$ 63.63	$ 2,118.88
Unit #302 (8382)	4.8	3.9	0	0	0	0	0	0	0	**9**	$ 69.24	$ 602.39
Unit #303 (8253)	0	0	0	0	0	0	0	0	0	**0**	$ 153.35	$ -
Unit #500 (8521)	5.1	5.8	0	0	0	0	0	0	0	**11**	$ 133.80	$ 1,458.42
Unit #504 (8282)	0	0	0	7	4.4	6.9	6.5	6.2	8.3	**39**	$ 55.30	$ 2,173.29
												$ 6,627.81

Total Labor	$ 3,112.41
Total Equipment	$ 6,627.81
TOTAL	**$ 9,740.22**

CZECHLAND LAKE C-78(860)

2021	8/11	8/12	8/13	8/16	8/17	8/18	8/19	8/20	8/23	HRS	RATE	TOTAL
Mark Rosencrantz	8	8	0	8	8	8	0	0	8	**48**	$ 24.49	$ 1,175.52
Calvin Caha	8	8	8.75	0	8	8	8	3	8	**59.75**	$ 17.85	$ 1,066.54
Jason Holtz	0	8	7	8	8	8	0	0	0	**39**	$ 18.94	$ 738.66
Rodney Patocka	0	8	8	8	0	0	8	0	0	**32**	$ 17.85	$ 571.20
Kevin Grant	0	0	0	0	0	0	2	0	0	**2**	$ 18.38	$ 36.76
												$ 3,588.68

	8/11	8/12	8/13	8/16	8/17	8/18	8/19	8/20	8/23	HRS	RATE	TOTAL
Unit #4 (8807)	0	0	0	0	0	0	0	3	1.5	**5**	$ 22.64	$ 101.88
Unit #8 (8808)	1	1	1	1	1	1	1	0	0	**7**	$ 22.99	$ 160.93
Unit #15 (8807)	0	0	0	0	0	0	0	0	1	**1**	$ 22.64	$ 22.64
Unit #17 (8807)	0	1	0	1	1	1	0	0	0	**4**	$ 22.64	$ 90.56
Unit #35 ((8792 & 8591)	0	0	0	0	0	0	2	0	0	**2**	$ 66.35	$ 132.70
Unit #202 (8331)	3.8	4.2	4.9	6.1	6.2	5.8	6.1	0	0	**37**	$ 63.63	$ 2,360.67
Unit #302 (8382)	0	0	0	0	0	0	0	0	0	**0**	$ 69.24	$ -
Unit #303 (8253)	0	0	0	0	0	0	0	0	0	**0**	$ 153.35	$ -
Unit #500 (8521)	0	2.8	0	5.7	4.7	5.8	0	0	0	**19**	$ 133.80	$ 2,542.20
Unit #502 (8521)	0	2.6	4.7	2	7.3	5.5	0	0	0	**22**	$ 133.80	$ 2,956.98
Unit #504 (8282)	6.7	6.5	5.1	3.6	0	0	3.1	0	0	**25**	$ 55.30	$ 1,382.50
Unit #604 (?)	0	0	0	0	0	0	0	0	4	**4**	$ 50.00	$ 200.00
												$ 9,951.06

MATERIALS:	
ASP Enterprises	Rolls of straw blankets & staples $1,860.00
Bluff Gravel	53.6 tons gravel @ $14.50 = $777.20
Kubik Seed Sales	Orchard grass & rye $133.50

Total Labor	$ 3,588.68
Total Equipment	$ 9,951.06
Total Materials	$ 2,770.70
TOTAL	**$ 16,310.44**

INTERLOCAL COOPERATION AGREEMENT
CZECHLAND LAKE SHORELINE/RAILROAD AVENUE ROAD
STABILIZATION PROJECT

THIS INTERLOCAL COOPERATION AGREEMENT is made and entered into this 20th day of July, 2021, by and between the Lower Platte North Natural Resources District, a political subdivision in the State of Nebraska, hereinafter referred to as "LPNNRD," and Saunders County, Nebraska, hereinafter referred to as "County", and jointly referred to as "Partners".

WHEREAS, a portion of the south shoreline of Czechland Lake and the Railroad Avenue Road has experienced excessive damaging erosion, located in Section 26, Township 16, Range 5 East, Saunders County.

WHEREAS, LPNNRD and the County desire to work together on a lake shoreline/road stabilization project, hereinafter referred to as "Project", (Project Plans attached as "Exhibit A") to protect the Railroad Avenue Road and a portion of the Czechland Lake south shoreline from further erosion damage.

WHEREAS, LPNNRD and County agree that the County will be responsible for taking the lead and provide the expense of engineering, designing, observation, and oversight of the Project as part of their in-kind contribution. The LPNNRD and County will share project construction costs as outlined in this Agreement.

WHEREAS, parties agree that the estimated total construction cost of the Project outside of and inside of the county right of way is estimated at $292,859 (attached as "Exhibit B") by Make Mainelli, Saunders County Engineer, of which a portion of the funds from LPNNRD will be coming from federal and/or state grant funding and those third-party dollars will be part of the LPNNRD financial commitment.

WHEREAS, the LPNNRD and County agree that the Project provides an opportunity to cooperate public funds, with the goal of decreasing risk to life and property and is a good use of taxpayer dollars.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, it is agreed between the parties as follows:

1. **Authority**:
The Partners desire to cooperate on completing the Project on a basis of mutual. Advantage under the auspices of the Interlocal Cooperation Act (Nebraska Revised Statute Section 13-801 to 13-827). In furtherance of this cooperative effort, each Partner desires to enter this Agreement for any powers, privileges or authorities exercised, or capable of exercise, individually by them as public entities under the Interlocal Cooperation Act.

2. **Project Description:**
The Partners desire to work together on the Project to stabilize erosion on a

portion of the south shoreline of Czechland Lake Reservoir and Railroad Avenue Road, located in Section 26, Township 16 North, Range 5 East, Saunders County, Nebraska.

3. **Partnership Contributions**:
The estimated Project construction cost of $292,859 will be provided as follows:

LPNNRD:
LPNNRD will reimburse the County the actual costs for Project rock riprap and riprap filter, up to a maximum of $231,955, as shown in "Exhibit B".

Saunders County:
The County will pay all contractor invoices and invoice LPNNRD for Project rock riprap and riprap filter, up to a maximum of $231,955, as shown in "Exhibit B".

The County will contribute the remainder of the Project construction costs (to include mobilization, site preparation, earth work & embankment, crushed rock road surface, cover crop and grass seeding) estimated at $60,904, as shown in "Exhibit B". The County will also provide all engineering, design, bidding, observation, and oversight services as additional in-kind contribution for the Project.

4. **Effective Date:**
This Agreement becomes effective upon execution by all Partners. The original copy of this Agreement will be maintained as part of the records of LPNNRD, with a copy being provided to the County. The Agreement may be signed in counterparts, as necessary.

5. **Duration of Agreement:**
This Agreement shall extend from the date of execution by both Partners and will remain in effect until Project completion, which is not to extend beyond September 1, 2021.

6. **Amendments and Addendums of Agreement:**
This Agreement may be amended subject to approval by both Partners.

7. **Indemnification:**
The Partners assume no liability under this Agreement unless expressly accepted herein. Each party agrees to defend the other from and against all liabilities, obligations, losses, damages, claims, and demands arising from the acts of its respective officers, agents, or employees.

IN WITNESS WHEREOF, each Partner has caused this Agreement to be executed by its duly authorized officer as of the date and year:

EXECUTED BY THE COUNTY this 20 day of July, 2021.

COUNTY OF SAUNDERS,

BY: _____
Doris Karloff, Chairperson
Saunders County Board of Supervisors

EXECUTED BY THE LOWER PLATTE NORTH RESOURCES DISTRICT this 12th day of July, 2021.

BY: _____
Frank Pollard, Chairperson
Lower Platte North Natural Resources District

ATTACHMENT "A"

PROJECT NUMBER	SHEET NO.
C-7818501	1

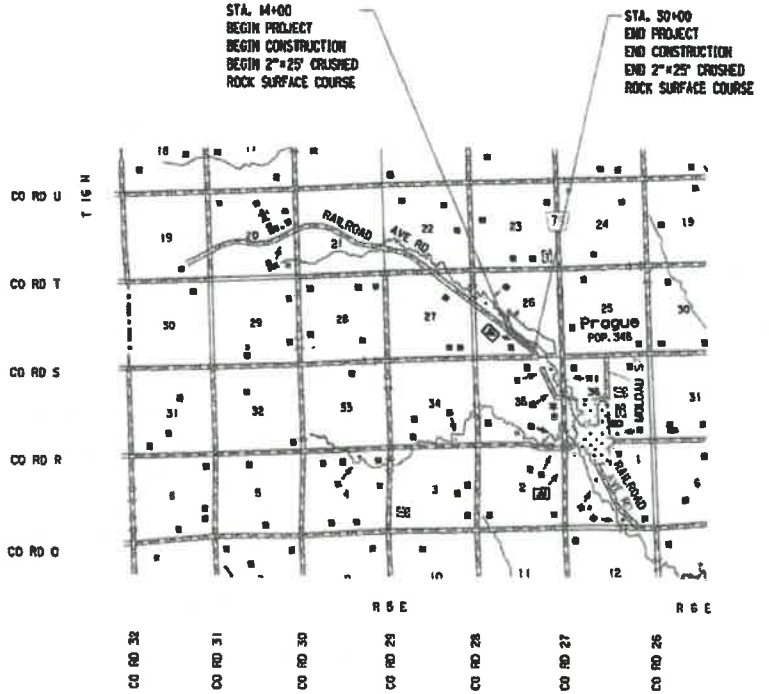
INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE PAGE
2-T	TYPICAL CROSS SECTIONS OF IMPROVEMENT
3 TO 4	PLAN AND PROFILES
X-1 TO X-4	CROSS SECTIONS

PLANS FOR CONSTRUCTION

PRAGUE NORTHWEST

SAUNDERS COUNTY



THE 2017 EDITION OF THE NEBRASKA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE SPECIAL PROVISIONS APPLY TO THIS PROJECT.

HALF SIZE PLANS

STANDARD PLANS

STANDARD PLAN NO.	DESCRIPTION
501-R7	(3 SHEETS) EROSION CONTROL
502-R2	(2 SHEETS) SILT FENCE DETAILS
920-R7	(5 SHEETS) TRAFFIC CONTROL, CONSTRUCTION AND MAINTENANCE
921-R8	(2 SHEETS) TRAFFIC CONTROL, CONSTRUCTION AND MAINTENANCE
923-R2	TRAFFIC CONTROL, ROAD CLOSURE

MEETS OR EXCEEDS MINIMUM DESIGN STANDARDS OF THE BOARD OF PUBLIC ROADS CLASSIFICATIONS AND STANDARDS FOR NEW AND RECONSTRUCTED ROADS IN RURAL AREAS.

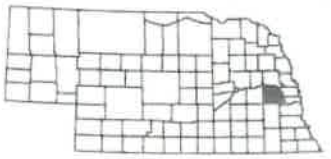
DESIGN DESIGNATION		
YEAR:	2020	-
ADT:	100	-
DHV:	-	-
N.F.C. =	LOCAL	
S.F.C. =	LOCAL	

CONVENTIONAL SIGNS

FENCE R.O.W. OR WIRE
GUARDRAIL
TRAVELED WAY
DIKE
CULVERT
POWER POLE
TELEPHONE POLE
MAILBOX
RAILROAD TRACKS
MARSH
TREE - CONIFEROUS
TREE - DECIDUOUS

R.O.W. LEGEND

NEW CONTROLLED ACCESS
PREVIOUS CONTROLLED ACCESS
LIMITS OF CONSTRUCTION
PREVIOUS R.O.W.
NEW R.O.W.
EXISTING PERMANENT EASEMENT
TEMPORARY EASEMENT
EXCESS TAKING
PERMANENT EASEMENT
EXISTING RAILROAD EASEMENT
NEW RAILROAD PERMANENT EASEMENT
NEW RAILROAD TEMPORARY EASEMENT



REFERENCE POST NO. N/A TO REFERENCE POST NO. N/A

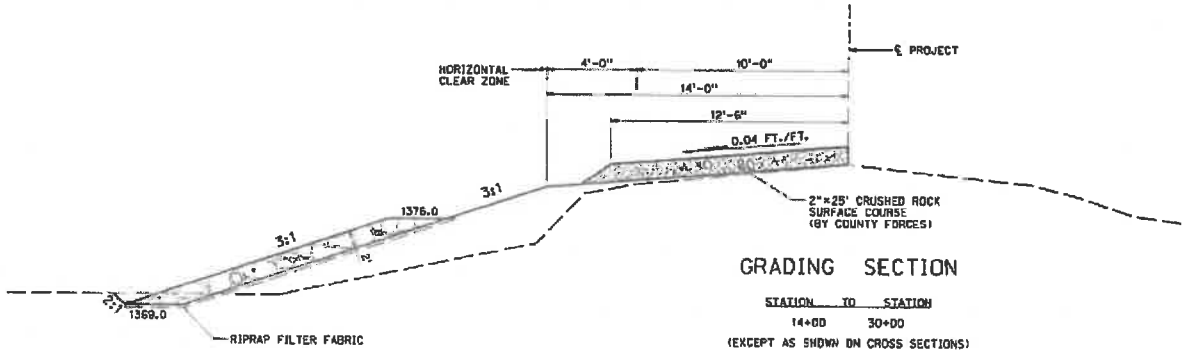
EXCEPTIONS: FROM STA. N/A TO STA. N/A

TOTAL NET LENGTH OF PROJECT: 0.303 MILES

Plans by:

Mainelli Wagner & Associates, Inc.

TYPICAL CROSS SECTION OF IMPROVEMENT



GRADING SECTION

STATION	TO	STATION
14+00		30+00

(EXCEPT AS SHOWN ON CROSS SECTIONS)

ANY UNSUITABLE MATERIAL ENCOUNTERED DURING CONSTRUCTION MUST BE EXCAVATED AND REMOVED FROM THE SITE. THE RESULTING VOID MAY BE FILLED WITH SUITABLE MATERIAL AS DIRECTED BY THE ENGINEER. ADDITIONAL EXCAVATION WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE ITEM "SITE PREPARATION".

ANY EXCESS MATERIAL WILL BE DISPOSED OF BY THE COUNTY AS APPROVED BY THE ENGINEER. IF ADDITIONAL MATERIAL IS REQUIRED FOR FINAL GRADING, THE COUNTY WILL BE REQUIRED TO OBTAIN THE NECESSARY SUITABLE MATERIAL FROM A SITE APPROVED BY THE ENGINEER.

UPON COMPLETION OF THE GRADING OPERATIONS PERMANENT SEEDING OF THE DISTURBED AREAS CREATED BY THE GRADING OPERATIONS WILL BE PERFORMED BY THE COUNTY AS DIRECTED BY THE PROJECT MANAGER.

COMPACTION REQUIREMENTS

ROADWAY EMBANKMENT	CLASS II
EMBANKMENT FOR INTERSECTING PUBLIC ROADS	CLASS II
PRIVATE DRIVES	CLASS I

(SEE SEC. 205 IN THE 2017 EDITION OF THE NEBRASKA STANDARD SPECIFICATIONS)

THE LOCATIONS OF ALL AERIAL AND UNDERGROUND UTILITY FACILITIES MAY NOT BE INDICATED IN THESE PLANS. UNDERGROUND UTILITIES, WHETHER INDICATED OR NOT WILL BE LOCATED AND FLAGGED BY THE UTILITIES AT THE REQUEST OF THE COUNTY.

NO EXCAVATION WILL BE PERMITTED IN THE AREA OF THE UNDERGROUND UTILITY FACILITIES UNTIL ALL SUCH FACILITIES HAVE BEEN LOCATED AND IDENTIFIED TO THE SATISFACTION OF ALL PARTIES. THE EXCAVATION MUST BE ACCOMPLISHED WITH EXTREME CARE IN ORDER TO AVOID ANY POSSIBILITY OF DAMAGE TO THE UTILITY FACILITY.

THE COUNTY MAY CLOSE THE ROAD TO ALL BUT LOCAL TRAFFIC SUBJECT TO THE CONDITIONS PRESCRIBED IN THE 2017 EDITION OF THE NEBRASKA STANDARD SPECIFICATIONS.

THE COUNTY SHALL PROVIDE ROUTING THROUGH TRAFFIC AROUND THE PROJECT IF DEEMED NECESSARY.

ALL SIGNING AND PAVEMENT MARKING DURING CONSTRUCTION SHALL BE DONE BY THE COUNTY IN CONFORMANCE WITH THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

EARTHWORK QUANTITIES

DRIVES AND DIKES ARE NOT INCLUDED

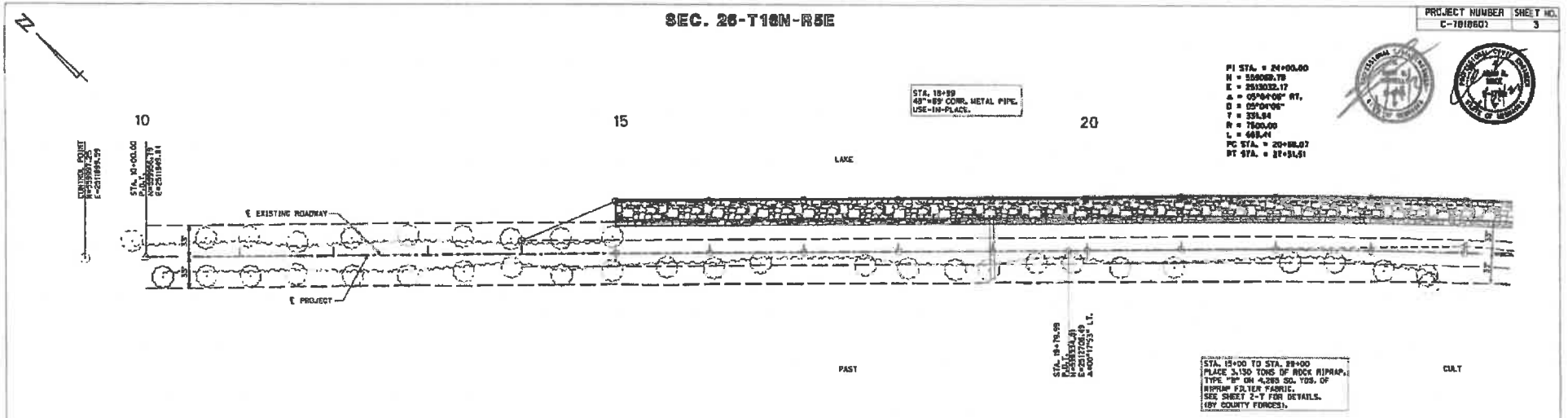
STATION	TO	STATION	DESCRIPTION	EXCAVATION AVAILABLE (Cu. yds.)	EMBANKMENT (cu. yds.)
14+00		30+00	ROADWAY	804	2,502
			TOTALS	804	2,502

SUMMARY OF QUANTITIES

ITEM	QUANTITY	UNIT
EARTHWORK MEASURED IN EMBANKMENT	2,502.000	CU. YDS.
CRUSHED ROCK SURFACE COURSE	167.000	TONS
ROCK RIPRAP, TYPE "B"	3,130.000	TONS
RIPRAP FILTER FABRIC	4,285.000	SQ. YDS.
COVERCROP SEEDING	0.800	ACRES
SEEDING, TYPE "A"	0.800	ACRES

PROJECT NUMBER	SHEET NO.
C-7818601	3

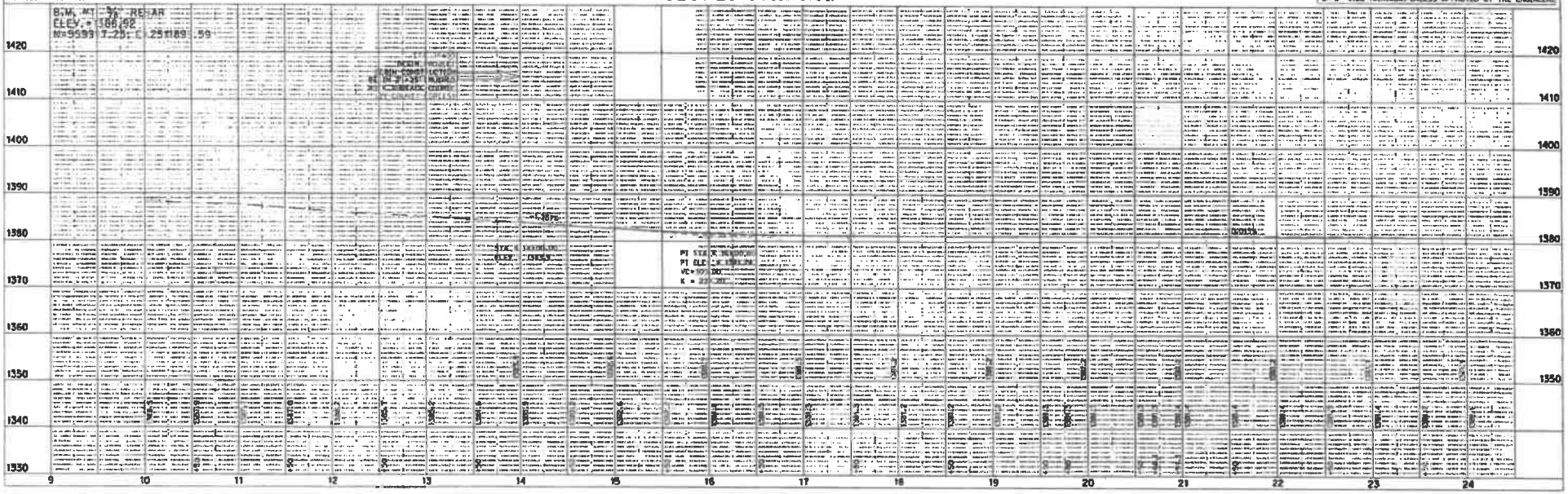
SEC. 26-T16N-R5E



NO TIES AVAILABLE.

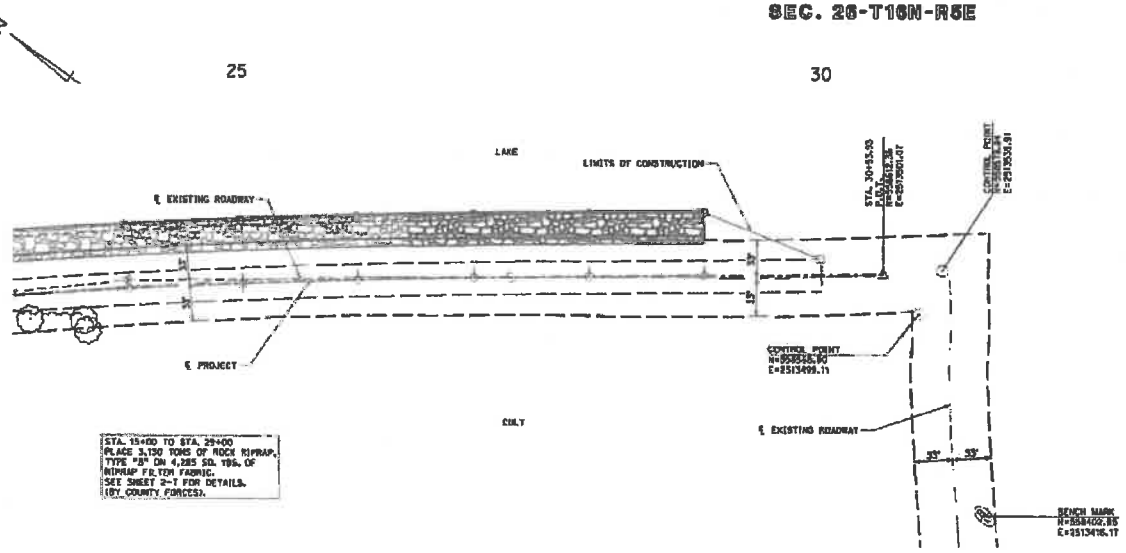
SEC. 26-T16N-R5E

ALL BANDS FOR CORRUGATED METAL PIPE SHALL BE 2'-0" WIDE (MINIMUM) UNLESS APPROVED BY THE ENGINEER.



PROJECT NUMBER	SHEET NO.
C-78(860)	4

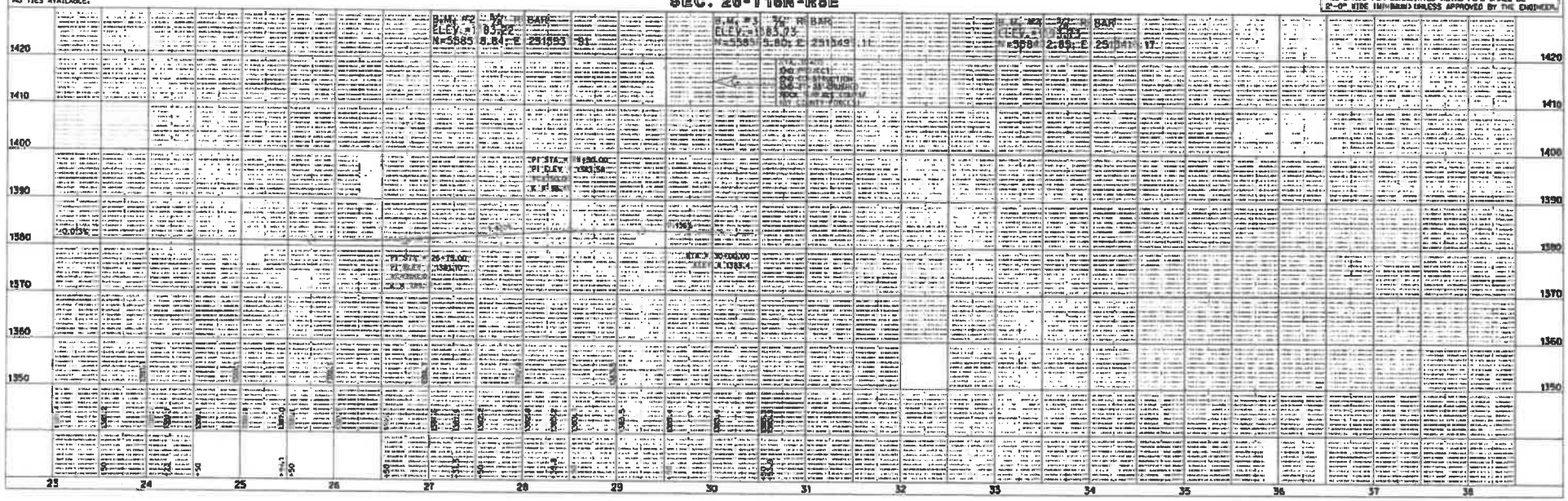
SEC. 26-T16N-R5E

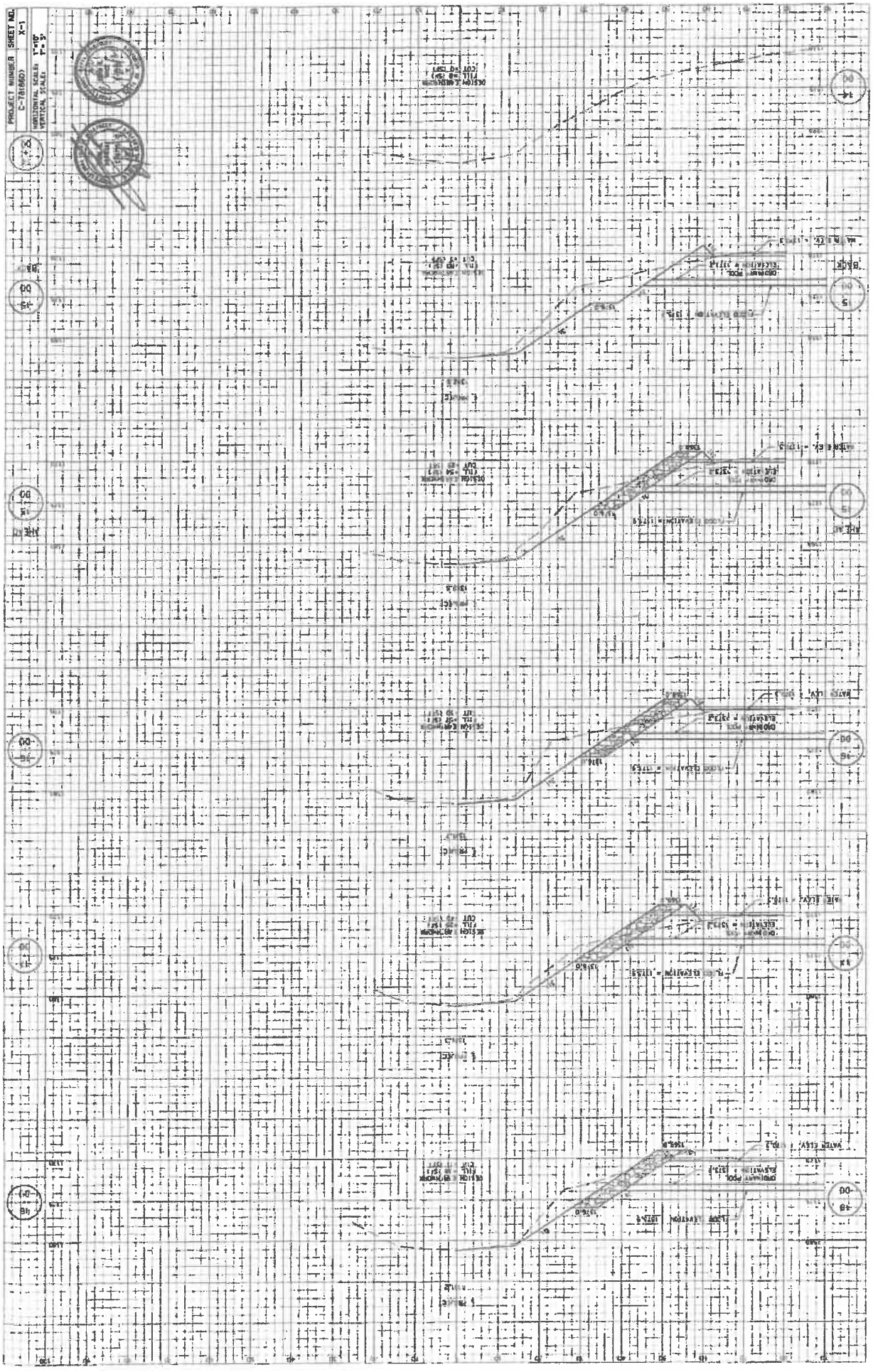


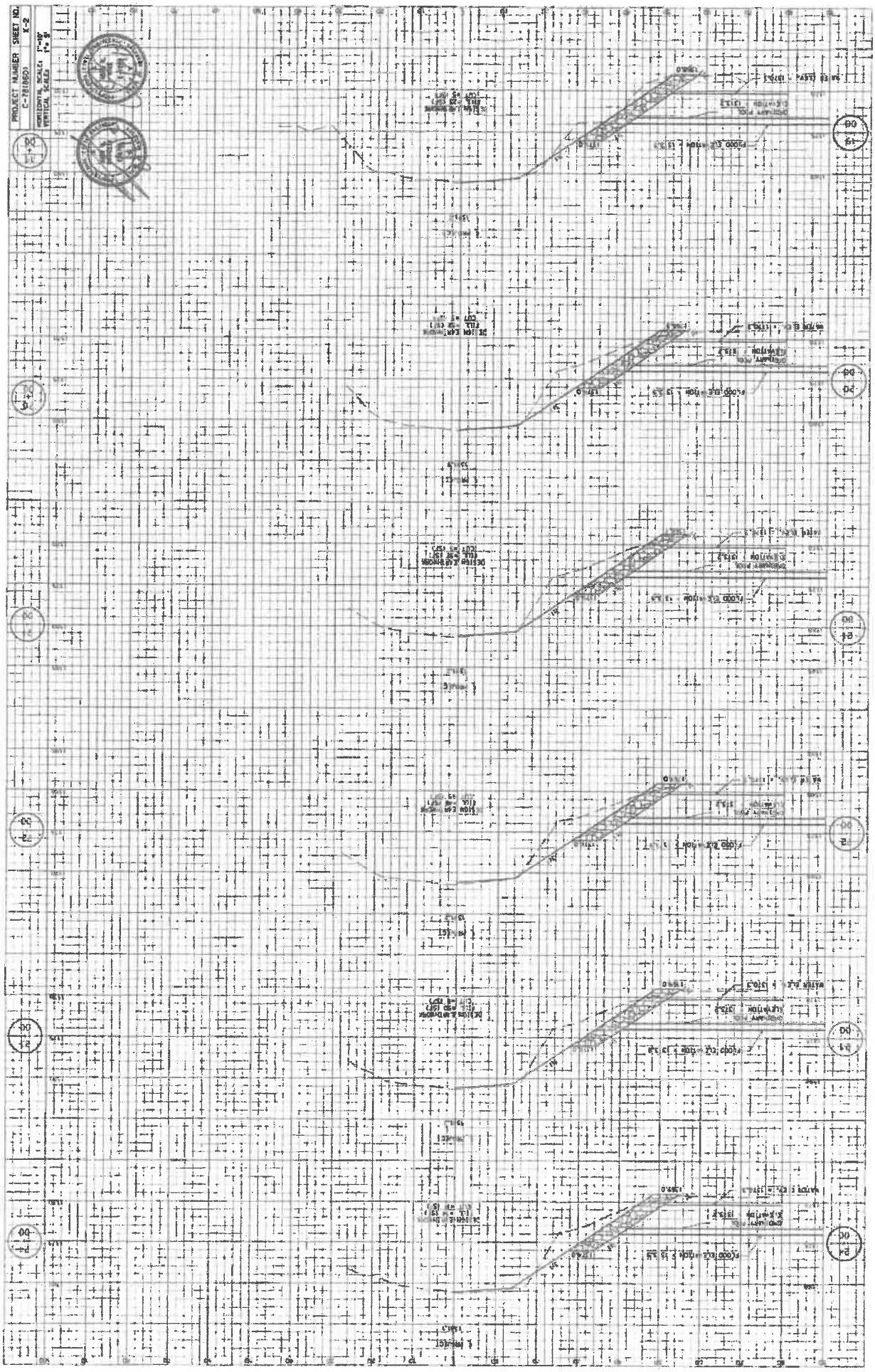
NO TIES AVAILABLE.

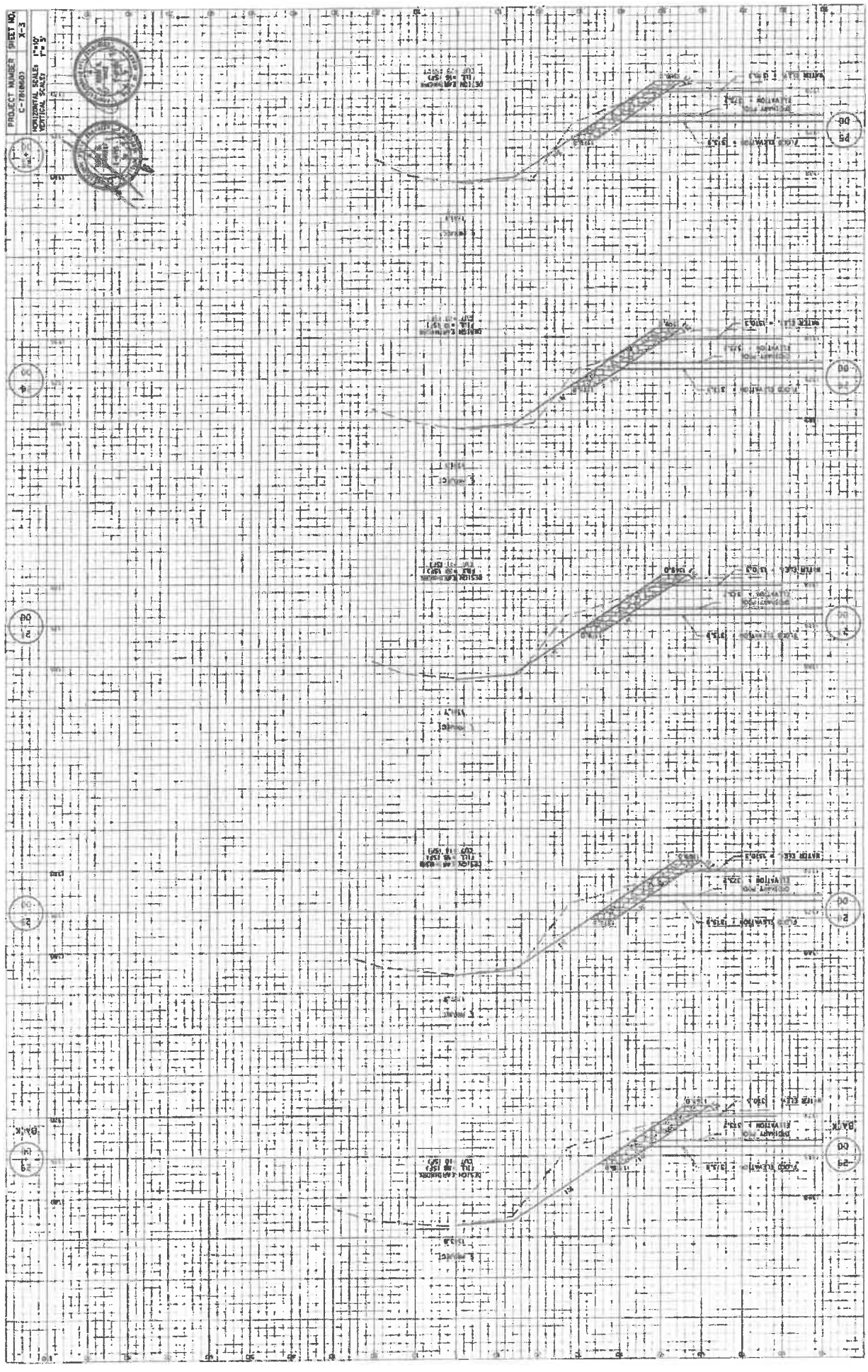
SEC. 26-T16N-R5E

ALL BANDS FOR CORRUGATED METAL PIPE SHALL BE 2'-0" WIDE UNLESS APPROVED BY THE ENGINEER.




PROJECT NUMBER
C-78(860)
SHEET NO.
X-1
HORIZONTAL SCALE 1"=10'
VERTICAL SCALE 1"=5'




PROJECT NUMBER
C-7818(60)
SHEET NO.
X-3
HORIZONTAL SCALE
1"=10'
VERTICAL SCALE
1"=5'

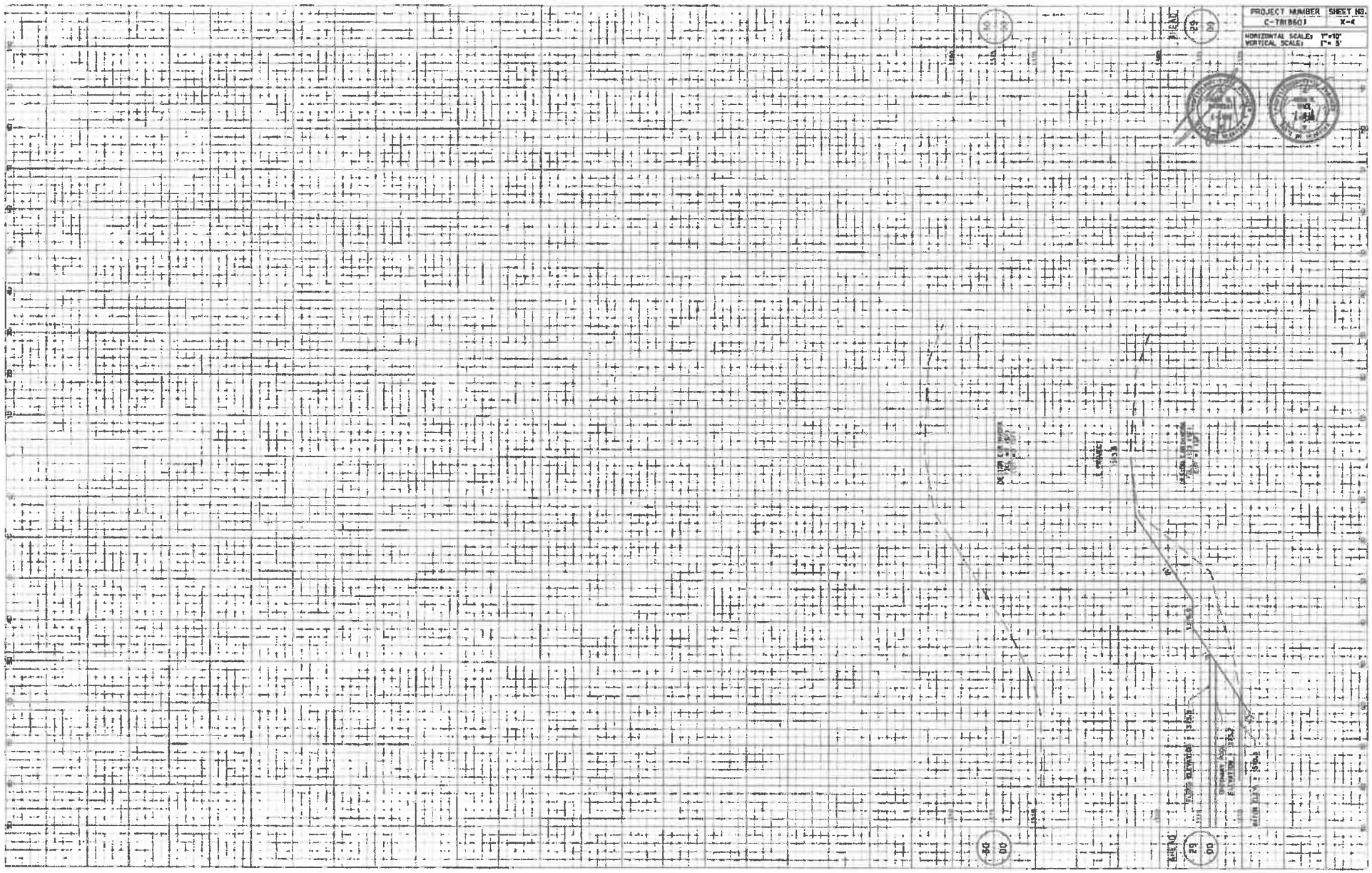

PROJECT NUMBER
C-7918601
SHEET NO.
X-4
HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE: 1"= 5'

EXHIBIT "B"

Engineer's Estimate

Project: Prague Northwest

County: Saunders

Project No.: Czech Lake

Description: Approximately 0.3 miles of grading.

Letting Date:

				Engineer's Estimate	
	Item Description	Plan Qty.	Units	Unit Price	Amount
1-1	Mobilization	1.000	Lump Sum	$10,000.00	$10,000.00
1-2	Site Preparation	1.000	Lump Sum	$10,000.00	$10,000.00
1-3	Earthwork Measured in Embankment	2,502.000	Cu. Yds.	$12.00	$30,024.00
1-4	Crushed Rock Surface Course	167.000	Tons	$40.00	$6,680.00
1-5	Rock Riprap, Type "B"	3,130.000	Tons	$70.00	$219,100.00
1-6	Riprap Filter Fabric	4,285.000	Sq. Yds.	$3.00	$12,855.00
1-7	Covercrop Seeding	2.100	Acres	$1,000.00	$2,100.00
1-8	Seeding, Type "A"	2.100	Acres	$1,000.00	$2,100.00
			Total for Project:		$292,859.00

PRELIMINARY

Not For Construction

INTERLOCAL COOPERATION ACT AGREEMENT
PLATTE RIVER CAMERAS/STREAM GAUGES
FOR
LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT
PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT
DODGE COUNTY
AND
CITY OF FREMONT

This Agreement (hereinafter named "Agreement") is made by and among the following Parties (all are political subdivisions of the State of Nebraska):

Lower Platte North Natural Resources District (LPNNRD)
Papio-Missouri River Natural Resources District (PMRNRD)
Dodge County (County)
City of Fremont (CITY)

The parties hereinafter being referred to individually as "Partner" and collectively as "Partners".

WHEREAS:

Flooding and resulting damages from winter ice jams and seasonal rainstorms frequently occur along the Lower Platte River corridor.

The Partners work closely with the National Weather Service, the Nebraska Emergency Management Agency and the Nebraska Department of Natural Resources to monitor winter ice/ice-out and flood stage conditions along the Lower Platte River corridor and take necessary actions to alert the public of resulting flood hazards.

The Partners desire to increase awareness of potential flood threats due to winter ice/ice-out conditions and other significant seasonal rainstorm events, by establishing cameras and additional water monitoring gauges at mutually agreed upon locations along the Lower Platte River corridor.

The Partners desire to enter into an Interlocal Agreement for sharing costs associated with purchasing and placing cameras, additional stream gauges and supporting equipment, for placement along the Lower Platte River corridor and for the future operation and maintenance of that equipment.

THEREFORE, in consideration of the foregoing recitals and their mutual covenants hereinafter expressed, the Partners agree as follows:

1. **Authority:**

The Partners desire to work together for purchasing and establishing cameras, stream gauges and supporting equipment, at mutually agreed upon Lower Platte River locations and to make the most efficient use of their respective powers by cooperating on a basis of mutual advantage under the auspices of the Interlocal Cooperation Act (Neb. Rev. Stat. §§ 13-801 to 13-827). In furtherance of this cooperative effort the Parties desire to enter into this Interlocal Agreement with one another for joint and cooperative action for any power or powers, privileges or authorities exercised or capable of exercise individually by them as public agencies under the Interlocal Cooperation Act. This Agreement is not intended to create a separate legal entity as between the Partners.

2. Funding for Cameras, Stream Gauges & Supporting Equipment:

The Partners agree to provide assistance toward the local costs for up to five (5) cameras, two (2) stream gauges and supporting equipment as follows:

PMRNRD:	$18,630
LPNNRD:	$6,750
City of Fremont:	$6,750
Dodge County:	$6,750
Total Equipment Expense:	$38,880

3. Cameras/Steam Gauges Operation and Maintenance Expenses:

The Partners agree to equally share on-going camera/stream gauge operation and maintenance expenses for three years, not to exceed an annual average total cost of $20,175 total cost ($5,044 annual maximum average cost for each Partner). It shall be the LPNNRD's sole discretion to determine when and how operation and maintenance is to be conducted and to then bill each Partner accordingly.

4. Authorized Partner for Entering into USGS Agreement/Billings:

The Partners agree that LPNNRD will enter into a three-year agreement with USGS for purchasing up to five cameras, two stream gauges and for operation and maintenance of the equipment. LPNNRD will bill each Partner for their share annually.

5. Effective Date:

This Agreement becomes effective upon execution by all Partners. The original copy of this Agreement will be maintained as part of the records of LPNNRD, with a copy being provided to each of the Partners. The Agreement may be signed electronically and in counterparts.

6. Duration of Agreement:

This Agreement shall extend from the date of execution by all Partners and will remain in effect until September 30, 2024, unless mutually or individually terminated by one or more of the Partners upon an advance 90 day written notice.

Provided, however, termination cannot effect the initial obligations of the Partners as the LPNNRD will be bound to the three year term with USGS so the parties are committing to at least that length of term.

7. **Amendments, Assignments, Severability and Integration:**

This Agreement may be amended, or Addendums added, subject to written approval by all Partners. This Agreement may not be assigned without the express written permission of the other Partners to this Agreement. If any portion of this Agreement is held invalid, the remainder hereof shall not be affected thereby if such remainder would then continue to conform to the terms and requirements of applicable law. This Agreement constitutes the entire agreement between the Partners with respect to the subject matter herein and merges all prior discussions between them. It shall not be modified except by written agreement dated subsequent to the date of this Agreement and signed by all Partners.

8. **Indemnification:**

The Partners assume no liability under this Agreement unless expressly accepted herein. Each party agrees to defend the other from and against all liabilities, obligations, losses, damages, claims, and demands arising from the acts of its own respective officers, agents, or employees. Liability includes any claims, damages, losses, and expenses arising out of or resulting from performance of this Agreement that results in any claim for damage whatsoever including any bodily injury, civil rights liability, sickness, disease, or damage to or destruction of tangible property, including the loss of use resulting therefrom. Further, each Partner shall maintain a policy or policies of insurance (or a self-insurance program), sufficient in coverage and amount to pay any judgments or related expenses from or in conjunction with any such claims. Nothing in this Agreement shall require any Partner to indemnify or hold harmless the other Partners from liability for the negligent or wrongful acts or omissions of said other Partners or its principals, officers, or employees.

IN WITNESS WHEREOF, each Partner has caused this Agreement to be executed by its duly authorized officer as of the date and year.

Lower Platte North Natural Resources District

By: _____
Board Chairperson

Date: _____

Papio-Missouri River Natural Resources District

By: _____
John Winkler, General Manager

Date: _____

Dodge County

By: _____
Chairman, Board of Supervisors

Date: _____

C**ity of Fremont**

By: _____
Mayor

Date: _____

Table 1. Summary of proposed funding for the period October 1, 2021 -- September 30, 2024 for the equipment purchase (one-time cost) and operation of stage-only streamgages and gage cameras, supported by the City of Fremont, Dodge County, Lower Platte North NRD, and Papio-Missouri River NRD (herein referred to as Cooperator).

[CMF=USGS, Cooperative matching funds; Cooperator=City of Fremont, Dodge County, Lower Platte North NRD, and Papio-Missouri River NRD; USGS=U.S. Geological Survey]

Station number	Station name	Station funding		
		USGS CMF for Cooperator	Cooperator	Total funding
Stage-Only Streamgages				
06794700	Platte River nr Schuyler, Nebr.	$4,940	$14,905	$19,845
06796450	Platte River at Fremont, Nebr.	$4,940	$14,905	$19,845
	Equipment cost (one-time cost, no install cost)	$0	$19,800	$19,800
	Subtotal	$9,880	$49,610	$59,490
Platte River Cameras				
*	Camera operations & web-maintenance	$10,185	$30,715	$40,900
*	Equipment cost & Installation (one-time cost)	$6,375	$19,080	$25,455
	Subtotal	$16,560	$49,795	$66,355
	Funding partner totals	$26,440	$99,405	$125,845

* Cameras at 5 streamgage locations:

1) 06794700 Platte River nr Schuyler, and stage-only streamgage
2) 06796000 Platte River at North Bend
3) 06796450 Platte River at Fremont, and stage-only streamgage
4) 06796500 Platte River at Leshara
5) Unknown Platte River bridge location

TOTAL ANNUAL COSTS:

		FY 2022	FY 2023	FY 2024	Total
Cameras	Camera operations & web-maintenance (5 gages)	$13,470	$13,610	$13,820	$40,900
	Equipment cost & Installation (one-time cost)	$25,455			$25,455
Stage	Stage-Only streamgage (2 gages)	$13,060	$13,210	$13,420	$39,690
	Equipment cost (one-time cost, no install cost)	$19,800			$19,800
		$71,785	$26,820	$27,240	$125,845

COOPERATOR ANNUAL COSTS:

		FY 2022	FY 2023	FY 2024	Total
Cameras	Camera operations & web-maintenance (5 gages)	$10,120	$10,260	$10,335	$30,715
	Equipment cost & Installation (one-time cost)	$19,080			$19,080
Stage	Stage-Only streamgage (2 gages)	$9,800	$9,950	$10,060	$29,810
	Equipment cost (one-time cost, no install cost)	$19,800			$19,800
		$58,800	$20,210	$20,395	$99,405

USGS ANNUAL COSTS:

		FY 2022	FY 2023	FY 2024	Total
Cameras	Camera operations & web-maintenance (5 gages)	$3,350	$3,390	$3,445	$10,185
	Equipment cost & Installation (one-time cost)	$6,375			$6,375
Stage	Stage-Only streamgage (2 gages)	$3,260	$3,285	$3,335	$9,880
	Equipment cost (one-time cost, no install cost)	$0			$0
		$12,985	$6,675	$6,780	$26,440

ASSUMPTIONS:

1) Stage-only gages will be radar stage sensors and wire-weight reference gages mounted on the upstream side of bridges. Radar stage sensor may be affected by channel ice during winter periods, and data during this affected timeframe might be unusable. Telemetry will be via satellite. Data will be archived and available on USGS NWIS web.

2) Camera installations will be on the upstream side of bridges. Telemetry will be via modem. Photos will be archived internally at the USGS Nebraska Water Science Center, and will be available on USGS NWIS web.

INTERLOCAL COOPERATION ACT AGREEMENT
PLATTE RIVER CAMERAS/SENSORS
FOR
LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT
PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT
DODGE COUNTY
AND
CITY OF FREMONT

This Agreement (hereinafter named "Agreement") is made by and among the following Parties (all are political subdivisions of the State of Nebraska):

Lower Platte North Natural Resources District (LPNNRD)
Papio-Missouri River Natural Resources District (PMRNRD)
Dodge County (County)
City of Fremont (CITY)

The parties hereinafter being referred to individually as "Partner" and collectively as "Partners".

WHEREAS:

Flooding and resulting damages from winter ice jams and seasonal rainstorms frequently occur along the Lower Platte River corridor.

The Partners work closely with the National Weather Service, the Nebraska Emergency Management Agency and the Nebraska Department of Natural Resources to monitor winter ice/ice-out and flood stage conditions along the Lower Platte River corridor and take necessary actions to alert the public of resulting flood hazards.

The Partners desire to increase awareness of potential flood threats due to winter ice/ice-out conditions and other significant seasonal rainstorm events, by establishing cameras and additional water monitoring sensors at mutually agreed upon locations along the Lower Platte River corridor.

The Partners desire to enter into an Interlocal Agreement for purchasing cameras, additional water monitoring sensors and other supporting equipment, for placement along the Lower Platte River corridor and for the future operation and maintenance of that equipment.

Dodge County Emergency Management has applied for FEMA/NEMA Hazard Mitigation grant assistance, up to $20,250 (75%), to potentially assist the Partners with the purchase and placement of ten (10) cameras, three (3) additional water monitoring sensors and other supporting equipment, at an estimated total project cost of $27,000.

THEREFORE, in consideration of the foregoing recitals and their mutual covenants hereinafter expressed, the Partners agree as follows:

1. **Authority:**
   The Partners desire to work together for purchasing and establishing cameras and water monitoring sensors and supporting equipment, at mutually agreed upon Lower Platte River locations and to make the most efficient use of their respective powers by cooperating on a basis of mutual advantage under the auspices of the Interlocal Cooperation Act (Neb. Rev. Stat. §§ 13-801 to 13-827). In furtherance of this cooperative effort the Parties desire to enter into this Interlocal Agreement with one another for joint and cooperative action for any power or powers, privileges or authorities exercised or capable of exercise individually by them as public agencies under the Interlocal Cooperation Act.

2. **Funding for Cameras, Water Sensors & Supporting Equipment Purchase:**
   The Partners agree to equally share the maximum local costs estimated at $27,000 ($6,750 each), for purchasing/placing up to ten cameras and three water sensors and supporting equipment.

   It is anticipated that the Partners may receive NEMA/FEMA grant assistance, reimbursable up to $20,250 (75%), based on the total maximum estimated project costs. Should grant funds be approved, the Partners actual total local share will be adjusted accordingly, up to $6,750 ($1,687.50 each). The County will be the subgrantee and fiscal agent for the NEMA/FEMA grant.

   LPNNRD will purchase and take the lead for placing all cameras, sensors and supporting equipment and bill each Partner for their equal share. If the NEMA/FEMA grant is approved, LPNNRD will submit expenses to the County for 75% reimbursement and bill each Partner for their equal monetary share of the remaining 25%, minus contributed in-kind credit.

3. **Camera/Equipment Operation, Maintenance and Data Subscription Expense:**
   The Partners agree to equally share on-going annual camera/sensor equipment operation, maintenance, and data subscription expense at an annual total cost not to exceed $10,000, or $2,500 maximum annual cost for each Partner. On behalf of the Partners, LPNNRD will enter into a contract for operation, maintenance and subscription services and annually bill each Partner for their equal share.

4. **Effective Date:**
   This Agreement becomes effective upon execution by all Partners. The original copy of this Agreement will be maintained as part of the records of LPNNRD, with a copy being provided to each of the Partners. The Agreement may be signed in counterparts, as necessary.

5. **Duration of Agreement:**
   This Agreement shall extend from the date of execution by all Partners and will remain in effect, unless mutually or individually terminated by one or more of the Partners upon an advance 90 day written notice.

6. **Amendments and Addendums of Agreement:**
   This Agreement may be amended, or Addendums added, subject to approval by all Partners.

7. **Indemnification:**
   The Partners assume no liability under this Agreement unless expressly accepted herein. Each party agrees to defend the other from and against all liabilities, obligations, losses, damages, claims, and demands arising from the acts of its respective officers, agents, or employees.

IN WITNESS WHEREOF, each Partner has caused this Agreement to be executed by its duly authorized officer as of the date and year.

Lower Platte North Natural Resources District

By: Gene Ruzicka
Board Chairperson

Date: July 13, 2020

Papio-Missouri River Natural Resources District

By: _____
Board Chairperson

Date: 07-09-20

Dodge County

By: _____
Chairman, Board of Supervisors

Date: 7/15/20

City of Fremont

By: _____

Scott Getzschman, Mayor

Date: 6/30/2020

INTERLOCAL COOPERATION ACT AGREEMENT
PLATTE RIVER CAMERAS/STREAM GAUGES
FOR
LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT
PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT
DODGE COUNTY
AND
CITY OF FREMONT

This Agreement (hereinafter named "Agreement") is made by and among the following Parties (all are political subdivisions of the State of Nebraska):

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Papio-Missouri River Natural Resources District (PMRNRD)
Dodge County (County)
City of Fremont (CITY)

The parties hereinafter being referred to individually as "Partner" and collectively as "Partners".

WHEREAS:

Flooding and resulting damages from winter ice jams and seasonal rainstorms frequently occur along the Lower Platte River corridor.

The Partners work closely with the National Weather Service, the Nebraska Emergency Management Agency and the Nebraska Department of Natural Resources to monitor winter ice/ice-out and flood stage conditions along the Lower Platte River corridor and take necessary actions to alert the public of resulting flood hazards.

The Partners desire to increase awareness of potential flood threats due to winter ice/ice-out conditions and other significant seasonal rainstorm events, by establishing cameras and additional water monitoring gauges at mutually agreed upon locations along the Lower Platte River corridor.

The Partners desire to enter an Interlocal Agreement for contracting with USGS for purchasing and placing cameras, additional stream gauges and supporting equipment, for placement along the Lower Platte River corridor and for the future operation and maintenance of that equipment.

THEREFORE, in consideration of the foregoing recitals and their mutual covenants hereinafter expressed, the Partners agree as follows:

1. **Authority:**

   The Partners desire to work together for purchasing and establishing cameras, stream gauges and supporting equipment, at mutually agreed upon Lower Platte River locations and to make the most efficient use of their respective powers by cooperating on a basis of mutual advantage under the auspices of the Interlocal Cooperation Act (Neb. Rev. Stat. §§ 13-801 to 13-827). In furtherance of this cooperative effort the Parties desire to enter into this Interlocal Agreement with one another for joint and cooperative action for any power or powers, privileges or authorities exercised or capable of exercise individually by them as public agencies under the Interlocal Cooperation Act.

2. **Funding for Cameras, Stream Gauges & Supporting Equipment:**

   The Partners agree to provide assistance toward the local costs for up to five (5) cameras, two (2) stream gauges and supporting equipment as follows:

PMRNRD:	$18,630
LPNNRD:	$6,750
City of Fremont:	$6,750
Dodge County:	$6,750
Total Equipment Expense:	$38,880

3. **Cameras/Steam Gauges Operation and Maintenance Expenses:**

   The Partners agree to equally share on-going camera/stream gauge operation and maintenance expenses for three years, not to exceed an annual average total cost of $20,175 total cost ($5,044 annual maximum average cost for each Partner).

4. **Authorized Partner for Entering into USGS Agreement/Billings:**

   The Partners agree that LPNNRD will enter into a three-year agreement with USGS for purchasing up to five cameras, two stream gauges and for operation and maintenance of the equipment. LPNNRD will bill each Partner for their share annually.

5. **Effective Date:**

   This Agreement becomes effective upon execution by all Partners. The original copy of this Agreement will be maintained as part of the records of LPNNRD, with a copy being provided to each of the Partners. The Agreement may be signed in counterparts, as necessary.

6. **Duration of Agreement:**

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IN WITNESS WHEREOF, each Partner has caused this Agreement to be executed by its duly authorized officer as of the date and year.

Lower Platte North Natural Resources District

By: _____
Board Chairperson

Date: _____

Papio-Missouri River Natural Resources District

By: _____
John Winkler, General Manager

Date: _____

Dodge County

By: _____
Chairman, Board of Supervisors

Date: _____

C**ity of Fremont**

By: _____

Date: _____

CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner:	**Dodge County, Nebraska**	Owner's Contract No.:	
Contractor:	**Yost Excavating, Inc.**	Contractor's Project No.:	
Engineer:	**JEO Consulting Group, Inc.**	Engineer's Project No.:	**190890.02**
Project:	**Breach Lake Flood Damage Repairs, CDBG Project No. 19-EM-005**	Contract Name:	**Breach Lake Flood Damage Repairs, CDBG Project No. 19-EM-005**

This final Certificate of Substantial Completion applies to:

☒ All Work ☐ The following specified portions of the Work:

August 25th, 2021

Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work shall be as provided in the Contract, except as amended as follows: *[Note: Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.]*

Amendments to Owner's responsibilities: ☒ None ☐ As follows

Amendments to Contractor's responsibilities: ☒ None ☐ As follows:

The following documents are attached to and made a part of this Certificate: *punch list.*

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents, nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract.

EXECUTED BY ENGINEER:	RECEIVED:	RECEIVED:
By: _____ (Authorized signature)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: Project Manager	Title:	Title:
Date: 8/25/2021	Date:	Date:

PROPOSAL FOR

RAWHIDE CREEK WFPO WATERSHED PLAN—ENVIRONMENTAL ASSESSMENT

DODGE COUNTY, NEBRASKA
(VIA THE JOINT WATER MANAGEMENT ADVISORY BOARD)
AUGUST 13, 2021

JEO CONSULTING GROUP, INC.

11213 Davenport St., Ste. 200
Omaha, Nebraska 68154

jeo.com

John Petersen, PE
Project Manager
p: 402.392.9923
e: jpetersen@jeo.com

Lalit Jha, PE, D.WRE, CFM
Project Principal
p: 402.443.8010
e: ljha@jeo.com

August 13, 2021

Dodge County Emergency Management
Attn: Tom Smith, Director
435 N Park Ave, Ste 101B
Fremont, Nebraska 68025

RE: Proposal for Rawhide Creek WFPO Watershed Plan-EA

Dear Selection Committee Members:

Before floodwaters receded in 2019, JEO Consulting Group, Inc. (JEO) was on site and has helped eight entities in the Dodge County area respond and recover. **In July 2020, JEO assisted the Joint Water Management Advisory Board (JWMAB), through Dodge County, to obtain $745,000 in Natural Resources Conservation Service (NRCS) Watershed Flood Prevention Operations (WFPO) Program funding to address future flood threats holistically.** NRCS is covering 100% of the cost to establish the Rawhide Creek Watershed WFPO Plan – Environmental Assessment (Plan-EA).

Now, JWMAB has a tremendous opportunity to utilize federal funding to address these flooding issues, limiting the burden of doing so with local taxing resources. JEO is eager to continue our work with JWMAB and develop the Rawhide Creek Watershed WFPO Plan-EA. Our team brings the following benefits to your project:

- **LEVERAGING WORK ON FREMONT EAST DRAINAGE:** JEO is working with the City of Fremont and Dodge County on the Fremont East Drainage Project and can save you time by combining project updates and stakeholder meetings, leveraging information from both H&H models, and evaluating project alternatives simultaneously. **Having the same consultant to work with you on these two critical projects will provide Dodge County and JWMAB a better value.**

- **SPECIALIZATION IN HYDROLOGY & HYDRAULIC MODELING:** The flow dynamics of the watershed are complicated including overflows from the Platte and Elkhorn Rivers and Shell Creek. We will start the H&H model development immediately, thus expediting the crucial project schedule. **JEO will complement the new model with data from existing NDOT studies, including the CLOMR for Highway 30, USACE studies, and NeDNR models.** JEO has seven engineers specially trained to work on H&H models, allowing our team sufficient professional manpower to meet the original project schedule.

- **KNOWLEDGE ON RESOURCES NECESSARY FOR SUCCESS:** JEO worked with NRCS and JWMAB to develop the grant application and planning budget. NRCS has recently recommended this budget amount for this scale of plan due to the complexity and steps required to achieve an approvable plan. **JEO is working on seven other WFPO plans and understands the complexity, steps, and required budgets to meet planning requirements.** JEO will capitalize on our WFPO experience, meaning the Rawhide Creek Plan-EA will be completed more effectively, thus allowing a complement to the East Drainage Project and design tasks, allowing the project to remain on schedule without modifications.

- **FLOOD REDUCTION PROJECT IMPLEMENTATION:** The focus is on building projects, not completing additional studies. **JEO will utilize information from existing studies, such as the USACE 205 study, to maximize value and ensure there is no duplication of past effort.** Implementation will be expedited by utilizing our existing economics evaluation techniques, approved by National NRCS, and collaborating with the U.S. Army Corps of Engineers (USACE), thus expediting final design and construction by meeting most of the 404 permitting requirements as part of the Plan-EA.

We helped obtain the grant for JWMAB and intend to see this project through to the end. If you would like to interview our team, or have a presentation given to JWMAB members, please let us know.

Sincerely,

John Petersen, PE
Project Manager

Lalit Jha, PE, D.WRE, CFM
Project Principal

JEO CONSULTING GROUP INC
JEO ARCHITECTURE INC

p: 402.934.3680
f: 402.934.3681

11213 Davenport Street, Suite 200
Omaha, Nebraska 68154

jeo.com

STATEMENT OF QUALIFICATIONS

JEO Consulting Group, Inc.

11213 Davenport St., Ste. 200 | Omaha, Nebraska 68154 | p. 402.934.3680

W.G. Johnson Construction Company was founded in Wahoo, NE in 1937. In 1979, the corporation was renamed to Johnson-Erickson-O'Brien & Associates. Over the years, several services and office locations were added; and in 1999, Johnson-Erickson-O'Brien & Associates was officially renamed to JEO Consulting Group, Inc. From our modest beginnings, JEO has grown into a highly skilled and respected consulting firm, serving individuals and communities throughout the Midwest. JEO has 13 offices located in Nebraska, Iowa, and Kansas. The JEO team of professional engineers, architects, planners, surveyors, community engagement specialists, environmental scientists, and finance experts all work in concert with skilled technicians and support personnel to exceed our clients' expectations.

Highlighted for the Rawhide Creek WFPO project is JEO's Water Resources Engineering Department, which includes over 30 staff who specialize in civil design, environmental planning, permitting, groundwater modeling, NRCS programs knowledge, and construction of water resources projects. **JEO's team is working on seven WFPO projects, two of which are 60% complete, and JEO has been a key partner to NRCS on establishing new methods to meeting the most recent requirements. A selected core group of professionals are dedicated to making WFPO plans a 'well-oiled machine' with the staffing capacity to be equally responsive to all clients, while completing many projects at the same time.**

While this is a water resources-focused project, other JEO services will be integrated as necessary, including environmental sciences, community engagement, water infrastructure, transportation, survey, funding, and other administrative staff, all of whom work together regularly. JEO's comprehensive professional services will benefit Dodge County and the Rawhide Creek watershed stakeholders.

JEO Services Used for Your Project

Water Resources Engineering

Watershed Planning

Environmental Science (NEPA)

Community Engagement

Hazard Mitigation

Funding

JEO Principals

Chairman of Board
Steven. A Parr, LS
Registered Land Surveyor: NE

President/Treasurer
Robert S. Brigham
Nebraska Bar Association

Secretary
Eric C. Obert, PE
Registered Professional Engineer: NE, IA, KS, MN

Vice President
Tyler L. Hevlin, PE
Registered Professional Engineer: NE, IA, MO, WI

Maximum Number of Staff

Over recent years, JEO has consistently maintained at least 250 professional staff at any one time.

No History of Negligence

JEO does not have any litigation claims over the past five years.

Subconsultants

The team was established to provide consistency from ongoing WFPO projects, including a Nebraska-based cultural resources reviewer, a professional economist, and geotechnical engineering. This team is consistent with other WFPO work and the cohesiveness in expertise allows JEO to leverage the standard WFPO process across multiple projects. SEH brings geotechnical engineering for water resources based structural design. BBC specializes in economics and has worked with JEO and NRCS to create a preferred benefit-cost assessment methodology for all projects statewide. History Nebraska, part of the Nebraska State Archaeological Office, provides required cultural resource services with local knowledge. JEO has a successful prior history teaming with each firm on various projects, including WFPO.

SEH

SEH is an employee-owned engineering, architectural, environmental, and planning company that helps government, industrial, and commercial clients find answers to complex challenges. At SEH, their geotechnical engineers make sure site conditions can sustain your project. Working across a spectrum of project types – from large earthen dams to bridge projects – **their geotechnical engineers examine the materials and conditions of your site to make sure structures and facilities perform safely and successfully.**

Role:

- SEH's geotechnical engineers will work with JEO's designers on a preliminary geotechnical analysis by reviewing geologic borings at the location of the preferred alternatives. They will evaluate soil data to document engineering properties and help determine construction suitability and design requirements based upon NRCS guidelines.

BBC RESEARCH AND CONSULTING

BBC Research and Consulting (BBC) is an economic research and consultant firm that provides services that have revolved around water management issues and in meeting federal rules and regulations for multiple agencies, including NEPA. **BBC has completed work in Nebraska including current work on five WFPO projects with JEO.**

Role:

- BBC will conduct a socioeconomic baseline study, a benefit-cost analyses (BCA), and an economic impact assessment which meets NRCS guidance, to support watershed planning efforts. This includes gathering data, assisting issues, and obtaining input; documenting economic and social effects; performing the BCA; and reporting.

HISTORY NEBRASKA

The Nebraska State Archeology Office (SAO) office is the primary repository for Nebraska archeology records. SAO staff manage and analyze archaeological collections recovered primarily through History Nebraska fieldwork. Staff members are dedicated professionals with academic and practical experience in various aspects of Plains archeology and history. Their team consists of archaeologists, collections managers, and historic architects. They are actively involved in field and laboratory research.

Role:

- They will complete the cultural resources review in compliance with NRCS and NEPA requirements, including a complete comprehensive background level research and report on existing sites.
- They will lead field surveys and the National Register of Historic Places Evaluation, and complete reports for areas of potential effect (APEs).

Key Personnel

John Petersen, with experience managing two other Plan-EAs projects, is your project manager and will work with all team members to apply WFPO experience, schedule meetings, conduct site visits, and plan reviews. Ross Lawrence will serve as the lead engineer and lead the team's modeling, alternative selection, and screening. Adam Rupe will support John and Ross with plan development, meeting coordination, and agency communication. **Arlis Plummer brings 36 years of NRCS engineering and watershed experience to the JEO team and will be responsible for QA/QC and expediting plan approval. Kevin Kruse and Jake Miriovsky will provide engineering support and brings their experience on nine recent or ongoing projects with JWMAB members.** Dan Fricke brings his knowledge on the needs of the JWMAB members and familiarity with the hydrologic dynamics from North Bend to Fremont.

JOINT WATER MANAGEMENT ADVISORY BOARD

NRCS

PROJECT PRINCIPAL
Lalit Jha, PE, D.WRE, CFM

PROJECT MANAGER
John Petersen, PE

QA/QC
Arlis Plummer, PE
Dan Fricke, PE, CFM

PLANNING/NEPA
Adam Rupe, CERP (lead)

PLAN DEVELOPMENT
Dillon Vogt
Jonathan Mohr

STAKEHOLDER COORDINATION
Alyssa Tenorio

NEPA/ENVIRONMENTAL ASSESSMENT
Zach Cunningham, CWB
Jonathan Mohr

CULTURAL RESOURCES
Rob Bozell[3]

ENGINEERING
Ross Lawrence, PE, CFM (lead)

DESIGN/ALTERNATIVES
Kevin Kruse, PE
Jake Miriovsky, PE
Justin Stine, PE

H&H MODELING
John Callen, PE, CFM
Ann Nissen, PE

ECONOMIC EVALUATION
Michael Verdone, Ph.D.[2]
John Callen, PE, CFM

GEOTECHNICAL
Wayne Wambold, PE[1]

Subconsultants:
1: SEH *2: BBC Research and Consulting* *3: History Nebraska*

JOHN PETERSEN, PE
PROJECT MANAGER

EDUCATION
B.S., Civil Engineering

REGISTRATION
Professional Engineer
NE, IA, MO

TENURE
15 Years - Industry
10 Years - JEO

John is a project manager and senior engineer with experience in dam design and modification, H&H modeling, streambank assessment and stabilization projects, drainage studies and design projects, and flood control projects involving channels, dams, and levees.

Highlighted Relevant Experience:

- Upper Prairie/Silver/Moores Creek Flood Control Project, Central Platte NRD
- Mira Creek/North Loup Flood Prevention Study, Lower Loup NRD
- Elm-Turkey WFPO Plan-EA, Central Platte NRD
- Lower Wood River WFPO Plan-EA, Central Platte NRD
- Battle Creek WFPO Plan-EA, Lower Elkhorn NRD

LALIT JHA, PE, D.WRE, CFM

PROJECT PRINCIPAL

EDUCATION
M.S., Civil/Environmental Engineering
B.S., Civil Engineering

REGISTRATION
Professional Engineer
NE

TENURE
25 Years - Industry
19 Years - JEO

Lalit has over 25 years of experience in water resources engineering and is working directly with NRCS on Nebraska's first new WFPO planning projects. Lalit will ensure the JWMAB is satisfied with the planning process and that JEO provides adequate resources for a timely deliverable.

Highlighted Relevant Experience:

- Upper Prairie/Silver/Moores Creek Flood Control Project, Central Platte NRD
- Battle Creek WFPO Plan-EA, Lower Elkhorn NRD
- Mud Creek WFPO Plan-EA, Lower Loup NRD

ARLIS PLUMMER, PE

QA/QC

EDUCATION
B.S., Civil Engineering

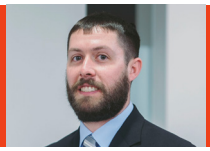
REGISTRATION
Professional Engineer
NE

TENURE
37 Years - Industry
1 Year - JEO

Arlis is a hydraulic engineer who previously worked at NRCS for over 36 years and currently assists JEO contractually. She has worked on over 20 watershed and watershed rehabilitation plan and environmental assessments, including the last approved WFPO plan in Wilber, NE (2008). Arlis provides QA/QC on all of JEO's WFPO watershed planning projects.

Highlighted Relevant Experience:

- Lower Wood River WFPO Plan-EA, Central Platte NRD
- Battle Creek WFPO Plan-EA, Lower Elkhorn NRD



ROSS LAWRENCE, PE, CFM

ENGINEERING LEAD

EDUCATION
B.S., Agricultural Engineering

REGISTRATION
Professional Engineer
NE, IA, ID

TENURE
10 Years - Industry
10 Years - JEO

Ross has experience in streambank stabilization and erosion control in small and large streams. His experience also includes levee analysis, planning, design, and permitting. Ross has construction observation, administration, and field inspection experience from multiple storm water drainage, streambank stabilization, and levee construction/repair projects.

Highlighted Relevant Experience:

- Fremont, Farmland and Railroad Levee Extension, Dodge County, NE
- Ditch 8 Flood Damage Repair, Lower Platte North NRD
- Upper Prairie/Silver/Moores Creek Flood Control Project, Central Platte NRD

ADAM RUPE, CERP

PLANNING LEAD

EDUCATION
B.S., Environmental Studies/Natural Resources *and* Fisheries & Wildlife

TENURE
12 Years - Industry
12 Years - JEO

Adam is an environmental planner and project manager for JEO, specializing in watershed planning. He has been dedicated as JEO's WFPO program manager and liaison to NRCS and the USACE. He will ensure compliance with NRCS's watershed manual and handbook and PR&G requirements.

Highlighted Relevant Experience:

- Battle Creek WFPO Plan-EA, Lower Elkhorn NRD
- Mud Creek WFPO Plan-EA, Lower Loup NRD
- Lower Wood River WFPO Plan-EA, Central Platte NRD

JAKE MIRIOVSKY, PE
DESIGN/ALTERNATIVES

EDUCATION
B.S., Civil Engineering

REGISTRATION
Professional Engineer
NE, IA, SD

TENURE
11 Years - Industry
5 Years - JEO

Jake is a project manager and engineer specializing in water resources engineering design, project development, and construction administration. He specializes in lake rehabilitation, aquatic habitat enhancements, stream restoration, stakeholder coordination, and streambank stabilization.

Highlighted Relevant Experience:
- Little Indian Creek WFPO Plan-EA, Lower Big Blue NRD
- Flood Damage Assessment, Design of Repairs, Permitting, Rod and Gun Club, NE
- Flood Damage Assessment, Dodge County SID #3 (Lake Ventura), NE

JOHN CALLEN, PE, CFM
H&H MODELING | ECONOMIC EVALUATION

EDUCATION
B.S., Biological Systems Engineering

REGISTRATION
Professional Engineer
NE, IA, SD

TENURE
18 Years - Industry
11 Years - JEO

John is a project engineer who has worked with FEMA and USACE staff from multiple focus areas including flood risk analysis, floodplain management, and non-structural flood risk mitigation. John has extensive experience in watershed evaluation projects and floodplain management including watershed master planning for water quality assessment and capital project development, hydrology and hydraulics, and all aspects of floodplain management.

Highlighted Relevant Experience:
- Parcel Level Flood Risk Assessment and Flood Risk Reduction Plans, Fremont and Schuyler, NE
- Lower Wood River WFPO Plan-EA, Central Platte NRD

WAYNE WAMBOLD, PE
GEOTECHNICAL

EDUCATION
M.S. & B.S., Civil Engineering

REGISTRATION
Professional Engineer
NE, IA, MN, WI

TENURE
28 Years - Industry
28 Years - SEH

Wayne is a senior geotechnical engineer with extensive geotechnical experience with SEH, including soil improvement, roads, levees, dams, floodwalls, retaining walls, modular block walls and reinforced slopes. Wayne has also worked in dewatering, building foundations (spread footings and piles), bridge foundations, river erosion control works, cellular coffer dams, and pipelines.

Highlighted Relevant Experience:
- Levee Program Geotechnical Design Optimization, Council Bluffs, IA
- Levee Accreditation Feasibility Evaluation, Council Bluffs, IA

MICHAEL VERDONE, PH.D.
ECONOMIC EVALUATION

EDUCATION
Ph.D., Natural Resource and Environmental

M.A., Economics

B.A., Economics

TENURE
8 Years - Industry
5 Years - BBC

Michael is an economist in the water and natural resource practice. Michael has supported several water-related projects that have helped him develop expertise on water economics, water markets, and the value of water. He is helping JEO and NRCS establish BCA methodologies for WFPO projects.

Highlighted Relevant Experience:
- Little Indian Creek WFPO Plan-EA, Lower Big Blue NRD
- Lower Wood River WFPO Plan-EA, Central Platte NRD
- Mud Creek WFPO Plan-EA, Lower Loup NRD

Similar or Current Projects

Russ Callan
Lower Loup NRD

308.728.3221

330,000 to 745,000

References for others can be provided

WFPO PLANNING EXPERIENCE

MULTIPLE NRDS, NEBRASKA

Since 2019, JEO has been helping NRDs with similar WFPO Plan-EA projects. Main tasks include agency coordination, NEPA/404(b)(1) compliance, H&H modeling, alternative assessments, plan writing, conceptual design, economics, and cultural resources. These include:

- Central Platte NRD – Lower Wood River Plan-EA
- Central Platte NRD – Elm-Turkey Creeks Plan-EA
- Lower Elkhorn NRD – Battle Creek Plan-EA
- Lower Loup NRD – Mud Creek Plan-EA
- Lower Big Blue – Little Indian Creek Plan-EA
- Lower Loup NRD – Mira Creek Plan-EA
- Lower Platte North NRD – Wahoo Creek Plan-EA
- Dubuque County, IA – WFPO Plan-EA

Lyndon Vogt
Central Platte NRD

308.385.6282

3,000,000

For more information on this project, please go to:

UPPER PRAIRIE/SILVER/MOORES FLOOD CONTROL

CENTRAL PLATTE NRD

In a 2000 study, it was estimated that a 100-year flood would cause an estimated $59 million in damages to urban property and approximately 1,500 residences and 55 businesses were in harm's way. These areas are subject to periodic flooding caused by overflow of the Prairie Creek, Silver Creek, and Moores Creek. Central Platte NRD (CPNRD) hired JEO to provide flood risk reduction and resiliency to the northwest area of the City of Grand Island. Project components included:

- **Complex hydrology and hydraulics modeling for over 230 square miles of the watershed.**
- **Design and construction of large detention cells, four dry dams, and a levee.**
- Robust public involvement and education program, including stakeholder coordination.
- Funding, with the total project cost estimated to be $30 million. This project was funded at a 52.5% share through the Natural Resources Development Fund (NRDF). To date, this project is the largest state-funded flood risk reduction project.

The spring 2019 flooding was estimated to be a 500-year flood event near Grand Island. This project successfully prevented these flood waters from entering the city. **During this flood event and another, the project has performed as expected and prevented over $47 million in damages, meaning the project essentially paid for itself almost four times over.**

Lottie Mitchell
City of Fremont

402.727.2624

236,100

HAZARD MITIGATION PLAN UPDATE WITH PARCEL LEVEL MITIGATION REVIEW OF FREMONT

LOWER PLATTE NORTH NRD/ FREMONT AND SCHUYLER, NEBRASKA

The Lower Platte North NRD submitted a Pre-Disaster Mitigation grant application to FEMA to fund their plan update. As part of this planning effort, additional funding was requested and allocated in the grant to provide the opportunity for participating communities to complete additional risk assessments for select floodprone properties. JEO completed the hazard mitigation plan update and parcel level assessments. In total, 55 jurisdictions participated in the hazard mitigation plan update. These jurisdictions are now eligible to pursue FEMA grant funding to assist in the implementation of mitigation projects across the NRD.

The purpose of the Fremont parcel level assessment and flood risk reduction plan was to identify and prioritize flood risk reduction alternatives on a property-by-property basis for selected structures in the Special Flood Hazard Area (SFHA). Ultimately, the assessment provides the City of Fremont and Dodge County with valuable information to support their decision making for funding additional flood risk reduction projects such as the homeowner flood mitigation projects submitted to FEMA through the Hazard Mitigation Assistance Programs.

FREMONT, FARMLAND, AND RAILROAD LEVEE EXTENSION
FREMONT, NEBRASKA

One activity stemming from the March 2019 flooding is the repair of breaches and an evaluation of the Fremont, Farmland, and Railroad Levee at Fremont. JEO developed conceptual repair information, which supported funding assistance requests. The evaluation included levee freeboard performance, an erosion hazard analysis, and identified critical issues that needed to be addressed for the levee to be accepted into the USACE PL 84-99 Rehabilitation Program. The city is currently pursuing final design and construction of levee repairs and improvements.

Lottie Mitchell
City of Fremont
402.727.2624
85,200

DITCH 8 FLOOD DAMAGE ASSESSMENT
LOWER PLATTE NORTH NRD

Rawhide Creek, Ditch 8, was one of several ditches and drainage infrastructure heavily damaged by the March 2019 flood event in Dodge County. JEO was hired by LPNNRD to assist with flood damage assessment and repairs, utilizing FEMA Public Assistance funding. The design team surveyed the site, coordinated emergency repair work at two major breach locations, prepared final design documents for repairs along the entire two-mile stretch of drainage ditch, assisted with landowner coordination and easements, and oversaw construction of the repairs. The project was successfully completed in April of 2020.

Tom Mountford
Lower Platte North NRD
402.443.4675
44,500

MARCH 2019 FLOOD RESPONSE, DAMAGE ASSESSMENT, AND REPAIR | NORTH BEND, NEBRASKA

During the March 2019 flood event, North Bend relied on JEO as their city engineer to assist with response and recovery. JEO surveyed and reported damages, as well as developed conceptual recommendations for immediate and long-term repair. The team performed field site assessments of the berm that had been constructed to protect the city from the Platte River floodwaters. JEO helped with four repairs to the berm south of the community and is continuing to facilitate discussions with project partners to obtain easements – a major first step to building long-term, sustainable improvements.

Theresa Busse
City of North Bend
402.652.3591
103,820

FLOOD DAMAGE ASSESSMENT, DESIGN OF REPAIRS AND PERMITTING | ROD AND GUN CLUB (DODGE COUNTY, NEBRASKA)

JEO was hired by the Rod and Gun Club to provide a flood damage assessment, survey, preliminary design of repairs, permitting services, final design, bidding, and construction. Through JEO's experience with analyzing the March 2019 flow paths and documentation of damages and repairs, the inter-connectivity of the various breaches was well understood. Application of the knowledge gained by the team's witnessing the event firsthand, provided a foundation for the CDBG funding application and implementation of repairs. The breach lake project is currently in the contracting phase, with construction scheduled for late summer/fall 2021.

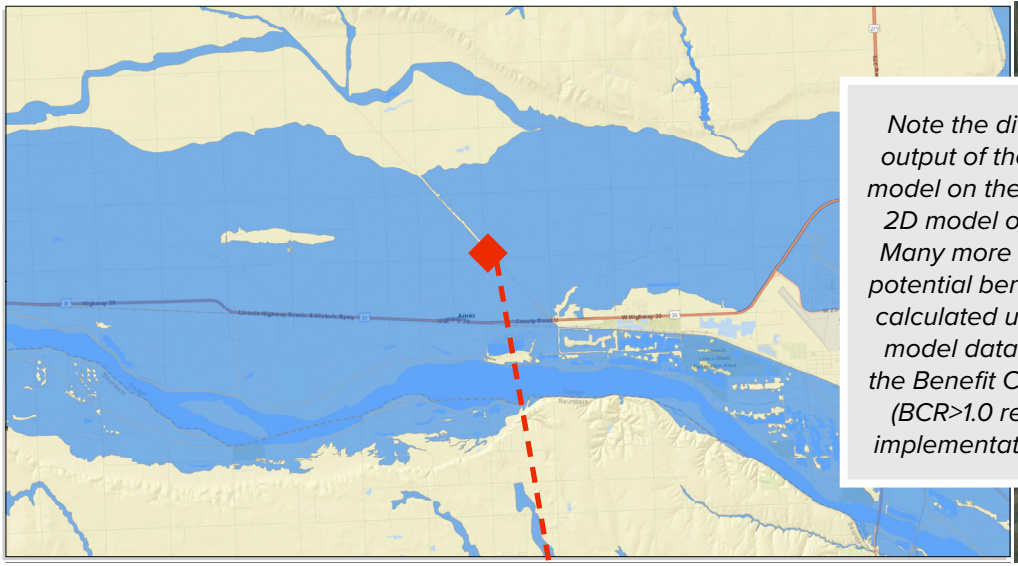
Bob Missel
Dodge County, NE
402.727.2767
63,600

JEO's Hydrology & Hydraulic (H&H) Modeling Ability

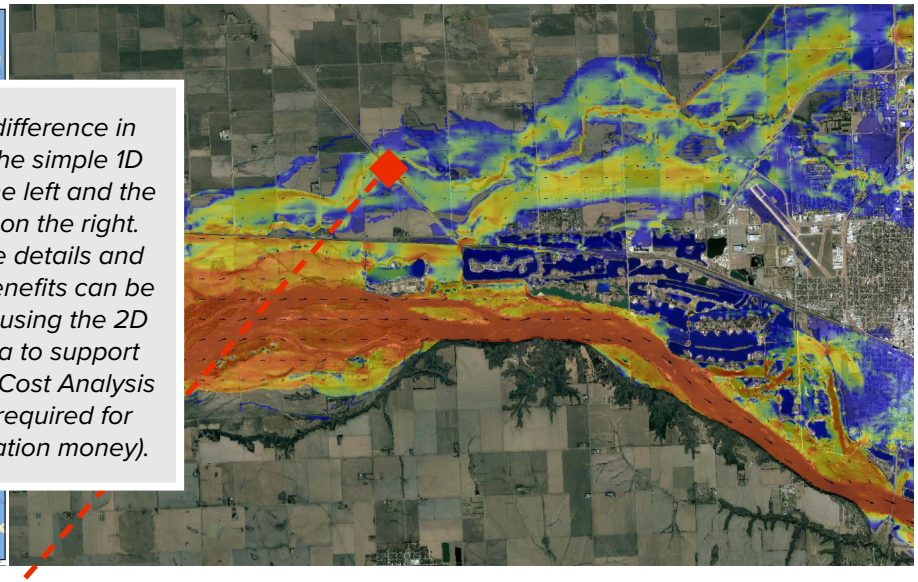
Similar or Current Projects

The H&H analysis is the backbone of the planning effort. We will leverage the numerous existing data sources, and create a holistic H&H model to identify impacts, potential projects and benefits. Below are some notes related to nuances of 1D vs. 2D analyses and the limitations and benefits that they provide. Through our work on other WFPO plans and coordination with NRCS, we have found that a robust and detailed H&H model is critical to planning success, this is not an area to try and shortcut. JEO has seven engineers specially trained to work on 1D and 2D models, allowing our team sufficient manpower to provide expertise and meet the original project schedule.

FEMA 1D Floodplain Data

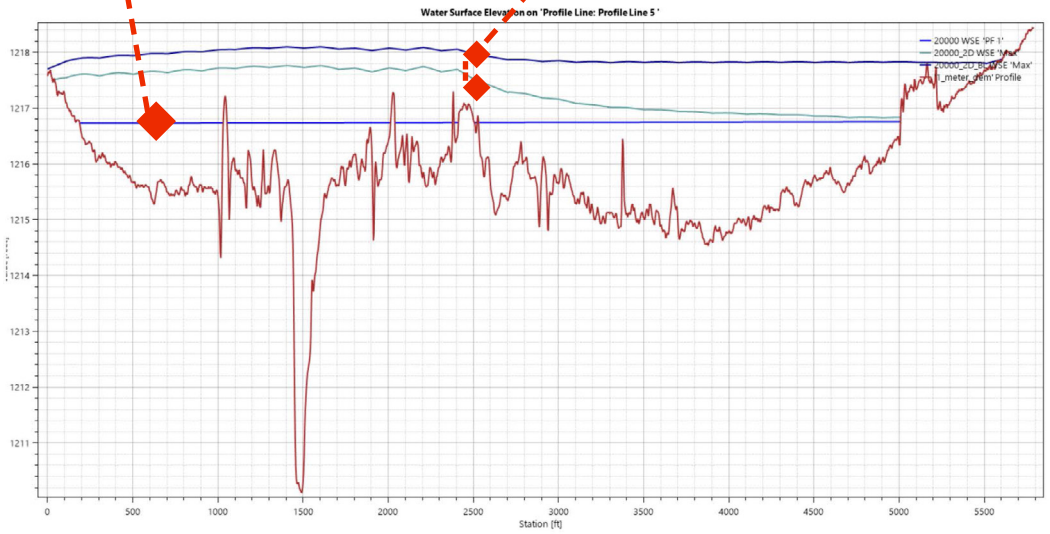


JEO Model Using the NDOT CLOMR Model and Enhancing with 2D Overflows



Note the difference in output of the simple 1D model on the left and the 2D model on the right. Many more details and potential benefits can be calculated using the 2D model data to support the Benefit Cost Analysis (BCR>1.0 required for implementation money).

Note the 1D analysis results in a constant elevation across the floodplain, regardless of roadways, cutoff ditch embankments, etc.



1D Cross Section Ground Data

Note the 2D analysis captures the nuances and topography of the floodplain, making potential benefits more pronounced and defendable for the project development and the Benefit Cost Analysis.

PROPOSAL

Project Understanding

Catastrophic flooding occurred in March of 2019 along the Platte and Elkhorn Rivers and their tributaries, including the reach between North Bend, Fremont, and Inglewood. The Dodge County Joint Water Management Advisory Board (JWMAB) was created to support inter-agency collaborative efforts to identify and implement measures to reduce area flood risks. With the support of NRCS WFPO funding, the JWMAB, led by Dodge County, intends to establish the Rawhide Creek WFPO Plan-EA for Rawhide Creek and its tributaries from associated flood risks from the overflows of the Platte and Elkhorn Rivers and cutoff ditches. **The way flooding damaged the region makes it clear that a long-term solution is necessary, including collaboration between multiple stakeholders while still allowing for immediate needs to be addressed.**

Project Goals

The goal of this effort is to focus on implementation and putting JWMAB in a position to complete projects that reduce flood risk, utilizing WFPO funding for design and construction as leverage with other funding sources. The Plan-EA will include:

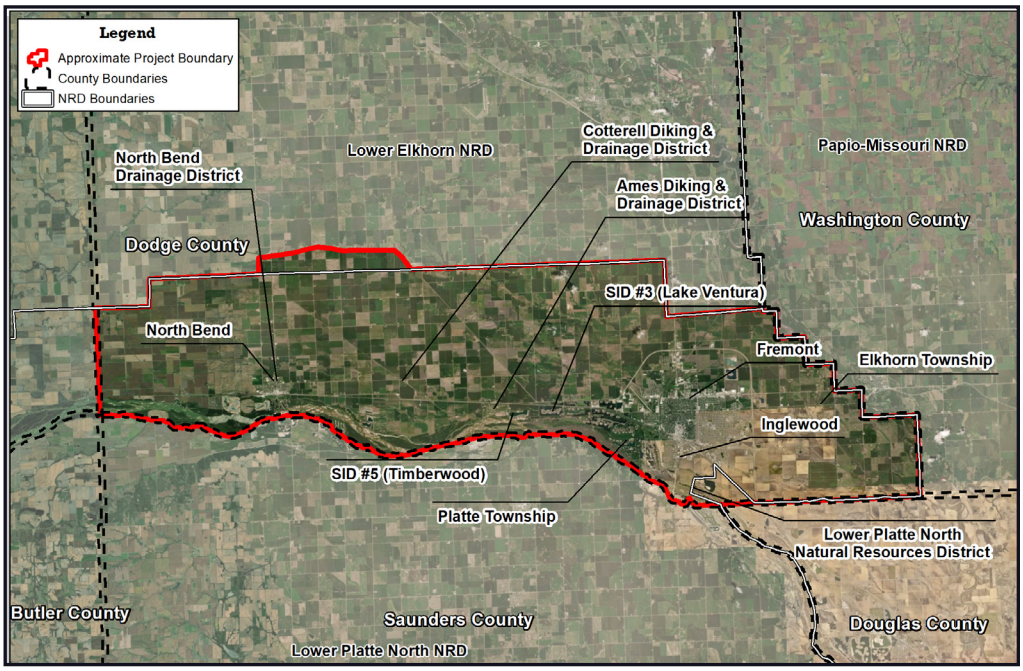
- A hydrologic and hydraulic (H&H) analyses to assess the nature of the flood risks.
- An evaluation of conceptual effectiveness of potential flood risk reduction improvement projects.
- Identification of a preferred alternative.
- Public outreach and education to ensure buy-in to long-term solutions.

JEO is working on the Fremont East Drainage project and provides value by leveraging information from both H&H models, and evaluating project alternatives simultaneously.

Key Project Stakeholders

This JWMAB, a group of 12 governmental entities created in 2019, are the key stakeholders

- *Dodge County*
- *Lower Platte North NRD*
- *City of Fremont*
- *City of North Bend*
- *Cotterell Diking & Drainage District*
- *Ames Diking & Drainage District*
- *North Bend Drainage District*
- *Elkhorn Township*
- *Platte Township*
- *Village of Ingelwood*
- *Dodge Co. Sanitary and Improvement District #3 – Lake Ventura*
- *Dodge Co. Sanitary and Improvement District #5 – Timberwood*



JWMAB members

- Multiple flood sources (Platte River and Rawhide Creek) create significant flood risk in this area.
- Dams, detention cells, bypasses, and berms are all viable options for keeping both the Platte River and Rawhide Creek flooding away from urban and agricultural areas within this watershed.
- Existing features, such as the cutoff and ditch system, can be leveraged and made more robust to achieve the flood reduction goals.

NRCS Planning

After the 2019 flooding, JEO supported the NRCS-WFPO application development process. **JEO worked closely with NRCS as a partner and scoped time for the NRCS-required, multi-step process.** These steps include:

- Task 1: Identify Problems, Opportunities, and Concerns
- Task 2: Determine Objectives
- Task 3: Inventory Resources
- Task 4: Analyze Resource Data
- Task 5: Formulate Alternatives
- Task 6: Evaluate Alternatives
- Task 7: Plan Development/Make Decisions

The NRCS grant application was based on the estimated work required for each of these steps, which NRCS has agreed with. If any of these steps are not completed, the risk is that the plan may fall short of the approval requirements. JEO will complete this on an hourly-not-to-exceed contract, meaning if efficiencies are found they will be passed along to the county and will not be billed.

Key Tasks of the Approach

There are primary tasks to develop the Plan-EA, however, the H&H model serves as the primary tool to evaluate the physical flood reduction benefits of each proposed project. As alternatives, such as detention cells, dry dams, and berms are evaluated, the H&H model is ran over and over to display the 'post-project floodplain' and flood depth reduction on a map. The output from the model is then used to estimate the value of flood damage reduction using a FEMA tool called HAZUS. JEO will use the 100-year flood as a base for evaluation, but will also run the 50-year and other more frequent events to understand overall project benefits.

kick-off

- Data collection
- Needs assessment

new 2D H&H model

- Incorporate data from existing model
- Focused on Rawhide Creek and contributing flows from Platte River/Elkhorn River/Shell Creek

environmental assessment

- Wetland impacts
- NEPA compliance
- USACE 404(b)(1)
- T&E species/flow impacts

alternatives assessment

- Review 205 study
- Include ongoing projects (i.e. East Fremont Drainage)
- Evaluate large-scale detention, dry dams, berms, etc.
- Stakeholder input

economics

- Establish preferred alternatives
- BCA > 1.0

plan development approval

- State NRCS review
- National NRCS approval

final design/construction (2023 - TBD)

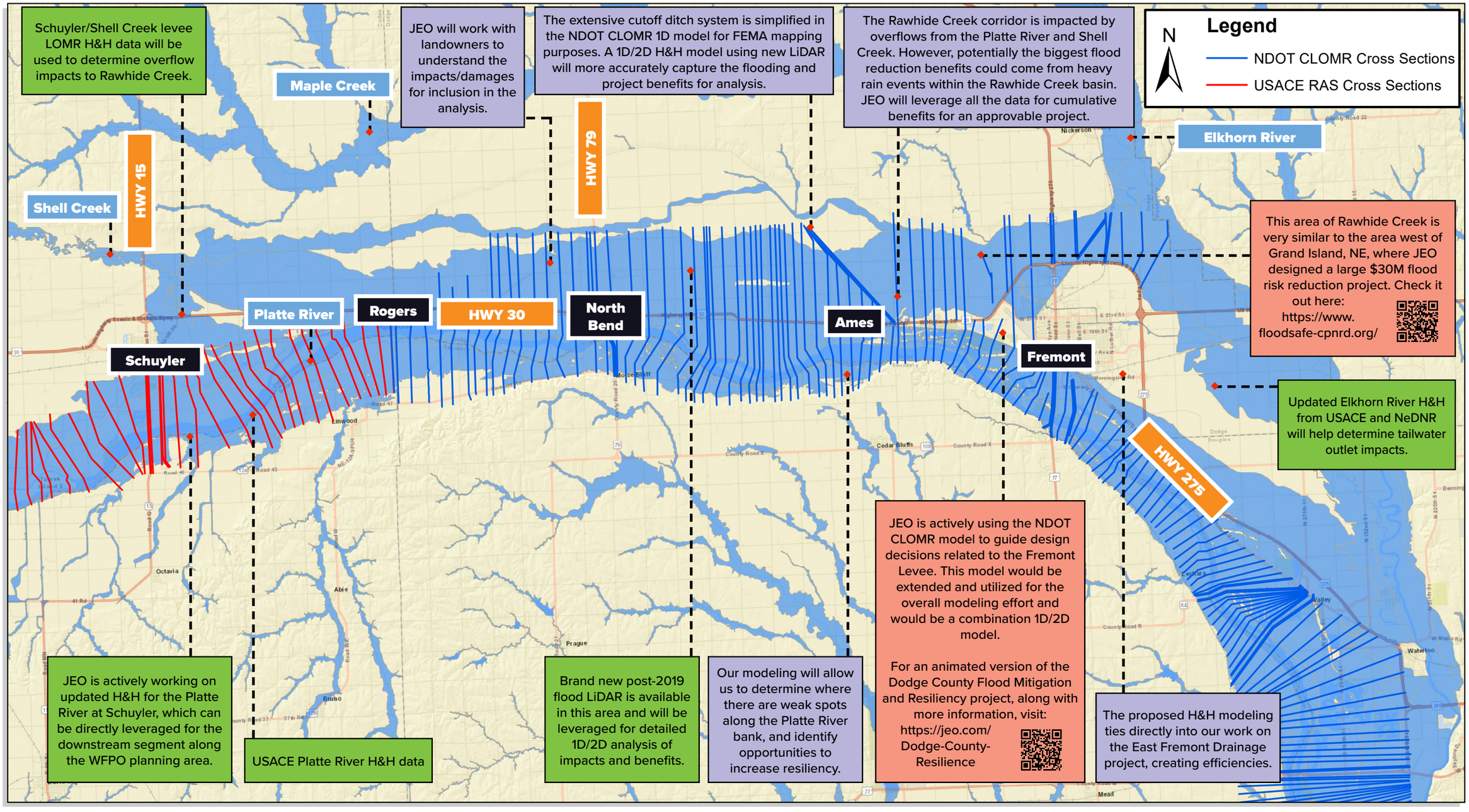
- NRCS 100% cost-share design/construction
- Local sponsor pay/land rights/permitting

#1 ROBUST HYDROLOGY & HYDRAULIC (H&H) MODEL

Project Approach

Because the flow dynamics are complicated with Rawhide Creek, drainage ditches, and the Platte and Elkhorn Rivers, JEO will create an existing conditions H&H 2D HEC-RAS model to gain a better understanding of the watershed. This model will be improved upon to create a robust, detailed model, complemented with data from existing NDOT studies, including the CLOMR for Highway 30, USACE studies, and NeDNR existing models. **JEO's simultaneous work on the Fremont East Drainage H&H Model will enhance the capability to run risk scenarios for alternatives for both projects, a major value to JWMAB.** JEO will use this model to illustrate anticipated inundation areas from various events; reductions from various alternatives, such as detention cells, channel clean-out, and dry dams; and perform project screening and alternative assessments. **Modeling is also the backbone of the economic assessment.**

Color Legend: *Available H&H data which will be leveraged* | *What we're going to do* | *Example project*



#2 DETAILED ALTERNATIVES ASSESSMENT

This project area is subject to complex flood risks from various sources, which vary across the snow melt, ice jam, and rainfall seasons. **While hydraulic analyses have been completed in the past, most recently the NDOT CLOMR for the Hwy 30 re-alignment, they lacked the detail that is needed to understand the implication of various flooding scenarios required for the NRCS requirements.** JEO will build on prior analyses but believes a much more robust analysis is necessary to evaluate numerous scenarios and determine holistic flood risk reduction strategies for all the communities along this corridor. The general components of a typical alternative analysis process are as follows (these will be vetted with a stakeholder group to ensure we capture additional desired inputs/outputs):

- Integration of previously identify projects in the USACE Section 205 Study for Fremont (November 2020).
- Existing conditions and March 2019 flood event review – work with stakeholders to determine potential areas of concern and opportunity areas.
- Consideration of ongoing projects: North Bend Cutoff Ditch, Levee Repairs, and Fremont East Drainage.
- Evaluate the feasible of a large-scale detention west of Fremont similar to JEO's Upper Prairie Silver Moores Flood Control Project west of Grand Island.

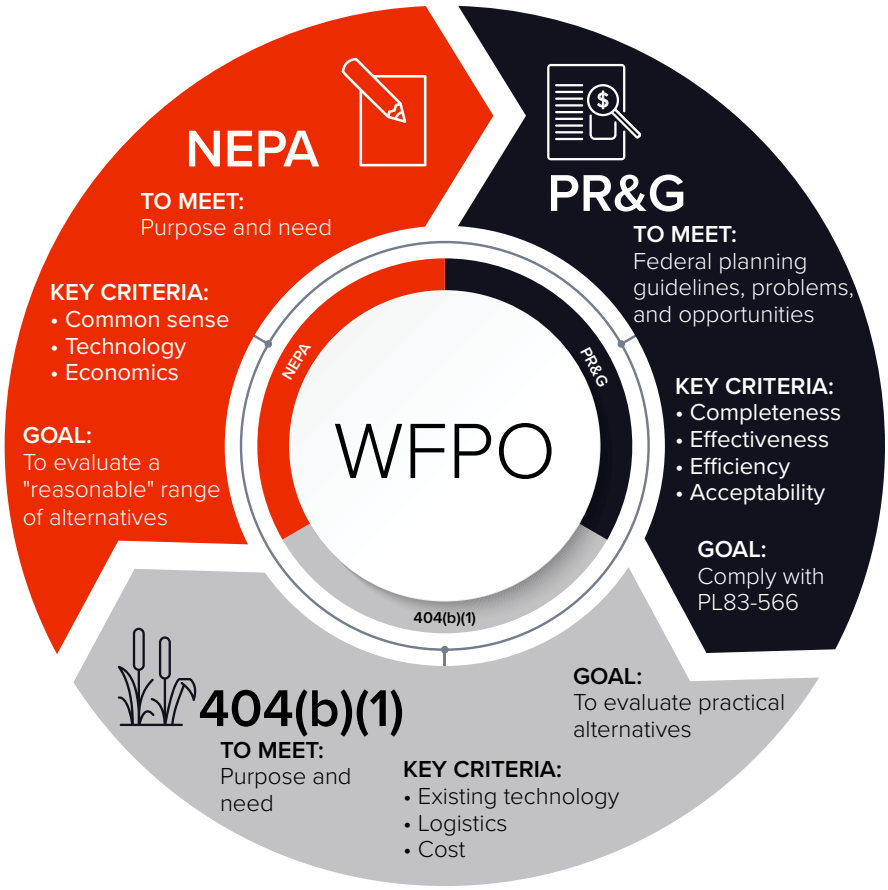
There are a number of potential alternatives for analysis, including dams and detention cells for Rawhide Creek flooding, as well as bypass channels, berms, and cutoff ditch improvements. The new 2D H&H model will be the foundation for the alternative analysis to compare existing flooding conditions to a variety of proposed conditions assuming projects are in place.

The Upper Prairie Silver Moores Project was a multi-year flood risk reduction project designed to reduce flooding risk for northwest of Grand Island for over 600 properties.

#3 MEETING NRCS, USACE, AND NEPA REQUIREMENTS

Navigating any federal process is a challenge. WFPO projects now also require the inclusion of USACE's Clean Water Act Section 404(b)(1) Alternatives Analysis Process, to ensure the projects meet the federal purpose and need, and are capable of receiving a 404 permit.

JEO is working closely with USACE on WFPO Plan-EAs. JEO has been aiding NRCS to build a process to merge the NEPA/404(b)(1) requirements into all future WFPOs. **Essentially, the WFPO process in meeting the 404(b) (1) requirements is similar to starting an Individual 404 Permit now, rather than starting after the plan is approved. Once approved, final design and construction should be expedited.**

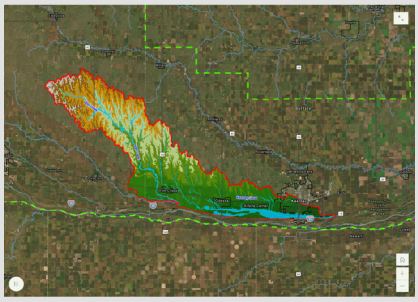


#4 PUBLIC BUY-IN AND STAKEHOLDER COORDINATION

Working with property owners potentially impacted by projects, one-on-one, is critical to achieving public buy-in. While the general public is likely in favor of projects that reduce flood risk, those with projects on or near their property could provide challenges to overcome. **The JEO team is prepared to work directly with property owners, listen, and work to achieve their buy-in.** The key to the approach is early communication with potentially affected property owners.

Should Covid-19 still be a factor, virtual meetings are a great option. JEO has completed five sets of WFPO Agency Scoping and Open House meetings using either Zoom or Microsoft Teams. Decisions on meeting formats, or a combination of options, will be discussed at the project scoping meeting upon notice of award, however, we anticipate in-person meetings for most progress reporting and open houses. The agency scoping meeting, including 10 - 15 agencies in multiple states, is convenient to complete virtually. JEO staff may still travel to Fremont to facilitate the meeting. Below is a summary of known meetings:

- One project kick-off with Dodge County and other key JWMAB members.
- Eight progress meetings.
- Two sets of Agency Scoping and Open House meetings (NEPA requirement).
- Six USACE/NRCS coordination meetings (404(b)(1) requirement).
- One-on-one property owner meetings.
- Four additional stakeholder coordination meeting with communities



Elm and Turkey Creeks Tour+

ONLINE GIS STORYMAP

A key outreach tool, particularly on projects with statewide attention, is an ArcGIS StoryMap. This is an interactive, highly-visual web-browsing tool available to everyone and is updated regularly. An example from another WFPO project is represented below.

+ To view the interactive StoryMap, click on the picture to the left, or visit:

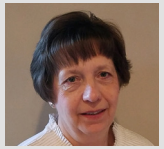
"I JUST WANTED TO SAY GREAT JOB WITH THE AGENCY MEETING. THE PARTICIPATION AND SCOPING INPUT WAS ABOUT THE BEST I HAVE SEEN ON A WATERSHED PROJECT."

- Rich Vaughn, NRCS Watershed Planning Coordinator for Nebraska (February 23, 2021)

Related Experience

A diversity of water resource engineering skillsets are required to complete a successful WFPO Plan-EA. The matrix below highlights JEO's combination of project experience, mostly focused on flood risk reduction design and construction, flood damage assessments, and similar WFPO projects. Our technical experience, deep bench of engineers, planners, and scientists – matched with a strong familiarity with JWMAB members and goals – puts JEO in a great position to make the Rawhide WFPO Plan-EA a success.

	PROJECT ELEMENTS						
CLIENT/PROJECT (FIRM COMPLETED BY)	WFPO	Flood Damage Assessment	Design	Construction	H&H Modeling	NEPA/404(b)(1)	Public Involvement
Lower Elkhorn NRD - Battle Creek WFPO Plan-EA	■		■		■	■	■
Lower Loup NRD - Mud Creek WFPO Plan-EA	■		■		■	■	■
Central Platte NRD - Elm and Turkey Creeks WFPO Plan-EA	■		■		■	■	■
Central Platte NRD - Lower Wood River WFPO Plan-EA	■		■		■	■	■
Lower Big Blue NRD - Little Indian Creek WFPO Plan-EA	■		■		■	■	■
Lower Loup NRD - Mira Creek WFPO Plan-EA	■		■		■	■	■
Lower Platte North NRD - Ditch 8 Flood Damage Repair			■	■			
Lake Ventura - Damage Assessment, Repairs, and Dredging		■	■	■			
Fremont Rod & Gun Club - Damage Assessment and Repairs		■	■	■			
Central Platte NRD - Upper Prairie/Silver/Moores Flood Control		■	■	■	■	■	■
Fremont - Farmland Levee Repair and Extension		■	■	■			
Leisure Lake - Flood Damage Assessment		■					
Timberwood Lake - Flood Damage Assessment		■					
Central Platte NRD - Dam Inventory and Siting for Recharge		■	■	■	■		■
Papio-Missouri River NRD - WP4 Dam Design			■		■	■	



Arlis Plummer previously worked at NRCS for over 36 years. Her experience includes floodwater earth structure design, watershed planning, and government programs. As the Nebraska State Hydraulic Engineer, **she has worked on over 20 watershed and watershed rehabilitation plan and environmental assessments, including the last approved WFPO plan in Wilber, NE (2008).**

Workload/Willingness and Capability to Meet Time Requirements

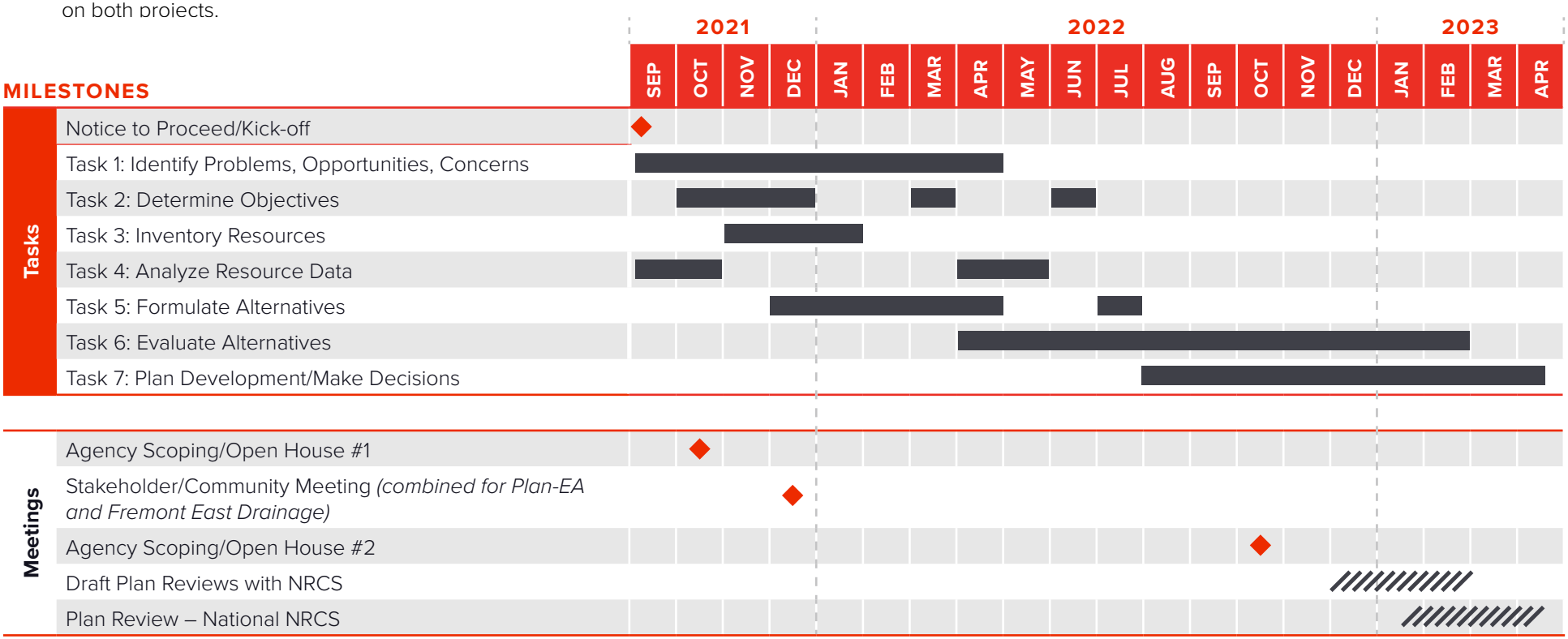
JEO forecasts the workload of individual employees for a minimum of six months through Deltek Vision software. This allows us to accurately assign project tasks and maintain the necessary resources to meet the milestones associated with each project deadline. We have a robust team available to commit the proper resources for a successful project. **To support our team members, we have built a seamless set of technologies within JEO, including shared access systems, video meeting capabilities, and remote access to keep team members engaged across multiple offices. This technology has been heavily used during the COVID-19 pandemic and has led to increased productivity among our staff.** This allows the full bench strength of JEO to be available for your project.

Proposed Project Schedule

The schedule for development of the Plan-EA is typically 24 months starting from the date the agreement is signed with NRCS. Assuming JEO starts in September, there will be 19-months remaining to the deadline, thus making the schedule a crucial project component.

Timely completion is another challenge and JEO is prepared to modify the workload of individuals assigned to this project to keep the schedule compliant for the benefit of JWMAB members. Also, Kevin Kruse, the project manager for Fremont East Drainage project, has been added to the Rawhide WFPO Plan-EA team and will coordinate work on that project with Plan-EA project manager, John Petersen. Having JEO work simultaneously on Fremont East Drainage and Rawhide WFPO is the key to expediting the schedule:

- Progress meetings with JWMAB members will be held on the same day, saving staff travel time and removing duplication of efforts.
- Having JEO do both H&H models side-by-side will enhance the capability to run risk scenarios and reduce delays in comparing modeling results of differing consultants.
- Stakeholder meetings could be combined or coordinated, providing the ability to leverage feedback and ideas, and having all input sorted by a single consultant on both projects.



Conflict of Interest

JEO and our subconsultants do not have any conflict of interest related to this project. Should a conflict arise, we will discuss with you immediately and develop a plan of action.

Description of Insurance

As previously submitted, JEO carries the necessary insurance requirements for this project. Should a copy of our certificate of insurance be needed, we will provide one upon request.

Costs

JEO understands that due to discrepancies in responses to the initial RFP, a second RFP was required. We understand there is still the possibility for differences in scope. **However, JEO believes based on our WFPO and NRCS coordination experience that all the planning steps need to be addressed, and need to be addressed in full to ensure the plan can be approved.** We have provided some additional context to the right of some steps to help you review the proposals and ensure the value of our proposal is understood.

Note: At JEO, all mileage, copies, postage, computer time, and other overhead items are included in our basic billing rates and are not billed separately. ***JEO's fee is based on an hourly-not-to-exceed contract; therefore as efficiencies are found, available models are able to be used, etc., the county will realize this savings and will not be billed for it.***

FEE BREAKDOWN

	John Petersen *Project Manager*	**Adam Rupe** *Planner*	**Various** *EI/GIS*	**Various** *PE/H&H*	**Various** *Environmental*	**Arlis Plummer** *QA/QC*	**LRE** *Groundwater*	**BBC** *Economics*	**History Nebraska** *Archaeology*	**SEH** *Geotech PE*	HOURS/TASK	FEE TOTALS	ITEMS TO NOTE
	$200	$150	$100	$175	$160	$105	$200	$150	$150	$205			
Task 1: Identify Problems, Opportunities, Concerns													
Project Management (for the entire duration of the project)													• We have included robust stakeholder Involvement (over 20 meetings) to ensure agency and property owners' buy-in and plan approval. We have found that agency/public buy-in is critical for plan approval. • We will develop and maintain a highly graphic user-friendly website, referred to as a StoryMap, to share updates and project material with agencies, stakeholders, and the public. JEO provides board maps, etc. for meetings to help facilitate the planning. • For cost comparison purposes, we have included all the Project Management hours for the duration of the plan phase in this step.
Billings & Progress Reports	40	24									64	$11,600.00	
General Coordination, Ad Hoc Meetings, Phone Calls	40	100									140	$23,000.00	
Develop Public Participation Plan	2	24									26	$4,000.00	
Assemble Existing Data	8	24	32	8							72	$9,800.00	
Recon Field Visit	8	12	16								36	$5,000.00	
Stakeholder Coordination													
Public Open House #1	4	16	16								36	$4,800.00	
Agency Scoping Meeting #1	4	16	16								36	$4,800.00	
Additional Stakeholder Coordination Meetings with Communities (4 meetings)	8	16	16								40	$5,600.00	
Meeting Notifications/Agency Letters	4	12	32	8							56	$7,200.00	
NRCS and USACE Progress Milestone Meetings (6 meetings)	30	70	70								170	$23,500.00	
Progress Meetings with Dodge County and JEO (8 meetings)	16	32	32								80	$11,200.00	
Subtotals	***164***	***346***	***230***	***16***							***756***	***$110,500.00***	
Task 2: Determine Objectives													
Document Sponsor Objectives	4	10	4								18	$2,700.00	
Write Purpose & Need Statement	1	12			12	8					33	$4,760.00	
Write Scope of Plan-EA	1	8	8		8	4					29	$3,900.00	
Subtotals	***6***	***30***	***12***		***20***	***12***					***80***	***$11,360.00***	
Task 3: Inventory Resources													
Conduct Resource Inventories & Watershed Assessment	2				8						10	$1,680.00	• JEO will leverage existing H&H information from previous and ongoing projects; i.e., USACE, NDOT, and other JEO projects. There are at least 5 H&H datasets for the Platte River, Rawhide Creek, Shell Creek, and the Elkhorn River, which can be leveraged for efficiency and consistency.
Collection of Existing Data Only		16	16		24						56	$7,840.00	
Economic & Social Effects		32	16								48	$6,400.00	
Archaeological & Historic Resources	2	32							300		334	$50,200.00	
Topographic Survey (spot shots)			60								60	$6,000.00	
Geology		16									16	$2,400.00	
Support Maps		12	26								38	$4,400.00	
Document Problem		12	24			16					52	$5,880.00	
Subtotals	***4***	***120***	***142***		***32***	***16***			***300***		***614***	***$84,800.00***	
Task 4: Analyze Resource Data													
Analyze Existing Data (Desktop data only)		16	32	8							56	$7,000.00	• JEO will leverage the available H&H data to develop a robust H&H model which will have a significant level of detail to identify impacts, potential projects, and benefits. This detailed work will help support a positive economic analysis Benefit Cost Ratio (BCR>1.0), which is required for plan approval and implementation.
Geology													
Sediment Modeling				32							32	$5,600.00	
Hydrology & Hydraulics			160	80		20					260	$32,100.00	
Review Cultural Resource Data													
Impact Area Maps (Area of Potential Effect (APE Map)		16	24		12						52	$6,720.00	
Economics and Social Effects (future without project condition)	8	8	40	40		4					100	$14,220.00	
Public & Private Utility Coordination	8	16	16								40	$5,600.00	
Environmental Evaluation		32			32	16					80	$11,600.00	
Subtotals	***16***	***88***	***272***	***160***	***44***	***40***					***620***	***$82,840.00***	
Task 5: Formulate Alternatives													
Analysis of Initial Alternatives	10	20	80	32		16					158	$20,280.00	
Prepare Initial Alternatives Report (and other documentation)	2	16	24								42	$5,200.00	
Subtotals	***12***	***36***	***104***	***32***		***16***					***200***	***$25,480.00***	
Task 6: Evaluate Alternatives													
Evaluate Resource Data		40	40								80	$10,000.00	• Plan development efficiencies integrated into this Plan-EA will equate to a focus on implementation, and therefore, a stronger likelihood of additional NRCS funding to design and build projects.
Wetland Determinations					150						150	$24,000.00	
Archaeological and Historic Resources													
Foundation and Slope Stability (geotech eval)	4	4		24						204	236	$47,420.00	
Sedimentation				40							40	$7,000.00	
Groundwater Analysis (mounding & impact analysis)		4					40				44	$8,600.00	

FEE BREAKDOWN

	John Petersen *Project Manager*	Adam Rupe *Planner*	Various *EI/GIS*	Various *PE/H&H*	Various *Environmental*	Arlis Plummer *QA/QC*	LRE *Groundwater*	BBC *Economics*	History Nebraska *Archaeology*	SEH *Geotech PE*	HOURS/TASK	FEE TOTALS	ITEMS TO NOTE
	$200	$150	$100	$175	$160	$105	$200	$150	$150	$205			
Hydrology & Hydraulics						16					16	$1,680.00	• The model will show multiple benefits, from rainfall flooding within the Rawhide Creek basin, as well as overflows from the Platte River and Shell Creek. Essentially this becomes a double (or more) benefit.
Conceptual Design	20	32	280	120							452	$57,800.00	
Value Engineering (Design Charrette Meeting)	4	4	4	8							20	$3,200.00	
Economics (all alternatives)													
Determine economic benefits for each alternative		4	8					120			132	$19,400.00	
Recreation area / Fisheries			72	16							88	$10,000.00	
Benefit/Cost Analysis		4	16	12				220			252	$37,300.00	
Identify direct & indirect effects		8									8	$1,200.00	
Determine Significance of Effects		32	24								56	$7,200.00	
Develop avoidance or mitigation actions		8	16								24	$2,800.00	
Identify major controversy, conflicts, and other effects		24	40			16					80	$9,280.00	
Subtotals	***28***	***164***	***500***	***220***	***150***	***32***	***40***	***340***		***204***	***1678***	***$246,880.00***	
Task 7: Plan Development/Make Decisions													
Compare Alternatives (NED, EQ, OSE, and RED accounts)	6	8	12			8					34	$4,440.00	• Our process and schedule ensures timely plan approval. • All documentation and models will be comprehensive and will be provided to JWMAB/city/county/NRD for future use. • The H&H model will be usable for future mapping purposes, if desired.
Review alternatives, Identify preferred, alternative	6	8	8								22	$3,200.00	
Prepare the Draft Plan-EA													
Section 1 - Purpose & Need		7	4		2						13	$1,770.00	
Section 2 - Scope of EA		4	4								8	$1,000.00	
Section 3 - Affected Environment		8	32								40	$4,400.00	
Section 4 - Alternatives	2	16	48								66	$7,600.00	
Section 5 - Environmental Consequences		20	32		32						84	$11,320.00	
Section 6 - Consultation & Public Participation		4	8								12	$1,400.00	
Section 7 - Provisions of the Preferred Alt.		18	6		4			4			32	$4,540.00	
Section 8 - Additional Information													
Compile References, List of Preparers, Distribution list, and Index		8	8								16	$2,000.00	
Appendices													
A - Comments & Responses		2	4								6	$700.00	
B - Support Maps & project map (GIS)		10	32								42	$4,700.00	
C - Investigation & Analysis Report		4	8	8		4					24	$3,220.00	
D - Supporting Information		4	4								8	$1,000.00	
E - Update Project Map			4								4	$400.00	
Prepare watershed agreement		8	2								10	$1,400.00	
Prepare land rights work maps		8	40								48	$5,200.00	
Reviews													
Conduct internal review (QA/QC) and make modifications	15	16	16			40					87	$11,200.00	
Technical review by NWMC and make modifications		32	32			40					104	$12,200.00	
Conduct Inter-Agency Review	6	14	16			6					42	$5,530.00	
Public Open House #2	4	16	16								36	$4,800.00	
Agency Scoping Meeting #2	4	16	16								36	$4,800.00	
Prepare Final Plan-EA													
Resolve comments and incorporate changes		6	16								22	$2,500.00	
Final Plan Approval	2	16	8			4					30	$4,020.00	
Prepare final deliverables		14	20								34	$4,100.00	
Subtotals	***45***	***267***	***396***	***8***	***38***	***102***		***4***			***860***	***$107,440.00***	
Totals	***275***	***1051***	***1656***	***436***	***284***	***218***	***40***	***344***	***300***	***204***	***4808***	***$669,300.00***	

STATEMENT OF VALUE

Additional value will be provided to JWAMB members when working with the JEO team beyond the meeting the minimum NRCS and USACE requirements for Plan-EA approval. Work completed on similar projects enables our team to become more efficient and to add value enhancements into our plan development process including:

- Creation of a highly graphic and simplistic website, referred to as a StoryMap, to share updates and project material with agencies, stakeholders, and the public.
- Additional community input and meetings beyond the two required sets of agency scoping/open house meetings.
- Use of ArcGIS to geographically organize alternatives in an easy to understand manner for use at meetings.
- Creation of an H&H model that incorporates multiple flooding sources and coincides and leverages the Fremont East Drainage H&H model currently under construction.
- Plan development efficiencies integrated into this Plan-EA will equate to a focus on implementation and therefore a stronger likelihood of additional NRCS funding to design and build projects in the future.

DEVELOPMENT OF WATERSHED AND FLOOD PREVENTION OPERATIONS (WFPO) WATERSHED PLAN - ENVIRONMENTAL ASSESSMENT FOR RAWHIDE CREEK WATERSHED IMPROVEMENT PROJECT

BID PROPOSAL | 13 AUGUST 2021

Joint Water Management Advisory Board

c/o Dodge County
435 N Park Ave, Suite 101B
Fremont, NE 68025

FYRA ENGINEERING

LETTER OF INTEREST

FYRA ENGINEERING • BURIED PAST CONSULTING

13 August 2021

Joint Water Management Advisory Board
Attn: Tom Smith, Director Dodge County Emergency Management
435 N Park Avenue, Suite 101B
Fremont, NE 68025

Re: Professional Services for the Development of WFPO Watershed Plan – Environmental Assessment for Rawhide Creek Watershed Improvement Project

Dear Tom and Selection Committee:

FYRA Engineering (FYRA) is pleased to re-state or interest in this project and to submit for your review our qualifications and project proposal for professional services for the above-referenced project. To meet our understanding of the project's requirements, we have teamed with Buried Past Consulting, as we have on our other current NRCS planning efforts. We will also be happy to work with any local resource agencies including LPNNRD or other JWMAB staff to gather information in any way that makes sense for the project to allow us to focus on project details.

FYRA brings the expertise and technical competency, innovative ideas, understanding, and relevant experience to provide excellent strategic planning and technical work to JWMAB. Our experience, along with an overview of our project understanding and approach, is contained within this proposal. We believe that success on this project is substantiated by three primary factors:

1. The FYRA Team is leading the development of multiple WFPO Plan-EAs. Our planning team is further along in the NRCS State, National Watershed Center and Federal review process than any other local consultant. In fact, we may be the only consultant with official feedback from NRCS at any level. What this means to you is that we understand the process and what NRCS is looking for at all levels. With this knowledge, we can assist you in streamlining your Plan-EA development and approval process, making you eligible for construction funds sooner.
2. FYRA's Mike Sotak has led the planning, permitting, funding, design and construction phases of many of Nebraska's most challenging (large AND complex) watershed projects over the last several decades. This came largely from the ability of his team to create real-world technical models that accurately represent the pre- and post-project conditions from which flood damage reduction economics are calculated. Mike and Janel Kaufman are now working with NRCS nationally on WFPO economic guidelines and have a working relationship with the NRCS National Economics Lead, Tim Goode, who recently relocated to NRCS from the USACE Omaha District where Mike was working with him on the Deadman's Run Section 205 Project in Lincoln, Nebraska. FYRA's expertise in project economics will be crucial on this project.
3. FYRA has a technical resume like no other. This project requires a level of technical understanding and capability that surpasses the capability and experience of our competition locally. Bob Gregalunas and Connor Kelley not only have a reputation for developing hyper-accurate models of riverine and watershed systems, but also have the ability and experience in selling their results to stakeholders such as NRCS, USACE and other agencies. Bob's past work on the Rawhide Creek system for the LPNNRD and NDOT, along with his and Connor's experience on the Lower Platte River hydrologic and hydraulics updating is exactly what is needed for this project to take "big picture" work that has been done to date and create a real-life depiction of Rawhide Creek and how it reacts to the other drainage infrastructure within and surrounding it.

We trust that our team's commitment to this project is made evident through this proposal. We are deeply invested in the successful completion of the Rawhide Creek Watershed Plan and Environmental Assessment, and we recognize its vast importance to JWMAB. The FYRA Team has a long history of successful implementation of watershed projects in Nebraska, and we welcome the opportunity to continue bringing our passion for this type of work to you and your NRD. Our planning and technical teams have the capacity to complete this Plan on time as shown within.

FYRA recognizes that there are a lot of moving parts, and it will take a lot of collective experience to solve flooding issues in the study area and prepare the Plans and other applications to bring funding to the project(s) for implementation. The hydrology and hydraulics work required to adequately assess alternatives is beyond what is typically provided for these Plans. It is simply too complex and the most current models (yet to be delivered) may be sufficient to generate planning-level costs and benefits that address the purpose and need of the Plan-EA, but unless they are refined and reconfigured, they cannot ensure real-world performance needed in the study area. There are too many variables such as sources and timing of the rainfall and runoff, ice jams and how drainage infrastructure will react to all related factors.

FYRA can provide all necessary professional services to execute this Plan-EA, as well as the North Bend Drainage Ditch work currently under contract. We are similarly capable of providing all required professional services for the east Fremont Elkhorn Township work

LETTER OF INTEREST

FYRA ENGINEERING • BURIED PAST CONSULTING

to be done in developing a shovel-ready project aimed at FEMA funding. But we would best serve the JWMAB developing the hydrologic and hydraulic work that is required for all three of these projects as well as the other work currently being conducted in the study area.

We understand that the cost of this planning effort is significant. This is largely due to the federal requirements set forth in NRCS' WFPO program as dictated by the National Watershed Manual. Within this proposal, FYRA has provided the same fee set forth in our original proposal. Because that fee is within the (100%) funding provided by NRCS for this initial effort, it is our opinion that JWMAB should maximize what materials can be generated as part of this effort. Namely, the development of a hydrologic and hydraulic model that cannot only be used for the technical and economic work required for this effort, but also for generating a tool that can be paired with other work being done near the study area (such as the North Bend Drainage Ditch modeling FYRA is completing for JWMAB) to develop an over-arching model that has the detail/resolution necessary to make decisions in assessing future projects that benefit JWMAB and its goals. We understand and respect the attention to taxpayer responsibility that goes along with not spending more than is absolutely necessary. However, it should be considered that this money has already been allocated to this program and is going to be spent somewhere. Utilizing the full amount that was funded, your board can ensure that the funding goes go to a worthy, deserving, and challenging project such as this Rawhide Creek effort and the remainder of the JWMAB focus area. Should cost become any part of your selection for the most qualified firm to provide this work, we have highlighted in our fee proposal where we believe we can reduce fees, but believe wholeheartedly that you should invest this entire funded amount in this project for your constituents.

Thank you for the opportunity to submit this project proposal. If you have any questions or clarifications about the information presented, please do not hesitate to contact us. We look forward to hearing from you soon and to the opportunity to continue building our relationship with JWMAB.

For the Team,

Michael K. Sotak, P.E., D.WRE

PROJECT UNDERSTANDING

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The JWMAB was formed to assess, formulate and implement solutions to water management issues in the region in which they serve. The partner agencies recognized the inter-relatedness of the watersheds and the drainage infrastructure within them as components that must all be assessed together. To date, focus has often been on the Platte River only or on one particular component of the system. Receiving planning-level funds through NRCS' WFPO Program, allows the JWMAB the opportunity to study, plan, and formulate alternatives within the Rawhide Creek Watershed that meet the purpose and need established for the Plan-EA, which is flood damage reduction.

JWMAB desires to develop the ability to formulate a plan that accurately assesses the value and costs of measures in the study area that can help reach overall agency goals of reducing flood damage in the agency authority area. This Plan-EA will contribute to that goal, but should not be completed without considering adjacent/parallel efforts and planning work being conducted in the JWMAB authority area. This Plan-EA should identify projects that can help meet the goals of the Rawhide Creek Watershed and maximize federal dollars brought for project implementation.

You need from your consultant the ability to complete the Rawhide Creek WFPO Plan-EA, along with an in-depth understanding of the complex technical work and associated economics to make this plan a success. Return frequencies of storm events in this area are often a factor of multiple watersheds and the joint probabilities that go along with the variance in the timing and magnitudes of the events. FYRA has proven time and time again that we possess the capability to assess these complex issues accurately and defend our processes and results during review from outside agencies. We will bring that expertise and the passion for doing this type of work to you on this project! Out staff typically utilized for this Planning work has availability to perform this work efficiently. Since the initial proposal was submitted for this project, our team has submitted the Papillion Creek and Long Pine WFPO Plan-EAs for National Water Management Center (NWMC) review, increasing our Team's availability. Our recent/on-going work on the North Bend Drainage Ditch Project sets us up to hit the ground running on the technical and econmics approach to this project.

PROJECT APPROACH

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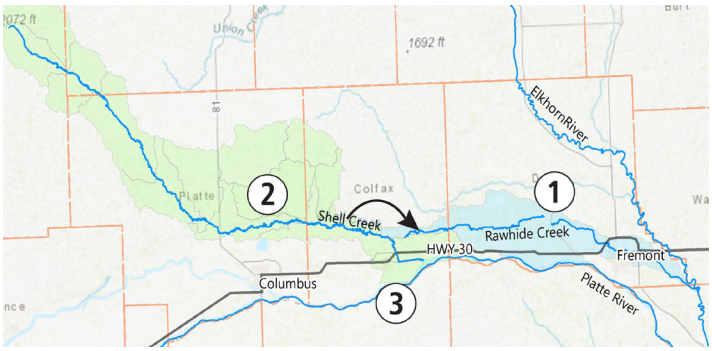
While it is understood that Federal regulations will dictate the planning process to refine the purpose and need(s) of this watershed planning study, for this proposal, it has been assumed that the primary purpose and need of flood damage reduction will be carried through the Plan-EA. FYRA's technical approach to formulating alternatives that meet that purpose and need are detailed below. This technical approach demonstrates our in-depth understanding of similar watershed improvement projects and approaches.

TECHNICAL APPROACH

In reviewing the project application prepared for this project, we agree that the best way to achieve the above-stated purpose and need is a variety of solutions to address flooding issues on a local level. The application goes into further detail about various sizes of detention cells as well as berm and channel capacity improvement work, which make sense given the elongated shape and lack of appreciable elevation change in the watershed.



The Rawhide Creek Floodplain can receive water from several sources as shown on the image above. Location 1-Rawhide Creek's drainage area (shown in light blue) from direct precipitation. Location 2-Overflow from Shell Creek during either extreme Shell Creek flooding or coincident flooding between Shell Creek and the Platte River can contribute to Rawhide Creek flooding. Location 3-Ice jams along the Platte River or open-water flooding on the Platte can overtop Hwy 30 and the railroad leading to flooding of Rawhide Creek. Any combination of the above can lead to less-common (joint probability), but more significant flooding events with higher tailwater leading to increased depths and longer inundation times.

FYRA's overall approach will be to develop a predictive model that represents the watershed well but has greater detail and resolution in areas identified early on (and already known) that are experiencing flood damages. This will allow for an assessment and screening of alternatives that will generate monetary benefits that can be shown in the Plan-EA and, more importantly, real physical and monetary benefits within the watershed community. Development of that model will be challenging. The Rawhide Creek floodplain is a unique system to understand due to its numerous flooding sources and flood mitigation systems in place. The historic Platte River floodplain is now cut off from the Rawhide Creek floodplain by both Union Pacific Railroad and US Highway 30. Multiple cutoff ditches serve to redirect flow traversing the Rawhide Creek floodplain back to the Platte River, which are effective in reducing damages during interior flooding events that occur in conjunction with minimal to moderate Platte River flooding. Once the Platte River reaches stages above the 25- to 50-year frequency level, backwater from the Platte River severely reduces the capacity of the cutoff ditches, but the cutoff ditches serve to store water within the floodplain until the Platte River recedes and gravity drainage can occur. Should flow reach the western limits of Fremont, a series of detention cells constructed as part of the Rawhide Creek Flood Control Project act to intercept the flow and offer attenuation to reduce flooding impacts downstream. At Fremont, the flow splits, with a large portion of the discharge moving northward around the City of Fremont on the north side of Highway 30 and another portion moving under Highway 30 into Fremont along Rawhide Creek.

While the above provides an overview of the broader-scale flooding during a lower probability flood event it does not adequately describe the nuances within the Rawhide Creek floodplain during smaller events and does not consider improvements made by various agencies in recent history. In the modeling used to generate the current/effective FEMA Flood Insurance Rate Maps (FIRM), blanket assumptions were made such as the demarcation of flood conveyance at County Road S, where no meaningful conveyance is carried further north despite known flooding and significant storage volume in this area. Additionally, the existing FEMA modeling does not consider the volume of water conveyed. For detailed flood modeling, the volume of water is important, particularly when sizing detention structures or considering infiltration with respect to high groundwater. The network of ditches, detention cells, and slide gates that convey water within the system (called Rawhide Creek Flood Control Project) are not included in current FEMA modeling, but have meaningful impacts to the flow distribution and peak discharges as water reaches the western end of Fremont. This is an important example of the need to refine modeling work that has been prepared using "broad brush strokes".

The balance between the modeling approach and level of detail should always be catered toward the need of the project - *what is the question that needs to be answered*? In the case of the Rawhide Creek floodplain, for a WFPO project, a more detailed analysis of the smaller-scale drainage features that specifically consider flood flow volume and groundwater levels/infiltration is required to properly size and rank potential projects so that projects that actually provide flood reduction benefits are implemented. Additionally, designing projects with an unrefined model can lead to developing projects that do not function as anticipated during flooding events. Models that do not incorporate the detention cells and the diversion of Rawhide Creek into West Branch Diversion or Ditch #8 (for instance) will likely lead to an incorrect understanding of the Rawhide Creek floodplain. Models should be developed that provide realistic flooding information to assist in making better decisions for flood mitigation and floodplain management.

PROJECT APPROACH

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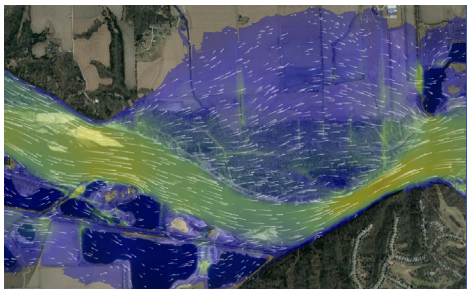
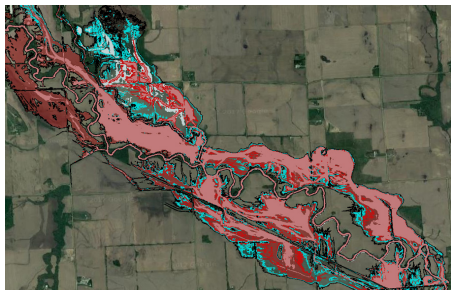
Understanding the interaction of Shell Creek, Rawhide Creek, and the Platte River is the subject of the North Bend Cutoff Ditch Project that we are currently working on and will be an important component to the overall understanding of the Rawhide Creek WFPO Project. These systems all act together at different times and seasons leading to flooding in this area. FYRA staff's previous work on the Platte River and Rawhide Creek for NDOT's US Highway 30 project as well as previous assistance offered to LPNNRD with respect to the Rawhide Creek Flood Control Project provides FYRA with a "head start" on understanding this area. Our approach to modeling is centered around providing realistic models that are used to develop the most beneficial solutions to the problems at hand.





FYRA's devotion to developing hyper-accurate hydrologic and hydraulic two-dimensional, unsteady flow models has proven incredibly valuable to three projects in recent time. Image 1 - The modeling that FYRA has completed for the LPSNRD's Deadman's Run project is changing how the City of Lincoln and the USACE is implementing the USACE's 205 project components. Image 2 - The 2-D mobile bed HEC-RAS model prepared for the P-MRNRD has addressed disconnects in previous modeling and observed water surface elevations in recent flood events. Image 3 - The Sand/ Wahoo Creek confluence 2-D, unsteady flow hydraulic model downstream of Lake Wanahoo was prepared to address landowner concerns that contended that Lake Wanahoo was actually making flooding worse in this area. This work was also used in the Wahoo Creek Watershed NRCS WFPO Plan-EA to demonstrate that Lake Wanahoo did not affect downstream flood damage reduction economics calculated for the development of the Plan-EA. All three models have been widely accepted at every level of review they have been through.

Models that exist today are limited because FEMA modeling is generally focused on determining the 1% Annual Chance Floodplain. FEMA modeling does not consider the influence of non-accredited levees or flood control systems that do not meet FEMA requirements. A significant limitation is also the use of peak discharges and steady-state modeling as opposed to volume corrected hydrographs and unsteady state modeling that correctly allocate flood volumes within the channel and floodplain. These are just some of the simplifying assumptions that prevent most FEMA models from being utilized as design models or models that can provide insight for flood mitigation and floodplain management. A purpose-built model can incorporate all features that influence hydraulics within the basin, as well as human decisions about the operation of flood reduction measures. This allows for creation of a "realistic" basin model that can better provide insight for flood mitigation design projects and flood management purposes.

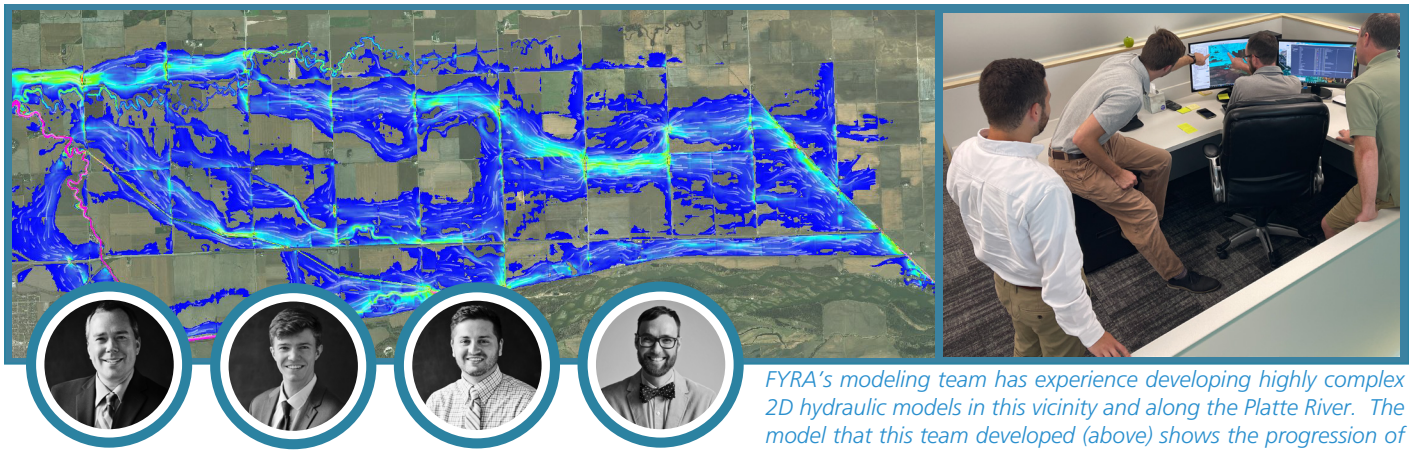
Because our approach largely hinges on the development of a suitable predictive model, we have chosen to detail how we envision developing such a model, given the availability of work completed to date.

USACE modeling has been completed that includes the Rawhide Creek Basin and may eventually provide a useful starting point for hydraulics once it is released by the USACE. This modeling does not, however, extend upstream of North Bend, which limits its ability to provide meaningful guidance in assessing projects that are affected by flows originating upstream of North Bend. Until the model is released, it is not currently known what level of assistance the model will provide. What is known at this point is that the USACE is taking a more physically-based modeling approach to ice-jam analysis within the construct of a 2D model. This is a big improvement over the standard approach that has been followed in the past and we are looking forward to seeing where this can go in the future. In the end, the new analysis will not change the joint-probability based statistical methods used to combine the multiple seasons into a single risk elevation at each cross section. What we also know is that the result of the effort by the USACE is not directly usable for the efforts needed in this project. Because each season and each flooding source has a different flood hydrograph and flood volume, they have to be considered separately for design purposes to establish each potential project's effectiveness. Some floods generate significant peak discharges, some develop significant volumes; all types of floods must be understood to design a project correctly for this basin. FYRA has had more experience along the Platte River dealing with hydrologic and hydraulic analyses than anyone outside of NeDNR and the USACE. Our experience, coupled with the experience of everyone associated with the JWMAB, means that we can pull together all the parts needed to ensure that only projects that will actually work will move forward through the WFPO process.

Groundwater is a significant factor in the surface water modeling that needs to take place. High groundwater can affect the dynamics of surface water runoff, slow infiltration, and even use up available volume in detention basins. The effects of groundwater need to be considered in the preparation of surface water models and in the formulation and screening of alternatives to ensure

PROJECT APPROACH

FYRA ENGINEERING • BURIED PAST CONSULTING



FYRA's modeling team has experience developing highly complex 2D hydraulic models in this vicinity and along the Platte River. The model that this team developed (above) shows the progression of Shell Creek flows spilling into Rawhide Creek and then travelling to the North Bend Cutoff Ditch. This team has also developed 2D models for multiple projects in Nebraska and Iowa.

that again, the projects implemented will perform as intended. Ignoring groundwater can alter the ultimate performance of future projects. FYRA will work with LPNNRD staff and other agencies with experience in the area and will make this a point of discussion during the preparation of the Plan-EA.

Once the models are completed, they will be used to formulate and screen alternatives for technical, environmental, and economic considerations, and ultimately to justify project economics. This is why it is vital that the models can withstand the test of any technical review and generate results that are favorable for project stakeholders.

Regarding water quality, there are no known impairments on Rawhide Creek, Lost Creek, or Otoe Creek. The integrated reports list the Class 2 and 3 streams as supporting aquatic life, agricultural water supply, and aesthetics for the branches that were studied. For this reason, any improvements to the local surface water or groundwater supplies will be noted as an ancillary benefit but will not likely serve as a purpose for the project. Limiting purposes can also help to streamline the Plan-EA, so focusing on flood damage reduction still appears to make the most sense.

The LPNNRD has an active Integrated Management Plan (IMP). The purpose of the IMP is to guide the use of the surface and groundwater resources within the District, being mindful of finite supplies of water, especially in the Lower Platte River Basin where water supplies are limited in the summer months and threatened and endangered species associated with Platte River habitat are protected. The NRD's IMP lists the following goals that are related to this project:

Goal 1 – Water supply inventory. Objective 1.1: *Conduct data collection and analyses of current and potential water supplies using best available information, data, science, and considering future technological advances.*

> ***Action Item 1.1.5*** *Evaluate the potential to augment existing supplies by accessing additional waters within and outside of the District, including recharge projects, improving existing and adding new water storage/conveyance infrastructure, or through brackish water supplies.*

Goal 3 – Sustainability of the resource. Objective 3.1: *Update policies, practices, and programs to maintain and improve water supply and water quality as it affects supply*

> ***Action Item 3.1.1.*** *Where feasible, promote practices focused on reuse of rain, storm, waste, industrial, or irrigation water.*
>
> ***Action Item 3.1.3*** *Cooperate with other entities to identify, evaluate, and prioritize locations and types of conjunctive water management and water use projects.*

Goal 5 – Basin-wide coordination. Objective 5.2: *Coordinate to expand conjunctive management opportunities to mitigate new uses*

> ***Action Item 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*
>
> ***Action Item 5.2.2*** *Evaluate benefits and limitations of potential conjunctive management projects*

Flood control is a benefit of conjunctive management projects and any alternatives developed can be shown to support this goal in the Plan-EA. Most of the alternatives identified in the project application can be shown to benefit all of the goals stated above. And while this may not add any quantifiable value to the project's economics, it certainly can be used to help justify the need for

the projects.

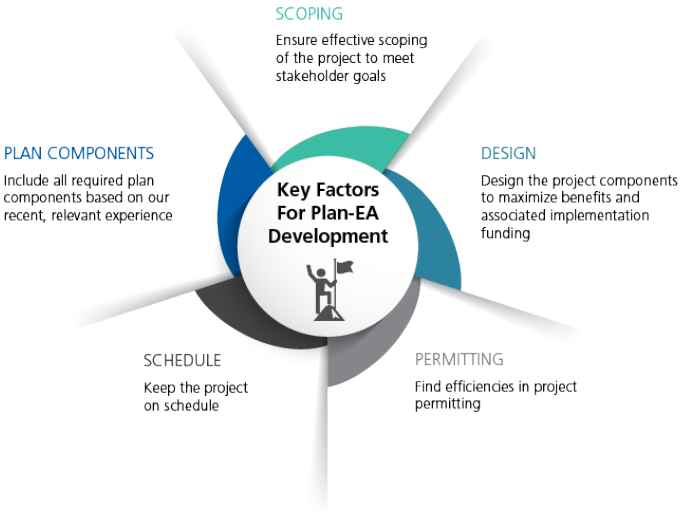
PERMITTING

Although USACE 404 permitting is outside of the scope of this planning project, understanding USACE and other permitting implications is important for Plan approval and future implementation. New flood reduction projects, especially dams, meet some resistance in today's world from regulators, agencies, and environmental interest groups. Sensitive species and flow regulations in the Platte River will also be important factors to consider during Plan-EA development. FYRA staff avoid unanticipated permitting pitfalls by working together throughout project scoping, field work, modeling, and alternatives analysis to ensure the projects that provide the most real-world benefits can actually be implemented.

Legally, the planning process must consider the basin appropriation status as well as the presence of senior downstream water rights. This usually means that low-level drawdown valves must be included in any detention structure, but also that the usefulness of the structure in meeting the watershed's needs must be considered. Releasing water to downstream senior water rights is not difficult, and in the case of dry detention, usually not an issue because the basins are only storing water during runoff events when water is abundant in the watershed.

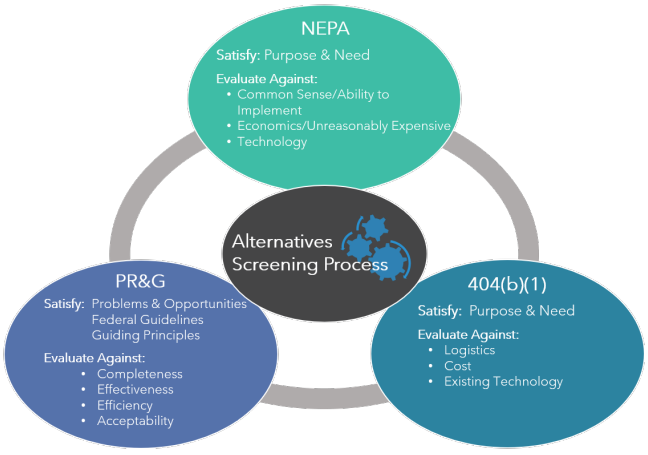
PLAN-EA COMPONENTS

Many firms have experience with watershed planning, permitting, and designing watershed structures and other Best Management Practices (BMPs). While that technical ability will be important, the key to successful Plan-EAs is an approach that focuses on the five key factors shown in the figure to the right.



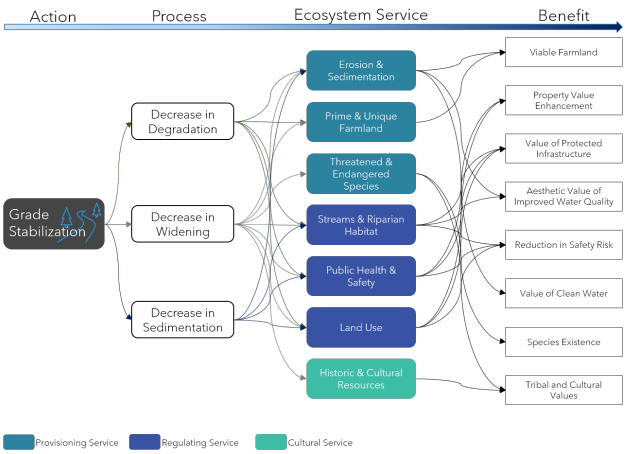
The final deliverable for this project must be a watershed Plan-EA that is accepted by the NRCS through state and national reviews. Approval will require that guidelines outlined in both the National Watershed Program Manual and Handbook for scoping and plan elements be followed. The alternatives analysis, economic analysis, and ecosystem services approach must be applied as outlined in the recently adopted Principles, Requirements, and Guidelines (PR&G) for Water and Land Related Resources Implementation Studies. All National Environmental Policy Act (NEPA) and USACE 404(b)(1) requirements must be incorporated, when applicable, to ensure a streamlined review process and prevent permitting problems or delays.

Project scoping with NRCS, the NRD, and USACE (if they choose to be a Cooperating Agency) will define the purpose and need of the Plan-EA and determine the social, cultural, and environmental resources to be assessed. The Plan-EA will include an analysis of existing conditions based on input from stakeholders and agencies during scoping. Some of the resources included in this analysis are threatened and endangered species, prime and unique farmland, wetlands, habitat, climate change, and social and cultural resources. FYRA will work with the NRD to develop a Plan of Work and a Public Participation Plan, which will define the responsibilities and goals and of everyone involved and develop a path for community outreach that meets the needs of the watershed community.



The figure above shows the integrated alternatives screening process that incorporates multiple Federal guidelines.

Understanding the intricacies of the NRCS planning process and multiple Federal requirements for environmental analysis will minimize comments and delays as the Plan-EA moves through review at the Federal level. Incorporating PR&G with the National Watershed Program Manual and the National Watershed Program Handbook requirements can be a cumbersome task without sufficient experience. The FYRA Team has had the opportunity to study the new guidelines and develop a process through the development of other Plan-EAs to ensure compliance in a readable and defensible product. We will bring these lessons learned to the development of the Rawhide Creek Watershed Plan-EA to ensure efforts focus on



This Ecosystem Services Concept Diagram is a new requirement of the PR&G and shows how alternatives, resources, and benefits can be discussed and analyzed with a comprehensive, holistic approach.

priorities and key issues rather than struggling through logistical hoops and requirements our team has already navigated.

One example of a required PR&G element is the alternatives identification and screening process. Formulating an alternatives analysis that incorporates both NEPA and 404(b)(1) requirements is well known throughout the permitting and planning community but incorporating PR&G into the analysis adds a new element to the document formulation. The FYRA team understands this process and will develop the Plan-EA with this requirement in mind from the start.

Another PR&G element is an analysis of the resources of concern through an ecosystem services analysis lens. This means that resources are grouped into different service areas (provisioning, regulating, supporting, and cultural) and analyzed holistically. This process enables a wider approach and broader view of both positive and negative impacts. Although the National Economic Development alternative (the one that is the most economically beneficial from a monetary standpoint) was required as the preferred alternative in the past for flood risk reduction projects, project sponsors are no longer bound to this alternative. Incorporating monetary benefits, non-monetized benefits, and considerations such as which alternative is preferred by the local watershed community can help identify and ensure that the best overall project is selected as the preferred alternative and subsequently chosen for additional funding and implementation.

The Plan-EAs developed in collaboration with the watershed community, stakeholders, and NRCS staff, will be reviewed by Nebraska NRCS staff, the NRCS National Water Management Center, and USACE (if they choose to be a Cooperating Agency) to ensure compliance with NEPA regulations and adherence to all NRCS design guidelines. It will also be reviewed for policy adherence by NRCS staff in Washington. The FYRA Team has recent and relevant knowledge of the nuances of NRCS processes, formats, and procedures for design and review of similar watershed projects. Projects in the floodplain will also be reviewed by the NeDNR Floodplain section, and some flood reduction structures may require review by NeDNR Dam Safety. FYRA is very familiar with the personnel and procedures for floodplain and dam permitting in Nebraska, and we will work proactively with agency review professionals to increase submittal and review efficiency and keep the project on schedule and compliant.

COMMUNITY-FOCUSED PUBLIC OUTREACH AND INVOLVEMENT

FYRA has a wealth of recent experience in watershed planning. Most of the experience can be lumped into four project types that created the need for the planning:

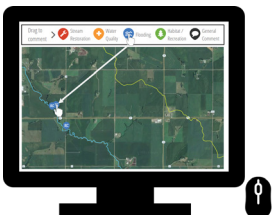
- Dam/Reservoir Planning
- Lake Rehabilitation
- Water Quality Planning (EPA Section 319)
- USDA-NRCS Watershed Flood Protection Operations (WFPO)

In all project types, there is usually the need to work with the watershed community to "sell" a plan that meets their needs (most often the "Purpose and Need" of the planning effort). Landowner/watershed community buy-in and participation will be vital for several reasons, not only to develop an adequate list of projects for implementation, but also to help meet NRCS requirements. For example, floodwater retention structures funded by NRCS must have at least fifty percent of the contributing watershed protected by land conservation measures and easements/land acquisition and operations and maintenance agreements must be established. Accomplishing this will require early and proactive compilation of potential projects combined with landowner outreach. Sometimes, the most technically sound solutions are not met with open arms from the watershed community or other stakeholders. Our approach to this outreach is to anticipate and be prepared for all potential conflicts, provide information in a way that can be easily understood, and to ensure that every landowner feels that their concerns are heard and are being considered. This approach is detailed as follows:

1. Ensure that the watershed community is involved from the start. If any potential "naysayers" are known ahead of time, do your best to include them. Document attempts to get their input if they are not willing to participate voluntarily. Keep them in the loop regardless!
2. Work with the watershed community to establish goals and collect input about how to best judge success. Make

sure that benefits help depict the bottom-line improvements for producers. How will this improve yield? How will this improve soil and nutrient management? How will this decrease flooding frequency? Show how the work will improve qualitative and quantitative interests of each producer affected by the project!

3. Explain the need to develop qualitative/quantitative metrics for the purpose of the alternatives development and screening process that can later be justified with post-project monitoring. It is important to correlate the tools used for screening with available methods of monitoring results later!
4. Develop "enhanced" existing and future conditions models that visually show how proposed alternatives meet the goals of the planning effort. Model output shown in mapped graphics and easy-to-understand tabular outputs are a must!
5. Make time for one-on-one communication at planned workshops and public meetings. The ability to explain these outputs on a one-to-one basis really sets FYRA's staff apart. This inter-personal relationship building between the technical staff and the landowners/watershed community helps to build trust.
6. Involve trusted technical agencies/staff as much as possible. Coordination between the local NRCS field staff or other professionals also helps to bridge any trust gaps.

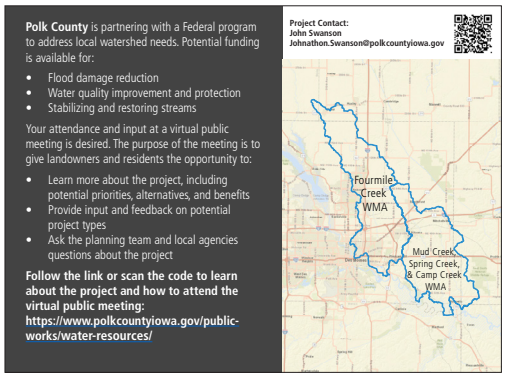


SCAN THIS QR CODE WITH YOUR PHONE TO SEE FYRA'S SOCIAL PINPOINT SITE FOR POLK COUNTY IOWA'S WFPO PLAN-EA

In today's COVID-affected world and in working with rural watershed communities, FYRA has found that offering electronic/virtual options for public input has been well-received in correlation with direct landowner communication. It is important that project websites do not just tell a story, but rather provide an interactive mechanism for maximizing public input. FYRA has been utilizing the Social Pinpoint community engagement platform, which allows for stakeholders to 'drop a pin' directly onto a map of the watershed. For example, landowners can "drop a pin" to identify locations where they have witnessed flooding in the past and even attach photographs of their land and insert comments.

The project website also allows for community surveys, which helps to both gather relevant landowner concerns and allows landowners to feel heard in the process. Links to public meetings and recorded versions of previously held meetings can also be added to the project website which gives access to those unable to attend at a specific time. In addition, project specific information can be added as the Plan-EA is being developed.

Keeping landowners, the watershed community, and agencies involved in the planning process through advisory groups and additional virtual and in-person meetings is another approach FYRA has had success with to keeping rural watershed communities engaged. This process can look different for each project and FYRA understands the importance of establishing a watershed-specific schedule and identifying vital community members from the project start.



To get the word out, FYRA has worked with local communities to place flyers in local community gathering spots as well as mailings to landowners. These flyers have the QR code for the project website, contact information for the project, and a project overview.

CONFLICT OF INTEREST STATEMENT AND DESCRIPTION OF INSURANCE

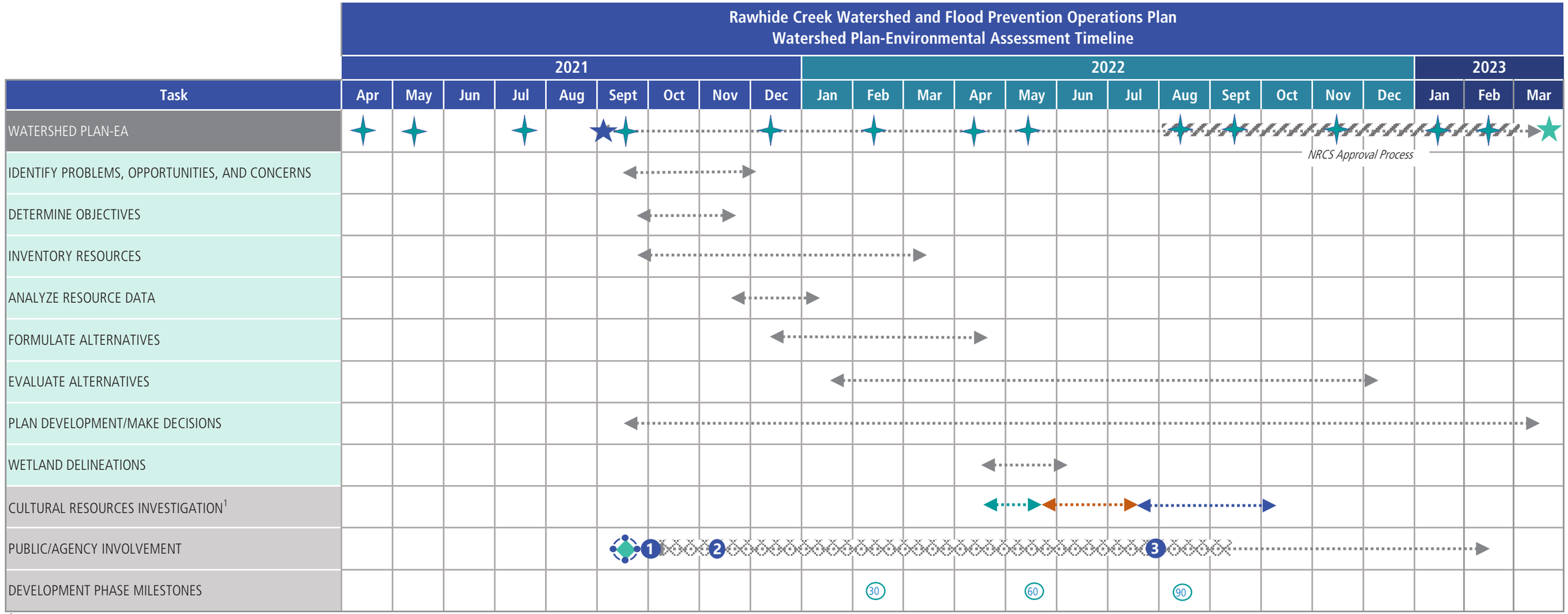
All FYRA employees and subconsultants whose names are listed in this Proposal certify that they have NO affiliations with or involvement in any organization or entity with any financial interest, or non-financial interest with the JWMAB or the project discussed in this proposal.

FYRA maintains a full suite of Commercial General, Automobile, Workers Compensation, Umbrella and Professional Liability Insurance that meets or exceeds the minimum capacity requirements of all of our clients. A certificate of insurance naming the JWMAB as a co-insured on this project will be provided along with contract documents.

PROPOSED PROJECT SCHEDULE

FYRA ENGINEERING • BURIED PAST CONSULTING

Rawhide Creek Watershed and Flood Prevention Operations Plan
Watershed Plan-Environmental Assessment Timeline



[1] *Field work*, *Report of Findings, Further Review, and NRCS Local Review*, *SHPO/THPO Consultation*

Issues That Can Impact Schedule

- Significant Cultural Resources with APE
- T&E: Field Surveys or Likely to Adversely Affect
- Agency Review Times
- Significant Weather Events
- Public or Agency Controversy
- Agency Turnover

- Consultant Selection
- Final Plan-EA
- NRCS Agreement Milestone
- (30) Meeting with JWMAB and NRCS

Public & Agency Involvement

- Invite USACE to be Cooperating Agency
- Set up Project Website (Social Pinpoint)
- Community Based Planning
- 1 Initial Scoping Meeting with JWMAB, NRCS
- 2 Public and Agency Scoping Meetings
- 3 Public and Agency Meetings

BREAKDOWN OF COSTS BY TASK

FYRA ENGINEERING • BURIED PAST CONSULTING

Tasks	Rawhide Creek Watershed Improvement Project Watershed Plan-EA	Client Manager $225	Senior Engineer/ Economist $200	Project Engineer $160	EI / Scientist $110	Accounting $80	Expenses	Total
Task No.	**Identify Problems, Opportunities, and Concerns**							
1.1	Project Management[1]	8	8	40	4			
1.2	Develop Plan of Work			8	4			
1.3	Develop Public Participation Plan	4	8	16				
1.4	Public and Agency Scoping Meetings (1 each)	2	8	24	16		$300	
1.5	Public and Agency Meetings (1 each)	2	8	24	16		$300	
	Identify Problems, Opportunities, and Concerns Task Total	$3,600	$6,400	$17,920	$4,400	$0	$600	$32,920
Task No.	**Determine Objectives**							
2.1	Project Management[1]	2	2	8				
2.2	Develop Plan-EA Outline			4	8			
2.3	Develop and Describe Purpose and Need	8	16	24				
	Determine Objectives Task Total	$2,250	$3,600	$5,760	$880	$0	$0	$12,490
Task No.	**Inventory Resources**							
3.1	Project Management[1]	8	40	40			$500	
3.2	Inventory of Existing Data		**16**	**8**	**48**			
3.3	Analysis of Affected Environment	4	**8**	**80**	**100**		$500	
3.4	Field Surveys	4	60	80	140		$1,590	
3.5	Collect and Analyze data on Historic and Cultural Resources/Properties			16	16		$35,000	
3.6	Formulation of Alternatives		60	40	60			
	Inventory Resources Task Total	$3,600	$36,800	$42,240	$40,040	$0	$37,590	$160,270
Task No.	**Analyze Resource Data**							
4.1	Project Management[1]	2	8	8				
4.2	Analysis of Collected Resource Data	4	32	44	24			
4.3	Integration with other Watershed Plans and Goals	4		8	8			
	Analyze Resource Data Task Total	$2,250	$8,000	$9,600	$3,520	$0	$0	$23,370
Task No.	**Formulate Alternatives**							
5.1	Project Management[1]	8	24	16				
5.2	H&H Assessment	4	**120**	8	**140**			
5.3	Identification of Alternatives	8	24	32	24			
5.4	Site Prioritization	2	24	8	60			
	Formulate Alternatives Task Total	$4,950	$38,400	$10,240	$24,640	$0	$0	$78,230
Task No.	**Evaluate Alternatives**							
6.1	Project Management[1]	8	24	24				
6.2	Site Selection		**60**	**40**	**80**			
6.3	Alternative Screening		**120**	**60**	**120**			
6.4	Preliminary Ecosystem Trade-off Analysis	4	**24**	**40**	8			
6.5	Preliminary Design	12	**120**	**40**	**280**			
6.6	Initial Benefits Analysis and Economic Assessment	8	80	40	40			
	Evaluate Alternatives Task Total	$7,200	$85,600	$39,040	$58,080	$0	$0	$189,920
Task No.	**Plan Development/Make Decisions**							
7.1	Project Management[1]	4	24	40		24		
7.2	Develop, Write, and Summarize Plan	8	**60**	**140**	**120**			
7.3	Development of Required Maps and Figures			24	120			
7.4	Develop Land Rights and Alternative Costs	4	24	16	80			
7.5	Analysis of Future Permitting Needs			16	16			
7.6	Ecosystem Trade-off Analysis		16	32	8			
7.7	Benefits Analysis and Economic Assessment	8	80	60	70			
7.8	Plan Review	16	24	100	24			
	Plan Development/Make Decisions Task Total	$9,000	$45,600	$68,480	$48,180	$1,920	$0	$173,180
	Subtotal Costs	$32,850	$224,400	$193,280	$179,740	$1,920	$38,190	$670,380

NOTES/ASSUMPTIONS

[1] Includes coordination with JWMAB, NRCS, USFWS, NGPC, USACE, and other agencies/ government entities (when applicable).

Task 1.3 Includes project website maintenance. Includes development of Community Based Planning, if applicable.

Task 1.4 Includes letters and notification to agencies and stakeholders. NRCS will handle all consultation with SHPO and Tribes.

Task 1.5 Includes letters and notification to agencies and stakeholders. NRCS will handle all consultation with SHPO and Tribes.

Task 3.1 Includes Community Based Planning initiatives, if applicable.

Task 3.3 Assumes programmatic consultation with USFWS and NGPC and no field surveys required by team.

Task 3.4 Includes preparation and review discussions of Plan outline, 50% complete, and 100% complete. Assumes final comments and quality control between 100% and Final Plan submittal.

Task 3.5 NRCS archeologist will assist in cultural resources identification. Field surveys and reporting will be completed by a subconsultant in coordination with NRCS.

Task 7.1 Includes monthly invoicing/project updates.

Task 7.2 Assumes no unforeseen controversy and the development of an Environmental Assessment and FONSI (not an Environmental Impact Statement).

Task 7.8 Assumes one round of comments from State NRCS and one round of comments from the NWMC. Ongoing coordination and review will occur with State NRCS staff.

Tasks shown in ORANGE indicate areas where FYRA believes proposed fees and efforts could be reduced if the JWMAB desires to spend less than the awarded planning fee.

Dodge County Emergency Management
435 N Park Ave STE 101B Fremont, NE 68025
Office: 402-727-2785
FAX: 402-727-2840 EMAIL: Dodgecoema@gmail.com

August 25th, 2021

Re: Rawhide Creek Watershed Work Plan – Environmental Assessment
(NR216526XXXXC010) Engineering Firm Notification

Lalit Jha, JEO Consulting Group,

Thank you for submitting a proposal for the Rawhide Creek Watershed Work Plan-Environmental Assessment project. On August 17th, 2021, representatives of the Dodge County Joint Water Management Advisory Board (JWMAB) reviewed two (2) engineering firm proposals for the project in the Dodge County Emergency Management office.

Based on the proposals received, it was the JWMAB proposal review committee's recommendation that the County proceed with contracting with JEO Consulting Group to complete the project. Dodge County Board approved the committee's selection during their August 25th meeting.

Congratulations on the selection for the project. Your local contact for the project will be Tom Smith, Dodge County Emergency Management Director, dodgecoema@gmail.com or work cell 402-909-2135. We request you provide Dodge County the necessary contract documentations required for your firm to proceed with the project. The NRCS representative assigned to the project is Richard Vaughan.

Very Respectfully,

Thomas Smith
Director
Dodge County Emergency Management

Enclosure-None

Saunders County SID No. 8 – Woodcliff Lakes
980 Co Rd W, T-1018, Suite A
Fremont, NE 68025
Address 3
402-753-0247; office@woodclifflakes.com

July 20, 2021

Mr. Eric Gottschalk
General Manager
Lower Platte North NRD
511 Commercial Park Road
Wahoo, NE 68066

RE: Cost-share, Financial Assistance for Bank Stabilization near Lots 1142 – 1134 Project

Dear Mr. Gottschalk:

Saunders County SID No. 8 – Woodcliff Lakes would like to formally request cost-share assistance from the Lower Platte North NRD for a new bank stabilization project that arose after the spring 2021 ice jams. The ice jam related flooding eroded a significant portion of floodplain bench, encroaching on the toe of the roadway slope and associated buried utilities. The project consists of stabilization of approximately 550 feet of Platte River bank, using a combination of peaked stone toe protection and six (6) bendway weirs. The project was publicly advertised for bids, and a bid letting was held on 7/8/2021. A total of eight (8) bids were received. The SID is currently working on contracting with the low bidder, Sawyer Construction.

The SID would like to formally request the NRD provide cost-share assistance for the bank stabilization project described above, up to 50% of the total project cost, $216,185, $108,092.50. The cost share could be provided over the course of multiple years.

We appreciate the NRD's support and assistance with this important project. Feel free to call me at (402)680-4953 or email me at lonniemahrt@jjmsearch.com if you have any questions. We look forward to hearing your feedback to this request for assistance.

Sincerely,

Lonnie D. Mahrt

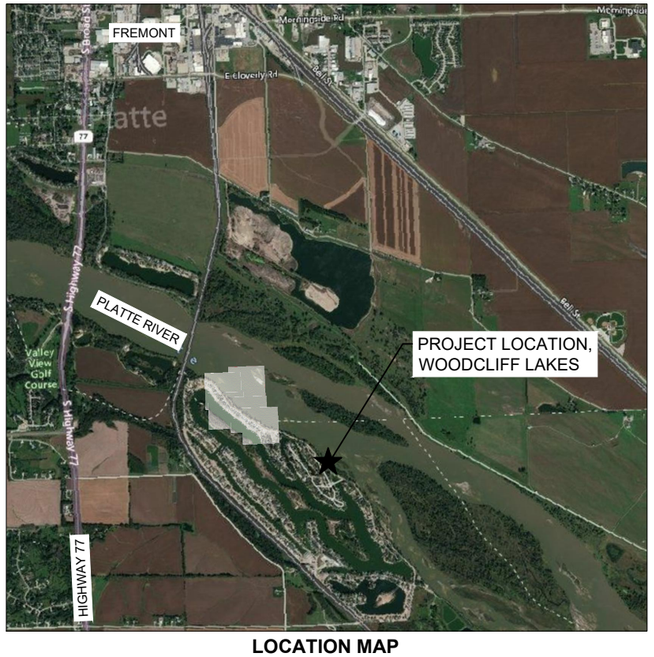
Lonnie Mahrt
SID Board Chair

Enclosure: Final plans for Bank Stabilization near Lots 1142 – 1134

WOODCLIFF LAKES
BANK STABILIZATION NEAR LOTS 1142-1134
SAUNDERS COUNTY SID NO. 8
SAUNDERS COUNTY, NEBRASKA

JEO PROJECT NUMBER 210511.00

INDEX OF SHEETS:



LOCATION MAP
SCALE: 1" = 2000'

ESTIMATE OF QUANTITIES			
Item #	Description	Unit	Quantity
1	Mobilization	LS	1
2	Bonding and Insurance	LS	1
3	Site Grading	LS	1
4	Clearing and Grubbing	LS	1
5	Riprap, NDOT Type C	TON	1400
6	Surge/Erosion Stone	TON	950
7	Crushed Rock Surfacing	TON	60
8	Crushed Rock Base Course	TON	44
9	Salvage and Reuse Existing Riprap	LS	1
10	Straw Wattle	LF	750
11	Seeding and Mulching, Floodplain Mix	AC	0.95
12	Traffic Control	LS	1.0

811 Know what's below. Call before you dig.

NOTE:
NEITHER THE OWNER (CLIENT) NOR JEO CONSULTING GROUP, INC. ASSUMES ANY RESPONSIBILITY FOR UTILITY LOCATIONS BEING ACCURATELY SHOWN OR NOT SHOWN ON THE PLANS. A REQUEST FOR UTILITY LOCATES MUST BE MADE BY THE CONTRACTOR FOR THIS LOCATION AS PER THE ONE-CALL NOTIFICATION SYSTEM ACT.

THE EXACT LOCATION AND/OR SIZE OF UNDERGROUND FEATURES MAY NOT BE ACCURATELY, COMPLETELY AND RELIABLY DEPICTED. FIELD VERIFICATION OF UTILITIES MAY BE REQUIRED. CONTRACTOR(S) SHALL NOTIFY THE RESPECTIVE UTILITY COMPANIES BEFORE COMMENCING ANY WORK.

JEO CONSULTING GROUP
1-800-728-8567

COVER SHEET

PROFESSIONAL CIVIL ENGINEER
JACOB A. MIRIOVSKY
E-16129
6/16/2021
STATE OF NEBRASKA

PROJECT NO.	210511.00
DATE	6/16/2021
DRAWN BY	JAA
FILE NAME	S-210511.00.dwg
FIELD BOOK	WOODCLIFF #14
FIELD CREW	M.S. & N.F.
SURVEY FILE NO.	SV_210511
PLAN IN HAND INITIALS	N/A
PLAN IN HAND DATE	N/A
70 PERCENT REVIEW INITIALS	JGP
70 PERCENT REVIEW DATE	5/5/2021
95 PERCENT REVIEW INITIALS	JGP
95 PERCENT REVIEW DATE	5/7/2021
REVISIONS	

LINESTYLES

ITEM	SYMBOL
BREAK LINE	
CABLE TELEVISION	TV TV
CABLE TV (NS)	<TV> <TV>
CENTERLINE OF ROAD	
CONTOUR MINOR (EX)	1202
CONTOUR MAJOR (EX)	1200
CONTOUR MINOR (EX,SCREENED)	1202
CONTOUR MAJOR (EX,SCREENED)	1200
CONTOUR MINOR (PR)	1202
CONTOUR MAJOR (PR)	1200
LIMITS OF CONSTRUCTION	LOC LOC
CULVERT	
ELECTRIC (OVHD)	OHE OHE
ELECTRIC (OVHD, NS)	<OHE> <OHE>
ELECTRIC (UGND)	UGE UGE
ELECTRIC (UGND, NS)	<UGE> <UGE>
FENCE (WOODEN)	
FENCE (WIRE OR UNKNOWN)	
FENCE (CHAINLINK)	
FENCE (SECURITY)	
FIBER OPTIC LINE	FO FO
FIBER OPTIC LINE (NS)	<FO> <FO>
FLOWLINE (BREAKLINE)	
GAS LINE	G G
GAS LINE (NS)	<G> <G>
GUARDRAIL	
PROPERTY BOUNDARY	
PROPERTY LOT LINES (PR)	
PROPERTY LINES (EX,NS)	
RIGHT-OF-WAY LINE	ROW ROW
RAILROAD RIGHT-OF-WAY	RR ROW
RAILROAD TRACKS	
RETAINING WALL	
SANITARY SEWER (EX)	8" SAN
SANITARY SEWER (NS)	<SAN> <SAN>
SANITARY SEWER (PR)	8" SAN
SAN SEWER FORCE MAIN (EX)	8" FM 8" FM
SAN SEWER FORCE MAIN (PR)	6" FM 6" FM
STORM SEWER (EX)	12"ST (OFFSET TO PIPE SIZE)
STORM SEWER (NS)	<ST> <ST>
STORM SEWER (PR)	12" ST (OFFSET TO PIPE SIZE)
TELEPHONE LINE (UGND)	UGT UGT
TELEPHONE LINE (UGND,NS)	<UGT> <UGT>
TELEPHONE LINE (OVHD)	OT OT
TELEPHONE LINE (OVHD,NS)	OT OT
TERRACE	
CROPLINE	
TRAVELED WAY	
WATER (EX)	6" W 6" W
WATER (NS)	<W> <W>
WATER (PR)	6" W
FIRE SERVICE	6" F 6" F
EXISTING	EX
EXISTING, NOT-SURVEYED	NS
PROPOSED	PR
OVERHEAD	OVHD
UNDERGROUND	UGND

COMMON HATCHING

ITEM	HATCH
ASPHALT PAVEMENT (EX.)	
CONCRETE PAVEMENT (EX.)	
GRAVEL (EX.)	
BRICK PAVEMENT (EX.)	
ASPHALT PAVEMENT (PR.)	
CONCRETE PAVEMENT (PR.)	
CONCRETE SIDEWALK (PR)	
GRAVEL (PR.)	
BRICK PAVEMENT (PR.)	
RIP RAP	
SEEDING	
MATTING	
UNDISTURBED EARTH	
EARTH	
GRANULAR FILL	
SAND MORTAR, PLASTER	
CONCRETE	
BRICK	
CONCRETE BLOCK	
METAL	
WOOD FRAMING	
WOOD FRAMING INTERRUPTED MEMBER	
BATT INSULATION	
RIGID INSULATION	

UTILITIES

ITEM	SYMBOL
STORM SEWER	
CURB INLET	
GRATE INLET	
CATCH BASIN	D
STORM SEWER MANHOLE	Ⓓ
SANITARY	
CLEANOUT	Ⓒ
SEPTIC TANK	(S)
SANITARY MANHOLE	
POWER, ELECTRICAL, LIGHT, AND TRAFFIC	
AIR CONDITIONING UNIT	A
ANTENNA	
ANCHOR POLE/POST	
GUY POLE	
GUY WIRE ANCHOR	
ELECTRICAL HIGHLINE TOWER (METAL OR CONCRETE)	
POWER POLE (EXISTING)	
POWER POLE (PROPOSED)	
POWER (ELEC) PEDESTAL	P
POWER (ELEC) PULL BOX OR MANHOLE	Ⓟ
POWER (ELEC) METER	
LIGHT POLE	
TRAFFIC SIGNAL	
TRAFFIC SIGNAL BOX	SB
TELEVISION PEDESTAL	TV
TELEVISION MANHOLE	Ⓣⓥ
WATER	
WATER MANHOLE	Ⓦ
WATER VALVE	
WATER SHUT OFF OR CURB STOP	
WELL	
WATER METER	W
WATER METER PIT	WP
YARD HYDRANT	
WATER ELEVATION	
WATER TOWER	
FIRE HYDRANT (EXISTING)	
FIRE HYDRANT (PROPOSED)	
FIRE HYDRANT IN PROFILE	
WATER FITTINGS	
11- 1/4°	
22- 1/2°	
45°	
90°	
CROSS	
PLUG	
REDUCER	
TEE	
GAS	
GAS METER	G
GAS MANHOLE	Ⓖ
GAS FILL PIPE	
GAS PUMP	
GAS VALVE	
GAS VENT	Ⓥ
TELEPHONE	
FIBER OPTICS PULL BOX	FO
TELEPHONE POLE	
TELEPHONE PULL BOX OR MANHOLE	Ⓣ
TELEPHONE PEDESTAL	T
MANHOLE (NON-SPECIFIC)	
UNDERGRND STORAGE TANK	UST
VALVE (NON-SPECIFIC)	

SITE & SIGNAGE

ITEM	SYMBOL
SIGN	
BARRICADE	
ROAD SIGNS	
COUNTY ROAD	0
INTERSTATE HIGHWAY	0
STATE HIGHWAY	0
U.S. HIGHWAY	0
MILE MARKER POST	M
RIGHT OF WAY MARKER	R
RAILROAD CROSSING SIGNAL	
RAILROAD SWITCH	
FLAG POLE	
MAILBOX	
PROPANE TANK	
SATELLITE TV DISH	
WINDMILL	

CONTROL & ELEVATION

ITEM	SYMBOL
BENCHMARK	BM
CONTROL POINT (NON-PROPERTY)	
MONUMENT FOUND (PROPERTY)	
MONUMENT SET	
TEMPORARY POINT	
TEST BORING	
POINT ELEVATION (EXISTING)	× 0.00
POINT ELEVATION (PROPOSED)	0000.00 TC 100.00 TC
TOP OF PAVEMENT	TP
TOP OF CURB	TC
GROUND	GR
TOP OF WALL	TW
BOTTOM OF WALL	BW
FLOWLINE	FL
GRID TICK	+

MISC FEATURES

ITEM	SYMBOL
CENTER PIVOT	
CEMETERY	
GRAVE	
CHURCH	
CAVE	
CISTERN	
LATRINE	
OIL WELL	
GUARD POST	

PAVING FEATURES

ITEM	SYMBOL
EXISTING PAVEMENT JOINT	
TRANSVERSE JOINT	
LONGITUDINAL JOINT	
EXPANSION/KEYED JOINT	
PAVEMENT MARKING	
PAVEMENT REBAR	
HANDICAP SYMBOL	

VEGETATION

ITEM	SYMBOL
BUSH	
CONIFEROUS TREE	
DECIDUOUS TREE	
MARSH/WETLAND	
TREE MASS LINE	
TREE STUMP	

SWPPP

ITEM	SYMBOL
SILT FENCE	SF SF
INLET PROTECTION	
STRAW WATTLE CHECK	
STRAW BALE CHECK	
FLOW ARROW (PLAN)	
AREA INLET FILTER PROTECTION	

GENERAL

ITEM	SYMBOL
PLAN REVISION	1
NORTH ARROW	
GRAPHIC SCALE PLAN	GRAPHIC SCALE 0 10 20 40 UNIT OF MEASURE IS FEET
GRAPHIC SCALE PROFILE/ CROSS SECTION	HORIZ.= 0 0 00 VERT.= 0 0 00
KEYNOTE OR TABULAR NOTE	101
REFERENCED NOTE	4
ELEVATION	0000.00'
SECTION	1 101 1 101
ENLARGED DETAIL	0 D0.0

JEO CONSULTING GROUP
1-800-723-5367

WOODCLIFF LAKES
BANK STABILIZATION NEAR LOTS 1142-1134
SAUNDERS COUNTY SID NO. 8
SAUNDERS COUNTY, NEBRASKA

SHEET NAME

PROFESSIONAL CIVIL ENGINEER
JACOB A. MIRIOVSKY
E-16129
6/16/2021
STATE OF NEBRASKA

PROJECT NO.	210511.00
DATE	6/16/2021
DRAWN BY	JAA
FILE NAME	S-210511.00.dwg
FIELD BOOK	WOODCLIFF #14
FIELD CREW	M.S. & N.F.
SURVEY FILE NO.	SV_210511
PLAN IN HAND INITIALS	N/A
PLAN IN HAND DATE	N/A
70 PERCENT REVIEW INITIALS	JGP
70 PERCENT REVIEW DATE	5/5/2021
95 PERCENT REVIEW INITIALS	JGP
95 PERCENT REVIEW DATE	5/7/2021
REVISIONS	

C0.2

LEGEND

SYMBOL	DESCRIPTION
0+00 — 1+00	BASELINE ALIGNMENT (DESIGN)
(C1)	BASELINE ALIGNMENT CURVE TAG LABEL
(L1)	BASELINE ALIGNMENT LINE TAG LABEL
△	BASELINE ALIGNMENT PI POINT
○	POINT OF CURVATURE OR TANGENCY

GRAPHIC SCALE
0 20 40 80
UNIT OF MEASURE IS FEET

JEO CONSULTING GROUP
1-800-723-8567

HORIZONTAL SURVEY CONTROL - NEBRASKA STATE PLANE 1983 GRID

POINT NAME	NORTHING	EASTING	LONG DESCRIPTION
CP-103	588957.55	260375.22	5/8" REBAR
CP-104	584850.60	2607549.28	5/8" REBAR

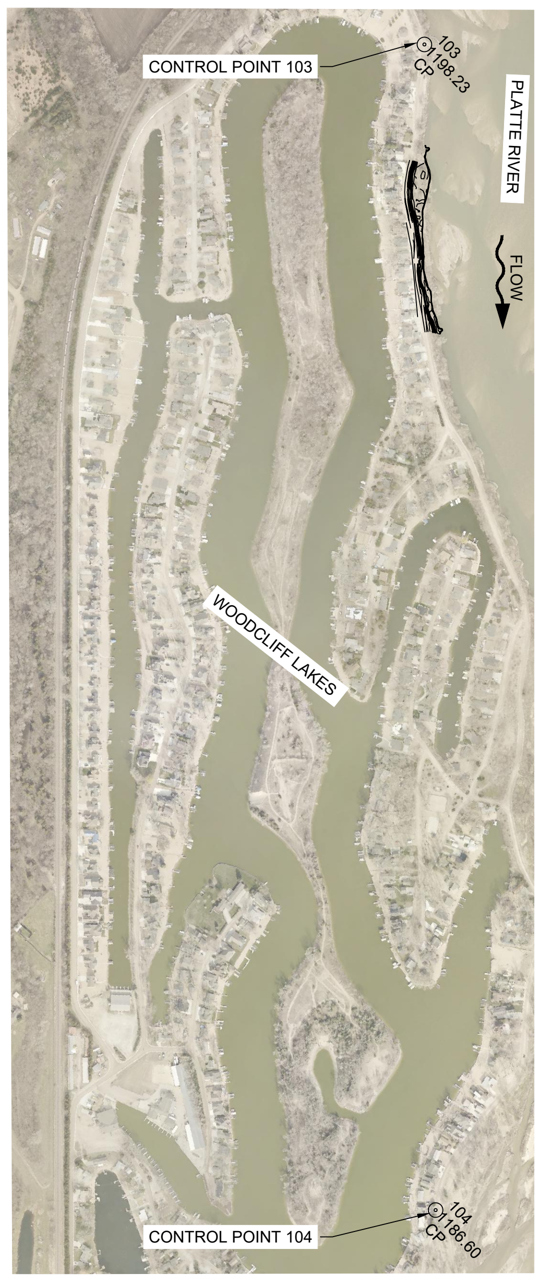
BENCHMARKS - NAVD88 DATUM

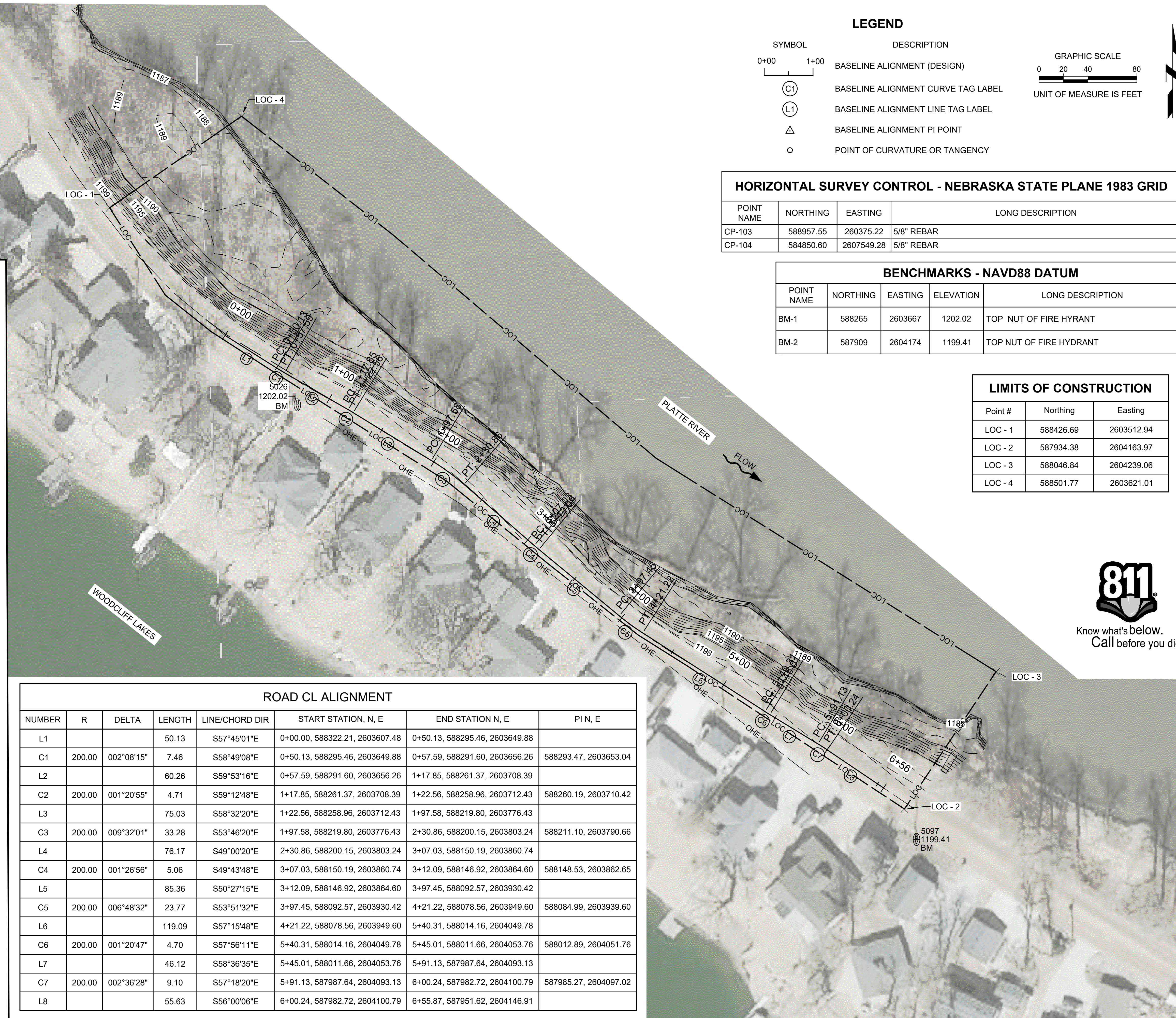
POINT NAME	NORTHING	EASTING	ELEVATION	LONG DESCRIPTION
BM-1	588265	2603667	1202.02	TOP NUT OF FIRE HYRANT
BM-2	587909	2604174	1199.41	TOP NUT OF FIRE HYDRANT

LIMITS OF CONSTRUCTION

Point #	Northing	Easting
LOC - 1	588426.69	2603512.94
LOC - 2	587934.38	2604163.97
LOC - 3	588046.84	2604239.06
LOC - 4	588501.77	2603621.01

GRAPHIC SCALE
0 250 500 1000
UNIT OF MEASURE IS FEET





Know what's below.
Call before you dig.

ROAD CL ALIGNMENT

NUMBER	R	DELTA	LENGTH	LINE/CHORD DIR	START STATION, N, E	END STATION N, E	PI N, E
L1			50.13	S57°45'01"E	0+00.00, 588322.21, 2603607.48	0+50.13, 588295.46, 2603649.88	
C1	200.00	002°08'15"	7.46	S58°49'08"E	0+50.13, 588295.46, 2603649.88	0+57.59, 588291.60, 2603656.26	588293.47, 2603653.04
L2			60.26	S59°53'16"E	0+57.59, 588291.60, 2603656.26	1+17.85, 588261.37, 2603708.39	
C2	200.00	001°20'55"	4.71	S59°12'48"E	1+17.85, 588261.37, 2603708.39	1+22.56, 588258.96, 2603712.43	588260.19, 2603710.42
L3			75.03	S58°32'20"E	1+22.56, 588258.96, 2603712.43	1+97.58, 588219.80, 2603776.43	
C3	200.00	009°32'01"	33.28	S53°46'20"E	1+97.58, 588219.80, 2603776.43	2+30.86, 588200.15, 2603803.24	588211.10, 2603790.66
L4			76.17	S49°00'20"E	2+30.86, 588200.15, 2603803.24	3+07.03, 588150.19, 2603860.74	
C4	200.00	001°26'56"	5.06	S49°43'48"E	3+07.03, 588150.19, 2603860.74	3+12.09, 588146.92, 2603864.60	588148.53, 2603862.65
L5			85.36	S50°27'15"E	3+12.09, 588146.92, 2603864.60	3+97.45, 588092.57, 2603930.42	
C5	200.00	006°48'32"	23.77	S53°51'32"E	3+97.45, 588092.57, 2603930.42	4+21.22, 588078.56, 2603949.60	588084.99, 2603939.60
L6			119.09	S57°15'48"E	4+21.22, 588078.56, 2603949.60	5+40.31, 588014.16, 2604049.78	
C6	200.00	001°20'47"	4.70	S57°56'11"E	5+40.31, 588014.16, 2604049.78	5+45.01, 588011.66, 2604053.76	588012.89, 2604051.76
L7			46.12	S58°36'35"E	5+45.01, 588011.66, 2604053.76	5+91.13, 587987.64, 2604093.13	
C7	200.00	002°36'28"	9.10	S57°18'20"E	5+91.13, 587987.64, 2604093.13	6+00.24, 587982.72, 2604100.79	587985.27, 2604097.02
L8			55.63	S56°00'06"E	6+00.24, 587982.72, 2604100.79	6+55.87, 587951.62, 2604146.91	

WOODCLIFF LAKES
BANK STABILIZATION NEAR LOTS 1142-1134
SAUNDERS COUNTY SID NO. 8
SAUNDERS COUNTY, NEBRASKA

HORIZONTAL ALIGNMENT & CONTROL SHEET

PROFESSIONAL CIVIL ENGINEER
JACOB T. MIRIOVSKY
E-16127
6/16/2021
STATE OF NEBRASKA

PROJECT NO. 210511.00
DATE 6/16/2021
DRAWN BY JAA
FILE NAME S-210511.00.dwg
FIELD BOOK WOODCLIFF #14
FIELD CREW M.S. & N.F.
SURVEY FILE NO. SV_210511
PLAN IN HAND
INITIALS N/A
DATE N/A
70 PERCENT REVIEW
INITIALS JGP
DATE 5/5/2021
95 PERCENT REVIEW
INITIALS JGP
DATE 5/7/2021
REVISIONS

C0.3

STA. 0+44.02, 83.51'LT
BEGIN LPSTP.

STA. 0+15.47, 39.81'LT
INSTALL ROCK KEY #1,
SEE DETAIL 2/D1.2

STA. 0+63.98, 72.51'LT
ROCK KEY APPROX. TIE-IN.

STA. 1+21.91, 75.18'LT
INSTALL BENDWAY
WEIR #1.

STA. 1+99.93, 60.56'LT
INSTALL BENDWAY
WEIR #2.

STA. 2+70.58, 58.96'LT
INSTALL BENDWAY
WEIR #3.

STA. 3+52.20, 59.55'LT
INSTALL BENDWAY
WEIR #4.

STA. 4+39.90, 69.10'LT
INSTALL BENDWAY
WEIR #5.

STA. 5+19.09, 70.57'LT
INSTALL BENDWAY
WEIR #6.

STA. 5+86.07, 38.83'LT
ROCK KEY APPROX. TIE-IN.

STA. 5+90.60, 39.96'LT
INSTALL ROCK KEY #2,
SEE DETAIL 2/D1.2

STA. 5+96.69, 58.71'LT
END LPSTP.

APPROXIMATE EDGE
OF BANK BEFORE
2019 FLOODS

PLATTE RIVER

FLOW

WOODCLIFF LAKES

0+00 1+00 2+00 3+00 4+00 5+00

LOC OHE 1190 1195 1198 1189

BENDWAY WEIR QUANTITIES

Weir #	Station	Offset	Length (Ft)	Weir Riprap (Ton)	Key Length (Ft)	Key Riprap (Ton)	Crushed Rock Base Course (Ton)
1	1+21.91	75.18	30	135	40	100	7
2	1+99.93	60.56	30	135	30	75	5
3	2+70.58	58.96	28	125	25	65	4
4	3+52.20	59.55	25	110	32	80	5
5	4+39.90	69.10	22	97	36	90	6
6	5+19.09	70.57	20	88	30	75	5

LPSTP QUANTITIES

LPSTP Segment	US	DS	Approx. Length (Ft)	LPSTP Riprap (Ton)	Key Riprap (Ton)	Crushed Rock Base Course (Ton)
Key #1	0+15.47	0+63.98	55		70	9
1	0+44.02	1+21.91	80	155.0		
2	1+21.91	1+99.93	80	155.0		
3	1+99.93	2+70.58	80	155.0		
4	2+70.58	3+52.20	80	155.0		
5	3+52.20	4+39.90	80	155.0		
6	4+39.90	5+19.09	80	155.0		
7	5+19.09	5+96.69	80	155.0		
Key #2	5+77.87	5+86.07	15		20	3

NOTES:
1. LPSTP QUANTITIES LISTED DO NOT INCLUDED THE TONNAGE OF EXISTING RIPRAP SALVAGED, MIXED, AND DISTRIBUTED INTO LPSTP.
2. QUANTITIES SHOWN ARE ESTIMATES ONLY. ACTUAL QUANTITIES REQUIRED MAY DIFFER SLIGHTLY BASED ON CHANGING RIVERBED TOPOGRAPHY FROM THE TIME OF SURVEY AND UNEXPECTED LOSSES TO RIVER FLOW DURING CONSTRUCTION.

GRAPHIC SCALE
0 10 20 40
UNIT OF MEASURE IS FEET

811 Know what's below. Call before you dig.

JEO CONSULTING GROUP
1-800-728-8567

WOODCLIFF LAKES
BANK STABILIZATION NEAR LOTS 1142-1134
SAUNDERS COUNTY SID NO. 8
SAUNDERS COUNTY, NEBRASKA

PROPOSED SITE PLAN

PROFESSIONAL CIVIL ENGINEER
JACOB A. MIRIOVSKY
E-16129
6/16/2021
STATE OF NEBRASKA

PROJECT NO.	210511.00
DATE	6/16/2021
DRAWN BY	JAA
FILE NAME	S-210511.00.dwg
FIELD BOOK	WOODCLIFF #14
FIELD CREW	M.S. & N.F.
SURVEY FILE NO.	SV_210511
PLAN IN HAND INITIALS	N/A
PLAN IN HAND DATE	N/A
70 PERCENT REVIEW INITIALS	JGP
70 PERCENT REVIEW DATE	5/5/2021
95 PERCENT REVIEW INITIALS	JGP
95 PERCENT REVIEW DATE	5/7/2021
REVISIONS	

C1.1

\\jeo.local\work\Projects\Engineering\210511.00 - Woodcliff Bank Stabilization 2021\Design\3 Drawings\Sheets\S-210511.00.dwg, jaa, 6/16/2021 - 10:01 AM

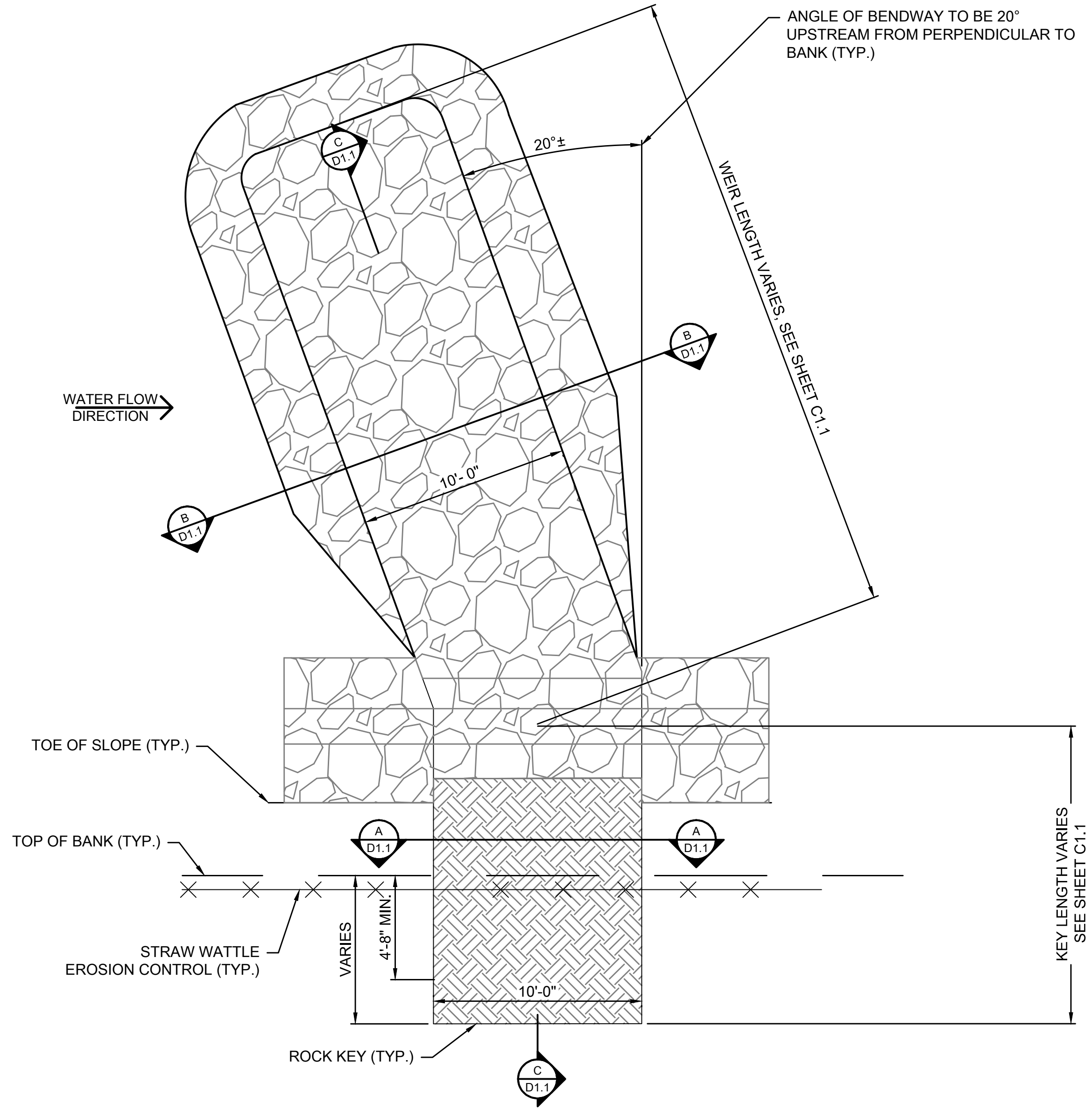
WOODCLIFF LAKES
BANK STABILIZATION NEAR LOTS 1142-1134
SAUNDERS COUNTY SID NO. 8
SAUNDERS COUNTY, NEBRASKA

EROSION CONTROL & REMOVALS PLAN

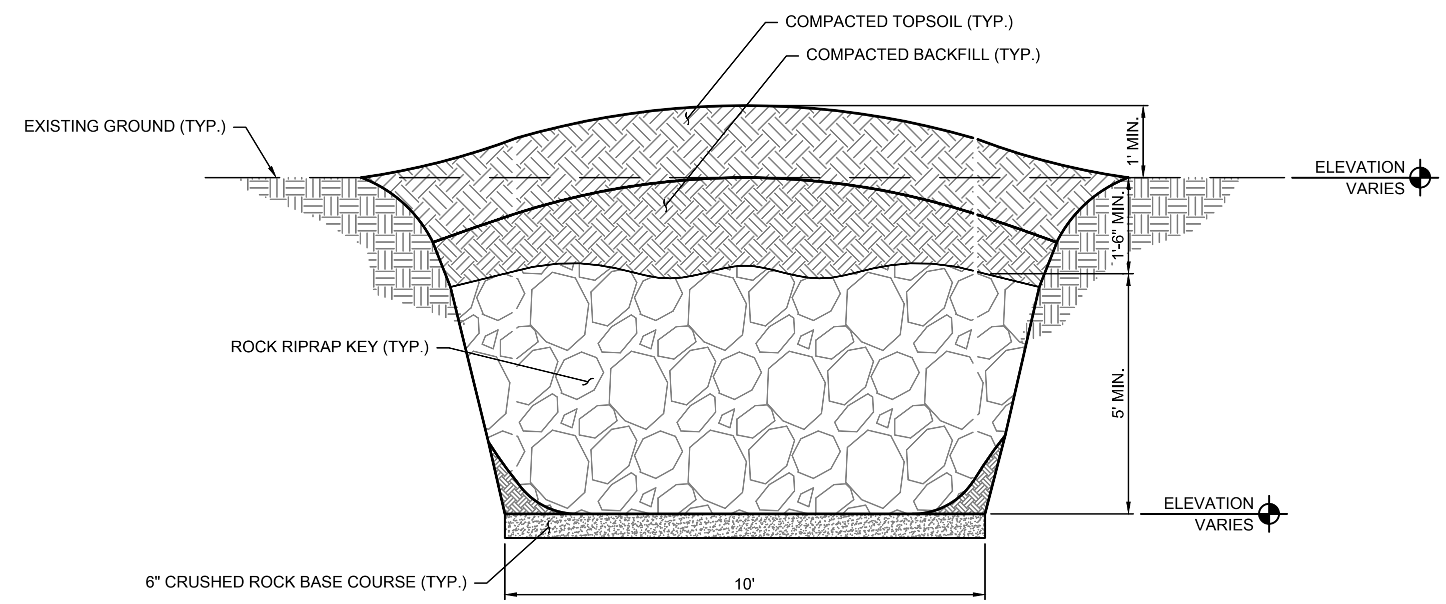
PROFESSIONAL CIVIL ENGINEER
JACOB A. MIRIOVSKY
E-16128
6/16/2021
STATE OF NEBRASKA

PROJECT NO.	210511.00
DATE	6/16/2021
DRAWN BY	JAA
FILE NAME	S-210511.00.dwg
FIELD BOOK	WOODCLIFF #14
FIELD CREW	M.S. & N.F.
SURVEY FILE NO.	SV_210511
PLAN IN HAND INITIALS	N/A
PLAN IN HAND DATE	N/A
70 PERCENT REVIEW INITIALS	JGP
70 PERCENT REVIEW DATE	5/5/2021
95 PERCENT REVIEW INITIALS	JGP
95 PERCENT REVIEW DATE	5/7/2021
REVISIONS	

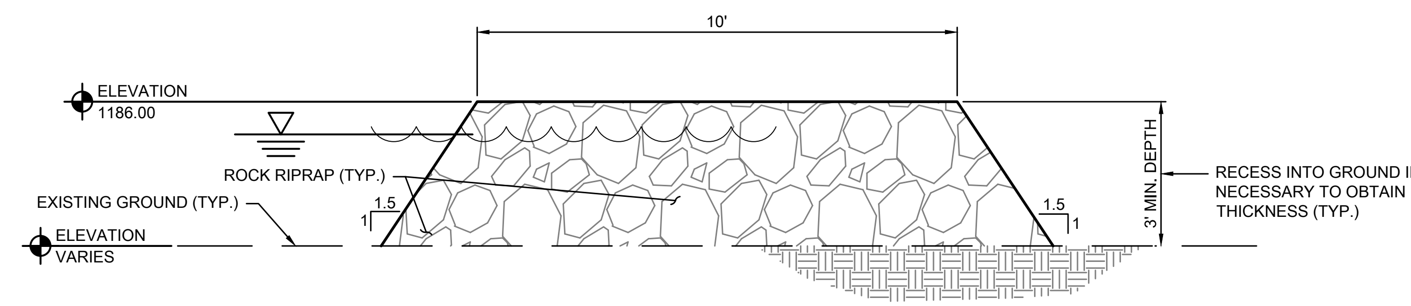
C1.2



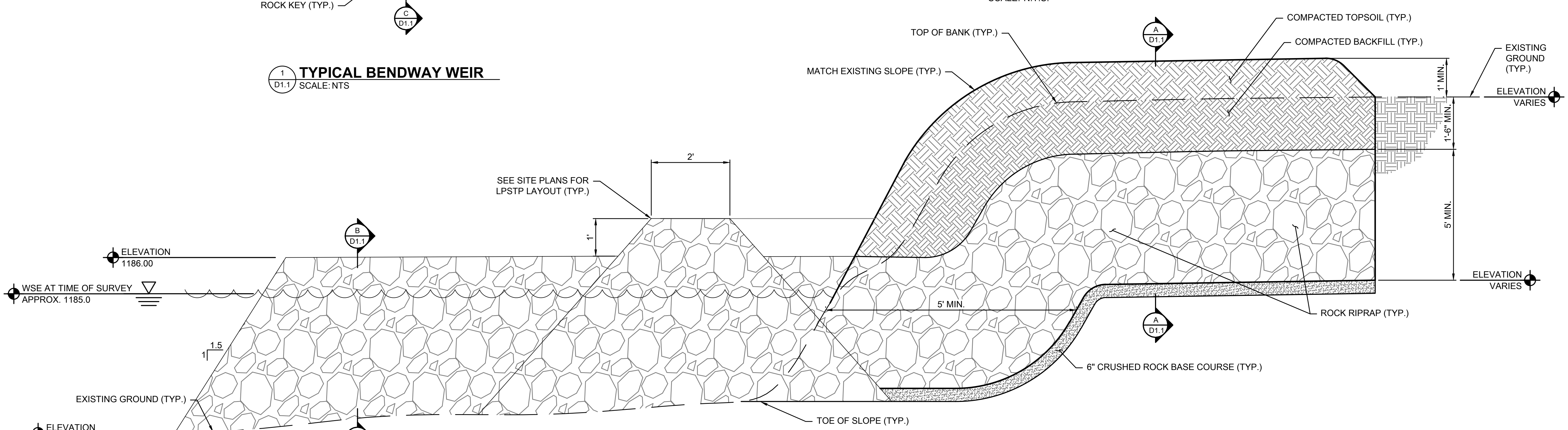
1 D1.1 **TYPICAL BENDWAY WEIR**
SCALE: NTS



SECTION A-A - ROCK KEY (BENDWAY) - TYPICAL SECTION
SCALE: N.T.S.



SECTION B-B BENDWAY WEIR - TYPICAL SECTION
SCALE: N.T.S.



SECTION C-C - BENDWAY WEIR - TYPICAL LONGITUDINAL SECTION
SCALE: N.T.S.

JEO CONSULTING GROUP
1-800-723-8567

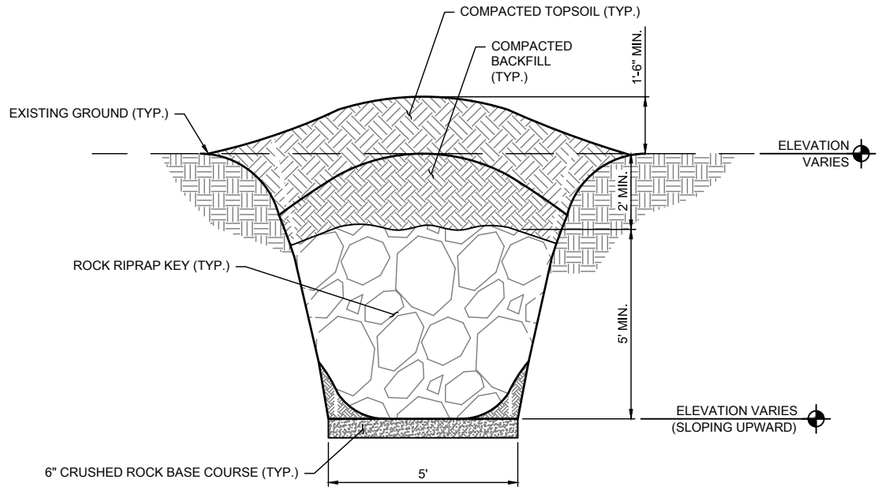
WOODCLIFF LAKES
BANK STABILIZATION NEAR LOTS 1142-1134
SAUNDERS COUNTY SID NO. 8
SAUNDERS COUNTY, NEBRASKA

STANDARD DETAILS

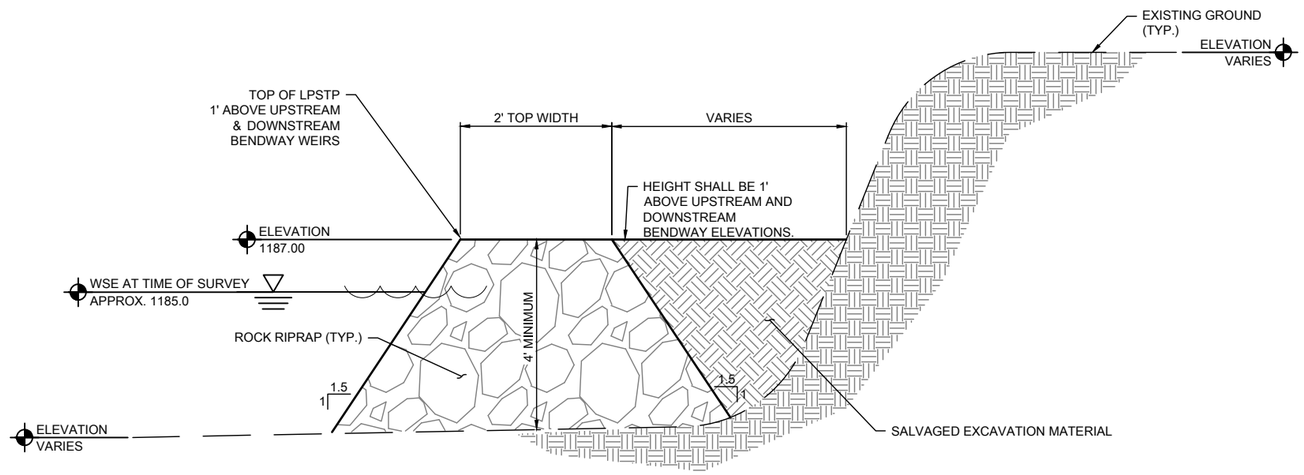
PROFESSIONAL CIVIL ENGINEER
JACOB T. MIRIOVSKY
E-16127
6/16/2021
STATE OF NEBRASKA

PROJECT NO.	210511.00
DATE	6/16/2021
DRAWN BY	JAA
FILE NAME	S-210511.00.dwg
FIELD BOOK	WOODCLIFF #14
FIELD CREW	M.S. & N.F.
SURVEY FILE NO.	SV_210511
PLAN IN HAND INITIALS / DATE	N/A / N/A
70 PERCENT REVIEW INITIALS / DATE	JGP / 5/5/2021
95 PERCENT REVIEW INITIALS / DATE	JGP / 5/7/2021
REVISIONS	

D1.1



1 **ROCK KEY (LPSTP) - TYPICAL SECTION**
SCALE: N.T.S.



2 **LONGITUDINAL PEAKED STONE TOE PROTECTION DETAIL (LPSTP)**
SCALE: N.T.S.

JEO CONSULTING GROUP
1-800-728-8567

WOODCLIFF LAKES
BANK STABILIZATION NEAR LOTS 1142-1134
SAUNDERS COUNTY SID NO. 8
SAUNDERS COUNTY, NEBRASKA

STANDARD DETAILS

PROFESSIONAL CIVIL ENGINEER
JACOB A MIRIOVSKY
E-16126
6/16/2021
STATE OF NEBRASKA

PROJECT NO.	210511.00
DATE	6/16/2021
DRAWN BY	JAA
FILE NAME	S-210511.00.dwg
FIELD BOOK	WOODCLIFF #14
FIELD CREW	M.S. & N.F.
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PLAN IN HAND INITIALS	N/A
PLAN IN HAND DATE	N/A
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70 PERCENT REVIEW DATE	5/5/2021
95 PERCENT REVIEW INITIALS	JGP
95 PERCENT REVIEW DATE	5/7/2021
REVISIONS	

D1.2

Bid Tab

PROJECT | Bank Stabilization Improvements for Saunders County SID No. 8

JEO PROJECT NO. | 190733.01

LOCATION | Saunders County, Nebraska

LETTING | 05/11/2021 09:00 AM CDT

OPINION OF PROBABLE COST | $557,532.00

Bidder	Total Base Bid
Mount Farm Drainage, LLC Riverton, IA	*$507,163.17*
Sawyer Construction Co. Fremont, NE	$517,780.40
Niewohner Construction Inc. Onawa, IA	$547,208.00
High Plains Enterprises Inc. Martell, NE	$626,092.00
Gana Trucking & Excavating Martell, NE	$659,160.81
Horizon Building Services, LLC Council Bluffs, IA	$706,765.00

** Numbers in italics indicate an irregularity in the contractor's original bid form*

Tab Sheet

PROJECT | Bank Stabilization Improvements for Saunders County SID No. 8

JEO PROJECT NO. | 190733.01

LOCATION | Saunders County, Nebraska

				Mount Farm Drainage		Sawyer Construction	
BASE BID							
Item	**Qty.**	**Unit**	**Description**	**Unit Price**	**Total**	**Unit**	**Total**
1	1	LS	Mobilization		$9,600.00		$10,000.00
2	1	LS	Bonding and Insurance		$9,360.00		$8,000.00
3	1	LS	Site Grading		$21,178.25		$35,000.00
4	1	LS	Clearing and Grubbing		$1,783.97		$8,500.00
5	3,296	TON	Riprap, NDOT Type C	$77.62	*$255,835.52*	$71.05	$234,180.80
6	2,198	TON	Surge/Erosion Stone	$73.14	*$160,761.72*	$65.00	$142,870.00
7	115	TON	Crushed Rock Base Course	$77.69	*$8,934.35*	$40.00	$4,600.00
8	232	TON	Coarse Aggregate	$48.13	*$11,166.16*	$40.00	$9,280.00
9	1,842	LF	Live Pole Plantings	$9.60	$17,683.20	$28.80	$53,049.60
10	1	LS	Erosion Control		$3,300.00		$6,000.00
11	1	AC	Seeding and Mulching, Native Mix	$5,400.00	$5,400.00	$4,500.00	$4,500.00
12	0.4	AC	Seeding and Mulching, Floodplain Mix	$5,400.00	$2,160.00	$4,500.00	$1,800.00
TOTAL BASE BID					*$507,163.17*		$517,780.40

** Numbers in italics indicate an irregularity in the contractor's original bid form*

Long Range Plan - DRAFT

FY2022

Introduction

The Lower Platte North Natural Resources District (LPNNRD) is one of 23 Natural Resources Districts created in 1969 with the passage of LB 1357 by the Nebraska Unicameral. Since its formation in 1972, the LPNNRD has been assisting people in the Lower Platte North River Basin in the development and protection of our soil and water resources. Nebraska Statutes require that Natural Resources Districts develop a Long Range Implementation Plan. The purpose of this plan is to summarize accomplishments during fiscal year 2021 (July 1, 2021 to June 30, 2022) and planned District activities for fiscal year 2022. There are also objectives for a five-year period from fiscal years 2023 to 2027. The plan serves as an implementation tool of the district's Master Plan, which is updated every ten years.

Authority and Responsibilities

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

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

Description of the District

The Lower Platte North Natural Resources District is located in the Lower Platte River Basin in eastern Nebraska and includes 1,031,000 acres of land. A portion of Saunders, Butler, Platte, Dodge, Colfax, Boone and Madison Counties are within the district (see Appendix A), which includes twenty-eight cities, towns and villages. Besides the Platte River, other notable tributaries

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

The population of the district is approximately 62,000, of which about half is rural and half urban. The Lower Platte North NRD is financed by a tax levy which may be up to four and one-half cents per $100 valuation for general purposes and another one cent for water programs. The FY 2022 tax levy is .033457 cents per $100 valuation.

Governing Body

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

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

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

FY 2021 Platte River Basin Activities

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

Ice Jam Agreement

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

During the winter of 2020-21, the explosives contractor was put on stand-by.

Rock & Jetty Program

This program was developed to offer cost-share assistance to landowners to construct erosion control devices for stream bank stabilization and to assist Dike and Drainage Districts with maintenance of dikes along the Platte and Elkhorn rivers and perennial streams. In FY21, $25,000 is budgeted for projects on rivers & streams. We assisted a couple landowners on maintenance projects in FY 20-21 at a cost of $3,170.

FY 2022 Platte River Basin Objectives

- Administer $25,000 in the Rock & Jetty Program to assist with priority stream bank stabilization for cooperators sustaining damage from the March 2019 flooding. This includes assisting cooperators with meeting the regulations of the Clean Water Act and 404 permits.

- As a member of the Joint Water Management Advisory Board, provide leadership and assistance to move forward with exploring flood reduction solutions for the lower one-third of Dodge County within the District.

- Support the Lower Platte Weed Management Area financially and technically in controlling noxious and invasive weeds.

- Support the Nebraska Land Trust in acquiring easements for the protection and preservation of quality lands.

FY 2023-2027 Long Range Platte River Basin Objectives

- Continue to budget cost-share funds for priority bank stabilization along the Platte and Elkhorn rivers and other perennial streams in the district.

- Continue to be an active member on the Joint Water Management Advisory Board.

- Promote riparian buffer zones along the Platte River and other perennial streams.

- Continue to explore new, innovative and cost-effective ways to protect against stream bank erosion.

- Provide education on stream bank protection and regulations.

- Support and budget annually, as needed, for the Ice Jam Agreement Fund.

- Keep up to date on Clean Water Act and Endangered Species Act regulations.

- Continue to participate with the City of Fremont to study potential nonstructural measures to reduce flooding and economic losses from the Lower Platte River.

- Work with the City of Schuyler as they evaluate the need for future federal funding for completing structural and non-structural approaches to reduce flooding and economic losses from the Platte River through the LPNNRD District-Wide Hazard Mitigation Plan.

- Encourage cities and counties to initiate floodplain management planning to promote wise floodplain development.

- Assist dike and drainage districts within the LPNNRD to properly repair and maintain levy projects.

- Budget annually as needed to support the Lower Platte Weed Management group in controlling noxious weeds.

FY 2021 Ground & Surface Water Activities

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

Groundwater Management Area

LPNNRD implemented a District-wide Groundwater Management Area (GWMA) on January 1, 1997, to address both water quality and quantity concerns. This action was based on data gathered since 1985 indicating where groundwater quality conditions have deteriorated beyond those established as health standards, such as nitrate nitrogen. On that date, groundwater quality Phase I (education) regulations became effective for the entire District. One primary rule in Phase I requires certification for fertilizer and water use. The District has developed a groundwater program emphasizing a protection-based approach rather than a reactive, corrective approach. Since that time, advanced Phase areas have been determined by trigger levels listed in the rules and regulations of the GWMA. The District has two Phase groundwater quality control areas, those being Bellwood and Richland/Schuyler. The Bellwood Phase 2 Area was established in 2003. This area covers approximately 30 square miles in the western portion of the Platte Valley in Butler County and includes the town of Bellwood. In 2015 nitrate levels decreased to a point that the trigger levels were not being achieved, so this area was decreased to 20 square miles. The Richland/Schuyler Phase 2 Area was established in 2004. In 2015 this area was raised to Phase 3 because of the rising nitrates. This area covers approximately 55 square miles in the Platte Valley of Colfax County and includes the towns of Richland and Schuyler. In 2015, 10 additional sections north of the Richland/Schuyler Area became a Phase 2 area and in 2020 raised to Phase 3. Elevated nitrate-nitrogen levels continue to be the major

concern in both Phase areas. Emphasis on awareness is a priority to the District with numerous grants being considered.

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

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

In 2012 seven NRD's agreed to develop a Lower Platte Basin plan, which is a cooperative agreement for the Basin Plan. This plan was approved in December of 2017 with each district assigned a depletion allotment within the Basin. The allotment is in 5-year increments starting in 2016 with a formula to determine the acre feet used for new water uses. The District completed its V-IMP in June of 2018 by adding an additional rule of requiring municipalities to report yearly water use, with an annual report due to NDNR. The Coalition contracted with the Flatwater Group to analyze the data that will be used in the next 5-year allotment.

In 2016 the Lower Platte River Consortium, made up of the Lower Platte South NRD, the Lower Platte North NRD, the Papio-Missouri River NRD, Lincoln Water System (LWS), Metropolitan Utilities District (MUD), and the Nebraska Department of Natural Resources (DNR), embarked on an effort to develop a drought contingency plan to maintain/mitigate sustainable water supplies to the Lower Platte River during drought conditions. The final report was finalized in the Spring of 2020. The group is in the process of ranking the projects to be considered for supplying water into the Platte River.

Current rules and regulations of the GWMA are available at the LPNNRD headquarters in Wahoo and via the district website at lpnnrd.org.

Ground Water Quality Sampling

The Lower Platte North NRD continues efforts to develop a ground water quality inventory. The District has been divided into four primary aquifer regions: Todd Valley, Platte Valley, Shell Creek and the Uplands, and further divided into 26 subareas. Staff samples the same 53 wells each summer, weather permitting, to determine long term trends for nitrate-nitrogen. This is referred to as the Statewide Network. The data collected is provided to the Nebraska Department of

Environment and Energy (NDEE). NDEE in turn provides this to the Nebraska Legislature on an annual basis.

In 2021 samples were collected from all 53 sites.

Year	Nitrate-Nitrogen Range	% Nitrate-nitrogen 0-8.0 ppm	% Nitrate nitrogen 8.01-10.0 ppm	% Nitrate nitrogen > 10 ppm
2021	0 - 23.1 ppm	69.8% (37 of 53)	7.6% (4 of 53)	22.6% (12 of 53)

Samples for pesticide analysis were collected from seven of these sites (18%). The pesticide analysis was for a suite of 25 parameters, and all results were less than reporting level.

Ground Water Energy Level Monitoring Network

One of the responsibilities of the NRDs in the State is to monitor fluctuations in groundwater levels. With the help of area cooperators, a ground water energy level monitoring network has been established in the LPNNRD. This monitoring network has been established to obtain a better understanding of the groundwater levels throughout the District. As of Spring 2021, the LPNNRD had 206 wells in the groundwater energy level monitoring network. These wells are monitored each spring and fall, with selected wells also measured in late August.

The LPNNRD compares the latest spring reading to the 1987 base-year to determine if a subarea needs to be declared a Level 2 or Level 3 groundwater management area. Level 2 and 3 management areas require flow meters on wells, annual reporting of water use, and establishment of acre-inch allocations. For the 26 subareas within the District, 24 subareas are currently at Level 1 management, while the other 2 subareas still need additional information before these can be designated. The District prefers at least three years of data before the subarea can be designated as a Level 1, 2, or 3 management area.

Fall readings in 2020 and Spring of 2021 showed a decline from the previous year's measurement. This change was likely the effects of less rainfall in the summer months of June

through August 2020 and as a consequence more irrigation occurred. Spring readings in 2021 showed 87% of the wells measured had levels lower in Spring 2021 compared to Spring of 2020. There was a 4% rise in 7 wells from a year ago.

Chemigation

Chemigation is the act of injecting chemicals into the water line of an irrigation system that is then applied onto the crops. It is considered to be one of the most efficient ways of applying essential nutrients in times when the crop is uptaking the most amount of nitrogen through its growing stages. In order to use chemigation, a licensed permit holder must obtain a permit through the Lower Platte North NRD. Special equipment must be installed to protect Nebraska's groundwater from possible back-flow of chemicals into the groundwater source. To obtain this permit, administered by NDEE you must pass the Chemigation Certification test taught through UNL Water. There is an online test producers may take due to the recent COVID-19 protocols. The chemigation equipment must be properly equipped, inspected and approved by the NRD before applying any chemicals. The number of chemigation permits continues to slowly rise throughout the district due to chemigation's efficient application rate when the crops are in the most need of nutrients. In sandier soil types, chemigation is extremely effective due to the soil's incapability to hold essential nutrients in the root zone after heavy rainfall events.

Chemigation Permits	Total	Renewal	New	Emergency
November 2020	748	695	53	0
November 2021	704	658	46	0

In 2014, the Legislature approved changes to Title 195 that would allow individual NRDs to set chemigation fees. Chemigation fees for LPNNRD are: $90 for a New permit, $30 for a Renewal permit, and $300 for an Emergency permit. New permits are to be inspected each year they are

permitted and renewal permits are to be inspected on a 3 year rotation. Failure to renew by June 1st of the following year the permit was obtained will cause the permit to lapse. If a renewal permit lapses and the producer decides to use chemigation as a practice of crop application the individual must obtain a new permit and an inspection is required.

Decommissioned (Abandoned) Wells

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

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

Since 1992 the district has administered local and state cost-share dollars to decommission 707 wells. Through this program in FY 20-21 , a total of $13,510.62 was administered by LPNNRD for the plugging of 16 wells. The district will administer approximately $15,000 of state and local funds to plug additional wells during the current fiscal year.

Flow Meter Maintenance Program/ Flow Meter Readings

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

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

mechanical meter site visit is $60 and each battery operated site visit is $75. This maintenance includes the regular greasing of the mechanical meters and changing the batteries on the digitally read meters. Along with the regular maintenance the private company also ensures that the meter is not damaged from water or vibration. There are approximately 1,056 irrigation well flow meters that are getting routine maintenance once every four years.

Along with the irrigation wells, the LPNNRD also records meter readings from all of the municipality wells within the District including MUD, Lincoln and Fremont. Livestock wells and commercial wells are required to report if the well was drilled after the 2012 requirement date. Nearly 1,175 readings are recorded annually throughout the LPNNRD District. This Fiscal year the LPNNRD budgeted $12,500 for the meter maintenance program.

Registered Wells

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

Table of Active Irrigation Wells within LPNNRD compiled by Completion Date

Date	Number of Active Irrigation Wells in the District
December 31, 1970	**1,428**
December 31, 1980	**2,756**
December 31, 1990	**3,241**
December 31, 2000	**3,686**

December 31, 2010	**4,307**
December 16, 2016	**4,528**
December 31, 2020	**4,585**
July 1, 2021	**4,586**

Well Permits

In May of 2008, the LPNNRD placed a flow meter and water reporting condition on well permits for all permits issued after that date. All well permits require well owners to install a flow meter and report their water use for the calendar year to the LPNNRD by December 15 of each year. This reporting requirement is effective the year the well is drilled and for each year thereafter, until the well is decommissioned. Summer of 2020 brought drier conditions and as wells were being pumped harder than the last 3 years, replacement well permit requests across the District have increased. As of August 1st, 2021, the District has issued 39 well permits with 8 new irrigation wells, 29 replacement irrigation wells, 2 municipal wells.

Special Studies

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

Aquifer Vulnerability Mapping and Analysis

The Lower Platte North has been working with UNL to collect and analyze data within the LPN Water Quality Management Areas. The first stage involved some intensive water sampling of irrigation wells for nitrates. A few samples were collected for isotope nitrate samples for the purpose of determining if the nitrates were organic or inorganic sources. This was followed-up with vadose soil sampling analysis to assist in determining the amount of nitrates in soil and pore water present in the unsaturated zones above the water table. A nitrate tool was developed utilizing this data, along with geological information to assist in determining vulnerability. This project will be wrapping up later in 2021 with informational meetings in the area.

3D AEM Hydrogeologic Framework and Assessment

Papio-Missouri RIver NRD, NeDNR and LPN started a study in January 2021 to assess AEM survey information, well logs and other geological information. The data will be used to characterize different geological layers and assign variables such as hydraulic conductivity. This data could be used in a groundwater model to better understand, assess and forecast groundwater flow within the geographical areas. This study should be completed in January 2022.

Lower Platte River Consortium Study

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

Eastern Nebraska Water Resources Assessment

LPNNRD is a partner in the Eastern Nebraska Water Resources Assessment (ENWRA). The ENWRA study has been utilizing Airborne Electromagnetic (AEM) over eastern Nebraska to better model the geology of the glaciated portion of the State. It has opened several questions concerning bedrock aquifers both in water quantity and water quality such as salinity. New flights were conducted in the summer of 2018 with the final report received in summer 2019. A study is being conducted in the Platte-Colfax Area (SQS#2) utilizing the AEM, additional data loggers and other geologic logs to determine the relationship between confining and unconfining layers along with determining drawdown levels for management decisions. The flights and the results can be found on the ENWRA website at (www.enwra.org).

Elkhorn Loup Model

The Elkhorn-Loup Model (ELM) project is a study of surface water and groundwater resources in the Elkhorn River basin upstream of Norfolk, Nebraska and the Loup River basin upstream of Columbus, Nebraska. Parts of this basin overlap and cover portions of upper Shell Creek.

Certifying Acres

In July 2009, the District signed a contract with GIS workshop to develop a database of county assessor records as the preliminary step to certifying irrigated acres. Using these records, LPNNRD staff mailed out letters to landowners to verify irrigated ground. As of January 2021, the majority of the irrigation in the district has been catalogued. The District is still granting new

irrigation development. Those new acres are not entered into the certification database until such time as they show up on aerial photography and can be accurately modeled. In March of 2021, the District went through all the approved new irrigations and modeled out all those that had yet to be counted. Acre certification provides a true inventory of the irrigation needs of the District, which is an important part of present and future groundwater management and planning. In addition to cataloging irrigated acres, LPNNRD staff have been actively working with the Nebraska Department of Natural Resources (NeDNR), as well as local landowners to bring all irrigation wells in LPNNRD into compliance with Nebraska Revised Statute 46-602 (7).

Nebraska Ordnance Plant Water Pollution Clean Up at Mead

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

Wellhead Protection Program

The LPNNRD implemented a wellhead protection program in FY 2001. The goal of the program is to minimize potential polluting activities on the land surrounding a community's public water supply well(s). The District has identified 22 communities with public supply wells and they have been encouraged to become involved in the program. The City of Ashland, with assistance from LPSNRD, has conducted some investigations within its wellhead management area in 2019-2020. An open house is planned for Ashland in August 2021. The Cities of David City and Wahoo are in the process of re-evaluating their wellhead management areas along with decommissioning wells within these areas.

Rural Water Districts

In recent years, the District has worked with communities who have had difficulties with water quality and quantity by forming two rural water systems. The Butler County system linked the village of Bruno in 2006, who was having water quality and quantity problems, to David City. Also in 2006, the Saunders County system linked the village of Colon, who was experiencing water quality concerns, to Wahoo. The LPNNRD operates both of these systems. The District purchases water from the larger communities and delivers it to the smaller communities; RW staff manage and maintain Colon's system and billing while Bruno manages their infrastructure and household billing. Both systems are designed to serve rural customers along each service route. Combined, the two systems serve over 135 households in Saunders and Butler Counties. To address fiscal

concerns both RWDs have implemented a phased rate increase strategy to more diligently manage the financial standings of both districts. The District has been in contact with several other communities and anticipates several more communities and rural customers to be serviced by rural water systems in the future. Both systems are greater than 10 years old and repairs/replacements of meters is expected to take up RWD staff's time in 202-22 as a number of meters and components are showing the signs of wearing out.

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

LPNNRD has used Geographic Information System (GIS) technology since 1996. GIS is an automated system combining database information and maps. Features on a map, created with GIS technology contain attribute or feature descriptions that are referenced by location. The data used by a GIS system consists of Vector and Raster Data. Vector data consists of point (wells), line (roads) and polygon data (irrigation boundaries); with Raster data consisting of pixels, where each pixel on the screen corresponds to a data point. Raster data includes aerial photography and elevation data such as LidAR (a highly accurate elevation dataset). The District has incorporated the use of GIS into most district functions, including the certification of irrigated acres, maintenance, project planning and modelling of groundwater availability and the movement of contaminants such as nitrates through the soil profile.

In addition to in-house GIS activities, LPNNRD GIS staff assist a variety of partners, including projecting FSA aerial photography into Nebraska State Plane Feet coordinates for NeDNR, custom authoring of maps for the Nebraska Land Trust, coordination of helicopter flight lines for invasive species control with the Lower Platte Weed Management Area, and helping other NRDs with GIS questions as they emerge.

LPNNRD entered into an agreement with Phoenix Web Group to create a robust, relational database. GIS will be the backbone of this database and will allow LPNNRD to quickly, and efficiently, look up any information pertaining to any project or cost share that has been completed for any constituent with land in LPNNRD.

The Global Positioning System (GPS) relies on 28 NAVSTAR satellites, which provide world wide positioning and navigation information around the clock. Receivers acquire signals from satellites to determine precise locations on earth. The data obtained from taking GPS positions can be downloaded and mapped with GIS, making the two technologies complemen-tary. LPNNRD partnered with NRCS on the purchase of a sub-centimeter GPS base station. This allows NRCS and NRD staff to quickly and efficiently perform a variety of tasks in the field with survey level precision.

FY 2022 Ground and Surface Water Objectives

- Continue to monitor changes in groundwater levels and quality in the district.

- Continue with LPNNRD Groundwater Management Area (GWMA) programs to help avoid the Lower Platte Basin being designated “fully appropriated.”

- Continue to implement Voluntary Integrated Water Management Plan (V-IMP) for the District and basin-wide plan. Utilize acre feet allotments assigned to the District for the benefit of the basin.

- As part of the GWMA, continue with LPNNRD certification classes, demonstration plots, generation of maps indicating problem areas, and evolving the development of a master database.

- Continue to cooperate with the United States Geological Survey (USGS) in monitoring groundwater levels at two sites.

- Continue to cooperate with the United States Geological Survey (USGS) in monitoring surface water levels at four sites and one site for contamination evaluation.

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

- Continue sampling of approximately 53 wells in our District that are part of the Nebraska State-wide Network.

- Continue to monitor the Phase Areas in Richland-Schuyler and Bellwood for nitrate and elevate these areas as needed.

- Implement extensive sampling of soil and water in the Phase Areas for the purpose of identifying workable best management practices for curbing the rising nitrate trend.

- Administer $15,000 of state and local cost-share funds to decommission abandoned water wells, and provide 100% cost-share assistance within Wellhead Protection Areas to communities that are actively doing projects within it’s management area.

- Maintain a multi-agency groundwater energy level monitoring network in the Wann Basin of the Platte Valley north of Ashland to pool information from different agencies collecting water level data. This information is being used by the COE and MUD to refine their groundwater modeling efforts.

- Continue to implement the Chemigation Program to inspect safety equipment on permitted irrigation systems in the district.

- Continue with the District’s Well Permitting Program and Variance Process throughout the District.

- Continue to review water use reports submitted to the LPNNRD as part of the well permitting process from new and replacement wells.

- Provide information and education on water conservation and safe disposal of farm and household chemicals.

- Continue to site registered and unregistered wells in the district using GPS.

- Promote and sponsor “Spring Conservation Sensation”

- Provide information on Integrated Pest Management in news releases and the “Viaduct” newsletter to encourage reduced use of pesticides.

- Support and promote urban water conservation and chemical disposal throughout the District.

- Assist in organizing the annual NRD Water Programs Conference held each year to update the NRD’s on activity of State and Federal Agencies, new research and Legislative issues.

- Continue to install flow meters on irrigation wells that are part of our Ground Water Energy Level (GWEL) Network.

- Expand the GWEL network to monitor aquifer sub-areas as designated in the 2009 Subarea Delineation Study. This will be done by incorporating additional high capacity wells and the drilling of new monitoring wells.

- Continue to monitor clean up efforts by the COE at the Former Ordnance Plant at Mead, Nebraska.

- Work with the COE to establish spacing requirements for future high capacity irrigation, industrial, and/or municipal wells that are requesting to be installed near known contaminant plumes from the Former Ordnance Plant near Mead, so these wells will not interfere with the COE’s clean up efforts.

- Continue to monitor clean up efforts by the University of Nebraska at the ARDC facilities east of Ithaca, Nebraska.

- Maintain transducers placed in District monitoring wells to record changes in groundwater energy levels and to start the process of installing real-time remote reads.

- Declare Level 2 or Level 3 Management areas as warranted caused by declining groundwater energy levels in 50% or more of the monitoring wells reaching their trigger levels after three consecutive spring readings.

- Review livestock permits from DEQ.

- Investigate irrigation runoff and groundwater management area complaints as needed.

- Expand the NeRain program within our District.

- Continue to be a sponsor member of the Elkhorn – Loup Model (ELM)

- Continue groundwater studies with the University and NDNR in the SQS areas. Study will focus on confined and unconfined aquifers and drawdowns within these areas.

- Communicate with well drillers and pump installers on water concerns within the District.

- Continue to assist the Eastern Nebraska Water Resources Assessment (ENWRA) with the use of AEM (Airborne Electromagnetic) to study the eastern glaciated portions of Nebraska to provide a geologic framework map.

- Improve irrigation efficiency by working with UNL Extension on the Nebraska Agricultural Water Management Network (NAWMN) to install Watermark sensors and ET gauges with producers each year in our District.

- Continue with the process of updating Irrigated Acre Certification within the District.

- Continue working on projects identified within the Shell Creek Watershed Water Quality Plan.

- Update water quality objectives as identified in the Wahoo Creek Watershed and the Shell Creek Watershed Water Quality Plans.

- To increase producer participation in online reporting for entering their data to improve efficiency and quality of data.

- To complete the process of developing a hydro-geological framework utilizing AEM data, boreholes and other geological information.

- To utilize the real-time water level measurement network in Special Quantity Areas for in-season management decisions.

FY 2023-2027 Long Range Ground and Surface Water Objectives

- Continue groundwater quality sampling throughout the LPNNRD, both the State-wide network and intensive sampling of selected regional aquifers.

- Continue water quality education programs based on the goals and objectives of the LPNNRD Groundwater Management Area, which includes LPNNRD certification classes for landowners, municipal and industrial water users.

- If needed, designate further Phase II, III & IV boundaries for the Groundwater Quality Management Areas.

- To educate the need for check valves in protecting the aquifer from contamination.

- Continue with nitrogen application demonstrations and participate with demonstrations on integrated pest management and sustainable agriculture.

- Assist in the proper decommissioning of water wells in the district.

- Continue to use GPS to site registered and unregistered wells within the district.

- If necessary, designate Level II and III boundaries within the district to manage declining groundwater levels.

- If necessary, designate new Special Quantity Subareas (SQS) within the district to manage mid summer declines of groundwater energy levels in aquifers that operate under large pressure swings.

- Continue measurement of ground water energy levels in the district.

- Develop a groundwater model for each sub-area. Additional information on water use from all wells will be needed for accurate information.

- Continued partnership with the Eastern Nebraska Water Resources Assessment (ENWRA) and apply information to the glaciated portions of our District.

- Additional studies to identify vulnerable aquifers and modify GWMA rules and regulations to protect these aquifers and their long term sustainability. Continue geophysical work, installation of monitoring wells and test holes to better define these vulnerable sub-areas. Additional AEM flights with ¼ to ⅓ mile spacing would gratefully assist in defining such areas. Eventually cover the entire District with these detailed AEM investigations.

- Continue using AEM (airborne electromagnetic) information to analyze bedrock aquifers both in water quantity and water quality. Test holes and monitoring wells will have to be installed and sampled to determine these as a possible source of usable groundwater. New management strategies need to be developed for these aquifers such as summer trigger levels for confined bedrock aquifers, especially if these are

hydrologically isolated from overlying alluvial aquifers. This could develop into three dimensional management where aquifers at different depths are treated by a separate set of rules for each one. This could become very complex but will likely be the only way to sustain the use of these aquifers far into the future.

- Install precipitation gauges near monitoring wells in important sub-areas.

- Utilize the completed Lower Platte River Consortium Study for possible locations for recharge and reservoir sites to better convey water downstream to municipal wellfields.

- Complete water quality objectives as identified in the Watershed Quality Plans.

- Continue to update the Groundwater Management Plan to include Integrated Management of surface and ground water. It may be necessary to install additional surface water gauging sites coupled with nearby groundwater monitoring wells as tools for integrated water management.

- Expand the GWEL network to have continuous recording monitoring wells in each sub-area to better manage the resource with the ability for remote real-time readings. This is especially important in confined aquifers.

- Continue to update the certification of irrigated acres

- Continue to assist District communities who have difficulties with water quality and quantity by helping determine rural water system feasibility.

- Keep the Saunders County Rural Water System study as an alternative in the event of changing federal regulations governing municipal water supplies.

- Update the Platte Valley modeling efforts using MODFLOW software. This information will be used to further define the 10/50 boundary line.

- Keep abreast of updates and new iterations of the Elkhorn – Loup Model (ELM) to determine which areas in the Shell Creek watershed are in hydrologic connection with the Elkhorn or Loup River basins.

In summary the LPNNRD needs to focus on six areas in the next five years:

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

flights, test holes and/or monitoring wells might be necessary in areas to provide the necessary information.

2. Establish ground water management rules to better address confined aquifers. This could involve comparing spring to summer ground water energy levels and comparing this to the potentiometric aquifer thickness and the depth of bedrock. The current management rules for unconfined aquifers should be adequate for future conditions. These controls are based on three consecutive spring readings at or below their trigger levels in at least 50% of the GWEL wells in a given subarea.
3. AEM flights have given a new interest in bedrock aquifers such as the Dakota formation. Monitoring wells in selected areas are needed to determine the water quality and quantity of these bedrock aquifers. Also are these bedrock aquifers in hydrologic connection to any overlying aquifers? If this is the case and new high capacity wells are being established in these bedrock aquifers then management should shift focus to the more vulnerable aquifer to sustain long term viability of both aquifers. If these bedrock aquifers are isolated from the overlying aquifer then "three dimensional management" where wells are managed differently due to their depth may be in order. This could get complex but management needs to take the chemical and physical characteristics of the aquifer in account. For example, what is the salinity of the groundwater and is the bedrock aquifer cemented, unconsolidated, sandstone, limestone, or shale.
4. Horizontal wells. In the immediate future horizontal high capacity irrigation water wells will likely be established in thin aquifers to increase well output or yield. On the plus side, these could replace several vertical wells that are used in series and therefore be a cost savings to the well owner. On the negative side these could quickly dry up thin aquifers less than 20 feet in thickness and affect nearby wells. How do you manage such a system? At the least you could require 600 feet spacing from any point of the lateral to a neighbor's well but again this may not provide much protection in thin aquifers such as the area immediately west of Fremont. Other management options would be to restrict the number of acres irrigated, restrict the length and direction of the laterals, restrict well output such as limit the gallons per minute, establish water allocation, install monitoring wells such as near the end of the laterals to track groundwater levels, etc.
5. Integrated Water Management. Siting of potential recharge sites, storage reservoirs (both surface and groundwater), and potential water reuse projects to enhance the water supply in the District. Additional monitoring wells, streamflow gauging, and precipitation sites will likely be necessary. Effects of climate change will also need to be considered as part of integrated water management.

Soil Conservation

In response to the Erosion and Sediment Control Act (LB 474), passed in 1986, the Natural Resources Commission developed the Nebraska Soil and Water Conservation Strategy. This

strategy outlines a course of action for efficiently conserving and managing the state's natural resources.

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

FY 2021 Soil Conservation Activities

Soil and Water Conservation Programs (SWCP)

Under Soil and Water Conservation Programs (SWCP), the LPNNRD administered $83,029.99 of state funds and $11,513.56 of local funds for land treatment practices during fiscal year 2021 in cooperation with 13 different landowner projects. In addition, 9 Buffer Strip contracts were administered with $ 15,008 in state funds.

For fiscal year 2022, $85,024.81 of state funds (from the Nebraska Department of Natural Resources) and $25,000 of local funds will be allocated for soil and water conservation practices.

Wahoo Creek Water Quality Land Treatment Efforts

Wahoo Creek in Saunders County, Nebraska, has resided on the Environmental Protection Agency's (EPA) Section 319 list of impaired water bodies. To address the impaired status of Wahoo Creek, LPNNRD in partnership with the U.S. Environmental Protection Agency (EPA) and the Nebraska Department of Environment and Energy (NDEE) developed the Wahoo Creek Watershed Water Quality Management Plan in 2013. These plans are updated every 5 years and the District will complete another update in 2021. This plan identifies goals to reduce excess phosphorus, nitrogen, soil sediments and E. coli bacteria in the Wahoo Creek Watershed. This plan meets the EPA requirement of containing "Nine Elements" of an effective watershed plan. The plan identifies water quality goals to protect and enhance the quality of all water resources within the Wahoo Creek. Sub-watersheds within the Wahoo Creek Watershed were prioritized for future water quality projects. LPNNRD in partnership with EPA, NDEQ and the Natural Resource Conservation Service (NRCS) identified four Wahoo Creek sub-watersheds as Water Quality Initiative (WQI) areas to receive special EQIP and EPA 319 funding for landowners to complete conservation practices to help achieve the numerous identified water quality goals.

Approximately $32,185 of 319 Grant Funds in FY 2021 were spent in the Wahoo Creek watershed. These cost-share monies helped construct practices including approximately 7,000 linear feet of terraces, 3,000 linear feet of tile outlets. The Wahoo Creek Grant also included

approximately 157 acres in the Lands for Conservation program that helps generate Summer work in the watershed.

We is now completing Wahoo Creek Watershed Water Quality Plan Phase II Part B, which has combining $200,000 of EPA 319 funds and $90,000 of Nebraska Environmental Trust Funds along with other federal, state and local funds for completing numerous water quality BMP's. For example, septic systems that are over 30 years old or have an open discharge are eligible for up to $4,800 of cost-share assistance to bring the system up to EPA/NDEE code. To accomplish water quality goals, as outlined in the EPA Water Quality Watershed Plan, is to continue this partnership effort for many years to come. Another major effort that will be completed in the fall of 2021, is the Railroad Road/ Czechland Lake Shoreline Stabilization Project. This is a cooperative effort between LPNNRD and Saunders County.

Shell Creek Watershed EPA Section 319 Water Quality Improvement Efforts

Shell Creek is a major tributary of the Lower Platte River. Land use in the approximately 305,000 acre watershed is predominantly row crop agriculture. The designated beneficial uses (Primary Contact Recreation and Aquatic Life) of some segments of Shell Creek are impaired by elevated levels of Escherichia coli (E. coli) bacteria, selenium, Atrazine and excessive erosion from storm water flow.

The Shell Creek Watershed Improvement Group (SCWIG) is a volunteer committee that formed in 1999 to lead local efforts to identify problems and to promote implementation of conservation practices to improve water quality in Shell Creek. This evolved into an advisory group to LPNNRD continuing to provide local leadership toward reducing erosion and quality impairments in the watershed. A community-based planning approach was used to gather input from the citizens of the watershed for development of the Shell Creek Watershed Environmental Enhancement Plan that emphasizes combinations of practices that improve water quality. Efforts are underway on the plan update to be completed by the end of 2021.

Over the past 20 years, the Shell Creek Watershed has benefited with over $2 million in EPA Section 319 funds combined with approximately $4 million in partnering federal and local funds for assisting landowners in establishing Best Management Practices on their farms. These efforts resulted in Shell Creek becoming the first watershed in the nation to be delisted for atrazine contamination in FY 2018.

In FY 2021, in cooperation with Colfax County, Shell Creek Channel and Bank Stabilization Project near Schuyler north of the Union Pacific Railroad bridge replacement near Colfax County Road 15 was completed. Completion of Shell Creek Channel Improvement and Bank Stabilization will occur south of the railroad bridge to the Platte River will occur in the fall of 2021. In addition, a large Wetland Project was completed in December 2020, in cooperation with a private Platte County landowner. There are over $390,000 of EPA 319 grant funds and approximately $14,000 of NET funds remaining to assist with other Shell Creek Watershed projects.

Erosion and Sediment Complaints

The LPNNRD responds to occasional erosion and sediment complaints. In most cases, these complaints are resolved before going through the formal complaint process. Many cases are drainage issues that are resolved between the District and landowners. During FY 20 the district received no formal complaints, but one verbal and some minor drainage issues.

FY 2022 Soil Conservation Objectives

- Use technical assistance from the NRCS in the planning, design, construction, and maintenance of conservation measures applied to the land.

- Use Federal, state and local funds to promote and implement land and water treatment projects in the Dunlap Creek, North Branch and Miller Branch of Wahoo Creek, along with Cottonwood Creek Watershed and Shell Creek Watershed, to reduce erosion and improve water quality.

- Continue encouraging the implementation of summer conservation construction utilizing federal funding within the Wahoo Creek Watershed through the Lands for Conservation program; for FY22 the NRD has approved $43,050.00 for the set aside of 210 acres.

- Administer $85,024.81 of State NSWCP funds and $25,000 of local cost-share and grant funds to landowners for the construction of terraces, tile outlets, waterways, diversions, small dams, planting of permanent vegetation, and maintaining water quality.

- Continue to promote conservation tillage measures, pasture & range management, sustainable agriculture, and the Conservation Reserve Program (CRP), through news releases and the district's newsletter.

- Recognize the Outstanding Soil and Water Conservationist, at the LPNNRD Recognition Banquet.

- Continue to assist landowners in resolving soil erosion and sediment complaints.

- Provide financial support and staff time to conservation education activities.

- Continue to work closely with locally-led conservation groups to promote soil and water conservation throughout the district.

- Partner with the Shell Creek Watershed Improvement Group (SWIG), EPA/NDEE and NET toward continuing implementation of Best Management Practices in the Shell Creek Environmental Enhancement Plan Implementation.

- Work with NRCS, NDEQ, NET, and Saunders County and the Wahoo Creek locally led Steering Committee in pursuing additional federal and state funds to assist with land

treatment practices as defined in water quality objectives in the Wahoo Creek Watershed Water Quality Plan.

- Assist local landowner groups form advisoring steering committees in the Wahoo and Bone/Skull Creek Watersheds.
-

FY 2023-2027 Soil Conservation Long Range Objectives

- Maintain existing land treatment practices and programs.
- Continue to work with all counties in the district to reduce roadside erosion.
- Administer the NDEQ/EPA 319 Grant Program to improve water quality throughout Wahoo Creek, Shell Creek priority watersheds.
- Begin implementing Best Management Practices under NDEQ/EPA Corridor Alliance Watershed Water Quality Plan.
- Look for new and innovative soil and water conservation methods.
- Partner with NRCS, UNL Extension and landowners to improve all aspects of their water and soil quality.
- Continue to support the Land and Range Judging Contests.
- Continue targeting SWCP land treatment program funds for priority watersheds in the District.
- Use existing and new technology and GIS software programs for implementing and promoting soil conservation practices.
- Promote the use of and make available soil surveys and land use information.
- Continue to support Locally Led Landowner Groups to promote and implement soil and water conservation practices.

FY 2021 Flood Control and Damage Reduction Activities

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

of trees, wildlife habitats and fences destroyed by project construction. The LPNNRD is also responsible for operation and maintenance activities on these projects after they are built.

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

Wahoo Creek Flood Reduction Efforts

In 2017, the Natural Resource Conservation Service (NRCS) approved $1.5 million under their Regional Conservation Partnership Program (RCPP) to assist with planning, design and construction of three Wahoo Creek flood reduction dams, sites 26a, 26b & 27. These dam sites were originally identified as potential projects in the NRCS Wahoo Creek Watershed Plan completed in 1998. The total estimated cost to complete the three dams is $4.1 million. In addition to RCPP funding, there is another $2.3 million of state funds approved through the Nebraska Department of Natural Resources Water Sustainability Fund, leaving $1.5 million needed from local sources. An RCPP agreement with NRCS was approved in September 2017 to accomplish planning, design, permits and construction of the project.

In the fall of 2017, NRCS approved additional funding for the Wahoo Creek Watershed under the federal Watershed Flood Prevention Operations Program (WFPO), historically referred to as P.L. 566. LPNNRD then entered into a three year agreement with NRCS to use federal funds for watershed planning to include sites 26a, 26b, 27 plus an additional seven remaining Wahoo Creek Watershed flood reduction dam sites (55, 66, 77, 82,, 84, 85 & 86). FYRA Engineering has been assisting LPNNRD with completing the Wahoo Creek Watershed plan which will be submitted to NRCS for approval in the fall of 2021. After watershed plan approval, LPNNRD has hired Olsson (Engineering) for completing the design, permitting, bid letting and construction oversight for dam sites 26a., 26b. & 27, along with designing the other seven dams.

After the watershed plan is approved, dam designs will be completed in 2022- 2023. After the first 3 dams are underway, it is anticipated that future federal and state assistance through the federal WFPO program and the state Water Sustainability Fund will be provided to assist with future construction of the remaining seven additional dams

Operation and Maintenance

District staff completed inspections on 45 watershed structures and special projects in the NRD in FY 20/21. These inspections help detect problems before they become serious. Also during the 2020 fiscal year, noxious weeds and volunteer trees were sprayed on 45 dams, Clear Creek Levee and the Rawhide Ditch System. Annual maintenance activities such as removing debris, repairing fences and unplugging risers were completed at many of the dam locations.

Army Corps of Engineers 205 and GI Flood Studies

Over the past few years, the District has partnered with local entities and the US Army Corps of Engineers to study flood protection alternatives for their areas. In 2004, LPNNRD partnered with Fremont, Inglewood and Dodge County to look at a potential levee project to remove areas from the Platte River 100-year ice induced floodplain. In FY 2017, the Fremont study evolved into a General Investigation (GI) Study which determined that there is not a feasible structural solution (levee) to the City of Fremont's flood threat from the Platte River. In 2018 the GI Study evolved back to a 205 Non-Structural Study for the City of Fremont and Dodge County. This effort will continue in FY 2022.

In 2005, LPNNRD entered into an interlocal agreement with the City of Schuyler to evaluate levee protection options to protect the city from flooding from the Platte River and Shell Creek. In FY 2012, the Schuyler 205 Study was completed and entered into the project design phase. In FY 2014 the design phase was completed and LPNNRD assisted Schuyler with obtaining needed land rights for the Shell Creek Levee portion of the project which began construction activities in the spring of 2014 and most construction activities were completed in the fall of 2015. LPNNRD continued to assist Schuyler in FY 2018 with closing out the project with the Army Corps of Engineers. Schuyler continues to do a good job in maintaining the levee.

FY 2022 Flood Control and Damage Reduction Objectives

- Continue with accelerated land treatment efforts in identified priority watersheds in the District.

- Complete biennial inspections on 45 watershed structures; spray noxious weeds & cut and treat trees on 45 dams, Clear Creek Levee and Rawhide ditch; complete regular maintenance activities at all sites.

- Continue to be an active partner on the Joint Water Management Advisory Board to explore flood reduction and drainage solutions in the lower one-third of Dodge County within LPNNRD.

- Partner with the City of Fremont, Dodge County and Papio-Missouri River NRD to establish cameras and water sensors at five locations along the Platte River.

- Partner with Dodge County, City of Fremont, Dodge County, City of North Bend and the North Bend Drainage District toward an eventual FEMA Drainage ImprovementProject.

- Partner with City of Fremont, Dodge County and the Fremont Rod & Gun Club on completing the Platte River Levee Breach Repair Project.

- Continue to educate the public on watershed management and flood reduction in LPNNRD newsletters, news releases and our website.

- Cooperate with landowners and counties in evaluating small dam sites for cost-share throughout the district.

- Continue to partner with the Army Corps of Engineers, FEMA, City of Fremont, Englewood and Dodge County on exploring non-structural opportunities for feasible flood control solutions.

- Support the City of Schuyler for exploring non-structural opportunities for feasible flood control solutions from the Platte River through the LPNNRD District-wide Hazard Mitigation Plan.

- Work with Communities, Counties and other entities on projects identified in our District-wide All Hazard Mitigation Plan.

- Complete the Wahoo Creek Watershed Plan that identifies the future completion of ten flood water reduction dams.

- Complete engineering designs on Wahoo Creek Dam Sites 26a, 26b and 27.

- Begin engineering designs on Wahoo Creek Dam Sites 55, 66, 77, 82, 84, 85, 86.

- Commit funds and staff time toward seeking federal and state funds for constructing the remaining seven unfunded flood water control structures (sites 55, 66, 77, 82, 84, 85, 86) in the Wahoo Creek Watershed.

- Begin the process of updating LPNNRD's district-wide All Hazard Mitigation Plan.

    - Work with Dodge County and City of Fremont and other JWMAB members toward the completion of the Rawhide Watershed WFPO Planning effort

FY 2023-2027 Flood Control and Damage Reduction Long Range Objectives

- Continue to commit funds and staff time toward obtaining additional funding for flood water control/reduction structures in the Wahoo Creek Watershed.

- Continue to budget staff time and funds to maintain and operate completed flood control structures that are sponsored by the LPNNRD.

- Continue to explore flood reduction opportunities for Shell Creek and Skull Creek Watersheds.

- Continue to encourage cities and counties in the district to accept and implement Floodplain Management Authorities.

- Assist Fremont, Inglewood and Dodge County with non-structural flood protection projects as identified by the Army Corps of Engineers study and the Hazard Mitigation Plan Flood Resiliency study.

- Assist Schuyler with non-structural Platte River flood protection project opportunities as they become available.

- Assist District Communities in evaluating future flood protection for their communities through updating the District's Hazard Mitigation Plan and assisting with identified projects.

- Construct Wahoo Creek flood water reduction dams 26a., 26.b and 27.

- Complete engineering designs for eight remaining Wahoo Creek Dam Sites 55, 66, 77, 82, 83, 84, 85 & 86.

- Commit funds and staff time toward obtaining federal and state funds for construction the ten flood water reduction dams in the Wahoo Creek Watershed.

- Continue to work with JWMAB members on the numerous projects identified as flood reduction/drainage improvement projects.

FY 2021 Forestry, Range, Wildlife Habitat, Recreation & Drainage Activities

The district administers several programs designed to enhance the region's forest, range, and wildlife land, including the Tree Planting Program, Wildlife Habitat Programs with Game & Parks and Pheasants Forever, SWCP Program, and Mitigation Program. The district also sponsors educational activities such as Range Judging and Land Judging contests, and other school-oriented activities.

Tree Program

One of the most visible and popular programs offered by the LPNNRD is the district's tree planting program. As a direct result of this program, begun in 1973, an estimated 862,750 trees and shrubs have been planted in the district. Trees and shrubs may be obtained from the NRD for windbreaks, shelterbelts, wildlife habitat, woodlots, and Christmas tree plantings. Besides providing a planting service, the NRD also designs tree plans and offers technical advice on ground preparation for tree sites.

During the spring of 2021, 6,215 trees and shrubs were distributed to District residents. Of this total, 5,245 were planted by the NRD field crew at 12 sites.

Wildlife Programs

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

The district assisted with one Corners for Wildlife payment in FY 20/21.

Community Forestry Program

In FY 2020/21 LPNNRD donated 900 seedlings for children in Fremont, and Newman Grove and provided trees to Conservation Sensation and Fremont EcoFair for educational purposes The District budgets $2,000 for Community tree development projects. The District assisted the American Legion Post in Newman Grove with their RollCall Veterans Memorial for Community Forestry funding.

FY 2022 Forestry, Range and Wildlife Habitat Objectives

- Plant and distribute conservation trees and shrubs through the district's Tree Planting Program.
- Continue to include tree planting as an eligible cost-share practice under the SWCP program.
- Offer trees and give staff presentations to elementary students across the district.
- Assist cooperators to sign up for Wildlife Programs.
- Cooperate with the Extension Service and the NRCS in obtaining tree orders from District residents.
- Recognize a cooperator for outstanding tree planting efforts at the Recognition Picnic/Banquet.
- Provide cost-sharing for the conversion of cropland to grassland through the SWCP program.
- Cooperate with Pheasant Forever Chapters to enhance wildlife habitat and establish windbreaks.

FY 2023-2027 Forestry, Range and Wildlife Habitat Long Range Objectives

- Sell as many trees and shrubs each year through the district's Tree Planting Program, and to plant as many trees and shrubs for qualified property owners.

- Provide information and education on tree planting, woodland management, grassland management, and proper wildlife habitat enhancement through the media, tours, and schools.

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

FY 2021 Recreation Activities

Czechland Lake Recreation Area

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

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

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

The Czechland recreation area was used extensively during FY 21 generating approximately $18,000 in camping revenue. Mowing, trash removal, repair and upkeep of park equipment, and thistle control kept LPNNRD park staff very busy during the spring and summer.

Homestead Lake (Skull Creek Site #55)

Construction was completed on Homestead Lake in 2001. The dam offers flood control for nearby communities, and has been developed for public recreation. Recreation facilities include a shelter, restroom, picnic areas, a boat ramp, and hunting areas. FY 2021 proved to be another very popular year for recreators as the area was extensively used.

Lake Wanahoo

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

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

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

The day use area on the east side of the lake has two large picnic shelters and two smaller ones, all offering scenic views of the lake. In FY17 a dump station for RV's was constructed on the east day use area as well as a disc golf course/nature educational trail.

Both the camping and day use areas provide excellent fishing access, with a total of seven fishing jetties. One jetty on each side has an attached handicapped pier. The lake was stocked with largemouth bass, bluegill, blue catfish, crappie, northern pike, and walleye beginning in 2008.

Limited hunting opportunities will continue to be available at Lake Wanahoo through the Game & Parks Commission PATH Program, where adults can schedule a time to mentor a youth hunter at designated hunting sites north of the recreation area.

The Lake Wanahoo Recreation Area was opened to the public in spring 2012. An operation and maintenance plan was developed with the assistance of the Nebraska Game and Parks Commission and Pheasants Forever in FY 2014 which identified activities that were implemented in 2015 .

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

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

FY 2022 Recreation Objectives

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

- LPNNRD will continue managing all recreation at the Lake Wanahoo recreation area.

FY 2023-2027 Recreation Long Range Objectives

- Continue to evaluate the development of new outdoor public recreational opportunities as they arise.

- Continue to assist NE Game & Parks and Pheasant Forever in developing new areas offering public access.

Drainage Improvement and Channel Rectification

FY 2022 Drainage Improvement & Channel Rectification Objectives

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

- Work with Colfax County to complete the Shell Creek South Channel Improvement/Benching Project
- In partnership with the North Bend Drainage District, Dodge County and City of Fremont, support the drainage improvement project assessment of the North Bend drainage ditch through FEMA.

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

- Provide continued assistance to Platte Center with stabilizing a segment of Elm Creek.

- Work with local landowners and Colfax County to improve Shell Creek flows east of Schuyler.

FY 2023-2027 Drainage Improvement & Channel Rectification Long Range Objectives

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

FY 2021 Waste Disposal & Pollution Objectives

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

FY 2022 Waste Disposal & Pollution Objectives

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

- Participate in education efforts to promote the reduction of pollution to our air, water, and soil resources.

- Cooperate and be supportive of other group and agency pollution control efforts, education, and/or regulation.

FY 2023-2027 Waste Disposal & Pollution Long Range Objectives

- Assist and encourage all District communities in establishing collection locations for recyclable wastes.

- Assist District cities and counties in establishing pickup days for hazardous household and farmstead wastes as opportunities arise.

- Promote waste reduction efforts in the district through education and incentives.

FY 2021 Information & Education Activities

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

During fiscal year 2021, the Lower Platte North NRD conducted many activities to help residents learn the importance of our soil and water resources and to stay informed of issues and concerns regarding natural resources. Some of the highlights included:

Publications (Print and Digital)

In FY 2012, the district switched distribution of "The Viaduct" newsletter from direct mail subscriptions to inserts in area newspapers. In FY 2021, more than 26,000 copies of the newsletter were distributed in area newspapers and via email.

Various brochures describing LPNNRD programs and services were updated as needed in FY 2021. These brochures are displayed in the office and distributed during LPNNRD sponsored events and exhibit booths. A Fact Sheet for use with the NARD's public relations campaign at public events is updated yearly.

Press releases are distributed to district papers and radio stations. Numerous ads spotlighting different NRD programs and upcoming deadlines air on KTIC Radio throughout the year. Digital ads on the Wahoo newspaper website continued in FY 2021. In FY 2020, the LPNNRD began airing 30-second program commercials on News Channel Nebraska. The Lake Wanahoo commercial aired during the summer of FY 2020. In FY 2021, the LPNNRD aired the newly produced Projects video, and Operations and Maintenance video, along with the Lake Wanahoo video.

Website

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

Video Promotion

During FY 2018, the district worked with redthread to create a 1 minute and 30 second video that promotes the conservation efforts of the district. The video is very unique to the Lower Platte North NRD because no professional acting or voice talent was hired for the video. A past director, current director, and current staff are featured in the video. The children of a current employee and a current director were also featured in the video.

During FY 2019, redthread created a promotional video for the Lake Wanahoo NRD Recreation Area. With the need to bring nature and outdoor recreation to people during the pandemic, the commercial was featured in 30-second spots on News Channel Nebraska during the summer of 2020.

KLKN produced a video to promote LPNNRD's water conservation efforts. The video featured LPNNRD Water Department staff and various water quality and quantity efforts.

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

The LPNNRD plans to create a video for the Information and Education department during FY 2022. This video will focus on the district's information outreach efforts and environmental education. Once completed, clips from the department videos will be combined to create another video that will feature all of the programs at the LPNNRD.

These videos are shown as commercials through area television stations, educational purposes for presentations and featured on social media platforms.

Education Programs

During FY 2021 the district continued with two year-long programs. The St. Wenceslaus Pre-kindergarten students learn about wildlife, trees, birds, recycling and water conservation through books, pictures, stories, and hands-on activities. The students also came out to Lake Wanahoo at the end of the year for a field trip filled with nature hikes and disc golf. The district teamed up Wahoo Public 8th Grade students for the Survival Club program, making a total of three full school years of the program. LPNNRD staff and other outdoor enthusiasts meet monthly with students during the school year to learn about hiking, knot tying, 2-legged predators, 4-legged predators, fishing, first aid, foraging for wild foods, fire building and other outdoor survival skills. Towards the end of the school year, the Survival Club meets at Lake Wanahoo for a year-end campout to test their new outdoor skills. We did not hold the year-end campout but look forward to getting it back on the calendar in FY 2022.

The district continues to participate in the Career Exploration Opportunities (CEO) Program with Wahoo Public Schools. During the Spring semester of 2021, LPNNRD staff hosted one high school senior and he rotated between each department to learn about the LPNNRD responsibilities.

Since the completion of the Education Building on the East side of Lake Wanahoo, the LPNNRD staff has been able to hold events in conjunction with area teachers and students for hands-on education. LPNNRD staff started a monthly educational event called, Coffee, Lakeside

that has discussed topics such as April gardening activities, migratory birds of Lake Wanahoo, fishes of Nebraska, tall-grass prairies, bats of Nebraska, and lake ecosystems.

The Lower Platte North NRD and Lower Platte South NRD rotate in hosting the East Central Land Judging Contest. Land Judging is a competition for high students that challenges them to gain a better understanding of soil structure and land evaluation. The Lower Platte North NRD works with local NRCS employees to choose a site location and help with site preparation. The East Central Land Judging was postponed in FY 2021 due to the pandemic. The plan for FY 2022 is to have the Lower Platte South NRD host the land judging contest at a site to be determined and the staff at the Lower Platte North NRD to assist.

The annual LPNNRD Spring Conservation Sensation celebrated its 30th anniversary this year! Fifth and sixth grade students from Saunders, Butler, and Dodge Counties participated in various activities. Hands-on activities were presented by LPNNRD staff, additional personnel from various agencies and organizations, and volunteers to teach students about the environment, natural resources, tree planting, lake ecosystems, wildlife education and more.

The Outdoor Recreation Youth Workshop coordinated by the LPNNRD and Saunders County UNL-Extension was held at Lake Wanahoo. 4H students and other participants who attended learned a variety of outdoor recreation activities including how to kayak, how to play disc golf, how to start campfires, and they also had the opportunity to learn about owls by dissecting owl pellets. The other event coordinated between LPNNRD and Saunders County UNL-Extension is the Saunders County Youth Ag Tour, and due to low numbers, that was canceled.

"Test Your Well Night" is a program that partners with area FFA chapters to host public events, providing nitrate testing on water samples from private wells at no cost to the attendees. The district held an event with East Butler where over 50 water samples were collected and tested by the FFA students.

District staff provided various presentations and activities during natural resources festivals, field days, out-of-school time programs, school classrooms, online activities on the LPNNRD website, and adult education events. As a result of the district's educational outreach efforts, there was interaction with approximately 809 youth and 43 adults in FY 2021.

Awards, Contests, and Events

The LPNNRD provided a display at the 2021 Butler County Fair. Most of the County Fairs in the District did not offer booth space due to the lingering effects of the pandemic. The LPNNRD plans to provide displays at up to five area county fairs, and agriculture related events in the district in the future.

The LPNNRD provided assistance through preparation and completion during the 2021 NCF-Envirothon Virtual Contest. Staff helped to prepare media and advertising, prepare

packages for contestants, and help with judging the oral presentations. The NCF-Envirothon was postponed from 2020 due to the pandemic, and for safety precautions, was held virtually in 2021.

In FY2021, LPNNRD directors voted to rename the Lake Wanahoo Education Building to honor a former influential LPNNRD director. In a unanimous vote, the building was renamed to the Clint Johannes Education Building at Lake Wanahoo. An open house and dedication ceremony was held in August 2021. The LPNNRD holds environmental education programs for all ages throughout the year at the building for special programs and events with area schools, and outside-of-school groups.

FY 2022 Information & Education Objectives

- Publish the district newsletter "Viaduct" biannually in an electronic format and as a printed newspaper insert in 10 area newspapers.
- Send timely news releases to the local media on various LPNNRD programs, projects, and activities.
- Disperse pamphlets and other publications about LPNNRD programs.
- Update the district's website frequently.
- Continue to provide a display at county fairs (up to five major counties) within the district.
- Continue information and education outreach for the district through the use of tools such as local radio stations, local tv stations, and social media outlets (Facebook, Twitter, YouTube, etc.).
- Continue with the annual awards and recognition program.
- Provide district elementary students with free trees, as requested, in the spring.
- Provide LPNNRD staff as requested to speak to community organizations and schools on NRD activities and environmental topics.
- Provide various education programs, events, and activities to area schools and out-of-school time programs.
- Provide assistance for the East Central Region Land Judging Contest in the fall of 2021, hosted by Lower Platte South NRD.
- Host the 31st Annual Spring Conservation Sensation in May 2022.

- Develop new programs and promotional projects to aid in outreach efforts of the district.
- Develop a video for the Information and Education department.
- Provide assistance and publications for the students involved in the Shell Creek Watershed Monitoring Program.

FY 2023-2027 Information & Education Long Range Objectives

- Search for new and effective ways to inform and educate the public on the NRD purpose and programs.
- Participate with the Information & Education Staff Group to coordinate statewide I&E activities and produce statewide products.
- Increase participation in activities sponsored by other agencies related to NRD responsibilities.
- Seek to have conservation/environmental education as a part of the school curriculum.
- Support environmental education activities and events throughout the district, and neighboring NRDs.
- Provide assistance for the East Central Region Land Judging Contest in the fall of 2022, hosted by Lower Platte South NRD.
- Assist in the development of an outdoor classroom for a district school.
- Partner with district schools to host “Test Your Well Night” events annually.

LPNNRD Staff

The staff of the Lower Platte North NRD includes 17 full-time and part-time employees stationed at the district office in Wahoo. The NRD administers a full-time field technician, four field office assistants in Natural Resource Conservation Service county offices, and a Recreation Facilitator for Czechland & Homestead Lake Recreation Areas.

Current staff as of September 1, 2021:

Sydney Abbott, **Education Coordinator**

Daryl Andersen, **Water Resources Manager**

Tyler Benal, **Water Resources Specialist**

Jill Breunig, **Bookkeeping Department Head/Administrative Assistant**

Will Brueggemann, **Water Resources Specialist**

Duke Dokulil, **Operations & Maintenance Technician**

Sean Elliott, **Projects/Rural Water Manager**

Eric Gottschalk, **General Manager**

Bob Heimann, **Operations & Maintenance Manager**

David Moore, **Operations & Maintenance Technician**

Tom Mountford, **Assistant General Manager**

Russell Oaklund, **Lead Water Resources Specialist**

Dave Odvody, **Recreation Facilitator**

Chris Poole, **Grants/GIS Department Head**

Karen Rezac, **Department/Administrative Assistant**

Lacey Sabatka, **Information Coordinator**

Bret Schomer, **Wanahoo Recreation Supervisor/Water Resources Specialist**

Staff Support for NRCS Offices:

Vacant, **Conservation Technician**

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

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

Luz Schafersman, **NRD/NRCS Field Office Assistant (Dodge County)**

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

Melissa Foreman, **Shell Creek Watershed (LPNNRD & SCWIG Volunteer)**

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

Financial

FY 2022 Financial Objectives

Funding required for the LPNNRD projects and programs for Fiscal Year 2021 requires a general operating budget of $7,782,546 of which $3,458,000 is required from the district's local tax levy. The

2022 tax levy of .033457 cents per $100 actual valuation is required from District property. Projected expenses and income for FY 2021-2026 are shown in Appendix F.

A tax levy of .033457 means that an owner of a $150,000 home will pay $50.19 in NRD taxes in FY 2022. An owner of farm land valued at $7,000 per acre will pay $2.34 an acre/year to the NRD in FY 2022. The LPNNRD levy represents about two percent of the total property tax collected.

FY 2023-2027 Long Range Financial Objectives

Although it is expected that the amount of revenue from all sources will fluctuate during the next few years, it is anticipated that the LPNNRD will operate at a mill levy between $0.035 and $0.055 per $100 actual valuation as the District continues to assist with flood reduction project priorities and addresses our responsibilities with groundwater water quality and quantity management.

LPNNRD LONG RANGE PROJECTED EXPENSES FY 2022 - 2027

Description	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
ADMINISTRATION						
Bonds	100	100	100	100	100	100
Dues and Membership	37,254	38,000	39,000	40,000	41,000	43,000
Fees & Licenses	10,600	11,024	11,465	11,924	12,401	12,897
GIS	2,000	2,000	2,000	2,000	2,000	2,000
Insurance	70,427	73,244	76,174	79,221	82,390	85,685
Interest Expense	0	0	0	0	0	0
Legal Notices	2,600	2,704	2,812	2,925	3,042	3,163
Maintenance Contracts	5,000	5,150	5,356	5,570	5,793	6,025
Office Supply & Expense	11,350	11,804	12,276	12,767	13,278	13,809
Computer Supply & Expense	30,400	31,000	32,000	33,000	34,000	35,000
Postage	6,500	6,760	7,030	7,312	7,604	7,908
Professional Services	136,575	138,000	140,000	142,000	144,000	146,000
Rent Expense	1,700	2,000	2,000	2,000	2,000	2,000
Support to Organizations	1,000	1,200	1,300	1,400	1,500	1,600
Telephone	19,100	19,864	20,659	21,485	22,344	23,238
Utilities	8,500	8,840	9,194	9,561	9,944	10,342
INFORMATION & EDUCATION						
Education	11,500	11,960	12,438	12,936	13,453	13,992
Information	29,950	31,148	32,394	33,690	35,037	36,439
Scholarships and Grants	3,000	3,120	3,245	3,375	3,510	3,650
Other	9,750	10,140	10,546	10,967	11,406	11,862
OPERATION/MAINTENANCE						
Auto & Truck Expense	22,000	22,880	23,795	24,747	25,737	26,766
Building Maintenance	9,300	9,672	10,059	10,461	10,880	11,315
Comm. Forestry Program	2,000	2,000	2,500	2,500	3,000	3,000
Operation and Maintenance	286,750	298,220	310,149	322,555	335,457	348,875
Project Repairs	3,000	15,000	15,000	15,000	15,000	15,000
Stream Bank Stabilization	25,000	25,000	25,000	25,000	25,000	25,000
Wildlife Habitat	3,820	5,000	5,000	5,000	5,000	5,000
Other	42,550	50,000	50,000	50,000	50,000	50,000
PERSONNEL						
Directors Expense	38,700	40,248	41,858	43,532	45,274	47,084
Directors Per Diem	38,000	38,000	38,000	38,000	38,000	38,000
Employee Benefits	463,000	481,520	500,781	520,812	541,645	563,310
Payroll Taxes	93,000	96,720	100,589	104,612	108,797	113,149
Personnel Expense	35,300	40,000	40,000	40,000	40,000	40,000
Salaries	1,229,800	1,303,767	1,342,880	1,383,166	1,424,661	1,467,401
PROJECTS						
Inter-governmental	458,500	500,000	500,000	500,000	500,000	500,000
Special Projects	33,500	35,000	35,000	35,000	35,000	35,000
Wanahoo	65,000	15,000	15,000	15,000	15,000	15,000
Other Projects	44,000	200,000	200,000	200,000	200,000	200,000
PRCA (WQ Monitoring)	6,562	7,000	7,000	7,000	7,000	7,000
WATER						
Groundwater Management Plan	33,100	40,000	50,000	60,000	65,000	70,000
Groundwater Programs	181,150	188,396	195,932	203,769	211,920	220,397
Regulatory	1,750	2,000	2,000	2,000	2,000	2,000
Surface Water Programs	17,700	18,000	18,000	18,000	18,000	18,000
Special Projects	80,500	150,000	150,000	150,000	150,000	150,000
Land Treatment	930,000	750,000	750,000	750,000	750,000	750,000
RURAL WATER DISTRICT	139,220	140,000	140,000	140,000	140,000	140,000
CAPITAL IMPROVEMENTS						
Wanahoo Stilling Basin & Oversight	1,700,000	0	0	0	0	0
Wanahoo Fish Station & Store	140,000					
Wahoo Creek Dams	739,358	1,277,500	1,277,500	3,500,000	2,450,000	2,100,000
Land rights (Wahoo Creek)	0	547,500	547,500	1,500,000	1,050,000	900,000
Cottonwood 21A Spillway	0	50,000	0	0	0	0
Buildings	40,000	40,000	40,000	40,000	40,000	40,000
Large Structure O&M Sinking Fund	100,000	100,000	100,000	100,000	100,000	100,000
Flood Reduction Sinking Fund	400,000	400,000	400,000	400,000	400,000	400,000
CAPITAL OUTLAY	417,500	100,000	100,000	100,000	100,000	100,000
BUDGET TOTAL	**8,217,366**	**7,396,481**	**7,453,531**	**10,738,387**	**9,347,170**	**8,960,007**

Description	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
AVAILABLE CASH (Sinking Funds etc.)	$ 304,410	$ 812,848	$ 869,898	$ 1,643,754	$ 1,573,537	$ 1,626,374
FEDERAL INCOME						
NRCS (WFPO & RCPP)	$ 639,358	$ 1,200,000	$ 1,200,000	$ 3,500,000	$ 2,450,000	$ 2,100,000
FEMA (Stilling Basin)	$ 1,600,000					
FEMA (Flood Funds)	$ 348,413					
NDEE (EPA 319)	$ 567,730	$ 300,000	$ 300,000	$ 300,000	$ 300,000	$ 300,000
STATE INCOME						
NE Buffer Strip Program	$ 27,000	$ 27,000	$ 27,000	$ 27,000	$ 27,000	$ 27,000
Decommissioned Well Fund	$ 3,500	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000
Natural Resource WQ Fund	$ 57,077	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
Shell Creek Implememtation	$ 43,829	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
Wahoo Creek Phase II (NET)	$ 13,989	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
Water Sustainability Fund	$ 60,000	$ 690,000	$ 690,000	$ 900,000	$ 630,000	$ 540,000
Water Department (NET)	$ 18,500	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000
Sand Creek - NRDF	$ 219,144					
Lake Wanahoo Other	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000
Wild NE	$ 3,820	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000
Moter Vehicle Prorate	$ 8,400	$ 8,400	$ 8,400	$ 8,400	$ 8,400	$ 8,400
OTHER INCOME						
Rural Water Income	$ 140,724	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000
Property Tax	$ 3,476,233	$ 3,476,233	$ 3,476,233	$ 3,476,233	$ 3,476,233	$ 3,476,233
Investment Income	$ 3,645	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000
Equipment, Rent, Parks, Salaries, Other	$ 530,157	$ 400,000	$ 400,000	$ 400,000	$ 400,000	$ 400,000
Local Income	$ 131,437	$ 130,000	$ 130,000	$ 130,000	$ 130,000	$ 130,000
TOTAL	**$ 8,217,366**	**$ 7,396,481**	**$ 7,453,531**	**$ 10,737,387**	**$ 9,347,170**	**$ 8,960,007**