

Projects Committee Meeting
Thursday, February 1, 2024 7:30 AM
Lower Platte North NRD Office
P.O. Box 126
Wahoo, NE 68066

1. UNFINISHED BUSINESS

2. SWCP

2.A. SWCP Payments

One project NRCS certified for SWCP reimbursement:

23-S-4 MARK KASPAR	\$	10,996.77	TOT/WASCB TO
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3. JOINT WATER MANAGEMENT ADVISORY BOARD (JWMAB)

A JWMAB meeting occurred on January 18th at 10:00 am at Fremont Council Chambers. The agenda, project summary including financial, and a copy of the presentation is attached.

Also, from Tom Smith, Dodge County Emergency Manager

Afternoon, at last week's Joint Water Management Advisory Board meeting, I mentioned the National Weather Service webpage for ice jam risk. The page contains multiple tabs including risk indicator, river levels, snowpack, temperature outlook, and river cameras. It is very convenient to have all this information in one location.

This page is updated at least weekly, Wednesdays, this time of year;

<https://www.weather.gov/oax/icejamrisk>

This is public information. Please feel free to share.

We will push out some social media posts regarding this.

3.A. Rawhide Creek Watershed - NRCS WFPO

JEO recently submitted 90% draft documents to NRCS. NRD staff have not had a chance to review them yet. A meeting with NRCS is set for February 8th to provide comments to the documents.

JEO is proposing to survey four properties on the west side of the Cutoff Ditch with concerns of negative consequences if the road raise happens. There is a map attached showing these properties. JEO did not proposed to survey any other properties (properties to the North) because they are not showing an adverse impact when looking at flood inundation elevations upstream of Cutoff Ditch. Meaning post project, they do not show a rise in water elevations from existing. We are working with Dodge County as this effort may take additional funds if we wish to do it at this time and we have been asked to contact the four homeowners for permission to survey. Typically elevations and refinement like this is conducted during the Design and Permitting phase. Committee direction is requested.

4. SHELL CREEK WATERSHED

4.A. Shell Creek Implementation - 319 & NET

On 1/23 SCWIG met at Columbus FO, agenda attached. Discussion held over:

- Project status
 - Shell Creek south bench
 - OWT
 - Bos projects
 - Wolfe Jetty
- September Shell Creek Project showcase
- Outreach: mailings/brochures

4.B. Shell Creek onsite wastewater upgrade applications

Kenneth Nelson	OWT Upgrade	60/40	\$7,500.00
Rick Loseke	OWT Upgrade	60/40	\$7,500.00
Dean Sander	OWT Upgrade	60/40	\$7,500.00

5. SKULL & BONE WATERSHED

NRCS is planning to be at the LPNNRD office at 10:30 am on Tuesday, February 27th for the Skull & Bone PIFR kickoff meeting. They suggested inviting interested partners.

6. WAHOO CREEK WATERSHED

6.A. Dam Site Planning Update

6.A.1. Design - Olsson

Attached are this month's progress report and invoice 484643: \$23,004.23.

6.A.2. Real Estate - Olsson & Great Plains Appraisal

Danielle Allen will be available to update committee on easement acquisition status.

We are still awaiting USACE approval of language within our form of easement for mitigation areas.

We need to define precedence for future negotiations that have impacted cost-share work, eg terrace/tile outlet systems.

The likelihood of earthwork/construction activity to begin during growing season is less likely now, do we "allow" farming within easement areas this (2024) year?

Olsson invoice attached for \$9,232.53

6.A.3. Funding - NRCS WFPO & NeDNR JEDI

6.B. Water Quality - NWQI & 319

Staff are working on updating the NDEE 319 Watershed Management Plan and a Project Implementation Plan (work plan) for funding. Meetings are also ongoing with NRCS to better define NWQI assistance needed from the NRD and funding to request from 319.

7. LOWER PLATTE RIVER COORIDOR ALLIANCE

Matt Moser will be present to discuss a potential trend analysis for Platte River water quality. Attachment is from November LPRCA meeting.

8. MORSE BLUFF LEVEE

It appears that Dan Melanson will be leading the project. Here is a recent email from Dan along with 11/11/2023 meeting minutes attached. We will keep the committee updated regarding upcoming meetings and progress.

Another meeting date/time is in the works to continue our initiative to secure resources and funding to rebuild the Morse Bluff levee. From this last meeting and previous, many ideas have surfaced in order to accomplish this, and the team agrees more focused and active engagement is necessary.

With the recent activity around the rescheduled January meeting, I've included Ryan Sabatka and Senator Bruce Bostelman in this email communication for awareness. Also, as we solidify participants for the next meeting and follow-up action items, we can formalize communication distribution lists for the primary team as well as community updates.

We appreciate everyone's time and support as we continue forward.

9. HAZARD MITIGATION PLAN UPDATE

10. OTHER

11. ADJOURNMENT

Joint Water Management Advisory Board
January 18, 2024 - 10:00 A.M.
City of Fremont Council Chambers,
400 E. Military Avenue, Fremont Nebraska

Agenda:

1. Meeting called to order – Bob Missel
2. Roll call.
3. Approval of the minutes from the November 22, 2022, meeting.
4. Project Updates
 - a. East Fremont & Elkhorn Township Drainage Improvement Project – Tom Smith DCEM, Kevin Kruse JEO
 - b. Platte River Gauge Monitoring – Tom Smith DCEM
 - c. Dodge County Residential Construction-Tom Smith DCEM
 - d. North Bend Cutoff Ditch – Tom Smith DCEM
 - e. Rawhide Creek Watershed Plan (USDA NRCS), Tom Smith DCEM, John Petersen JEO
 - f. West Fremont & Platte Township Building Resilient Infrastructure and Communities (BRIC) project-Tom Smith DCEM, Kevin Kruse JEO
 - g. Other projects/grants
5. Member updates
6. Public comments
7. Adjournment.

A meeting notice was posted at the Fremont Municipal Building, Dodge County Courthouse, and the Lower Platte North Natural Resources District Office in Wahoo on January 17, 2024, and was distributed to the governing partners of the advisory board. The official current copy of the agenda is available at Municipal Building, 400 East Military, office of the City Clerk. A copy of the Open Meeting Law is posted in the meeting room for review by the public.

Status

Flood Control-Hazard Mitigation Projects

Status	Project Description	Total Project Estimated Costs	Project Due	Project Expenses to Date PAID BY DODGE COUNTY		Project Expenses Reimbursed TO COUNTY to Date		Service Contract Agreement	Local Cost Share** (collected at closeout of projects)	Mgmt Costs (5% of total project cost) Reimbursed to County to date	**CDBG-DR Application Submitted	Status
				Total	\$	Total	\$					
CURRENTLY In CLOSEOUT	FEMA HMPG Advanced Assistance-Elkhorn Township (East Fremont) Drainage Study* improve drainage system from Fremont and within the Elkhorn Township	\$800,000.00	7/19/2023	Total	\$ 739,580.00	Total	\$ 554,685.00 \$ 184,895.00	JEO- \$739,580.00	Dodge County \$67,000.00- City of Fremont \$66,500- LPNNRD \$66,500-	\$5,293.50(split Cof LPNNRD \$1,660.00 \$2,042.00)	Funding Received \$184,895.00	City of Fremont application submission into FEMA Go under BRIC program for construction funding. Interlocal Agreement Signatures
CLOSED	FEMA HMPG-Platte River Monitoring* Install cameras and guages along Platte River to improve situational awareness.	\$38,880.00	Complete	Total	\$ 38,880.00	Total	\$ 29,160.00 \$ 9,720.00		Dodge County \$6,750.00- LPNNRD \$6,750.00- City of Fremont \$6,750.00- PMNRND, \$6,750.00	\$1,002.80 LPNNRD, reimbursed back to the LPNNRD from County	Funding Received \$9,720.00	LPNNRD O&M ongoing costs split among partners for USGS Cooperative
ON SCHEDULE	FEMA HMPG-Dodge County-Residential Construction* purpose Homeowners have opportunity to mitigate home from flooding.	\$511,382.00	9/1/2024	Total	\$ 1,500.00	Total	\$ -	JEO Mgmt Costs- \$39,700.00	Property Owners pay local cost of their project Dodge County reimbursement of Management costs (JEO-\$39,700.00)	\$13,449.81	Yes, NOIA up to \$127,845.50	Coordination with Home owners
ON SCHEDULE	FEMA HMPG-North Bend Drainage District*- establish east bank to mitigate flooding from west.	\$1,633,357.47	9/1/2024	Total	\$ 149,998.67	Total	\$ 112,499.00	FYRA PH1- \$129,040.00	North Bend Drainage- \$25,000.00 Dodge County \$100,000- LPNNRD- \$100,000- City of Fremont- \$100,000-	\$7,487.50 (FYRA)	Yes, NOIA up to \$408,399.37	Awaiting PH2 Approval from FEMA; Grant Agreement Signature, FYRA PH II Signature
CLOSED	CDBG-EM Breach Lake (19EM-005) repair damage from 2019 and 2020, develop plan for maintenance and easement	\$647,380 project cost overrun \$42,435.56	Complete	Total		Total		JEO- \$63,600.00 Yost- \$597,323.50	LPNNRD-\$50,000 (\$13,065.00) PAID 10/24/22 City of Fremont;\$50,000-PD - (\$13,065.00) Dodge County;\$50,000-PD Rod and Gun \$12,380.00-PD(\$3,240.56)		Not eligible	Currently awaiting payment for Cost Overrun, each entity was emailed an invoice 8/2522, O&M-Easement secured by City of Fremont
BEHIND SCHEDULE (6 Months)	NRCS-Rawhide Creek* create a watershed plan, identifying alternatives within the plan to mitigate flood risk.	\$745,000.00	Plan Finalized 3/2024	Total	\$ 604,091.19	Total	\$ 604,091.19	JEO- \$670,500.00	None for this phase-plan development		Not eligible	3 Alternatives Total construction estimate \$38,481,500.00 Local Cost Share Estimate \$9,607,200.00 Annual O&M Cost Estimate \$169,976.00
ON SCHEDULE	BRIC-Scoping Project-(West Fremont)* to develop project application to mitigate flooding in South West Fremont	\$250,000.00	4/2025	Total	\$ 138,733.23	Total	\$ 104,049.91	JEO- \$249,590.00	LPNNRD-\$20,000.00 City of Fremont;\$20,000.00 Dodge County;\$22,500.00	NA	Not eligible	Alternative Cost development

\$ 1,672,783.09 \$ 1,599,100.10

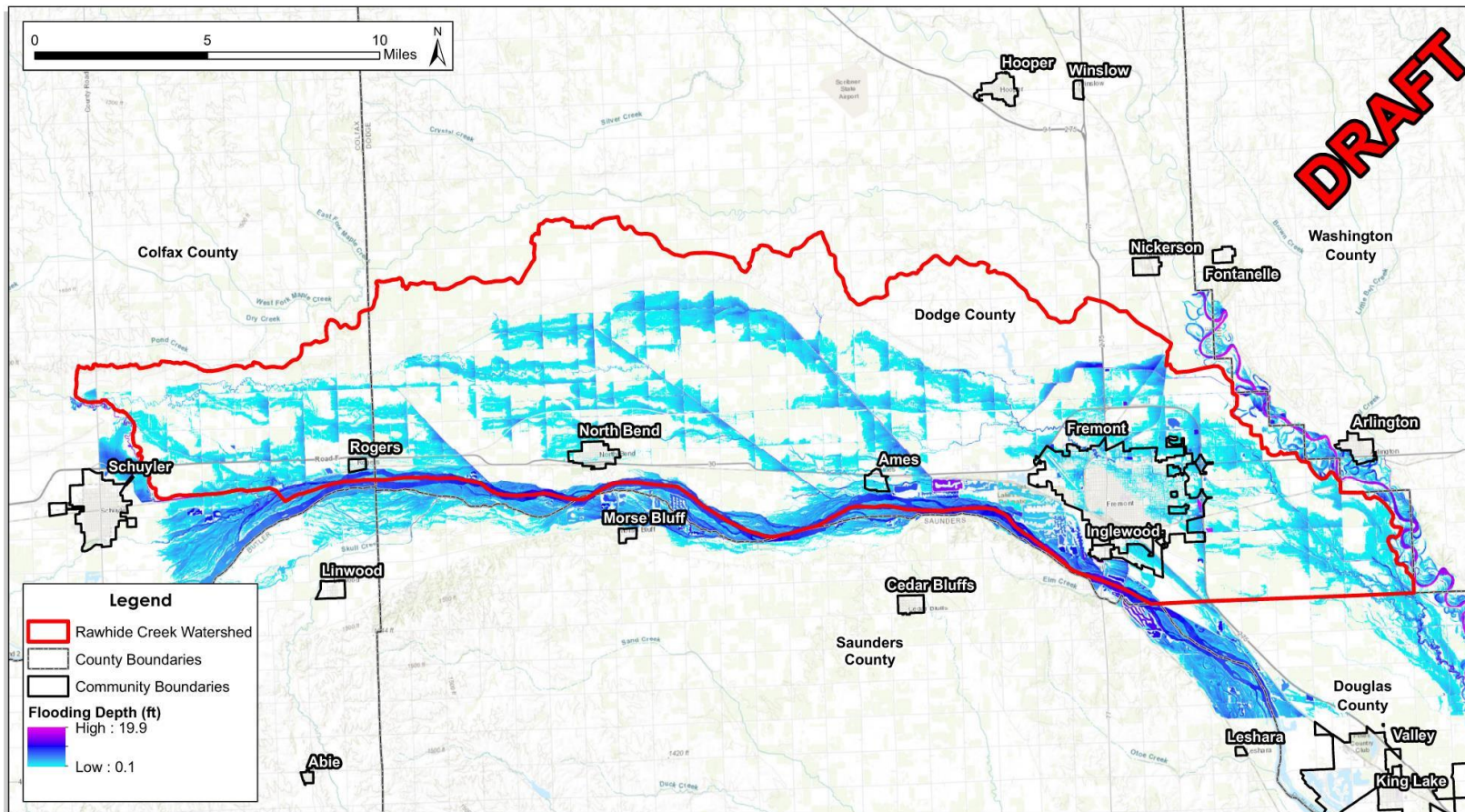
*These are reimbursement grants

Rawhide WFPO Plan-EA

JOINT WATER MANAGEMENT ADVISORY BOARD
01/18/2024



Background



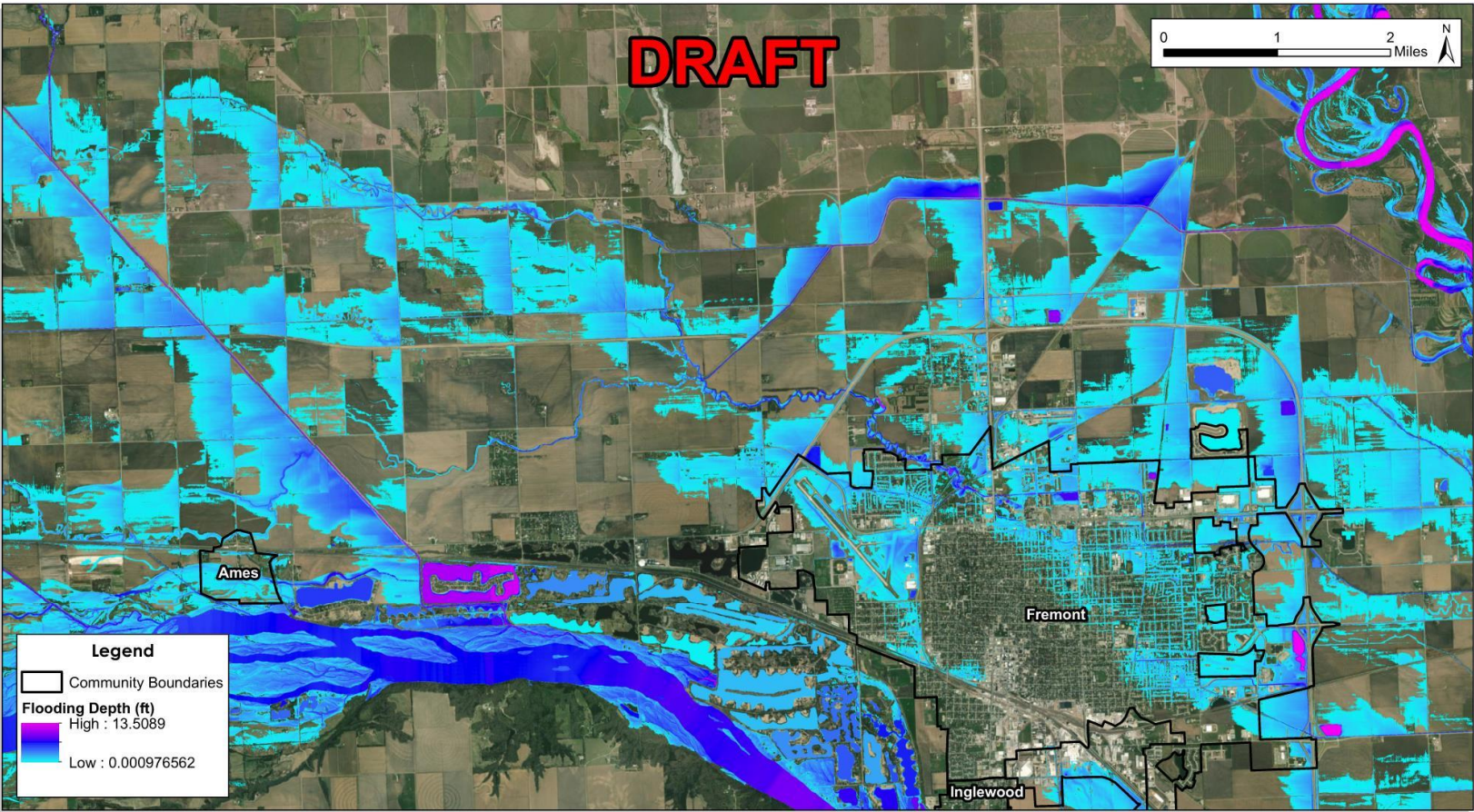
Existing Conditions 100-Year Flood Extents

Dodge County, NE

Date: 3/15/2023
Software: ArcGIS 10.8.1
This map was prepared using information from record drawings supplied by JEO and/or other applicable city, county, federal, or public or private entities. JEO does not guarantee the accuracy of this map or the information used to prepare this map. This is not a scaled plot.



Background



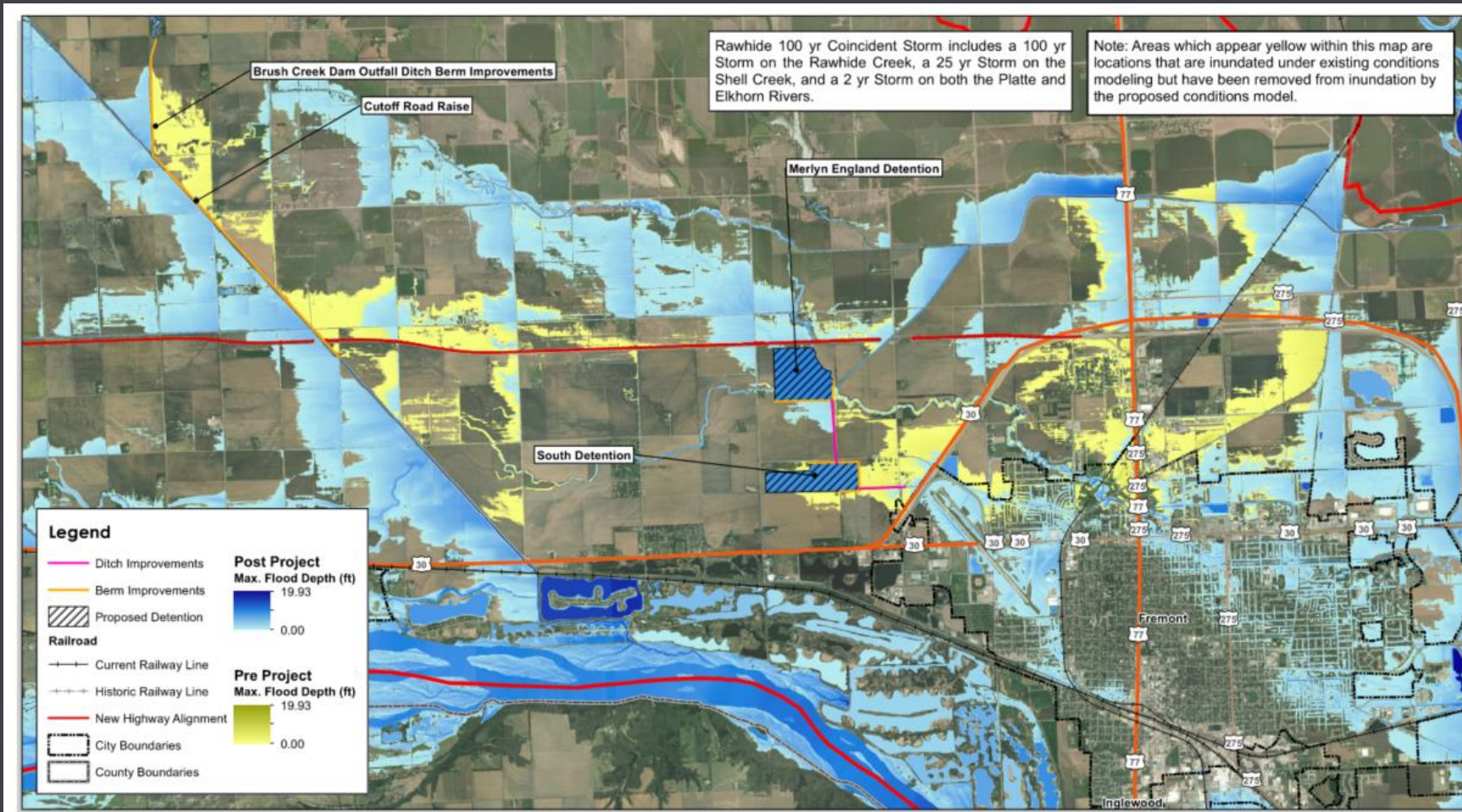
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Dodge County, NE



Alternatives



Created By: CEO
Date: 8/25/23
Software: ArcGIS 10.8.1

Rawhide Creek 100-year Coincident Flow - Reworked Alternatives 1-3

DRAFT

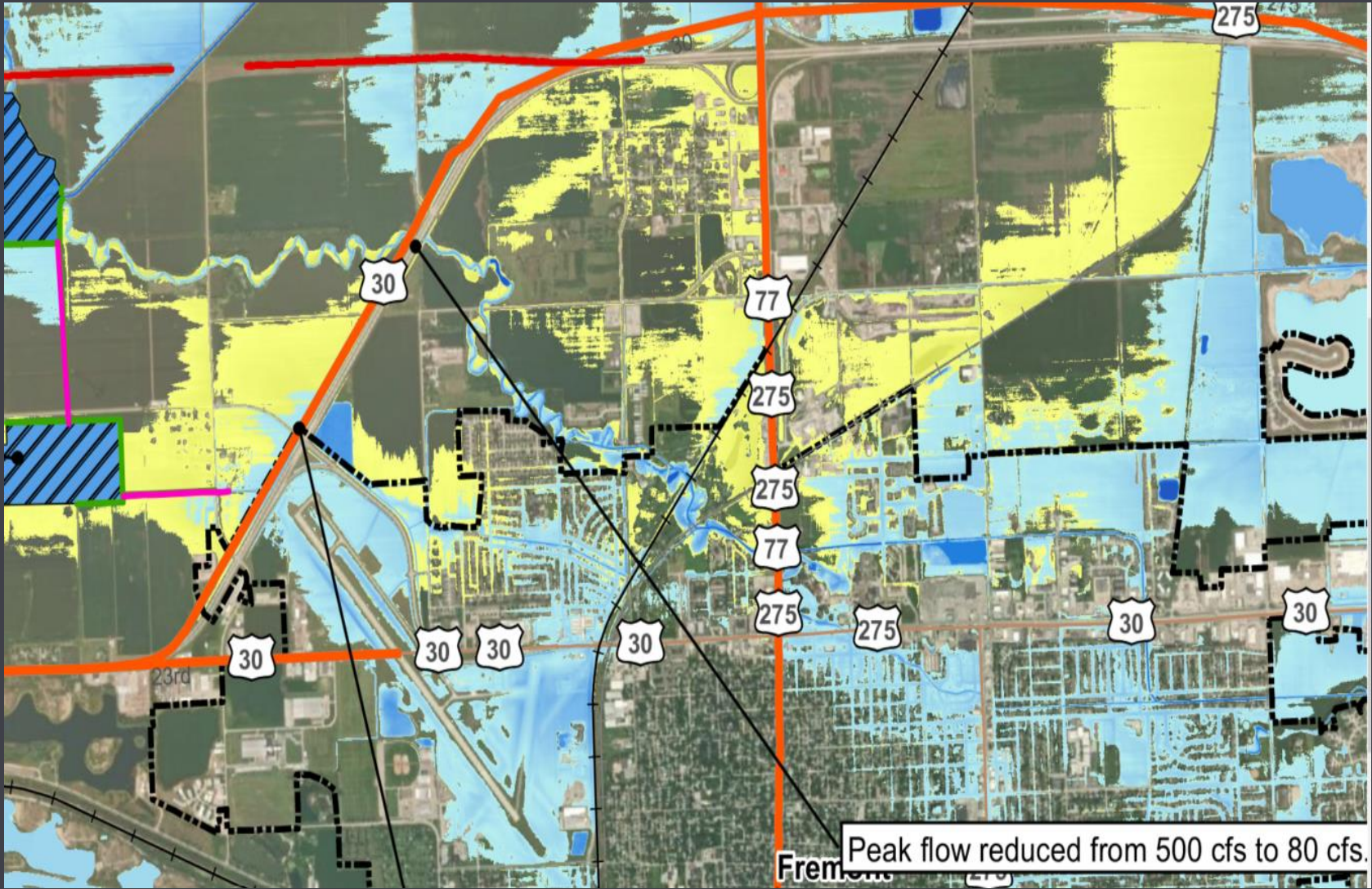
Rawhide Creek WFPO

0 1 2 Miles



This map was prepared using information from record drawings supplied by J&E and/or other applicable city, county, federal, or public or private entities. J&E does not guarantee the accuracy of this map or the information used to prepare this map. This is not a scaled plot.

Alternatives



Alternatives - Costs

Project	Total Cost	Federal	Local
Fremont Cutoff, Brush Creek Berm	\$5,104,700	\$3,580,000	\$1,524,700
Merlyn England Detention	\$18,922,700	\$14,019,400	\$4,903,300
Airport Detention	\$12,879,000	\$8,367,900	\$4,511,100
TOTALS	\$36,906,400	\$25,967,300	\$10,939,100

- Potential Water Sustainability Fund Grant: 60% of local share
 - \$6,563,400 WSF / \$4,375,640 Local



Plan Status



- 90% Draft Nearly Complete
- 90% Review Meeting w/ Local NRCS: February 8
- Remaining Steps to Complete Study:
 - Submit to NWMC
 - Respond to NWMC Comments
 - Final Agency Scoping Meeting
 - Programmatic Review (Final)
 - Public Review Period



East Fremont/Elkhorn Township



- Evaluation Phase is complete
 - Digital versions of Phase 1/2 have been submitted to County/City/NRD and NEMA
- Preferred Alternative includes channel, culvert and storm sewer improvements and detention pond construction (\$~57 Million; 3.56 BCR)
 - Project has been prioritized by Governor's Task force for advancement to FEMA BRIC project application
 - Currently working on application submittal February 2024
 - No timeline on response from NEMA/FEMA



West Fremont/Platte Township



- Phase 1 of Evaluation is complete
 - Identification and screening of alternatives
 - Several options are viable
 - Nonstructural mitigation selected as preferred alternative at this time
 - Phase 2 is advancing to develop framework for nonstructural mitigation
 - Other structural alternatives MAY be implemented as additional funding is identified
- Nonstructural Mitigation
 - Educational outreach for risk communication
 - Identify properties for acquisition/floodproofing
 - Review of local flood management ordinances and update





1489 County Road S

1985 County Road 15 Boulevard, Ames, NE

1620 W Hwy 30, Ames, NE

1644 W-Hwy 30, Ames, NE

1685 W Hwy 30, Ames, NE

Old U.S. 30

Old Lincoln Hwy

Old U.S. 30

Shell Creek Watershed Improvement Group (SCWIG) - Agenda
1/23/2024 - 10:00 am
Columbus NRCS Office

- Introductions
- Approval of 12/5/2023 Minutes (Gene's minutes on back)
- Projects
 - Completed:
 - Keith Runge - Onsite wastewater upgrade – 12/2023
 - Total \$8,472.54 = 60/40 = \$5,083.52/\$3,389.02
 - Randy Brabec - Onsite wastewater upgrade – 11/2023
 - Total \$5,443.01 = 60/40 = \$3,256.81/\$2,186.20
 - Diane Miller – Onsite wastewater upgrade – 10/2023
 - Total \$8,590.40 = 60/40 = \$8,5443.01/\$5,154.24
 - Tom Sprunk – Grade stabilization structure – 9/2023
 - Total \$24,444.60 = 75/25 = \$18,333.45
 - Approved (NRD):
 - Tony Long – new well, solar pump, tanks, and cross fencing
 - Estimate Total \$35,000 = 75/25 = \$26,565.91/\$8,434.09
 - Planned:
 - Runge Project – grass waterway
 - Road J Box Culvert
 - Final Bend Project – bank protection (east of Schuyler)
 - Solar well & Cross-fence project
 - Grade stabilization on gully above pond
 - 2 well decommissioning
 - Schuyler Library Stowmwater Project
- Information/Education
 - Brochure/flyer mailings (NRD staff will work on these):
 - Ag BMP flyer mailing to all farmland owners
 - Onsite Wastewater System maintenance and upgrade cost share flyer to all rural acreage owners
 - Abandoned well and decommissioning cost share flyer mailed to all rural landowners
 - Meeting or field day
 - One agricultural
 - One urban
 - Rehabilitate 6 existing billboards and realtor signs (waiting on estimate from Cornhusker State Industries).
- Next Meeting

January 18, 2024

To: Shell Creek Watershed Improvement Group

Subject: Minutes of December 5, 2023 meeting

The meeting of the Shell Creek Watershed Improvement Group was opened by CO-cahair, Raymond Flood in the Columbus, NE NRCS conference room. Present: Ray, John Hanna, Sean Elliott, Drew ten Bensel, Matt Bailey, Bill Bos, Mark Seier, Carl Groteluschen, Katie Hickle, Derek Benson, Chelsea Czarnick, and Gene Wissenburg.

Minutes of the September 19 meeting were approved with the correction, NRD, not NRCS. Reviewed the November 14 NRD meeting and student presentation at Newman Grove; next year's presentation at Schuyler. Gene mentioned the Newman Grove FFA Ag Demo team qualifying for State with a demonstration of Nitrate testing. Katie H. addressed the NDEE sending out 29,000 Nitrate test kits, state wide.

Bill discussed several completed projects, and is trying to target the older approved septic system upgrades. There are three new signups and about 15 septic system projects pending. We may need to establish a cut-off date for completion. On-going projects include the Runge waterway, Road J box culvert, final bend east of Schuyler, one more solar well and a cross-fence project. Bill presented a possible grade stabilization project on a gully above a pond, along with two wells set for de-commissioning.

Chelsea discussed NRCS and EQIP with 77 eligible applications for cover crops, nutrient management, irrigation conversion, solar wells, and composting manure. Carl talked about the final bend project and bridge construction, with target date in the bridge in March or April. Minelli is working on engineering for grade stabilization. Sean and Matt addressed Schuyler's urban rain garden project. Kelly F. Katy P. and Ryan C. to help with design.

NRD staff are still planning three spring mailings: BMP's, Septic System upgrades, and Well De-commissioning. Also planning meetings or field days; on Ag, one Urban. NRD still working on upgrading signs in the watershed.

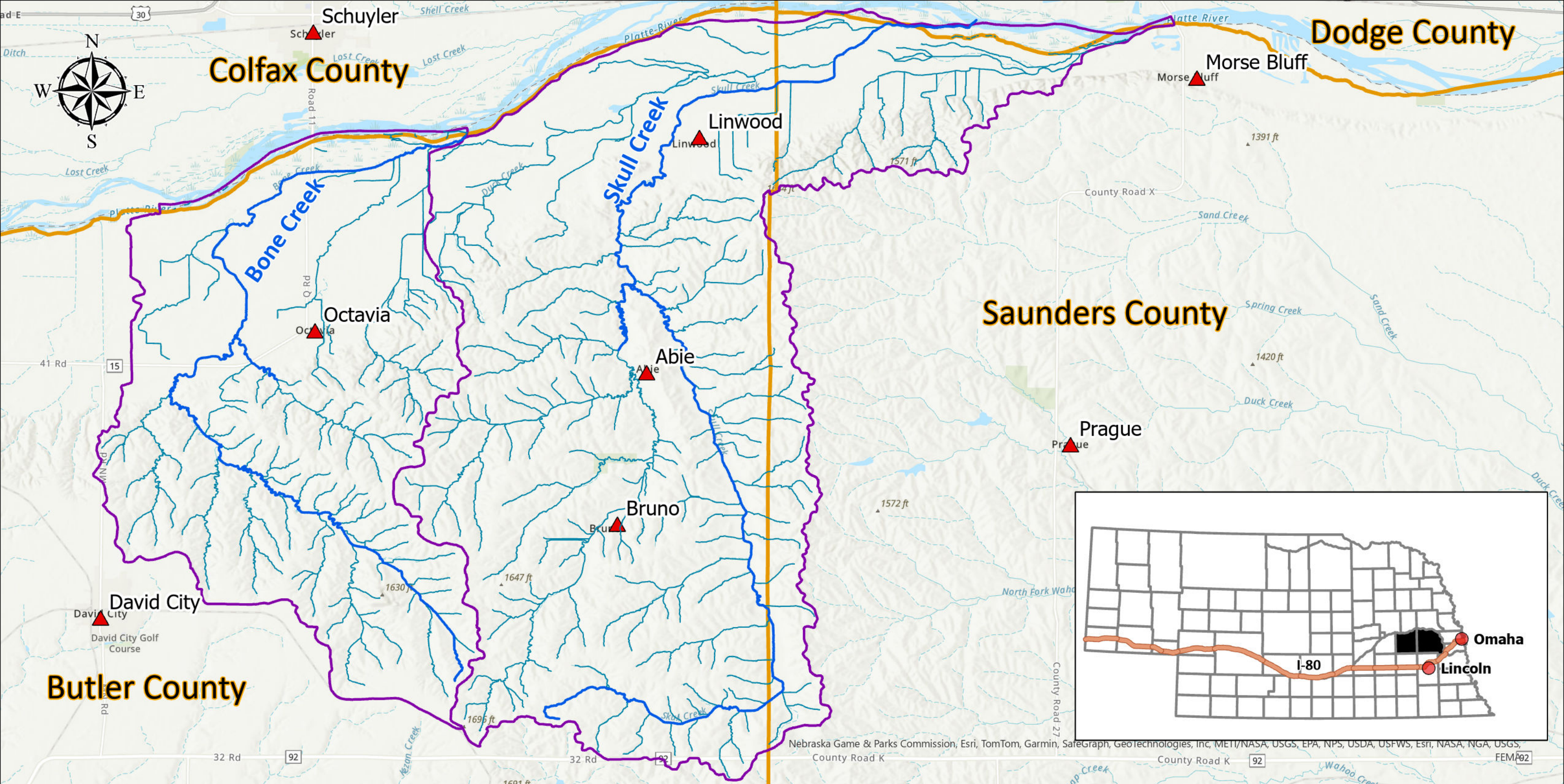
Carl mentioned Wolfe jetty on Platte River by Richland; washed out in 2019 flood.

John Hanna discussed steadily increasing nitrate levels in our ground water and using satellite imagery to time fertilizer NO₃ applications and reduce amounts applied. No action taken.

Next meeting set for January 16, 2024; adjourned at 11:46 am.

Gene Wissenburg, secretary

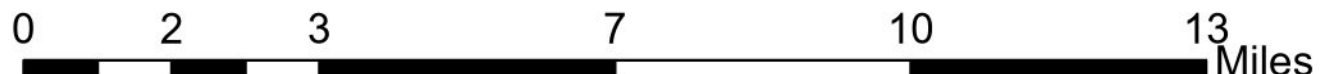
Name	Project	Board Approval	Estimate Cost	Cost Share	Approved Cost Share	expires	Board Payment Approval	Actual Total Cost	Final Cost Share	Funds Transferred	Notes
Keith Runge	OWT Upgrade	9/13/2021		60/40	\$4,800.00		1/8/2024	\$8,472.54	\$5,083.52		
Randy Brabec	OWT Upgrade	9/14/2020		60/40			12/11/2023	\$5,443.01	\$3,256.81		
Diane Miller	OWT Upgrade	6/13/2022		60/40	\$6,500.00		11/13/2023	\$8,590.40	\$5,154.24		
Tom Sprunk	Grade Stabilization	5/8/2023	\$19,144.00	75/25	\$14,358.00		10/9/2023	\$24,444.60	\$18,333.45		
Kyle Reed	OWT Upgrade	8/14/2023		60/40	\$7,500.00	6/30/2025	9/11/2023	\$12,296.19	\$7,377.71		
Arden Saalfeld	Solar well	5/8/2023	\$23,877.00	75/25	\$17,908.34		9/11/2023	\$17,908.34	\$11,593.25		
Fred Siefken	Solar well	5/8/2023	\$27,929.29	75/25	\$20,946.97		9/11/2023	\$20,197.97	\$15,947.84		
Lee Hueschen	OWT Upgrade			60/40	\$4,800.00		11/14/2022	\$9,464.29	\$5,698.77		
Earleen Potmesil	OWT Upgrade	8/8/2022		60/40	\$6,500.00		10/10/2022	\$7,283.47	\$4,370.08		
Steven Bender	OWT Upgrade	2/10/2022	\$10,000.00	60/40	\$6,000.00		10/10/2022	\$12,235.73	\$7,341.44		
Tom Sprunk	Grade Stabilization	5/9/2022	\$45,262.50	75/25	\$33,945.00		9/12/2022	\$39,647.56	\$29,735.67		
Craig Nelson	OWT Upgrade	2/10/2022		60/40			6/13/2022		\$6,317.82		
Tony Long	Grazing System	1/8/2024	\$35,000.00	75/25	\$26,565.97						
Jeff Klug	OWT Upgrade	9/11/2023		60/40	\$7,500.00						
Roger Goedeken	OWT Upgrade	8/14/2023		60/40	\$7,200.00	6/30/2025					
Terry Helmer	OWT Upgrade	6/14/2021		60/40	\$4,800.00						
Mike Dvorak	OWT Upgrade	5/10/2021		60/40	\$4,800.00						
Reece Klug	OWT Upgrade	12/14/2020		60/40	\$4,800.00						
Kenneth Nelson	OWT Upgrade			60/40							Craig Nelson?
Rick Loseke	OWT Upgrade			60/40							
Dean Sander	OWT Upgrade			60/40	\$7,000.00						



- ▲ Cities
- Main Creeks
- Tributaries
- Project Boundary
- County Boundaries

Skull Creek Watershed- Project Map

Scale: 1:133,725



Maps are for graphical purposes only. They do not represent a legal survey. While every effort has been made to ensure that these data are accurate and reliable within the limits of the current state of the art, NRCS cannot assume liability for any damages caused by any errors or omissions in the data, nor as a result of the failure of the data to function on a particular system. NRCS makes no warranty, expressed or implied, nor does the fact of distribution constitute such a warranty. Created by MJF on 1/23/2024



Progress Report for Wahoo Creek Watershed Dams Sites



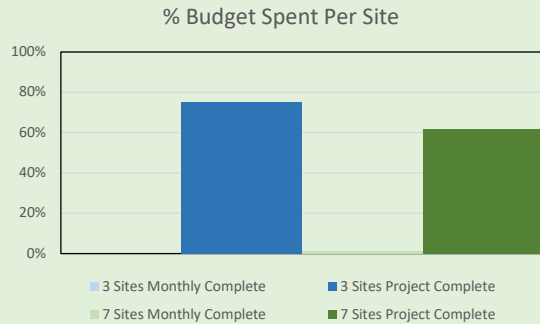
Lower Platte North NRD

For Work Completed During The Month Of : **December, 2023**
(through 12/30/23)

Project # 018-3423 Dam Site 26A, 26B, &27 Project Phase	Phase Budget	Billings for Month		Project Total Billings to Date	
		Current Earned/Billings	% Completed This Month	JTD Earned/Billings	% Completed Overall
010 - Project Management/Meetings	\$ 23,213		0.0%	\$ 14,067.55	60.6%
020 - Geotechnical Engineering	\$ 224,493		0.0%	\$ 226,775.48	101.0%
030 - Dam Design	\$ 184,885		0.0%	\$ 199,168.83	107.7%
040 - Permitting	\$ 86,634		0.0%	\$ 60,884.18	70.3%
050 - Survey and Legal Descriptions	\$ 11,142		0.0%	\$ 23,636.47	212.1%
060 - Community/Public Participation	\$ -			\$ -	
070 - Construction Services	\$ 171,962			\$ 1,590.75	0.9%
				\$ -	
3 Sites Totals	\$ 702,329	\$ -	0.0%	\$ 526,123.26	74.9%

Project # A18-3423 (separate invoice) Sites 55, 66, 77, 82, 84, 85, &86 Project Phase	Phase Totals	Billings for Month		Project Total Billings to Date	
		Current Earned/Billings	% Completed This Month	JTD Earned/Billings	% Completed Overall
100 - Project Management/Meetings	\$ 60,813		0.0%	\$ 33,240.14	54.7%
110 - Geotechnical Engineering	\$ 592,047	\$ 7,436.43	1.3%	\$ 581,152.77	98.2%
120 - Dam Design	\$ 425,202	\$ 14,544.38	3.4%	\$ 414,375.73	97.5%
130 - Permitting	\$ 244,810	\$ 1,023.42	0.4%	\$ 157,524.55	64.3%
140 - Survey and Legal Descriptions	\$ 28,165		0.0%	\$ 33,529.76	119.0%
150 - Community/Public Participation	\$ 30,000		0.0%	\$ 5,899.20	19.7%
160 - Other	\$ -			\$ -	
170- Construction Services	\$ 603,992			\$ -	0.0%
7 Sites Totals	\$ 1,985,029	\$ 23,004.23	1.2%	\$ 1,225,722.15	61.7%

Billings For Month	\$ 23,004.23
Total Billings To Date	\$ 1,751,845.41
Project Budget	\$ 2,687,358.00
Budget Remaining	\$ 935,512.59



Summary Of Work Completed This Month	
Sites 26A, 26B, & 27	Sites 55,66,77,82,84,85, & 86
-Received comments from State for Sites 26a and 27. Comments for 26b should be received soon.	-Completing redlines for Site 86 geotechnical report -Mitigation Plan updates for Environmental - Report review and updates for Site 86 -Site 55 additional investigation information for NRCS -Site 84, 85, 86 plans and specification updates and foundation drain updates and chimney drain discussions. -SITES revisions

Planned Work For Next Month	
Site 26A, 26B, & 27	Sites 55, 66, 77, 82, 84, 85, & 86
-Plan on responding to State's comments for 26b in February.	-Finish NRCS comments and submit 90% for Site 66 -If approval from NRCS is given, schedule additional investition Site 55 -Finalize 90 submittal for Sites 84, 85, and 86 -Once materials costs are received from manufacture for pipe at Site 77 and approach is finalized with NRD, 60% updates will begin for Site 77

For questions regarding billings, please contact Andrew Phillips at (402) 440-8807 or aphillips@olsson.com

Invoice



601 P St Suite 200
PO Box 84608
Lincoln, NE 68501-4608
Tel 402.474.6311, Fax 402.474.5063

January 17, 2024
Invoice No: 484643

Ryan Chapman
Lower Platte North NRD
PO Box 126
Wahoo, NE 68066-0126

Invoice Total \$23,004.23

Olsson Project # A18-34230 Lower Platte North NRD Wahoo Creek Watershed & 7 Dam Sites
Phase II

Professional services rendered December 3, 2023 through December 30, 2023 for work completed in accordance with agreement.

Phase 110 Geotechnical Engineering

Labor

	Hours	Amount	
Assistant Engineer	10.00	978.90	
Principal	2.00	593.26	
Project Professional	35.00	4,879.70	
Assistant Professional	3.00	600.69	
Administrative/Clerical	2.00	158.88	
Totals	52.00	7,211.43	
Total Labor			7,211.43

Unit Billing

P-200 Sieve Test			
5 Tests @ \$45/Test		225.00	
Total Units		225.00	225.00
	Total this Phase		\$7,436.43

Phase 120 Dam Design

Labor

	Hours	Amount	
Assistant Professional	42.75	4,919.18	
Designer	8.00	987.20	
CAD Operator	140.00	8,638.00	
Totals	190.75	14,544.38	
Total Labor			14,544.38
	Total this Phase		\$14,544.38

Phase 130 Permitting

Labor

		Hours	Amount	
Principal		6.00	1,023.42	
	Totals	6.00	1,023.42	
	Total Labor			1,023.42
			Total this Phase	\$1,023.42
			AMOUNT DUE THIS INVOICE	\$23,004.23

Outstanding Invoices

Number	Date	Balance
482611	12/21/2023	12,332.83
Total		12,332.83

Authorized By: Andrew Phillips

Invoice



601 P St Suite 200
PO Box 84608
Lincoln, NE 68501-4608
Tel 402.474.6311, Fax 402.474.5063

January 19, 2024
Invoice No: 485063

Ryan Chapman
Lower Platte North NRD
PO Box 126
Wahoo, NE 68066-0126

Invoice Total \$9,232.53

Olsson Project # 023-00443 LPNNRD Wahoo Creek Watershed Flood Reduction Project Real Estate Services
Professional services rendered through December 30, 2023 for work completed in accordance with our Agreement dated February 17, 2023.

Phase 100 Real Estate Acquisitions

Labor

	Hours	Amount	
Principal	38.00	8,735.82	
Totals	38.00	8,735.82	
Total Labor			8,735.82

Reimbursable Expenses

Auto		108.67	
Shipping and Delivery		388.04	
Total Reimbursables		496.71	496.71

Total this Phase \$9,232.53

Billing Limits

	Current	Prior	To-Date
Total Billings	9,232.53	27,938.33	37,170.86
Limit			210,000.00
Balance Remaining			172,829.14

AMOUNT DUE THIS INVOICE \$9,232.53

Billings to Date

	Current	Prior	Total
Labor	8,735.82	25,351.84	34,087.66
Expense	496.71	2,586.49	3,083.20
Totals	9,232.53	27,938.33	37,170.86

Email invoices to: rchapman@lpnnrd.org; selliott@lpnnrd.org and CC: jbreunig@lpnnrd.org

Authorized By: Danielle Allen

Trend Analysis on Continuous Water Quality in the Lower Platte River

USGS Nebraska Water Science Center
Matt Moser, Brenda Densmore, and Dave Rus

In partnership with the Lower Platte River Corridor Alliance

Introduction:

With continuous water quality data being collected in cooperation with the Lower Platte River Corridor Alliance (LPRCA) over the past 15 years, datasets are now sufficient to begin looking for potential water quality trends that are occurring in the lower Platte River. These data sets can be examined using modeling techniques to account for wet and dry years or missing data and detect water quality trends or facilitate comparisons between sites to better understand how the water quality in the Lower Platte River has changed over the monitoring. This short proposal describes the type of modeling that the USGS could complete in cooperation with the LPRCA to gain more information about the water quality of the Lower Platte River as represented by this monitoring data.

The Lower Platte River Corridor Alliance has cooperated with the USGS Nebraska Water Science Center since 2007 to collect continuous water quality data at four stream locations strategically placed in the lower Platte River basin to target specific watersheds. These include:

- Platte River at Louisville has had seasonal collection of water temperature, specific conductance, dissolved oxygen, and turbidity since the fall of 2007. Beginning in 2012, continuous nitrate data were also collected seasonally.
- Elkhorn River at Waterloo has had seasonal collection of water temperature, specific conductance, dissolved oxygen, and turbidity since the fall of 2007. Beginning in 2016, continuous nitrate data were also collected seasonally.
- Platte River at Leshara has had seasonal collection of water temperature, specific conductance, dissolved oxygen, turbidity, and nitrate since 2016.
- Salt Creek near Ashland has had seasonal collection of water temperature, specific conductance, dissolved oxygen, and turbidity since the fall of 2007.

The USGS has provided the Lower Platte River Corridor Alliance and the Natural Resources Districts (NRD) with bi-yearly updates on the collected data with graphs, data summaries, and observations on how these continuous water quality variables were changing from year to year. These continuous data sets have also supported other water management operations and studies in these streams by documenting current water quality conditions.

The continuous water quality monitors can provide data for trend analysis over several years, river conditions, and multiple parameters. Continuous water quality monitors provide the ability to look at short term fluctuations in the river that traditional sampling can miss, as well as data that can be collected and analyzed over a variety of flow conditions. Continuous data such as this, provide the ability to look at a more complete picture of river conditions.

To date (2023), statistical analysis of the continuous water quality data being collected has not been completed to better understand how water temperature, specific conductance, dissolved oxygen, turbidity, and nitrate are changed seasonally, during wet and dry years, and year to year over the period of data collection. Therefore, the full value of this continuous data record is not well understood.

Objectives:

The LPRCA and the USGS NEWSW are interested in completing statistical trend analysis on the continuous water quality data from the beginning of each record up to and including the 2023 monitoring season to better understand how these monitored parameters are changing over time. This project will also include an analysis of discharge trends during the same time period.

Conceptual approach:

The high-frequency data from continuous water quality monitoring provides many benefits but also provide challenges to the statistical analysis of trends because of the serial correlation (dependence upon previous data values) inherent in the measurements. Since many wide-spread, readily available continuous water quality data sets are just recently reaching length thresholds that make trend analysis practical (generally around 10 years), trend analysis using these types of data are an active research topic.

Using order statistics of daily values from continuous water quality data in Virginia streams, Porter and others (2020) were able to perform a trend analysis on high frequency data. The USGS Nebraska WSC would follow a similar method to analyze data and look for trends on data collected in Nebraska. Daily values would be utilized for data to run linear regressions on continuous water quality data in the lower Platte. This approach would look at overall trends occurring throughout the time frame and not analyze every single point.

The linear regressions would only focus on the extremes and averages observed within each selected time frame, and then compare those extremes and averages against similar time frames throughout the 15-year period where data have been collected. The USGS NEWSW would utilize previous R packages already established by the USGS and available in R to analyze the data.

Temporal changes in daily discharge statistics will be explored using methods available in the EGRET software (Hirsch and De Cicco, 2015). Daily discharge records can be used to perform Mann-Kendall trend tests, and the associated Thiel-Sen slope estimates, to create Quantile-Kendall plots (Hirsch, 2018) to evaluate discharge trends across the range of discharge values at each of the sites for a specified timeframe. These statistics will be explored as a possible method for trend analysis at the four sites in the lower Platte River. In addition to these trend analyses at each site, sites will be compared to better understand how the full system is changing over the years contributions to the system from the tributaries vs from the Central Platte.

The USGS also previously produced concentration predictions using surrogate relations in the Lower Platte River. These relations were published through a USGS Scientific Investigations Report (Schaepe et al, 2014) and were funded in part by a NET grant. These surrogate equations were developed using continuous water quality data collected from 2007 to 2011 and comparing those data to a USGS sample dataset. When these two data sets are combined, their relations were able to compute additional concentrations of analytes of concern that were occurring in the stream throughout that period. The USGS is proposing to add in data collected from 2011 to 2023 to these equations to update the data to better reflect stream concentrations

over the entire monitoring period. This will help represent the concentrations of additional constituents more accurately in the rivers. By updating these equations, better calculations would be made of real time concentrations of concern such as atrazine, *E.coli*, phosphorus, suspended sediment, and ammonia.

Potential outcome of the study:

The Lower Platte River Corridor Alliance and member NRDs have water quality management plans in place on the Platte River and its tributaries. Part of these water quality management plans are to look at impaired watersheds and water flowing into the river. The trend analysis being proposed can look at the collected continuous water quality data to help determine if long term management changes are impacting the water quality of the lower Platte River. The trends analysis will be able to account for wet vs dry years and see a clearer picture of how the water quality of the system is changing independent of discharge. Often during dry years, the amount of runoff into the channel is diminished which also decreases the quantity of contaminants and likewise during very wet years extremes in water quality are observed.

Long term changes can also possibly identify changes occurring in regard to climatic effects. The temperature in the lower Platte River can be analyzed throughout the previous 15+ years to see if any changes have occurred or are occurring.

The outcomes of this study will also provide a better understanding of how continuous water quality parameters in the Lower Platte River watersheds are changing over time since data collection started. The R scripts used to complete the data analysis will be created in a way that future years of collected data can be further analyzed through these same scripts. The statistical methods used will be described in a USGS scientific investigations report and the R script and resulting trends data will be published as a USGS data release in ScienceBase.

Study duration: 2 years

Data analysis will primarily occur during Federal Fiscal Year (FY) 2024, with report writing beginning at the same time. The final scientific investigations report and data release will be published in FY 2025.

Cost estimate:

The anticipated cost for the data analysis and report production are expected to be \$148,100. This cost will be split between the USGS and Lower Platte Corridor Alliance members electing to participate in the trend analysis. Of the total cost, the USGS will be contributing \$48,300 and the LPRCA members contributing \$99,800.

References:

Helsel, D.R., Hirsch, R.M., Ryberg, K.R., Archfield, S.A., and Gilroy, E.J., 2020, Statistical methods in water resources: U.S. Geological Survey Techniques and Methods, book 4, chap. A3, 458 p., <https://doi.org/10.3133/tm4a3>. [Supersedes USGS Techniques of Water-Resources Investigations, book 4, chap. A3, version 1.1.]

Hirsch, R.M., and De Cicco, L.A., 2015, User guide to Exploration and Graphics for RivEr Trends (EGRET) and dataRetrieval: R packages for hydrologic data (version 2.0, February 2015): U.S. Geological Survey Techniques and Methods book 4, chap. A10, 93 p., <https://dx.doi.org/10.3133/tm4A10>.

Hirsch, R.M., 2018, Daily Streamflow Trend Analysis, U.S. Geological Survey Office of Water Information Blog, <https://owi.usgs.gov/blog/Quantile-Kendall/>

Kendall, M.G., 1975, Rank correlation methods (4th ed.): London, Charles Griffin.

Porter, A.J., Webber, J.S., Witt, J.W., and Jastram, J.D., 2020, Spatial and temporal patterns in streamflow, water chemistry, and aquatic macroinvertebrates of selected streams in Fairfax County, Virginia, 2007–18: U.S. Geological Survey Scientific Investigations Report 2020–5061, 106 p., <https://doi.org/10.3133/sir20205061>.

Schaepe, N.J., Soenksen, P.J., and Rus, D.L., 2014, Relations of water-quality constituent concentrations to surrogate measurements in the lower Platte River corridor, Nebraska, 2007 through 2011

Sen, P.K., 1968, Estimates of the regression coefficient based on Kendall's tau: Journal of the American Statistical Association, v. 63 p. 1379–1389

Yang, G., and Moyer, D.L., 2020, Estimation of nonlinear water-quality trends in high-frequency monitoring data: The Science of the Total Environment, v. 715, p. 136686, accessed February 2020 at <https://doi.org/10.1016/j.scitotenv.2020.136686>.

For any additional questions or comments, please reach out to:

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402-328-4184
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Morse Bluff Levee Meeting

November 11, 2023 @ 1:00pm

Attendees:

Deanna Wolf
Greg Johnson (USACE)
Larry Dolezal

David Saalfeld (NRD)
Heidi Novotny
Andrew Tonnies (NRD)

Ryan Chapman (NRD)
Dan Melanson

Minutes:

The meeting started discussion with the need to focus on the need for funding and the staff to take on the rebuild effort.

Saunders Co. Senator Bruce Bostelman received a copy of our past meeting minutes and expressed interest in the effort.

Point raised that a government entity must be engaged to take control, either County or NRD. All entities thus far engaged stated it is not for them to lead, but rather participate/assist.

Option presented for possible pursuit... Landowners can petition County or NRD. Petition can call out the area as a Special Interest Area which needs a certain number of people to approve. Count would hire a team to assess the situation, then if approved, move effort lead back to Landowners. NRD has approved one in the past as did the Landowners. Costs were shared. Funding requires an entity supporting the Landowners like an SID.

Additional Insight provided that all options to pursue for the levee rebuild would involve a cost share. The legal entity for the Landowners should be maintained for perpetuity. Local Government would be expected to take the lead.

Ideas presented...

- Can we go back to the State or County to reenact the old levee maintenance group? Group unsure but worth the ask.
- Approach County Road department. Unsure of interest to help.
- Approach from County infrastructure perspective
- Wahoo Creek...Senator Bostelman helped put money through NRD. Might be residual funds available.
- Engage Senator Bostelman for possible support and assistance.
- Jetty funding may be available.
- State funds may be more accessible/easier to get.
- FEMA... money might be available, but their end goal is to get houses out of the 100yr flood plain.
- COE Rehabilitation Plan... does not have to be FEMA approved. Has criteria for adoption. Greg can help get this information. (Union Dike east of Fremont).

Programs discussed...

Morse Bluff Levee Meeting

November 11, 2023 @ 1:00pm

- USACE program... Section 205 – small flood control project. Feasibility study needed - can properties be flood-proofed? May have more cost-efficient protections. Limit to \$10MM/project. Cost share ~ 65 Fed/35 non-Fed.
- USACE can provide emergency assistance on Government approved disaster. Temporary Right of Permission applies. Emergency items to be removed after the flood. Spencer Giles head of Emergency Team.
- General Investigation Program... No limit on cost. Presented to Congress to decide on funding.
- USACE... Section 22 - Planning Authority engaged to determine qualification. Study needed on specific ask. NRD requests it. Risk drivers involved. Scope should include Morse Bluff and Linwood to leverage the full potential impact of flooding.

Additional discussion...

- The cost of rock is high.
- Expect new levees to be built back from riverbank.
- Trenching in ground helps address the regulations for build.
- Jetties must be 3' to 5' to deal with erosion.
- North Bend is working on a plot plan to manage flooding.
- MB Levee needs immediate interim maintenance/fixes before long-term solution. Riverbank has imminent failure point of erosion which would cause river channel to head south at a point ½ mile west of HWY 79 bridge.
- DOT – HWY 79 supports several zip codes for school transportation. Important point to use.
- County/NRD/DNR/Levee Commission all must be engaged.
- Engage Senator Bostelman for help (Wahoo Creek example). Ask if Jetty Funds are available.
- Jetties are typically built lower than the riverbank.
- Engineering study needed. DNR would review and approve. Money goes to Levee repair team.
- Can we create an SID with the surrounding communities?
- Can we utilize a Township?
- Can we utilize the Morse Bluff Fire Department and their needs for flood control in support of emergency services?
- NRD continues with their offering to assist and partner with levee team.
- USACE engaged and offering to assist.