

Projects Committee Meeting
 Thursday, July 30, 2020 7:30 AM
 Lower Platte North NRD Office
 P.O. Box 126
 Wahoo, NE 68066

1. UNFINISHED BUSINESS

No unfinished business to address.

2. SWCP

DNR contacted the NRD and informed us of the FY21 SWCP state allocation. We were allocated \$83,029.00, the same amount as last year. We are budgeting \$50,000 of local funds (also the same as last year) but we will be able to utilize NDEE grant funds for a number of our approvals within the Shell Creek watershed, as well as, the Cottonwood/Wahoo Creek. Those approvals are designated with an asterisk (*) on the attached spreadsheet.

A. SWCP Application Approvals

Below are the applications for fall SWCP.

B. 20-B-1	C.	D. Joseph Hanis	E. \$ 12,500.00	F. WASC0B w/ TO
G. 20-B-2	H.	I. Dwayne Lanc	J. \$ 12,500.00	K. TOT/WASC0B w/TO
L. 20-S-5	M.	N. John Kaspar	O. \$ 12,500.00	P. TOT/WASC0B w/TO
Q. 20-S-6	R.	S. Dave Vrana	T. \$ 3,210.00	U. Terrace enlargement
V. 20-S-7	W.	X. Robert & Linda Fickes	Y. \$ 10,000.00	Z. TOT/WASC0B w/TO
AA. 20-S-8	BB.	CC. Dennis Brabec*	DD. \$ 20,130.09	EE. Grassed Waterway

FF. SWCP Payments

None presented.

GG. SWCP Cancellations

None presented.

HH. Wahoo Creek Cost Share Approvals

None presented.

3. WATERSHEDS

A. Shell Creek

1. Shell Creek Environmental Enhancement Plan Implementation

a. Shell Creek Grant Funding Update

No new information. We have all grant agreements in place to assist with planned Shell Creek erosion and water quality projects. We have been approved for \$365,000 from the Nebraska Department of Environment and Energy (NDEE) and \$104,688 from the Nebraska Environmental Trust (NET). Attached is the Project Implementation Plan that was completed by NDEE and the review by EPA.

b. Tom Sprunk Bank Stabilization/Wetlands Project

No new information to report. Mr. Sprunk plans to complete his project this year with our guidance and funding support.

c. U.P. Railroad Colfax County Bridge Replacement Projects - Update

Adam Studts, U.P. Railroad, has informed us that U.P. will likely delay replacing the railroad bridge near Colfax County Road 15, due to the corona virus fallout and budget cuts. The railroad is very aware that our channel improvement and benching project is moving forward and when completed, will bring water at an increased velocity to the bridge. For that reason, Adam will be looking for ways to get this \$4.5 million bridge replacement project at least started later this year with the intent to have the bridge completed replaced by the spring of 2021.

While LPNNRD is not directly involved with the U.P. Railroad bridge replacement at Colfax County Road 14, that project is moving forward to be completed this year.

B. Wahoo Creek Watershed

1. Wahoo Creek Dam Site Planning Update & FYRA Invoice - FYRA & NRCS at 8:30 a.m.

On July 24th, Gottschalk, Elliott and Mountford joined a TEAM conference with NRCS and FYRA representatives to discuss moving forward with complete the Wahoo Creek Watershed Plan. Allen Gerhing, NRCS, and Mike Sotak, FYRA, joined the Projects Committee Meeting to give an update as to where things are at moving forward. As mentioned last month, more work, especially

with the economics, is being required by the NRCS review group in Little Rock, AR. This will require a contract amendment with FYRA to cover the additional work and an agreement addendum with NRCS to reimburse us for the additional expense. Both Mike Sotak and Allen Gerhing will join the August 10th Board Meeting to discuss this topic as there will be potential Board motions to approve a FYRA contract amendment that is anticipated to be presented. There will also be discussion about a future NRCS agreement amendment that would cover this additional expense.

2. Wahoo Creek Watershed Water Quality Plan Phase II

No new information at this time.

3. Olsson Design Update and Invoice

Attached is the July 22, 2020, invoice from Olsson totaling \$14,258.05 for work completed for the Wahoo Creek Watershed Sites 26a, 26b and 27 as attached. Of the total contract amount of \$583,825 for those three sites, \$259,541.16 (44.5%) will have been expended after this payment, of which most was for geotechnical engineering. Dam design and permitting activities will continue to be on hold until NRCS approves the Wahoo Creek Watershed Plan.

4. JOINT WATER MANAGEMENT ADVISORY BOARD

A. North Bend Drainage District Improvement Project Update

LPNNRD continues to assist Dodge County, Fremont and the North Bend Drainage District (NBDD), with submitting a Hazard Mitigation grant application for 75% assistance on what is estimated to be a \$1.7 million project, to repair and improve four miles of the NBDD drainage system (attachment). Dodge County Emergency Manager Tom Smith has been working on a preliminary cost benefit ratio for the project application which is calculated at .64 to 1.0 and work is underway with FYRA looking for ways to improve that ratio. There is also a very good chance to receive a Community Block Grant (CBG) for the project as well. Dodge County will be the fiscal agent for the project and LPNNRD has offered to help the County with project administration.

To help move things forward, Brian Newton, Fremont City Administrator, sent out an RFP to engineering firms for needed assistance on the proposed project. Two proposals (attached) were received, from JEO and FYRA, that were reviewed by NBDD, Fremont, Dodge County and LPNNRD representatives on July 21st. After discussion, the review group is recommending FYRA to be the consulting engineering firm for the North Bend Drainage District Improvement Project. This will be reported at the August 4, 2020, JWMAB agenda (attachment).

FYRA has offered to provide assistance on the FEMA grant application at no fee. Their fees will be contingent of receiving grant approvals. There was also discussion on the amount of local commitment Fremont, Dodge County and LPNNRD should

prepare for in our upcoming FY2021 budgets. It was discussed that Dodge County, Fremont and LPNNRD should each budget \$100,000 of local funding for potential local assistance needed toward the project. The NBDD will also contribute financially, however it will likely be \$10,000 or less due to limited available funds they can provide. NBDD has expenditures for other ditch repairs and continual future operation and maintenance of the project.

Dodge County is requesting letters of support/commitment from the partners (Dodge County, Fremont, NBDD and LPNNRD) to include with the FEMA application. An Interlocal Agreement between the partners is also being drafted for potential LPNNRD Board approval on September August 10th.

The committee discussed the following motions for the Board review and approval consideration at our August 10, 2020 Meeting:

1. To budget up to a maximum \$100,000 for the North Bend Drainage District Improvement Project in FY 2021, with LPNNRD's final contribution being contingent on the amount of grant assistance and other partner financial contributions secured for the project.

2. To send letters of support for FEMA/NEMA and CBG grant applications as needed for the North Bend Drainage District Improvement Project.

3. To endorse the JWMAB review group's recommendation to select FYRA Engineering for assisting with the North Bend Drainage District Improvement Project subject to approval by the North Bend Drainage District, Dodge County and the City of Fremont.

Larry Ruzicha, NBDD, and Mike Sotak, FYRA, have been invited to be present or join (Zoom) the Board Meeting to answer questions.

5. HAZARD MITIGATION PLAN UPDATE

As part of our approved contract amendment with JEO, we have contacted Saunders County Zoning to give a briefing on August 3 about an opportunity for the county to move forward with a dam breach overlay for 15 of our existing structures in Saunders County. The breach areas were mapped a few years ago and including them in an overlay district would require regulations for inhabitable dwellings that are constructed below these dams. If the County expresses an interest to proceed, they will move forward with public hearings for expanding the dam breach overlay to include those dams. Likewise, the communities of Wahoo, Yutan and Prague are also being contacted to offer this opportunity to them as well.

Also, attached are comments from FEMA on our Hazard Mitigation Plan that JEO is addressing. Attached is a July 30th invoice from JEO totaling \$4,659.88 for work

completed under contract.

It should be mentioned that we need shape files that accompany the breach inundation maps provided by the USACE for the seven dams above Lake Wanahoo. If we are unable to obtain those in a timely manner from USACE, JEO can produce shape files at a cost of \$1000 - \$2,000. If needed, a contract addendum on JEO's contract will be presented at the August 10th Board meeting for approval. If we need to have JEO produce shape files, 75% of this cost will be covered by our FEMA/NEMA grant.

6. EROSION AND SEDIMENT RULES AND REGULATIONS

No new information was presented.

7. OTHER

A. Draft FY21 Projects Budget Review (handouts)

The committee reviewed and gave input to the projects portions of LPNNRD's FY 2021 Budget.

B. NRCS Chief Matthew Lohr's Visit to Nebraska

Our office was notified last week and confirmed on Tuesday of the NRCS Chief's visit to Nebraska on August 5th and 6th. While in the State, the Chief will be visiting one NRD and he has chosen Lower Platte North. The State NRCS office is excited to have the Chief visit and has scheduled a busy day beginning with a visit to LPNNRD and Lake Wanahoo. The draft itinerary is attached which has the Chief scheduled to be at the Wanahoo Education Building from 8:30 am - 12:30 pm on the 5th. While the NRCS would like to keep the attendance at a manageable number, they are extending an invitation to LPNNRD Directors and staff. Please let me know as soon as possible if you are interested in attending.

8. ADJOURNMENT

The Projects Committee adjourned at 9:55 a.m.

SWCP Monthly Report

SWCP # STATUS NAME

APPROVED SMALL DAM PROJECTS:

15-S-12 Approved Mike Chvatal

APPROVED SUMMER PROJECTS:

20-S-1	Dennis Beranek
20-S-2	Randy Beranek
20-S-3	Rick Beranek
20-S-4	Elaine Kaspar
20-C-1	Louis Lutjelusche*
20-C-2	Terry & Spring Wendt*
20-C-3	Randy Brabec*
20-P-1	Keith Runge*
20-P-2	Jeff Lusche*
20-D-1	Diers Family Farm

TOTAL SUMMER APPROVALS

APPROVED FALL PROJECTS:

20-B-1	Joseph Hanis
20-B-2	Dwayne Lanc
20-S-5	John Kaspar
20-S-6	Dave Vrana
20-S-7	Robert & Linda Fickes
20-S-8	Dennis Brabec*

TOTAL FALL APPROVALS

TOTAL FY20 SWCP APPROVAL

PAID PROJECTS

<i>SWCP #</i>	<i>STATUS</i>	<i>NAME</i>
20-C-2	PAID	Terry & Spring Wendt

Total SWCP PAID:



July 30, 2020

SWCP LOCAL
SWCP TREE ALLOCATION
STATE ALLOCATION
CASH CARRY-OVER
AMOUNT SPENT
CASH BALANCE
ALLOCATION %

AMOUNT PROJECT

\$ 46,356.00 Small Dam

\$ 10,000.00 TOT

\$ 10,000.00 TOT

\$ 10,000.00 TOT

\$ 12,500.00 WASCOB/TO

\$ 12,123.00 Planned grazing system

\$ 12,500.00 Planned grazing system

\$ 6,534.56 Grass Waterway

\$ 11,276.95 Livestock well (solar)

\$ 10,759.69 Livestock well (solar)

\$ 18,964.65 Livestock well (solar)

\$ 114,658.85

\$ 12,500.00 WASCOB w/ TO

\$ 12,500.00 TOT/WASCOB w/TO

\$ 12,500.00 TOT/WASCOB w/TO

\$ 3,210.00 Terrace enlargement

\$ 10,000.00 TOT/WASCOB w/TO

\$ 20,130.09 Grassed Waterway

\$ 70,840.09

\$ 185,498.94

LANDS FOR CONSERVATION

	<i>AMOUNT</i>	<i>PROJECT</i>	<i>Name</i>
\$	7,464.60	Planned Grazing System	

\$

7,464.60

TOTALS





VATION (GRANT FUNDED)

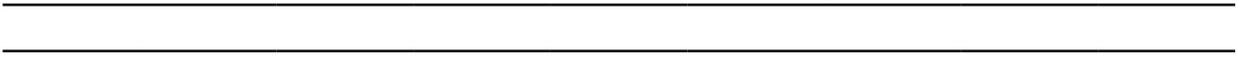
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Amount

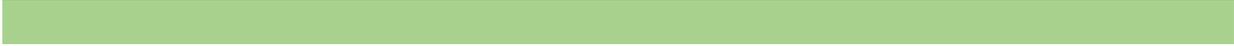
-83 \$ (15,770.00)

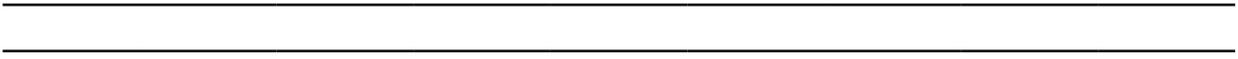




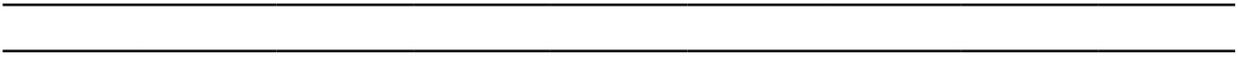




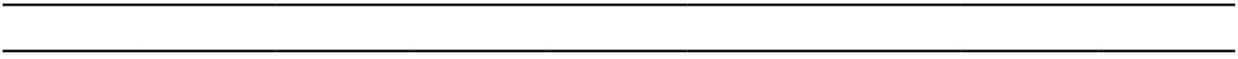




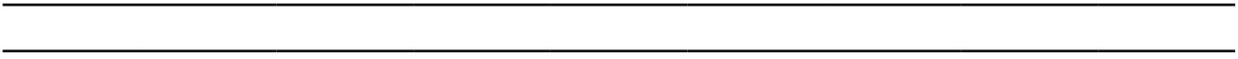




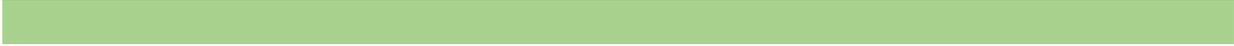


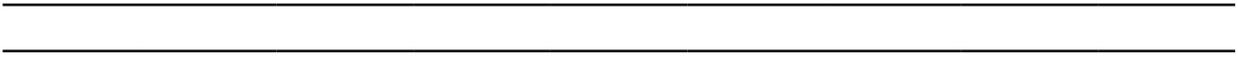




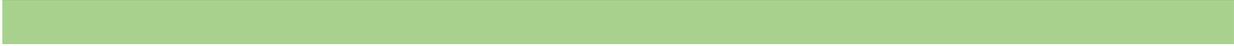


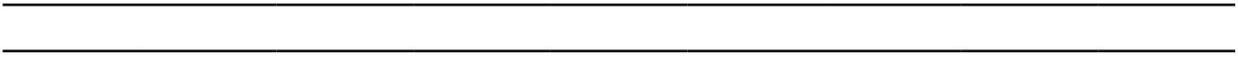




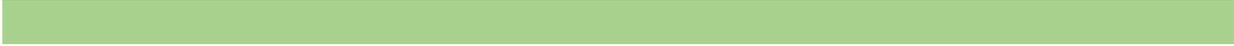


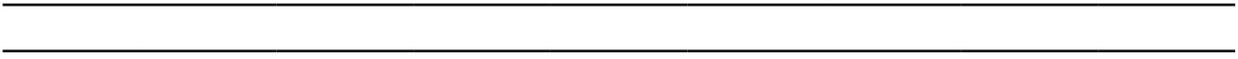






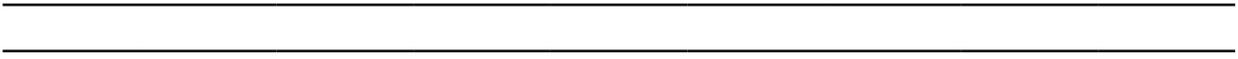




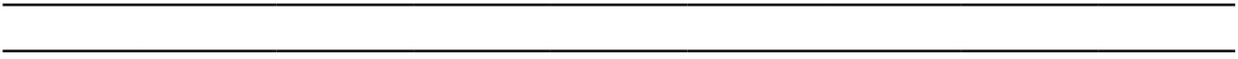




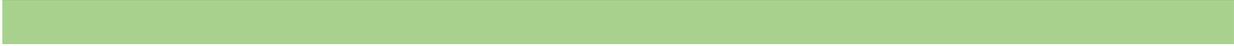


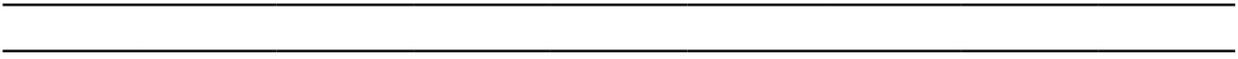






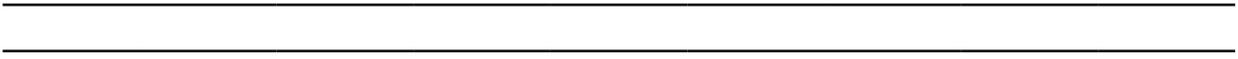




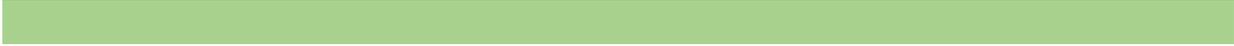


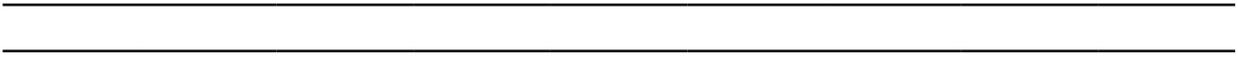




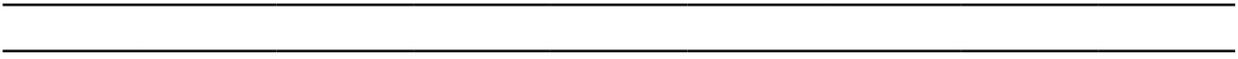




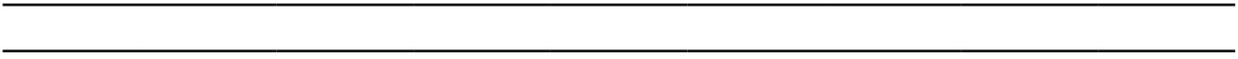






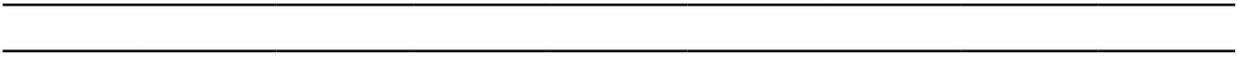






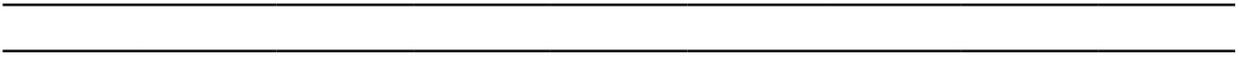




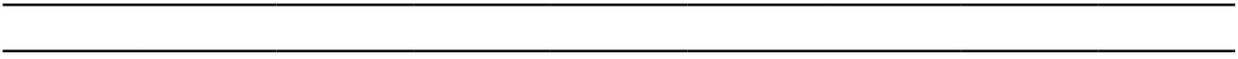




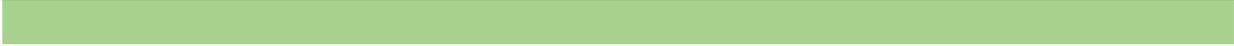


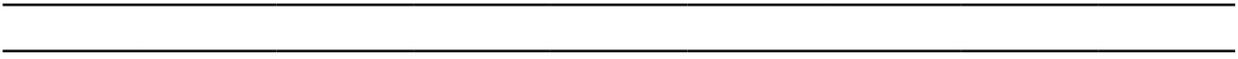






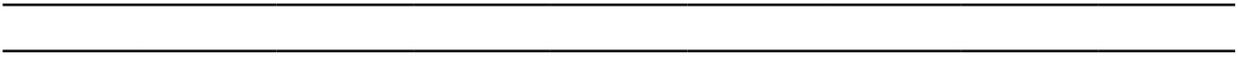




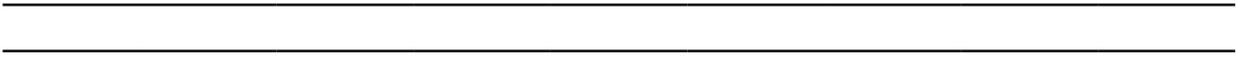




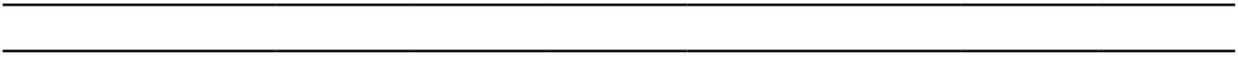






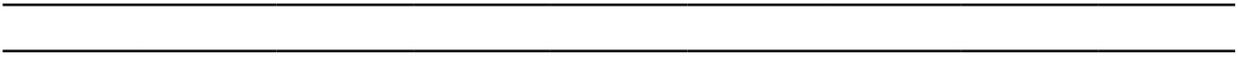






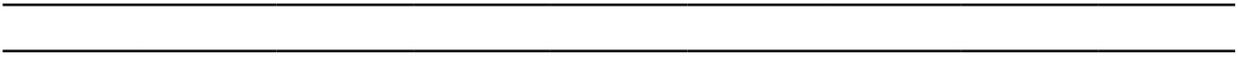




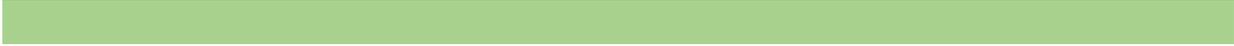


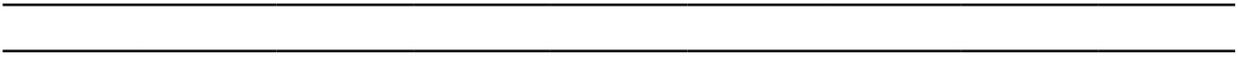




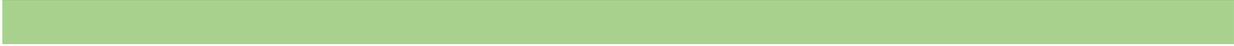


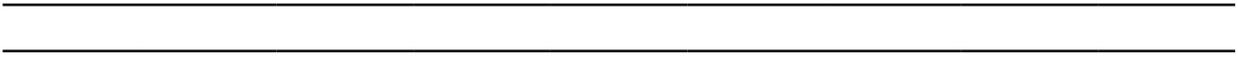














Project Implementation Plan

Shell Creek Corridor Enhancement and Conservation Implementation

56-17xx

Contract Reference Number:

Project Sponsor

Lower Platte North Natural Resources District
P.O. Box 126
511 Commercial Park Road
Wahoo, NE 68066
(402) 443-4676
Contact: Tom Mountford, (402) 443-4665. <tmountford@lpnrd.org>

Project Partners

Lower Platte North Natural Resources District. Coordinate the project and provide funding and technical assistance to install BMPs. Provide direction and assistance in developing watershed and project implementation plans. Contact: Tom Mountford, (402) 443-4665. tmountford@lpnrd.org

Shell Creek Watershed Improvement Group. Coordinate project promotion and recruitment of conservation participants. Provide assistance in developing watershed and project implementation plans. Contact: Matt Bailey. mattbailey@yahoo.com

USDA – Natural Resources Conservation Service. Provide funding and technical assistance for BMP installation through EQIP and other USDA programs. Contact: Melissa Foreman, (402) 564-0506. melissaforeman@hotmail.com

Nebraska Environmental Trust. Provide funding for installation of BMPs.

Nebraska Department of Environmental and Energy. Provide funding and technical assistance for BMP implementation and project management. Provide direction and assistance in developing watershed and project implementation plans.

Project Area

The project area includes five HUC-12 priority areas in the lower end of the watershed: Taylor Creek (102002010208), Brewery Hill-Shell Creek (102002010209), St. Paul’s Church (102002010101), Headwaters Loseke Creek (102002010102), and Schaad Creek (102002010103). The project area also includes a 3,000 feet corridor adjacent to the main stem of Shell Creek and its major tributaries.

Funding

Section 319 Funds:	\$365,000	Other Federal:	\$197,486
Non-federal Match:	\$244,000	Other Non-federal:	\$106,373

Project period

May 15, 2020 – June 30, 2022

Shell Creek Corridor Enhancement and Conservation Implementation

BACKGROUND

The Shell Creek watershed encompasses more than 304,000 acres in northeast Nebraska. The stream is a major tributary of the lower Platte River that influences the wellfields of Lincoln and Omaha. Three segments of Shell Creek are impaired for recreation and/or aquatic life uses due to E. coli concentrations or aquatic habitat disturbance.

The Shell Creek Watershed Improvement Group (SCWIG), a coalition of area farmers, formed in 1999 to address flooding and water quality issues in Shell Creek. With assistance from Nebraska Department of Environmental Quality (DEQ), Lower Platte North Natural Resources District (NRD) and USDA Natural Resources Service (NRCS), SCWIG developed and implemented the first watershed management plan for Shell Creek between 2005 and 2015.

Significant progress was made in getting effective management practices implemented on agricultural lands. For example, the use of conservation tillage applied to cropland increased from approximately 14% to 85% (67% No Till) over the life of the first management plan. Atrazine impairment of Aquatic Life Use was removed recently from Segment LP1-20700 in 2018 following implementation of the 2005 Shell Creek Watershed Management Plan. However, Atrazine management will remain a priority in this project to protect the recent delisting.

A new watershed plan, Shell Creek Environmental Enhancement Plan, developed and approved in 2015-2016, continues implementation of cropland BMPs to reduce erosion and Atrazine run off, but puts greater emphasis on reducing E. coli runoff and the impact of hydrologic alteration stream and riparian area on aquatic habitat. The plan also puts greater emphasis on protecting groundwater in wellhead protection areas from leaching of nitrate and other contaminants.

New efforts to protect surface waters will be concentrated in five priority sub-watersheds in the lower end of the watershed and within a 3,000 feet corridor along the main stem and tributary channels of Shell Creek. Efforts to protect community source water supplies (groundwater) will be concentrated in the delineated wellhead protection areas in the Shell Creek watershed.

GOALS AND OBJECTIVES

This project will advance the goals and objectives of the Shell Creek Watershed Environmental Enhancement Plan. For convenience, the goals and objectives of this project are cross-referenced to the management plan goals (G#), objectives (O#) and tasks (T#) in parentheses.

Goal 1: Efficiently and effectively implement actions to restore and protect natural resources from degradation and impairment (G1).

Objective 1: Maintain collaborative partnerships to advance management of natural resources (O2/T1,2,3).

Task 1: Continue SCWIG leadership in developing and promoting watershed management activities.

Task 2: Continue coordination of USDA, NRD and Section 319 programs in the watershed.

Task 3: Support the new USDA source water protection initiative in wellhead protection areas.

Objective 2: Actions will be strategically employed to restore and protect natural resources (O3/T2,3).

Task 1: Prioritize targeting of agricultural BMPs in five priority watersheds and the stream corridor.

Task 2: Prioritize targeting of stream BMPs in the Special Priority Areas for tributary stabilization and stream channel renovation.

Task 3: Install select BMPs approved for watershed-wide implementation.

Task 4. Install select BMPs for nutrient and irrigation management in wellhead protection areas.

Objective 3: Project Activities will be continually assessed and reported to appropriate audiences (O4/T2,3).

Task 1: Maintain a record of type, quantity and area of impact of BMP implemented.

Task 2: Maintain a record of stakeholder participation in project events and activities.

Task 3: Continue weekly Atrazine monitoring (May-June) at ambient monitoring site.

Task 4. Conduct weekly E. coli monitoring (May-September) at ambient monitoring site.

Task 5. Conduct weekly E. coli monitoring (May-September) at a new site near Schuyler.

Task 6: Re-evaluate stream and cropland conditions in the watershed.

Task 7: Submit semi-annual reports of accomplishments and activities to project partners.

Goal 2: Watershed stakeholders will understand water quality deficiencies in Shell Creek and support restoration and protection of water resources (G2).

Objective 1: Knowledge gaps that impede project participation by key stakeholders will be identified and addressed (O1/T2).

Task 1: Collect information on stakeholder knowledge about watershed conditions, water quality and management options through one-on-one contact and a mail-in survey.

Task 2: Develop and distribute a flier on guidance on accessing available conservation programs to support BMP implementation.

Task 3: Develop and distribute an educational brochure to enhance watershed stakeholders' understanding of stream hydrology and stream geo-morphology.

Task 4: Develop and distribute an educational brochure on the impact of soil health on water quality management.

Objective 2: Tools to effectively transfer knowledge and facilitate management of natural resources will be developed, improved and employed (O2/T1,2,3,4).

Task 1: Distribute an educational traveling display to promote understanding of watershed management issues.

Task 2: Promote project activities and BMPs through 1 meeting or field demonstration and releases through commercial and social media networks.

Task 3: Provide periodic training about BMPs, watershed dynamics and project management to SCWIG members at three monthly meetings.

Task 4: Improve volunteer monitoring and training opportunities for local school groups.

Task 5: Hire a part-time Producer Liaison to recruit and help producers enroll in BMP cost share programs.

Goal 3: The productivity and sustainability of water, land and biological resources of Shell Creek will be improved (G3).

Objective 1: Sub-watershed contributions of Atrazine and E.coli loads will be significantly reduced (O1/T1).

Task 1: Evaluate reduction of Atrazine and E.coli through monitoring at the Columbus gauging station and Schuyler monitoring site.

Task 2: Model pollutant load reductions from installed BMPs.

Objective 2: Sub-watershed contributions of sediment and nutrient run-off to streams will be significantly reduced (O1/T2).

Task 1: Evaluate reduction of sediment and nutrients through modeling of installed BMPs.

Objective 3: Stability of stream and land resources will be significantly improved (O2/T1,2,3,4,5).

Task 1: Evaluate reduction of stream erosion through site observation and modeling of installed BMPs.

Objective 4: The health and productivity of the flora and fauna community will be significantly improved (O3/T1,2).

Task 1: Evaluate re-establishment or increase in desirable flora and fauna in the stream and riparian zone at stream renovation sites through observation and volunteer monitoring.

PROJECT DESCRIPTION

This project initiates implementation of the 2017 Shell Creek Watershed Environmental Enhancement Plan. It incorporates both traditional cropland and pastureland treatment and near and in-stream treatments to abate contamination of the stream and its tributaries by Atrazine and E. coli, and to enhance habitat to improve aquatic life in the stream. The project is expected to reduce run-off of nitrogen, phosphorus and sediment as well, although those are not the primary focus of the practices to be implemented. Nutrient and irrigation management practices implemented in wellhead protection areas are expected to reduce leaching of nitrate to groundwater. A multi-modal approach to applying practices will be employed following the NRCS ACT model, which layers synergistic practices that avoid (A) exposure or application of contaminants, control (C) contaminants where they exit or are applied, and trap (T) contaminants in run-off to prevent their discharge into surface waters.

Operation and Administration

The Lower Platte North Natural Resources District will administer external grants and coordinate selection and implementation of conservation practices among available programs. The Shell Creek Watershed Improvement Group (SCWIG) will provide leadership in contacting producers and landowners and encouraging their participation in conservation programs and project activities. SCWIG

will play a key role in organizing watershed outreach activities and advising partner agencies on opportunities to work with interested stakeholders. NRCS and NDEE will administer EQIP and Section 319 programs, respectively, to support implementation of BMPs.

Agricultural Practices

The project will provide resources to address nonpoint source contamination from both crop and livestock production. NRCS will extend EQIP funding to the Shell Creek watershed through the general EQIP program **and through the Source Water Protection Initiative**. Participants in cost share programs for agricultural practices will be determined by a screening tool designed to target the most effective BMPs for E. coli and Atrazine management in priority sub-watersheds and the stream corridor **and for nutrient and irrigation management in wellhead protection areas**. The stream corridor extends 1,500 feet on both sides (total 3,000 feet) of Shell Creek and its tributaries. Priority practices are those noted by NRCS or other sources to be effective in avoiding, controlling or trapping E. coli or Atrazine.

Priority practices targeted for cropland include: crop rotation, integrated pest management, waste (manure) utilization, water and sediment control basins, wetland development and restoration, no till, field borders and buffers, riparian buffers and filter strips, grass waterways, and cover crops. Irrigation and nutrient management practices and well decommissioning are prioritized for Wellhead Protection Areas approved as Special Priority Areas in the watershed management plan. Eligible wellhead protection areas include Newman Grove, Lindsay, Platte Center, and Schuyler.

Supplemental practices, such as terraces and tile outlets, may be supported by program funds if they complement other priority practices that reduce E. coli and Atrazine runoff installed as part of the implementation contract. **Upland wildlife habitat may be supported where it may reduce the congregation of wildlife near streams, or intercepts and filters E. coli and Atrazine from runoff.**

A special complementary practice, Lands for Conservation, is designed to extend the construction season for installing structural practices. This practice provides a land rental payment to set aside the footprint of the construction area for structural practices. The land must be available for construction no later than August 1. It must have adequate pre-construction cover to prevent erosion and must be planted to a cover crop post construction. **A complementary practice, such as continuous no till, must be applied to the field where the structural practice is installed to qualify for Land for Conservation funding.**

This project will introduce and evaluate a new practice, Annual Cover Strip. This practice will be applied to drainage ways where permanent waterways may not be required. The practice consists of planting a temporary small grain cover such as wheat, rye or oats along the drainage way as an over-winter cover crop. This area may be farmed over during the cropping season. The practice also may be applied as a temporary buffer strip along stream channels. Continuous no till is required in the field where this practice is installed to be eligible for cost share.

Priority practices targeted for livestock operations include: exclusion fencing, managed grazing systems, relocation of feeding and loafing areas, composting, water diversion, water and sediment basin, wetland creation, and vegetative treatment systems. Supplemental practices include: pasture and hay planting, range planting, fencing, controlled access and controlled stream crossing. **Upland wildlife habitat may be supported where it may reduce the congregation of wildlife near streams, or intercepts and filters E. coli from runoff.**

Stream and Streambank Practices

Priority practices for streambed and streambank stabilization include: grade stabilization structures, channel vegetation, streambank and shoreline protection, channel stabilization, riparian buffers and filter strips, floodplain benches, meander and oxbow renovation and protection, wetland creation or enhancement, and aquatic habitat enhancement. When necessary, livestock exclusion practices also will be supported to protect treated areas. Preference will be given to applications that include suites of complementary practices and practices with greater longevity.

Streambed and streambank practices are prioritized for two Special Priority Areas identified in the management plan: the Tributary Stabilization Areas to control head cuts and the Stream Channel Renovation Areas to improve morphologic and hydrologic stability of Shell Creek. Streambank stabilization practices also will be used to protect public infrastructure within the stream corridor priority area.

Urban and Residential Practices

Urban and residential areas are broadly defined for this project as public, commercial, and private properties within municipalities as well as the residential and non-production facilities of rural properties. Practices targeted for these areas are intended to take advantage of opportunities to address a specific high profile local need or to provide opportunities to promote the project through demonstration. **Septic system up-grades will be allowed throughout the watershed**, but preference will be given to applications within the priority areas. Well decommissioning will be allowed throughout the watershed, but preference will be given to applications within wellhead protection areas. Urban BMPs, such as rain gardens and bio-swales will be targeted to properties within municipalities for demonstration and promotion of the watershed management plan.

Outreach

The Shell Creek project will be supported by an active outreach program to recruit participation in conservation efforts. Members of SCWIG and staff of partner agencies will work one-on-one and collectively with operators and landowners to assist them in enrolling in conservation programs and implementing BMPs. **Employment of a part time Producer Liaison will enhance this effort.** Information and education on nonpoint source pollution management will be disseminated through meetings, tours and demonstrations. Volunteer stream monitoring by area schools will be continued to engage students and the public in learning about and responding to water quality issues in Shell Creek.

Student Volunteer Monitoring Program

Students of Newman Grove High School have monitored six sites along Shell Creek since 2003. Samples are collected monthly from May through August and analyzed in the school laboratory as part of their science education program. This project will extend that program to additional schools, including Schuyler High School and Lakeview High School. More monitoring sites will be added and some existing sites will be relocated to provide more strategic isolation of tributaries and sub-watersheds. At least one site will be co-located with a site monitored by NDEE to provide calibration of the students' data. Students will collaborate in sharing data among the schools and will present the results of their monitoring efforts annually to SCWIG and to the NRD Board.

PRACTICES AND LOAD REDUCTIONS

The table below predicts the sediment, nitrogen, phosphorus and E. coli load reductions expected from implementing the priority BMPs for this project.

Practice	Area Controlled (ac)	<i>E. coli</i> (cfu/100ml)	Total Phosphorous (lb)	Total Nitrogen (lb)	Sediment (tons)
Streambank Stabilization ¹ (2)	140	455	1,510	873	1,820
1 Grade Control Structure (1)	120	78	---	---	1,560
Exclusion Fencing (12,000 LF)	600	1,950	3,237	1,872	3,900
Alternate Water Supply (2)	--	2	--	--	--
Livestock Waste Control Facility	---	13,000	22	13	26
Livestock Pen Relocation	---	32,500	54	31	65
Vegetative Treatment System (2)	2	13,000	53	25	52
Onsite Waste Water System (5)	--	3	13	7	0
Cover Crop	1,083	3,520	11,686	6,758	14,079
Buffer Strip	50	163	540	312	650
Grass Waterway	200	650	2,158	1,248	2,600
Annual Cover Strip ²	750	2,438	8,093	4,680	9,750
Lands for Conservation ³	100	325	1,079	624	1,300
No Till ⁴	250	813	2,698	1,560	3,250
Terrace and Tile Outlet ⁵	1,000	3,250	10,790	6,240	13,000
Total		72,147	41,933	24,243	52,052

¹The streambank stabilization sites include bio-engineering methods to capture and reduce Atrazine and E. coli. It also includes installation of a buffer strip above the stabilization site.

²An annual cover crop of small grains planted along a drainage way or along a stream bank to intercept and infiltrate water and pollutants. Must include continuous no till.

³Lands for Conservation will be eligible for funding when paired with supporting practices such as no till and/or cover crop.

⁴No Till is an effective practice to reduce the mobilization of Atrazine and E.coli in run-off. However, it will not be funded in this project with Section 319 funds, but may be funded by other partners. Non-federal funds used for no Till will be eligible for match credit.

⁵Traditional terraces and grade control structures on agricultural will not be funded in this project with Section 319 funds, but may be funded by other partners. Practice must include continuous no till to be credited as match.

EVALUATION

Progress in implementing this project will be tracked through semi-annual reports and feedback questionnaires at public meetings and events. Students from local schools will continue annual presentations of their volunteer monitoring results to project partners and the public. NDEE and the NRD will continue monitoring the ambient site near Columbus and establish a secondary monitoring site downstream near Schuyler. These two sites will bracket the priority sub-watersheds (upstream and downstream) where the majority of BMPs will be installed to better evaluate the impact of the project. *E. coli* and Atrazine samples will be collected weekly at both sites in May through June and *E. coli* will be collected from both sites in July through September. NDEE will conduct a mid-term progress and financial review.

SCHEDULE

Activity	2020			2021				2022	
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Complete project approval									
Let bids for construction projects									
Construct 2 streambank stabilization sites									
Design and Engineer Future Water Quality Structures									
Implement cropland BMPs									
Implement Livestock BMPs									
Construct tributary grade stabilizations									
Field demonstration and tours									
Student Volunteer Monitoring									
SCWIG meetings and training sessions									
Performance and financial reviews									
Project Reports									
Wrap-up Open House									
Project Final Report									

PROJECT BUDGET

Item	Section 319	EQIP	NET	NRD	County	Landowner	Total
Personnel	18,980	0	11,650	8,670	0	0	39,300
NRD Staff	0	0	0	7,500	0	0	7,500
Producer Liaison	12,480	0	8,320	0	0	0	20,800
Travel/meals/lodging	500	0	300	200	0	0	1,000
Mileage	6,000	0	3,030	970	0	0	10,000
Water Quality Structures (sub-total)	144,000	0	36,000	24,000	102,000	0	306,000
Project Management	0	0	0	0	6,000	0	6,000
Site Survey	0	0	1,200	800	8,000	0	10,000
Design and Permitting	0	0	6,000	4,000	40,000	0	50,000
Construction	144,000	0	28,800	19,200	48,000	0	240,000
BMPs (sub-total)	105,220	197,486	55,350	15,160	0	95,943	469,159
Exclusion Fencing	4,800	12,000	4,800	0	0	2,400	24,000
Alternate Water Supply	400	1,000	300	0	0	300	2,000
Livestock Waste Control Facility	7,500	25,000	5,000	0	0	12,500	50,000
Vegetative Treatment System	15,000	50,000	10,000	0	0	25,000	100,000
Livestock Pen Relocation	15,000	30,000	9,000	0	0	6,000	60,000
No-Till Conversion	2,250	7,500	1,500	0	0	3,750	15,000
Terraces ¹	0	25,000	7,500	5,000	0	12,500	50,000
Cover Crop	4,875	16,250	3,250	0	0	8,125	32,500
Buffer Strips	2,145	3,236	500	80	0	1,618	7,579
Grass Waterways	6,000	20,000	4,000	0	0	10,000	40,000
Annual Cover Strip ²	2,250	7,500	1,500	0	0	3,750	15,000
Septic System Upgrade	15,000	0	0	0	0	10,000	25,000
Lands for Conservation ³	30,000	0	8,000	10,080	0	0	48,080
Outreach (sub-total)	96,800	0	1,000	600	0	0	98,400
Information/Education	1,800	0	750	450	0	0	3,000
Watershed Evaluation/Plan Revision	80,000	0	0	0	0	0	80,000
Student Volunteer Monitoring Prog.	15,000	0	250	150	0	0	15,400
Total	\$365,000	\$197,486	\$104,000	\$48,430	\$102,000	\$95,943	\$912,859

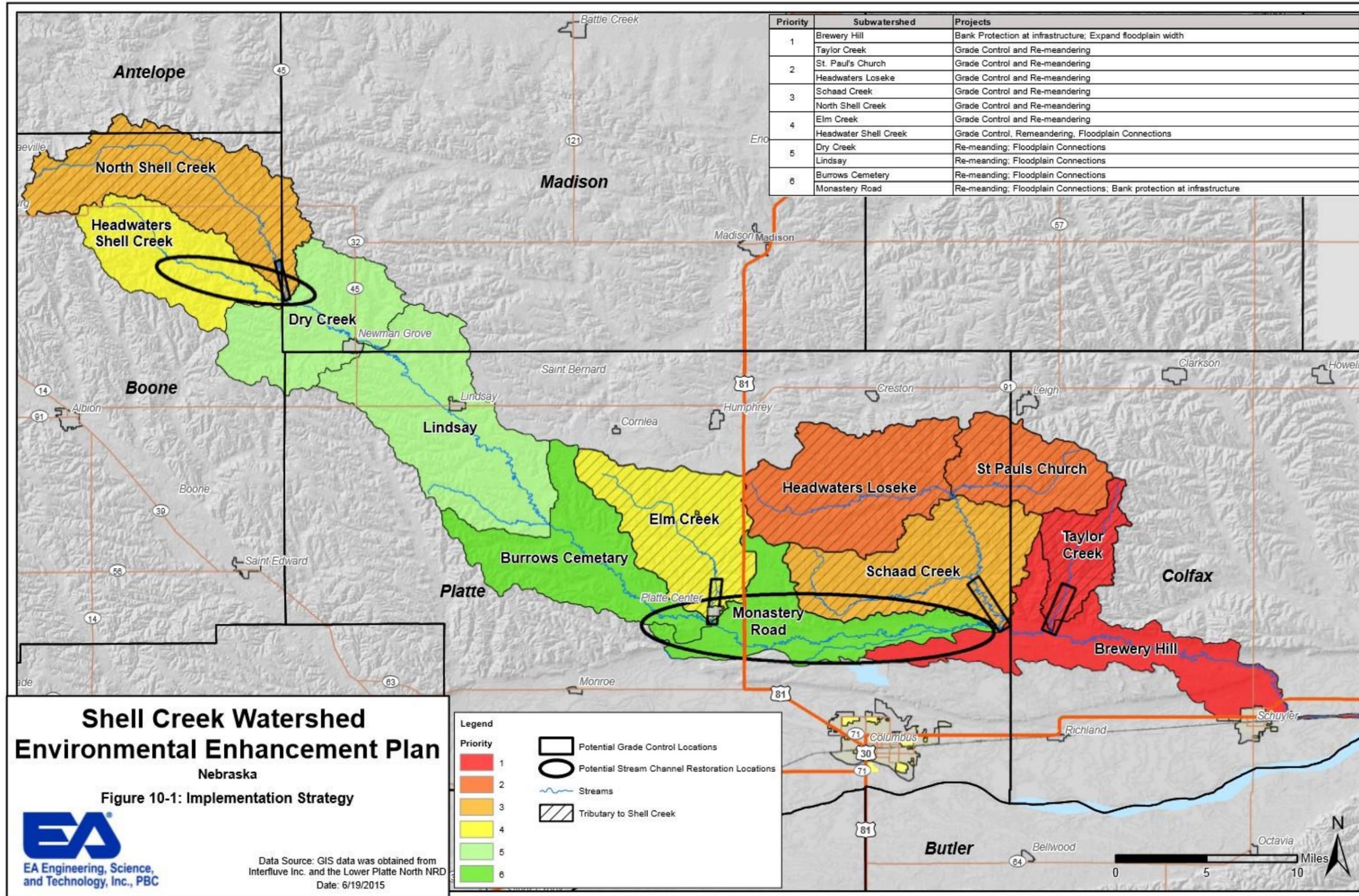
Budget Narrative

Personnel includes salaries and benefits associated with staff time for coordination and administration of the project. Materials and supplies includes costs for offices products, printing, publishing and mailing fees, meeting and demonstration supplies, supplies and materials for monitoring, and similar needs. Travel includes costs associated with attending meetings, conferences, field days and producer assistance associated with conducting and promoting the project. Costs for the student volunteer monitoring program include field and laboratory supplies; instruments and equipment; transportation costs and teacher stipends. All other budget items are contractual costs associated with installing practices and implementing activities of the project.

¹Traditional terraces on ag land are generally excluded from Section 319 funding, but may be supported or credited as match provided other secondary treatments (e.g., continuous no till, pest management) reducing E. coli or Atrazine loads also are implemented on the land treated.

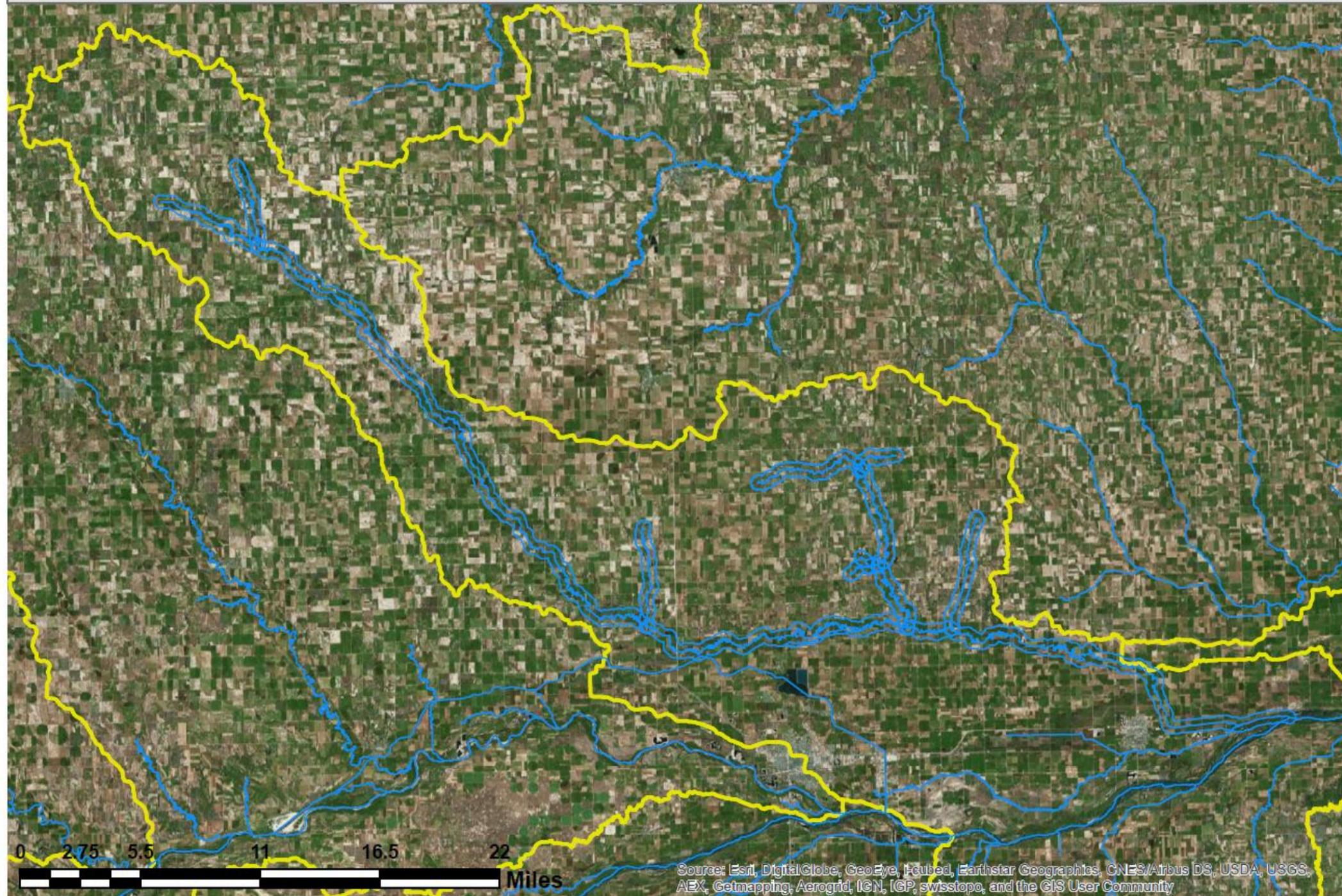
²Annual cover strip practice is a practice of planting a cover crop into drainage areas that otherwise might be a grassed waterway. The field must be in continuous no till to be eligible for this practice.

³Lands for Conservation requires continuous no till to be practiced on lands receiving installation of a structural practice. The treatment area must have adequate pre-construction cover and be planted to a cover crop post construction.





Shell Creek and Tributaries Buffer



Project Implementation Plan Review Checklist

The attached checklist is intended for EPA's use in providing consistency in the evaluation of PIPs. This checklist can also be used by states in their RFP/RFA, PIP sub-grant processes, and templates. The checklist was completed in March, 2013, as a result of EPA and state collaboration on kaizen process improvement. Checklist items link to the requirements of federal grant regulations, section 319 program guidelines, the environmental results order, and grants policy issuance.

The checklist may be revised as lessons are learned after EPA applies it to PIP reviews. A revised process chart and examples or excerpts of PIPs that meet required items will be developed to accompany the checklist.

“Standard Requirements” in the checklist include items applicable to all PIPs. “Additional Requirements for the use of Watershed Project Funds” include items applicable to PIPs that are slated for watershed project funds (known as incremental funds prior to FY 2014). Many of the checklist items for watershed project funds can be fulfilled through reference in the PIP to the current Watershed-based Plan (WBP). A pre-existing WBP should be reevaluated for necessary updates or revisions to the WBP according to a milestone/schedule in the WBP itself or according to the state's workplan. Generally, WBPs may need to be updated on a 5 year basis as appropriate and updates may include monitoring data, new TMDLs, and progress on milestones.

Project Implementation Plan Review Checklist

Project Title Shell Creek Corridor Enhancement and Conservation
Implementation
State Nebraska
Grant Appropriation Year 2018
Project Number (EPA/GRTS) 6
Grant Number 007403267

Project Start Date May 15, 2020
Project End Date June 30, 2022

319 Program Funds _____
319 Project Funds \$365,000

**Technical Advisor's
Determination:**

**Accept with
comments** _____

(choose one: Accept, Accept with
Comments, Needs Revision)

Technical Advisor Name
(typed):

Kimberly Hill

Kimberly J. Hill
Technical Advisor Signature

June 10, 2020

Date (typed)

General Comments:

NDEE should coordinate with their wetlands coordinator to ensure the streambank component does not alter the flow of the stream or require a 404 permit.

√ = complete; I = incomplete; N/A = not applicable

Standard Requirements

- √ 1 The state identifies via transmittal letter or email, the priorities, goals, objectives, or milestones from the state's Nonpoint Source Management Program (NPSMP) that are relevant to the PIP under review.
This project will further the goals of our state program by implementing a water quality management plan to restore a water resource, reduce pollutant loads and strengthen partnerships.

- √ 2 The state identifies the grant fiscal year(s) of PIP funding.
2018

Clean Water Act Section 319 Program

- √ 3 Project start and end dates are within the state awarded grant period.
[Yes, start date is May 15, 2020 through June 30, 2022.](#)
-
- √ 4 If the PIP is implementing a subsequent phase of an ongoing project, the current status and any accomplishments of the previous project phase(s) are briefly summarized in the PIP.
[This information is included in the background.](#)
- √ 5 The PIP identifies the geographical extent of the project.
[Information included.](#)
- N/A 6 Projects whose major purpose is Information and Education clearly identify the target audience and the mechanism for evaluating the effectiveness of the activity.
[N/A](#)
- √ 7 Goals, outputs, outcomes, and measures of success are identified in the PIP.
http://www.epa.gov/region7/grants_funding/pdf/grant_work_plan_requirements_and_checklist.pdf :
- **Results of Activities (Outputs)** – the project identifies the anticipated products/results from the accomplishment of work plan activities.
 - **Projected Environmental Improvement (Outcome)** – information regarding the environmental improvement that is anticipated at the completion of the program/project. Environmental improvements are changes or benefits to the environment that are a result from the accomplishment of work plan commitments and outputs.
 - **Established Baseline for Measurement** – the PIP provides a baseline for measuring the results of the project and discusses how this baseline will be used to determine whether the project resulted in environmental improvement (i.e., current condition, new condition).
- [Goals are listed on pages 1-3. Very good job!](#)
- √ 8 The PIP includes a detailed implementation schedule and milestones.
[A schedule is included on page 7.](#)
- √ 9 The budget clearly breaks out each source of funds: Section 319 and match, other EPA, other federal, state funds, state in-kind, local funds, local in-kind, landowner contributions, and other funds.
[Budget is provided on page 8.](#)

Clean Water Act Section 319 Program

- √ 10 The PIP includes a budget narrative. The narrative should describe the purpose and types of any travel, explain and justify any equipment (cost per unit \$5,000 or more), and describe any contracts, including the scope of work or services to be provided.

An acceptable budget narrative is provided on page 9.

- √ 11 PIP budget costs are necessary, eligible, reasonable, and allocable.

Yes.

Additional Requirements for the use of Watershed Project Funding

- √ 12 The PIP contains a reference to the appropriate WBP, its date(s) of completion, revision or updates, and describes what components or phases of the WBP are being implemented by the PIP.

Information included.

- √ 13 The PIP identifies its HUC-12(s) and smaller subwatersheds where implementation will occur.

Information included.

- √ 14 A PIP designed to protect unimpaired waters is based on either a WBP containing the nine elements, or an accepted alternative plan to guide project implementation. The PIP, implementing a WBP or an accepted alternative plan to protect unimpaired surface and/or ground water, directly addresses priorities for protection of water quality outlined in the state NPS Management Program. Surface waters addressed in the protection-based PIP are assessed and included in the State Integrated Report.

Information included.

- √ 15 The PIP identifies types of BMPs to be implemented, quantities, Section 319 cost per type, total cost per type, and the critical areas for implementation.

This information is included. Great job!!

- √ 16 The PIP includes estimated load reductions per each type of applicable BMP.

Load reductions are provided by BMP type. Excellent!!

- √ 17 If water quality monitoring is done by the project, the monitoring objectives, costs, time frames, and water quality parameters are clearly identified in the PIP.

Clean Water Act Section 319 Program

A volunteer project involving the school district. Innovative!!!

Progress Report for Wahoo Creek Watershed Dams Sites



Lower Platte North NRD

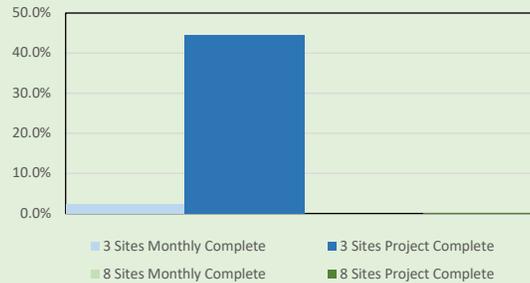
For Work Completed During The Month Of : **June, 2020**
(through 7/1/2020)

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	\$ 21,840	\$ 170.94	0.8%	\$ 6,654.79	30.5%
020 - Geotechnical Engineering	\$ 222,485	\$ 14,039.29	6.3%	\$ 190,140.89	85.5%
030 - Dam Design	\$ 173,160		0.0%	\$ 44,845.67	25.9%
040 - Permitting	\$ 79,960	\$ 47.82	0.1%	\$ 6,539.48	8.2%
050 - Survey and Legal Descriptions	\$ 10,780		0.0%	\$ 11,360.33	105.4%
060 - Community/Public Participation	\$ -			\$ -	
070 - Construction Services	\$ 75,600			\$ -	
				\$ -	
3 Sites Totals	\$ 583,825	\$ 14,258.05	2.4%	\$ 259,541.16	44.5%

Project # A18-3423 (separate invoice) Sites 55, 66, 77, 82, 83, 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	\$ 62,400		0.0%	\$ -	0.0%
110 - Geotechnical Engineering	\$ 607,460		0.0%	\$ -	0.0%
120 - Dam Design	\$ 436,278		0.0%	\$ -	0.0%
130 - Permitting	\$ 251,140		0.0%	\$ -	0.0%
140 - Survey and Legal Descriptions	\$ 28,875		0.0%	\$ -	0.0%
150 - Community/Public Participation	\$ 30,000		0.0%	\$ 429.02	1.4%
160 - Other	\$ -			\$ -	
8 Sites Totals	\$ 1,416,153	\$ -	0.0%	\$ 429.02	0.0%

Billings For Month	\$ 14,258.05
Total Billings To Date	\$ 259,970.18
Project Budget	\$ 1,999,978
Budget Remaining	\$ 1,740,007.82

% Budget Spent Per Site



* As suggested by the NRCS at the 3-11-19 LPNNRD board meeting, design will be slowed down for a few weeks while the watershed plan is being completed. We will continue with the geotechnical analysis

Summary Of Work Completed This Month	
<u>Sites 26A, 26B, & 27</u>	<u>Eight Sites</u>
	- No work on these sites
	-
Over the previous month we have completed the first drafts of the reports for dams #26A, #26B, and #27 and are working through peer review and quality control. Each dam has similar recommendations for staged construction and selective fill but differ on seepage recommendations. Our reports detail the potential for uplift failures and remedial measures. We also prepared and presented a slide show of our progress to the LPNNRD board.	

Planned Work For Next Month

For questions regarding billings, please contact Mike Placke at (402) 458-5957 or mplacke@olsson.com

Invoice



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

July 22, 2020
Invoice No: 362579

Tom Mountford
Assistant Manager
Lower Platte North NRD
PO Box 126
Wahoo, NE 68066-0126

Invoice Total \$14,258.05

Olsson Project # 018-3423 Lower Platte North NRD Wahoo Creek Watershed & 11 Dam Sites
Professional services rendered June 14, 2020 through July 11, 2020 for work completed in accordance with agreement.

Phase 010 Sites 26A 26B & 27 Project Management

Labor

	Hours	Amount	
Senior Engineer	1.00	170.94	
Totals	1.00	170.94	
Total Labor			170.94
		Total this Phase	\$170.94

Phase 020 Geotechnical Engineering

Labor

	Hours	Amount	
Industry Expert	1.25	289.23	
Team Leader	16.50	3,459.45	
Project Engineer	61.50	6,977.79	
Associate Engineer	28.00	2,865.52	
Student Technician - Level 1	10.00	447.30	
Totals	117.25	14,039.29	
Total Labor			14,039.29
		Total this Phase	\$14,039.29

Phase 040 Permitting

Labor

	Hours	Amount	
Student Technician - Level 1	1.00	47.82	
Totals	1.00	47.82	
Total Labor			47.82
		Total this Phase	\$47.82

Billing Limits

	Current	Prior	To-Date
Total Billings	14,258.05	246,873.41	261,131.46
Limit			583,825.00
Balance Remaining			322,693.54

AMOUNT DUE THIS INVOICE \$14,258.05

Outstanding Invoices

Number	Date	Balance
358319	5/26/2020	19,185.48
360106	6/24/2020	12,706.55
Total		31,892.03

Email invoice to tmountford@lpnnrd.org

Authorized By: Michael Placke

TO BE COMPLETED BY NEMA HM STAFF	
Eligible activity under FEMA HMGP	Choose an item.
If no, is it potentially eligible under PA?	Choose an item.
If ineligible, please provide a brief explanation:	Click or tap here to enter text.
Local Hazard Mitigation Plan Verification	Choose an item.
NEMA Point of Contact assigned to project	Choose an item.
Date NOI received:	Click or tap to enter a date.

State of Nebraska Notice of Interest (NOI) Form FEMA Hazard Mitigation Assistance

This Notice of Interest (NOI) form gathers information required to apply for FEMA Hazard Mitigation Grant Program (HMGP) funds through the Nebraska Emergency Management Agency (NEMA). The HMGP provides funds following a presidentially declared disaster to enable communities to implement *critical mitigation actions*. HMGP funds may be used to fund 75 percent of eligible project costs and require at least 25 percent local match.

This Notice of Interest form must be completed and returned to NEMA in order to be considered for an invitation to complete a full grant application. Applicants must have a FEMA approved **Local Hazard Mitigation Plan (LHMP)**. The proposed mitigation project must be consistent with the LHMP and an eligible activity consistent with [FEMA's Hazard Mitigation Assistance Guidance \(2015\)](#) in order to be considered for a project award. Please contact the NEMA Hazard Mitigation team to discuss program eligibility and requirements: nema.hazardmitigation@nebraska.gov. Return this form to nema.hazardmitigation@nebraska.gov.

Part 1: Applicant Information

1. Applicant Name: **North Bend Drainage District**
2. Type of Jurisdiction: **Special District Government**
3. What is the jurisdiction's current population size? **Approximately 60 miles of drainage ditches, includes ditches that protect City of North Bend and City of Fremont.**
 4. Primary Point of Contact Information: **Larry Ruzicka**
 - a. Name: **Larry Ruzicka**
 - b. Title: **President**
 - c. Agency/Organization: **North Bend Drainage District**
 - d. Mailing Address: **1856 County Road 7, North Bend NE 68649**
 - e. Email Address: **lruzicka23@hotmail.com**
 - f. Phone Number: **402-720-8828**
5. Does the jurisdiction participate in the National Flood Insurance Program (NFIP)? **No**
6. If yes, what is the jurisdiction's NFIP number (CID)? **Click or tap here to enter text.**

Part 2: Local Hazard Mitigation Plan Information

1. What plan does the jurisdiction participate in? **Lower Platte NRD Other**
2. What is the jurisdiction's Local Hazard Mitigation Plan Expiration Date? **May 2020**
3. Where in the Local Hazard Mitigation Plan is the objective of this project located? Please provide the specific reference. **Goal 2, Objective 2.2**

Part 3: Project Information

1. What type of **mitigation activity** does this project propose? **Stormwater System and Drainage Improvements** **Choose an item.**

If other, please describe: **Click or tap here to enter text.**

2. **Project location.** *If available, please include a map of the proposed project area with the NOI submission.*
 - a. Latitude and Longitude: **Start 41.453926, -96.840533, End 44.499292, -96896156**
 - b. Street Address: **North Bend Cutoff Ditch**
 - c. Is the project located in the 100-year flood plain? **Yes Start 41.453926, -96.840533, END 41.485034, -96.880164**

If unknown, use the FEMA Map Center to locate the project area: <https://msc.fema.gov/portal/home>

3. Project Description

- a. Please provide a general description of the project scope of work:
Stabilize and Raise elevation of east (high) bank along North Bend Cutoff Ditch, improving ditch capacity to channel water back towards the Platte River.
- b. What structures, critical facilities, or critical infrastructure will this project mitigate/protect:
Drainage Ditches, City of North Bend and surrounding nearby developments, county roads, state highways 30 and 79, streets and city sewer and well-heads.
- c. DR-4420 specific: Were these structures damaged in the disaster incident between March to July 2019?
Yes, scope of work includes segments of the bank from County R to Platte River
If YES, is the community receiving **Public Assistance and/or 406 mitigation** funding for these facilities?
Yes, for the portions impacted scope of work includes shoring up banks, ditch cleaning, does not include elevation of bank.
- d. Provide a brief narrative of damages from past events to structures/facilities and/or infrastructure which will be mitigated by this project:
The flooding and structural damage will be mitigated
 - Are these damages documented, if yes, how?:

Recently with FEMA Disaster DR4420 Drainage District is a PA Applicant.

Did the critical facility or infrastructure experience loss of function during the 2019 event and/or past events? Provide a brief summary on impacts to services to the community, customers, and/or users. **The North Bend Cutoff Ditch serves as the channel to capture storm water and flood waters from the Platte River and Shell Creek diverting flood water back into the Platte River before entering the City of North Bend and impacting state highways 79. In March 2019, a portion of the ditch bank breached allowing flood waters to inundate the City of North Bend, County Roads, State Highways 30 & 79, and rail line. The City of North Bend was evacuated and disrupted for several weeks.**

Click or tap here to enter text.

- e. What is the anticipated level of protection after mitigation?

Moderate to High

- f. What, if any, studies have been conducted in the project area (hydraulic & hydrologic, FEMA Flood Insurance Study, drainage reports, planning or feasibility studies, etc.)

Unknown, North Bend Drainage District is part of the Dodge County Joint Water Management Board that has submitted an NOI for Study and Plan for Flood Resiliency but has been denied in July and December 2019.

4. Cost Estimate

- a. Total Project Cost: **1.7 Million Dollars**
- b. As mentioned above, HMGP requires a 25 percent local match. Please list possible local match sources:
City of North Bend, Lower Platte NRD, Dodge County, North Bend Drainage District

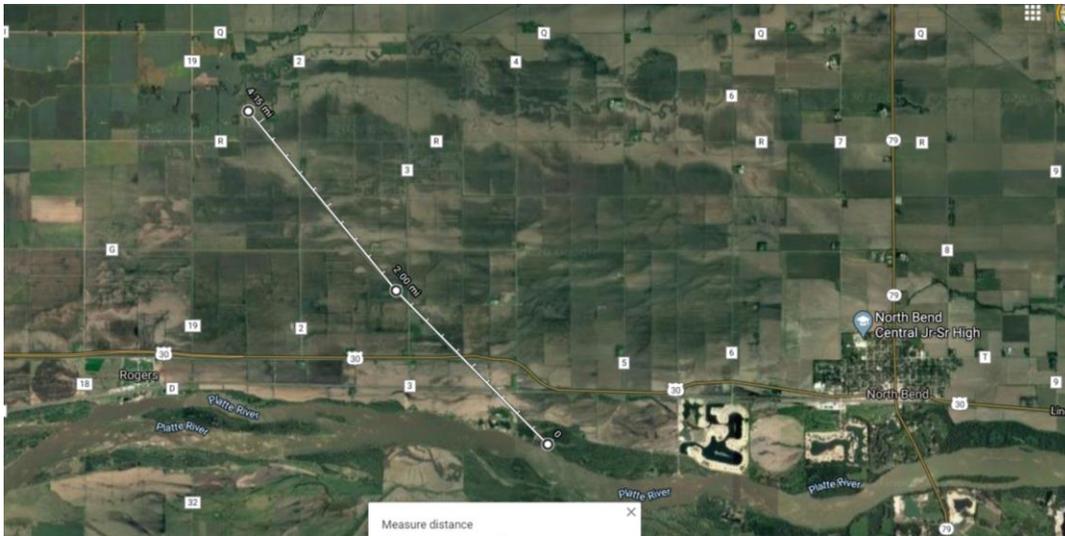


Figure 1: North Bend Cutoff Ditch



in partnership with



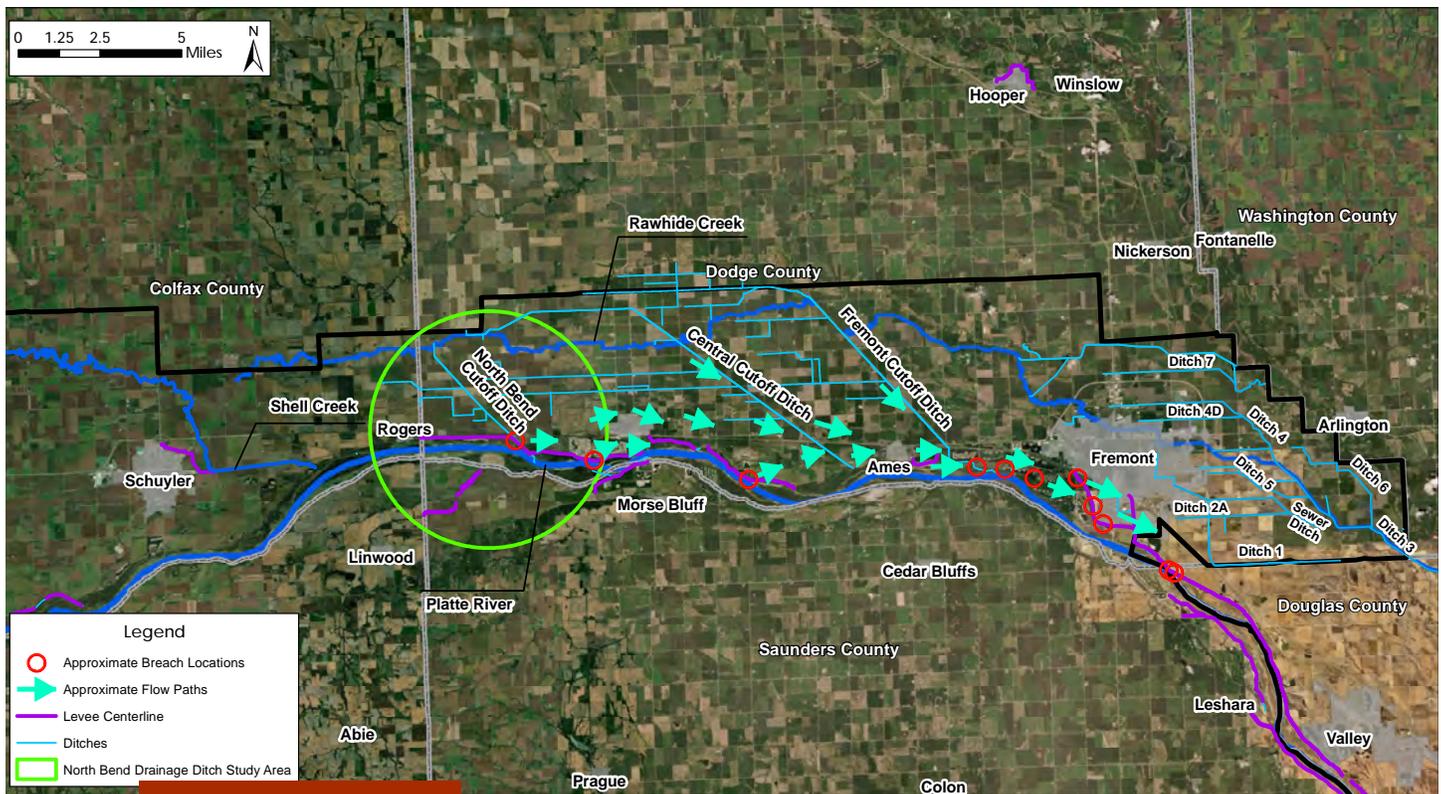
ideation

PROPOSAL FOR

CONSULTING SERVICES IN REGARDS TO A HAZARD MITIGATION GRANT PROGRAM (HMGP) APPLICATION

North Bend Drainage District

July 7, 2020



JEO CONSULTING GROUP, INC.



Contacts

Kevin Kruse, PE
 Project Manager
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 e: kkruse@jeo.com

Lalit Jha, PE, D.WRE, CFM
 Project Principal
 p: 402.443.8010
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2700 Fletcher Avenue
 Lincoln, Nebraska 68504
 p: 402.435.3080
 f: 402.435.4110



July 7, 2020

City of Fremont
Attn: Brian Newton, City Administrator
400 East Military Avenue
Fremont, Nebraska 68025

RE: Proposal for Consulting Services in Regards to a Hazard Mitigation Grant Program (HMGP)
Application for North Bend Drainage District

Dear Selection Committee Members:

Efforts to recover from the March 2019 flood and to make the Dodge County Area more flood resilient are continuing with the Joint Water Management Advisory Board (JWMAB)'s effort to support North Bend Drainage District with ditch and bank measures that would mitigate the threat of future damages. NEMA/FEMA's request for a full Hazard Mitigation Grant Program (HMGP) application is encouraging and a big step forward to make this project a reality.

JEO Consulting Group, Inc. (JEO) was on site before the flood waters receded and helped eight communities in Dodge County respond, recover, and now we are ready to provide engineering services on flood mitigation projects. JEO has included Ideation, experts in FEMA's Benefit-Cost Tool, to support development of the HMGP application.

- **VESTED INTEREST:** Most of the damages in the Dodge County area have a hydrologic connection. JEO is working on over ten local drainage/flood control projects with JWMAB members in response to flood damages. Having access to aerial photography, hydrologic and hydraulic (H&H) models, survey, and repair concepts will save costs by not duplicating efforts.
- **FLOOD RESILIENCY AND RISK REDUCTION PROJECT IMPLEMENTATION:** The magnitude of the March 2019 floodwater showed the weak points along the river and the drainage system and clarified inadequacies in the upland drainage ditches and drains. Our team understands that actions at the west end of the planning area could either benefit or harm downstream communities and landowners. Our initial review of the hydrology during the flood has given us ideas on this holistic vision behind the plan.
- **FUNDING KNOWLEDGE:** Working with federal funding presents multiple obstacles and is always a challenge. JEO features Mary Baker, a FEMA funding specialist who has recently been coordinating with multiple small communities on flood repair and mitigation projects, as well as Terry Meier, a funding specialist with significant experience with the CDBG and Water Sustainability Fund programs. Furthermore, our design engineers are experienced with FEMA's BCA Toolkit, design specifications, and guidelines for several grant programs that will bring further cost savings regardless of the funding strategy.

I look forward to the opportunity to further discuss the details of our qualifications and JEO's willingness to continue work with the JWMAB.

Sincerely,

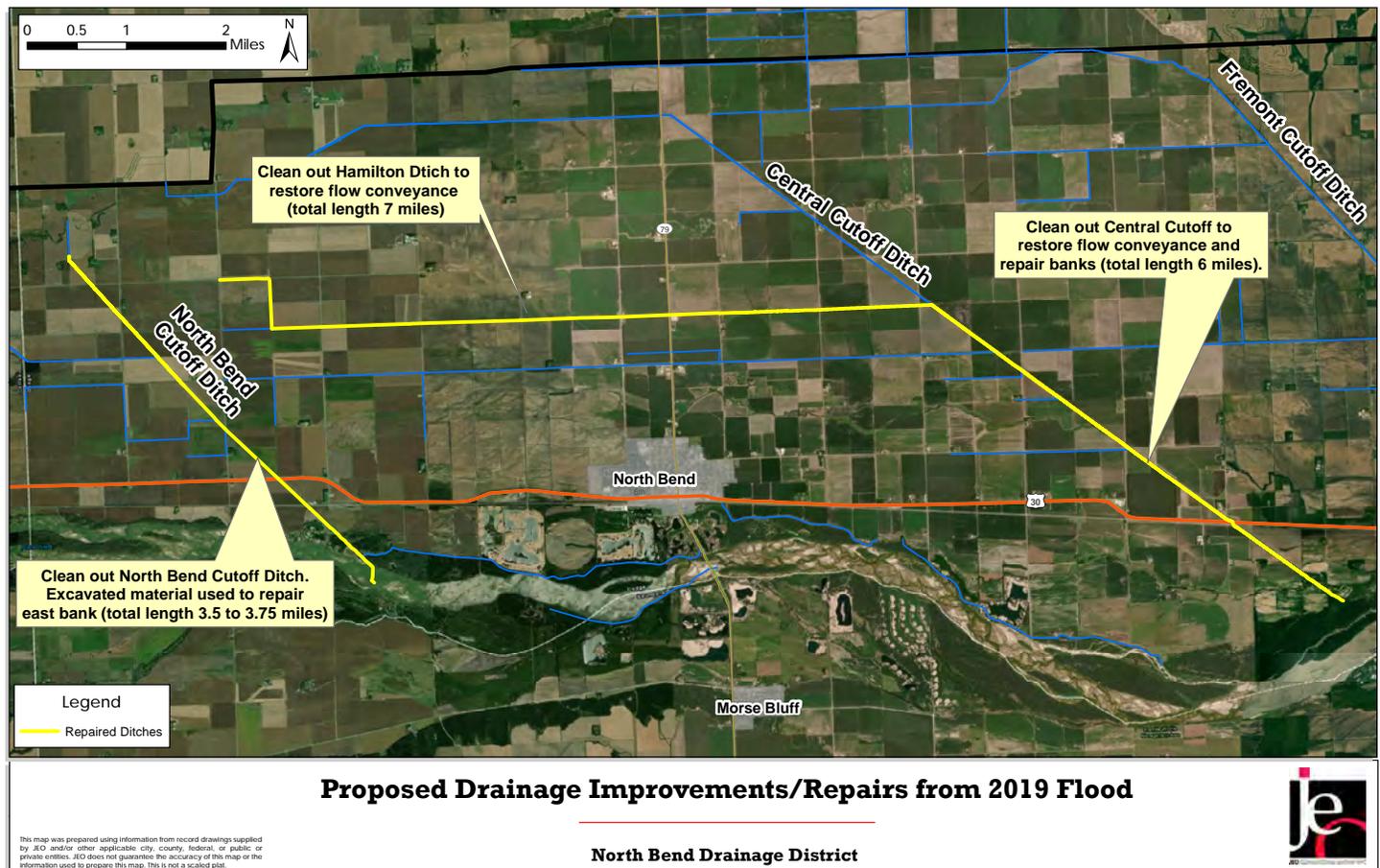
Kevin Kruse, PE
Project Manager

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

PROJECT UNDERSTANDING AND APPROACH

PROJECT UNDERSTANDING

During the historic flooding in 2019, the Platte River near North Bend saw unprecedented flood levels. As flood levels in the river swelled, it overtopped banks upstream of North Bend as it continued to travel easterly. JEO, as part of our ongoing work with several communities in the Platte River Corridor, was highly involved in flood fighting actions during the flood event, as well as repairs to critical infrastructure following the flood. As part of this effort in working with communities directly impacted by the flood from Columbus to Fremont, JEO gained vital insight into the flood damages, as well as the intricacies of the various flood infrastructure.



The North Bend Cutoff Ditch was constructed to intercept local flows and re-direct them to the Platte River. To improve this system's ability to intercept and redirect floodwaters, the North Bend Drainage District (NBDD) has submitted a Notice of Intent (NOI) to the Nebraska Emergency Management Agency (NEMA) that documents their intent to apply for Hazard Mitigation Grant Program (HMGP) funds. The project proposed by the NBDD includes significant cleaning out of the existing ditch and building up of the east (downstream) bank to prevent flows from continuing east. After discussing this project with representatives from NEMA, the project has been selected to proceed with the development of a full grant application that will be submitted to NEMA/FEMA during the summer of 2020. The NBDD, with assistance from the Lower Platte North Natural Resources District (LPNNRD) and the Dodge County Emergency Manager, is currently developing the grant application and will be submitting to NEMA. Following the initial review of the HMGP grant application, a Request for Information (RFI) from NEMA is anticipated which will request supplemental information from NBDD further supporting the final application.

The HMGP administered by FEMA is a statewide, competitive program. The current funding allocation will be distributed among those projects deemed to be cost effective at mitigating risks, while providing sufficient benefits to warrant the cost. A successful grant application for this project must include the following information:

1. Detailed project description:

- Engineering background including issues/problems to be mitigated.
- Conceptual design of the proposed project with sufficient detail.
- Detailed project cost opinion including anticipated construction quantities, estimate of professional services, land acquisition costs, and long-term maintenance.

2. Detailed description of pre- and post-project conditions:

- How will the project reduce flood risk?
- How do the post-project flood conditions (flood depth, flow rate, etc) compare to the pre-project conditions?
- What are downstream impacts to the project?
- Detailed evaluation of benefits provided by the project, with benefits monetized for inclusion into the Benefit-Cost Analysis (BCA).

3. Description of alternate solutions evaluated.

4. Summary of damages that will be avoided with project implementation.

5. Environmental and historic preservation impacts:

- Coordination is necessary (during the grant application phase) with several state and federal agencies to confirm that environmental/historical permits are either not necessary or will be secured through the final design phase.

6. Anticipated property acquisition needs (if any).

7. Detailed BCA using FEMA:

- Monetized benefits over the life-span of the project must outweigh project costs.

8. Anticipated project schedule.

JEO has successfully assisted several communities with the development of HMGP applications and has a strong understanding of the process, as well as the requirements of the application. JEO understands the NBDD and JWMAB are currently developing the initial grant application with an anticipated submittal date in July 2020. Any other information necessary for the grant will be included in an RFI process and must be reviewed and approved by NEMA (state level) prior to the final grant application being forwarded to the reviewers at FEMA (federal level).



Since 2015, JEO has successfully assisted communities in securing \$4.3 million of federal funds through the Hazard Mitigation Grant Program for design and construction of vital flood risk reduction projects.

PROJECT APPROACH

Based on our team's solid experience in securing HMGP funding, we have developed the following phased project approach. The final approach and associated fee structure will be developed upon final review of the initial grant application (currently being developed by the NBDD and the JWMAB and the anticipated RFI from NEMA. Both the draft grant application and the RFI were not available for review at the time of development of this Request for Proposal.

PROJECT KICK-OFF MEETING

Due to the complexity of the project and the numerous moving parts, JEO anticipates facilitating a detailed project kick-off to review the grant application (developed by NBDD) and the project specifics. A comprehensive funding strategy that may include HMGP, CDBG, or other outside sources of funding will be discussed.

ADDITIONAL FUNDING STRATEGIES

JEO understands that in addition to the current request for FEMA funds through HMGP, additional funding sources may be necessary. Funding programs such as the CDBG, Water Sustainability Fund, and other sources may be utilized for the local share (25% of project total) if HMGP funds are allocated. If HMGP funds are not available, these funding programs could be pooled together to keep the project viable. The JEO team has direct experience working with communities to develop creative funding strategies to meet overall project goals.

PHASE 1 - GRANT APPLICATION DEVELOPMENT

Upon receipt of the initial grant application and pending RFI from NEMA, the JEO team will review outstanding items with the NBDD and representatives of the JWMAB to develop a scope of work, fee structure, and anticipated schedule to support the NBDD and JWMAB.

Based on JEO's recent experience with the HMGP funding applications, efforts to develop the necessary components for a complex project such as that proposed can take time and require significant back and forth with FEMA and its contractor assisting with the process. In order to fully develop a successful application and respond to eventual RFIs, it is likely that a comprehensive hydrologic and hydraulic model, as well as conceptual project design with detailed cost opinion may be necessary. If those elements are necessary, JEO will work with the NBDD/JWMAB to determine the best scope of work and associated fees required to address the RFIs. Identifying substantial benefits of the project will be key. Therefore, a focus at the outset will be to identify potential benefits to focus evaluations on the other side of the cost/benefit ratio equation.

HYDROLOGIC AND HYDRAULIC ANALYSIS

If hydrologic and hydraulic analysis is requested, JEO can develop a robust two-dimensional analysis to evaluate the overland flow scenarios and determine a holistic flood risk reduction improvement. JEO is also involved in other related discussions including hydrologic and hydraulic evaluations of this same area that are being considered for other grant opportunities. **If selected, JEO does anticipate reviewing the likelihood and potential schedules of all of the project opportunities to utilize a common model for development of comprehensive strategies for the Lower Platte Corridor, which would bring cost savings and consistency to JWMAB communities.**

BENEFIT-COST ANALYSIS

If a detailed BCA is requested, JEO will utilize the required FEMA BCA software v 6.0 to document and calculate the benefit-cost ratio. The documentation and monetization of both damages avoided by the project, as well as costs of the project will also be vital for a successful application. JEO understands the JWMAB and NBDD have already begun to gather and document damages as part of the initial grant application submission.

COORDINATION WITH ENVIRONMENTAL AND HISTORICAL PERMITTING AGENCIES

Coordination and consultation with the Nebraska Game and Parks Commission, U.S. Fish and Wildlife Service, Nebraska State Historical Society, the Nebraska Department of Transportation, among others is required for the application. If requested, JEO will initiate the discussion with the various agencies to verify that pre-application consultation was conducted.

PHASE 2 - DESIGN, PERMITTING, AND CONSTRUCTION (PENDING GRANT APPROVAL)

Pending authorization and the obligation of funds, JEO anticipates initiating the design and construction document development. It is anticipated that this phase will include construction drawings, plans, and specifications necessary to publicly bid the project. Plans will include all details and right-of-way/property acquisition needs and will be signed and sealed by a professional engineer licensed in the State of Nebraska. This phase will also include development of necessary permit applications (USACE, Local Floodplain, etc.).

Our team also includes specific expertise in providing construction administration support to manage the construction phase of the project, including site observation, construction engineering, pay application review, and approval and final coordination with NEMA/FEMA for project close-out.

PROPOSED TEAM

TEAM ORGANIZATION AND ABILITY TO COMPLETE PROJECT

We have set up our team for this project based on the expected scope of work. **Each of the team members listed below, in addition to others not listed, have worked on projects listed as experience in this proposal package and bring a depth of experience to serve you.**

JEO utilizes a company-wide system called Deltek to monitor project staffing resources on active and planned projects. Each project is entered into the system with timelines and anticipated hours assigned to each project team member. This data is updated on a regular basis to provide a real-time view of the availability each staff member. The proposed members of this team have the availability to complete your project within the proposed schedule.

NORTH BEND DRAINAGE DISTRICT



QA/QC
Dan Fricke, PE, CFM



PROJECT MANAGER
Kevin Kruse, PE



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

PROJECT TEAM MEMBERS

**BENEFIT-COST ANALYSIS |
HYDROLOGY & HYDRAULICS**
Patrick Hartman, PE

**OPINION OF COST |
LEAD DESIGNER**
Justin Stine, PE

TECHNICAL ADVISOR
Steve McMaster, CFM¹

GRANT DEVELOPMENT
Mary Baker
Terry Meier

SURVEY
Jeff Serafin, LS

DESIGN/CONSTRUCTION
Jake Miriovsky, PE
Ross Lawrence, PE, CFM

Subconsultant:
1- Ideation

STAFF AVAILABILITY

Kevin Kruse serves as a Senior Project Manager and the Operations Manager for the Water Resources Engineering department. He is aware of each team member's workload and anticipated hours assigned for this project, and all projects. The proposed members of this team have the availability to complete your project within the proposed schedule, and Kevin will make adjustments during the project to ensure the schedule is maintained.



FIRM PROFILES



JEO CONSULTING GROUP, INC.

Since 1937, JEO has provided engineering consulting services, unsurpassed in skill, creativity, and cost-efficiency. 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 Iowa, Nebraska, 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.**

JEO's Water Resources Engineering Department (WRED) includes 34 staff members who specialize in levee and flood mitigation, stormwater and floodplain management, dam and lake design, environmental planning, stream/wetland improvements, and hydrologic and hydraulic modeling. We are proud to say JEO features one of the largest water resources engineering service groups in Nebraska and focuses on exactly this type of project. We continue to invest in development of this service to ensure we provide the best-in-practice service to our clients.

JEO has over 250 staff members. Our staff of professionals include:

- Professional Engineers
- Environmental Scientists
- Engineering/Architecture Technicians
- Registered Land Surveyors
- Surveyors In Training/Survey Technicians
- Registered Architects
- Community Planners
- LEED Accredited Professionals
- Certified Floodplain Managers
- Community Development/Funding Specialists
- Community Engagement Specialists
- Certified Pool Operators

PROJECT SUBCONSULTANT:  ideation

Ideation has specialized experience in benefit-cost analysis, including development and maintenance of FEMA's BCA Tool, as well as the methodologies and data underlying the BCA Tool and delivering training of BCA and hazard mitigation courses. Ideation offers assistance with all aspects of applying for and managing hazard mitigation plans and project sub-awards, including developing or reviewing benefit-cost analyses. Ideation's experience delivers expertise to state and local government clients across the entire hazard mitigation spectrum.

Ideation staff have assisted states and communities with the development of new BCAs and the review of completed BCAs. As FEMA's exclusive training delivery contractor, Ideation has delivered more than 100 BCA trainings for FEMA, state, tribal, territory, and local government staff since 2010. They understand what the end user needs to learn and have incorporated the years of knowledge into the development and maintenance of the training materials. Using their experience in conducting BCAs, Ideation is able to provide answers to participants' detailed questions about their mitigation projects.

Core Competencies

Ideation staff has expertise in the following areas:

- Hazard mitigation application development and review
- Benefit-cost analysis
- Community resiliency
- Training on the topics of benefit-cost analysis and the complete federal award life cycle
- Community and stakeholder consultation and engagement
- Environmental (ecosystem services) and natural capital
- Mitigation policy development and analysis of policy change implications



KEVIN KRUSE, PE

Project Manager



EDUCATION

- M.S. in Civil Engineering
University of Nebraska
- B.S. in Civil Engineering
University of Nebraska

REGISTRATION

- Professional Engineer
Nebraska
Kansas
Iowa
Wyoming

TENURE

- Industry - 20 Years
- JEO - 20 Years

QUALIFICATIONS

Kevin is a senior project manager in the Water Resources Engineering department at JEO. During his career at JEO, Kevin has been the lead designer and project manager on several large-scale stormwater projects. He has expertise in urban stormwater design, permitting, master planning, hydrology and hydraulics, and construction administration.

PROJECT EXPERIENCE

- North Bend Levee Flood Damage Repairs, North Bend, Nebraska
- 56th and Morton Drainage Improvements and HMGP Application, Lincoln, Nebraska
- Storm Water Improvements, Lincoln, Nebraska
 - 66th and Ballard
 - 69th and Walker
 - 48th and Holdrege
 - Fletcher from 57th to 63rd
 - Turner Ditch
- Forest Lake Blvd Drainage Improvements and HMGP Application, Lincoln, Nebraska
- Storm Sewer Improvements and HMGP Application, Valentine, Nebraska
- Big Sioux River Levee Flood Damage Repairs, North Sioux City, South Dakota



LALIT JHA, PE, D.WRE, CFM

Project Principal



EDUCATION

- M.S. in Civil/Environmental Engineering
South Dakota School of Mines
- B.S. in Civil Engineering
Nagpur University

REGISTRATION

- Professional Engineer
Nebraska
- Diplomat, Water Resources Engineering
- Certified Floodplain Manager

TENURE

- Industry - 25 Years
- JEO - 19 Years

QUALIFICATIONS

Lalit currently serves as vice president of the Water Resources Engineering department and provides services in program and project management, business development, and client management. Lalit has over 25 years of experience in water resources engineering. His experience includes flood risk reduction studies and projects, floodplain management and mapping, stormwater management, levees, dams, watershed master planning, flood and natural hazard mitigation, regulatory coordination and permitting, capital improvement plans, stakeholder involvement/outreach programs, and program/project management. He works with agencies such as FEMA, NDEE, NRCS, USACE, NeDNR, NEMA, NGPC, and NDOT. His funding experience includes obtaining grants from FEMA, Water Sustainability Fund, NeDNR, NRCS, NRDs, NDEE, CDBG, Economic Development Administration, and NET.

PROJECT EXPERIENCE

- 56th and Morton Drainage Improvements and HMGP Application, Lincoln, Nebraska
- Forest Lake Blvd Drainage Improvements and HMGP Application, Lincoln, Nebraska
- Flood Risk Reduction, Grand Island, Nebraska/Central Platte NRD



DAN FRICKE, PE, CFM

QA/QC



EDUCATION

- B.S. in Civil Engineering
University of Nebraska

REGISTRATION

- Professional Engineer
Nebraska
Iowa
Idaho
Wyoming
- Certified Floodplain Manager

TENURE

- Industry - 16 Years
- JEO - 14 Years

QUALIFICATIONS

Dan is a project manager in the Water Resources Engineering department at JEO. For the bulk of his professional career, Dan’s focus has been large-scale flood risk reduction evaluations and strategy development for communities in Nebraska and Iowa. Dan has experience in hydrologic and hydraulic analyses including riverine systems, interior drainage based on joint probability, and USACE risk and uncertainty analyses associated with flood risk reduction improvements. Dan is currently serving as project manager and lead project engineer on a number of levee and flood risk reduction projects.

PROJECT EXPERIENCE

- Emergency Assessment of the Platte River Upstream of Fremont, Nebraska
- Salt Creek Levee System-Wide Improvement Framework (SWIF), Lower Platte South NRD
- Levee Program, Missouri River Levee System-Wide Improvements, Council Bluffs, Iowa
- Multiple Section 408 Levee Improvements Feasibility, Design, and Construction: Waterloo, Hooper, Columbus, and Howells, Nebraska



PATRICK HARTMAN, PE

Benefit-Cost Analysis | Hydrology & Hydraulics



EDUCATION

- M.S. in Civil Engineering
University of Nebraska
- B.S. in Civil Engineering
University of Nebraska

REGISTRATION

- Professional Engineer
Nebraska

TENURE

- Industry - 8 Years
- JEO - 5 Years

QUALIFICATIONS

Patrick has a broad range of experience in hydrologic and hydraulic (H&H) modeling, floodplain mapping, and FEMA benefit-cost analysis. Patrick is highly proficient in using GIS as a tool for H&H analysis, and has an extensive base of experience with most major GIS data types and data sets. Prior to JEO, Patrick was the State of Nebraska Section 319 Program Coordinator, and thus understands intuitively many of those requirements.

PROJECT EXPERIENCE

- 56th and Morton Drainage Improvement and HMGP Application, Lincoln, Nebraska
- Forest Lake Blvd Drainage Improvements and HMGP Application, Lincoln, Nebraska
- West Side Drainage Improvement HMGP Application, South Sioux City, Nebraska
- Wastewater Treatment Flood Protection HMGP Application, Fort Calhoun, Nebraska
- Urban Drainage Preliminary Engineering Study, Lincoln, Nebraska
- Bloomfield Floodplain Assessment, Bloomfield, Nebraska



JUSTIN STINE, PE

Opinion of Cost | Lead Designer



EDUCATION

- B.S. in Civil Engineering
University of Nebraska

REGISTRATION

- Professional Engineer
Nebraska
Iowa
Kansas
Missouri
Montana

TENURE

- Industry - 21 Years
- JEO - 19 Years

QUALIFICATIONS

Justin is a senior engineer with a diversity of experiences in complex studies and designs in water resources and environmental engineering. His current focus is study, design, and construction of stormwater infrastructure, flood risk reduction projects, streambank rehabilitation and stabilization, and coordination with regulatory agencies. He also has design experience with recreation facilities, water supply wells, sewer collection, and wastewater treatment facilities.

PROJECT EXPERIENCE

- 56th and Morton Drainage Improvement and HMGP Application, Lincoln, Nebraska
- Forest Lake Blvd Drainage Improvements and HMGP Application, Lincoln, Nebraska
- Fairview Storm Sewer Improvements - Phases I and II, Albion, Nebraska
- System-Wide Improvement Framework (SWIF), Lower Platte South NRD
- Underseepage and Stability Improvement Design, Council Bluffs, Iowa
- Raccoon River Levee Alternatives, Des Moines, Iowa



STEVE McMASTER, CFM

Technical Advisor



EDUCATION

- M.A. in Geography
Southern Illinois University
- B.A. in Geology/Geography
University of Minnesota

REGISTRATION

- Certified Floodplain Manager

TENURE

- Industry - 22 Years
- Ideation - 9 Years

QUALIFICATIONS

Steve has 22 years of experience in hazard mitigation, including 14 years of combined experience coordinating hazard mitigation programs for state governments and eight years in the private sector as a senior hazard mitigation specialist. Steve has served as a task order manager and as a subject matter expert for FEMA's benefit-cost analysis (BCA) tool, hazard mitigation assistance (HMA) grant programs, and loss avoidance studies. Steve has assisted local governments and non-profit organizations with BCA and project application development.

PROJECT EXPERIENCE

- FEMA, HMA Courses, Training Manager and Senior Instructor
- FEMA, BCA Toolkit, and Tribal HMGP Toolkit Updates
- FEMA, Hazard Mitigation Applications, Benefit-Cost Analysis, Loss Avoidance Studies



MARY BAKER

Grant Development



EDUCATION

- B.A. in Human Development and Family Wellness
University of Nebraska

TENURE

- Industry - 24 Years
- JEO - 1 Year

QUALIFICATIONS

Prior to joining JEO, Mary worked for the State of Nebraska for over 12 years, the last five of which were as the State Hazard Mitigation Officer for Nebraska’s Emergency Management Agency. Mary has a strong knowledge of FEMA’s funding requirements, policies, and grant management. Mary’s strengths are in program and project management, relationship building, professional networking, as well as exemplary communication skills, both verbal and written. As an Air Force and Nebraska Air National Guard retiree, Mary’s military career spanned over 24 years serving as a professional military educator, aviator, and commander’s first sergeant.

PROJECT EXPERIENCE

- Floodplain Structure Elevations and Acquisition, Fremont, Nebraska
- 2019 Flood Assistance, Winslow, Nebraska
- Floodplain Property Acquisitions, Platte County, Nebraska
- Property Acquisitions, Papio-Missouri River NRD



TERRY MEIER

Grant Development



EDUCATION

- B.A. in Mathematics and Economics
Northwestern College

REGISTRATION

- Certified Community Development Block Grant Administrator

TENURE

- Industry - 31 Years
- JEO - 12 Years

QUALIFICATIONS

Terry has over 31 years of professional grant writing experience. He joined JEO as a funding specialist after serving 17 years with the Southeast Nebraska Development District, where he was responsible for the implementation of all aspects of community betterment initiatives. He has successfully written applications that have resulted in over \$270 million in community betterment projects. Terry is well-versed in all phases of project development, including community needs identification, prioritization, strategic planning, and implementation. Terry has an abundance of knowledge in obtaining federal, state, regional, local, and private grants including the CDBG, USDA-RD, DWSRF, and CWSRF programs.

PROJECT EXPERIENCE

- Disaster Recovery Funding Plan, Hamburg, Iowa
- Nebraska Disaster Recovery Assistance with CDBG, NEMA, and FEMA
 - Berm Restoration, Ithaca, Nebraska
 - Relief Storm Sewer, Schuyler, Nebraska
 - Elm Creek Watershed Study, Platte Center, Nebraska
 - Lagoon Enhancement, Alexandria, Nebraska
 - Watershed and Interior Drainage Study, Hickman, Nebraska



Terry Meier comes to JEO from Southeast Nebraska Development District (SEND), thus his knowledge of grants in general, and specifically his knowledge of the requirements related to state and federal funding, is great!



As the former State Hazard Mitigation Officer for the Nebraska Emergency Management Agency, Mary Baker knows NEMA and FEMA requirements, policies, and grant management.

JEO'S FUNDING RESOURCES

Funding is critically important for turning ideas into reality. It is truly an integral part of the project development. **Despite its importance, quality projects are often delayed—or even canceled—due to the lack of appropriate funding.** An awareness of available funding options is a critical “first step” in addressing a project’s funding needs.

The JEO funding department understands how crucial it is to educate and inform community leaders on funding options, so they can make responsible decisions on how best to proceed with their project. Uncovering all available resources ensures our clients that no stone has been left unturned when it comes to funding.

Terry Meier (JEO’s funding specialist) will consider all grants, loans, tax credits, and statutorily-authorized programs that may help fund projects. Terry has over 31 years of proven grant writing experience. **During that time, he has successfully written applications that have resulted in over \$270 million in community betterment projects.**

Mary Baker will bring her experience from working at the State of Nebraska for over 12 years, including five years as the State Hazard Mitigation Officer for the Nebraska Emergency Management Agency. **Mary has a strong knowledge of FEMA’s funding requirements, policies, and grant management.**

Not many local firms offer a full-time funding specialist whose primary focus is on assisting our clients with public grants and loans. Nor do many have a NEMA/FEMA expert.

AREAS OF FUNDING EXPERTISE

- Community strategic planning
- Community assessment, needs identification, and prioritization
- Public facilitation
- Project development and coordination
- Issues facing rural development
- Local capital campaigns
- Economic development planning
- Downtown revitalization planning
- Tourism development projects
- Housing needs assessment and implementation
- Business transfer issues
- Grant writing and administration



“Funding is critically important for turning **IDEAS** into **REALITY.**”

SIMILAR PROJECTS

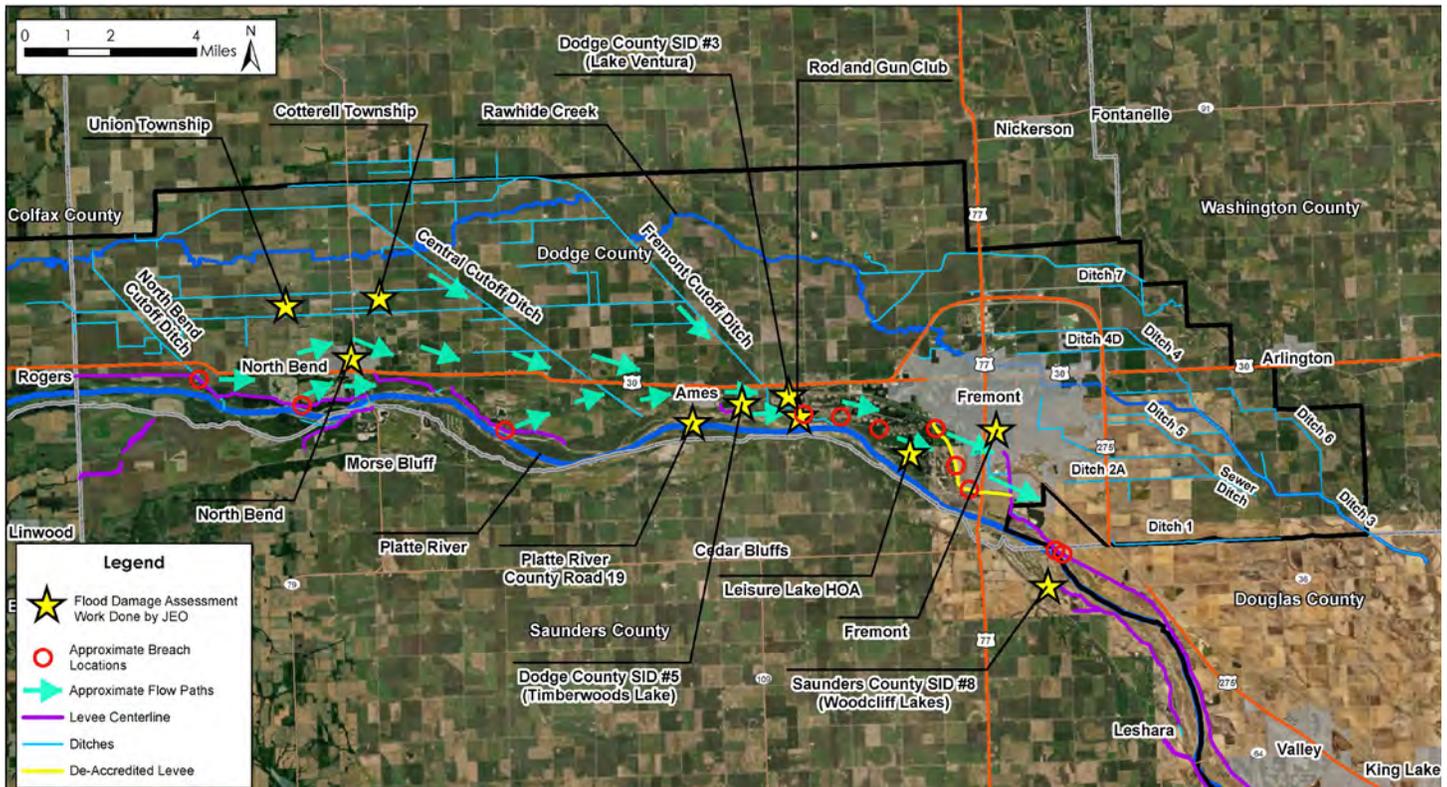


HAZARD MITIGATION GRANT PROGRAM EXPERIENCE

	FEMA Grant Program and Benefit-Cost Analysis	Hydrologic and Hydraulic Analysis	Engineering/Design/Drafting/Survey	Utility Coordination	Status
56 th and Morton Drainage Improvements and HMGP Application, Lincoln, NE	●	●	●	●	Construction complete 7/2020 Total project cost \$4.7 million Total project benefit \$10.7 million (BCR 1.99)
Storm Sewer Improvements, Valentine, NE	●	●	●	●	Design funded through HMGP \$636,750 Construction funded locally Construction completed 5/2017
South Table Creek Bank Stabilization, Nebraska City, NE	●	●	●	●	Construction complete 9/2015 Total project cost \$450,000 Total project benefit \$1.0 million (BCR 2.20)
Forest Lake Blvd Drainage Improvements and HMGP Application, Lincoln, NE	●	●	●	●	Final application submitted 7/3/2020 Total project cost \$1.2 million Total project benefit \$1.4 million (BCR 1.17)
Interior Drainage and Pump Station, Seward, NE	●	●			Final application submitted 6/2020 Total project cost \$1.4 million Total project benefit \$1.6 million (BCR 1.15)
West Side Drainage Improvements, South Sioux City, NE	●	●			Application currently in development for submittal in July 2020
Wastewater Treatment Flood Protection, Fort Calhoun, NE	●	●			Application currently in development for submittal in July 2020
Hazard Plan Update, HMGP Project Screening, and BCA, Lower Platte North NRD	●	●			Plan update is currently underway and anticipated for completion and approval by FEMA in summer 2020
Diversion Channel HMGP and BCA, Battle Creek, NE	●	●	●	●	Project is currently on hold due to property acquisition
Hazard Mitigation Plan Update, HMGP Project Screening, and BCA, Lower Platte South NRD	●	●			Plan was approved by FEMA in March 2020

The March 2019 flood has engaged community leaders into action. Now is the time to act and the JEO team is focused on developing implementable projects that can be funded by outside dollars. JEO's roots are with helping Nebraska communities, counties, local governments, and Natural Resources Districts to obtain funding for their projects. Our culture is small town centric and that will drive us to make this project a success. JEO was here before the flood and will remain committed to your community well into the future.

POST 2019 FLOOD ASSISTANCE DODGE COUNTY, NEBRASKA



EMERGENCY ASSESSMENT OF THE PLATTE RIVER, UPSTREAM OF FREMONT, DODGE COUNTY, NEBRASKA

Dan Fricke was part of the Society of American Military Engineers (SAME) Emergency Response Team. The team assessed the problem, with regards to the City of Fremont at County Road 19 and repairing the Ames Diking team. They proposed mitigation alternatives and developed a preliminary plan to mitigate increased flood risk to the city.

HAZARD MITIGATION PLAN/PARCEL LEVEL MITIGATION, CITIES OF FREMONT AND SCHUYLER, NEBRASKA

As part of the Lower Platte North NRD Hazard Mitigation Plan Update, JEO is completing a review of flood risk for a selected set of parcels within the City of Fremont jurisdiction and is using this information to inform the city on flood risk reduction mitigation actions. JEO is using the March 2019 flood impact information as a guide to determine which structures to assess.

FLOOD DAMAGE ASSESSMENTS, DODGE COUNTY PLATTE RIVER CORRIDOR, NEBRASKA

During the March 2019 flood event, JEO assisted seven organizations with flood damage assessments, damage cost estimates, and recommendations for short- and long-term projects to put infrastructure back in place and to mitigate future damages. Services also included assistance in communicating with NEMA and FEMA, concepts for immediate repairs, and some long-term solutions. These organizations included Cotterell Township, Lake Ventura, Leisure Lake HOA, North Bend, Rod and Gun Club, Timberwoods Lake, and Union Township.

FLOOD DAMAGE ASSESSMENT AND REPAIRS, CITY OF SCHUYLER, CITY OF NORTH BEND, CITY OF FREMONT, TIMBERWOODS LAKE, LAKE VENTURA, FREMONT ROD AND GUN CLUB, WOODCLIFF LAKES, NEBRASKA

The JEO team completed a flood damage assessment to support recovery and FEMA public assistance.

MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, LOWER PLATTE NORTH NRD

The Lower Platte North NRD is currently using JEO, the original plan author, to provide the district's second five year update. JEO staff has become familiar with the flood risk, proposed mitigation actions, and created strong working relationships with Dodge County Emergency Management and the other 25 plan participants throughout this process.

56TH AND MORTON DRAINAGE IMPROVEMENTS AND HMGP APPLICATION LINCOLN, NEBRASKA



The tributary to Salt Creek along 56th Street experienced frequent flooding. JEO conducted a detailed hydrologic and hydraulic evaluation for the watershed to accurately assess flood risks and develop CIP project recommendations. Conceptual recommendations included widening the existing channel, replacement of an existing city street bridge, and removal of a private bridge to improve conveyance. During this process, it was estimated that the project would reduce food depths by as much as four feet to withstand even the ten year storm event. Overall, a very large area would receive significant food risk reduction. Following the evaluation, it was determined that funding assistance would be necessary to make the project a reality. FEMA HMGP grant funds were applied for and secured. A detailed benefit-cost analysis was performed to demonstrate a high degree of cost-effectiveness, supporting the grant application.

The final design of the channel improvements included many features. Grade control was included in three locations to halt downcutting of the channel. Riprap bank stabilization was included at strategic locations, especially around bridge abutments and culvert outlets. The channel itself was sized and shaped to not only accommodate flood flows, but also rehabilitate the channel into a more natural condition. The project cost is estimated at \$5.8 million and includes 4,500 feet of channel rehabilitation and a new 120 foot bridge at Fletcher Avenue. The completion of this project will yield about \$11 million dollars in benefits, including reduction of structural flooding, avoided economic losses, reduction of damage to infrastructure, and environmental benefits.

REFERENCE

City of Lincoln
Ben Higgins
p. (402) 441-7589



“ The flood risk reduction project in the area of 56th and

Morton demonstrates the power of collaboration to solve problems. The city’s partnership with JEO, the Lower Platte South NRD, and the property owners has resulted in an effective solution, one that can serve as a model for other areas and other cities that face flash flooding issues. I also want to thank the voters of Lincoln for passing the stormwater bond issue that funded the city’s share of this important project.”

- Chris Beutler
Former Mayor, City of Lincoln



For more information on the project, please go to: www.56thmorton.com



JEO is currently in the design phase of an improvement to South 67th Street and Forest Lake Boulevard. As part of this effort, JEO is completing a Hazard Mitigation Grant Program application to FEMA to request funding for the construction phase of the project. Through previous phases, JEO has completed a comprehensive two-dimensional hydrologic and hydraulic evaluation of the pre- and post-project conditions to confirm flood depth reductions at both street crossings.

Previous evaluation phases also included significant stakeholder and public involvement efforts to inform the design phase and to develop a holistic design that was both functional and acceptable to the area residents. The proposed project will significantly reduce flood depths and reduce flood risk to 10 private residences along the project reach, as well as reduce street overtopping which currently limits access to the neighborhoods by emergency vehicles. The project includes additional culvert barrels at both South 67th Street, as well as Forest Lake Boulevard, in addition to streambank improvements in select areas along the length of the channel. The current schedule is to be completed with design in the fall of 2020 and construction to begin in 2021.

REFERENCE

City of Lincoln
Ben Higgins
p. (402) 441-7589



For more information on the project, please
go to: www.lincolnforestlakeproject.com

FEMA FUNDING EXPERIENCE NEBRASKA AND IOWA



Since 2010, JEO has featured a specialized group of hazard mitigation planners and engineers who have become proficient with FEMA funding programs, such as the Public Assistance (PA) Program, Hazard Mitigation Grant Program, Pre-Disaster Mitigation (PDM), and Flood Mitigation Assistance (FMA). Our team is familiar with the FEMA Public Assistance Program and Policy Guide (PAPPG) through our continuous work on FEMA PA projects.

Over the last decade, our FEMA funding team has maintained solid professional relationships with the Nebraska Emergency Management Agency, Nebraska Department of Natural Resources, and FEMA staff. Whether a mitigation project or disaster response, our team knows who to call to obtain information quickly.

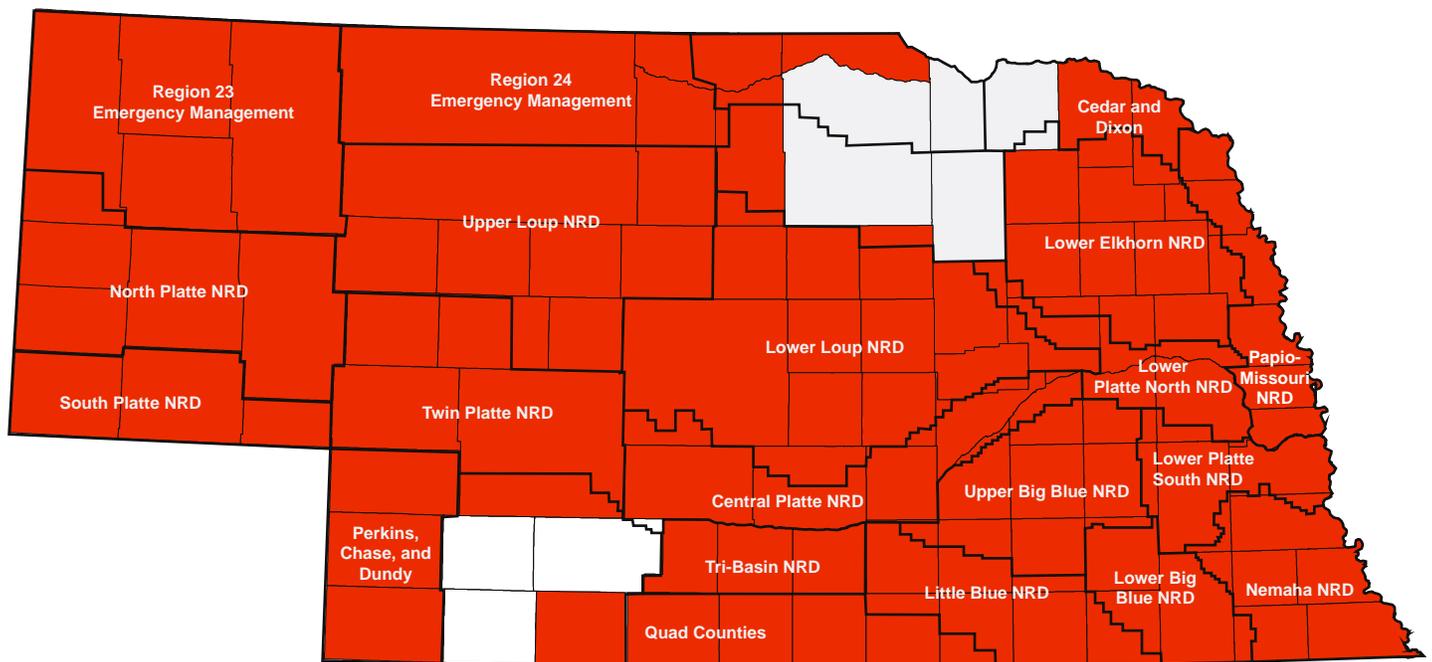
The JEO team has successfully written FEMA planning grants and project grant applications for over 60 projects throughout Nebraska since 2010. JEO team members have written grants that provided over \$270 million to the communities we serve in Nebraska and Iowa. Our team has also assisted in securing over \$130 million for flood risk reduction projects to our clients in Nebraska and Iowa.



- FEMA Grant ~\$25 million
- WSF (Water Sustainability Fund) Grant ~\$30 million
- State of Iowa Flood Mitigation Program ~\$70 million
- CDBG-HUD, NRCS, NET, DEQ ~\$5 million

FEMA FUNDED PLANNING EXPERIENCE

JEO has worked with most counties in Nebraska to obtain funding to produce and update hazard mitigation plans dating back to 2010.



PROPOSED TIMELINE

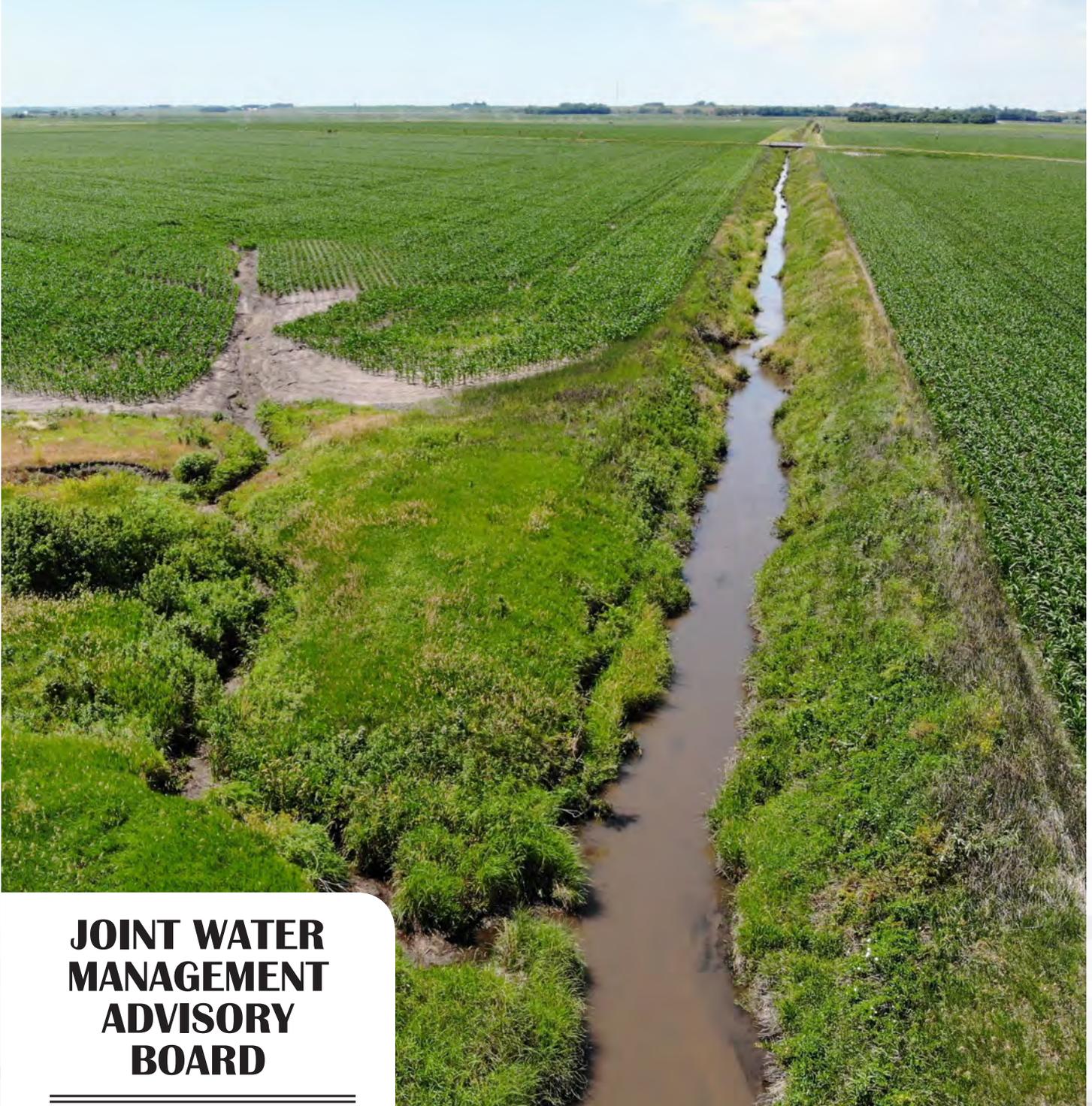
The following timeline is dependent on 100% funding of the project with the HMGP funds. A modified timeline may be necessary if alternate funds are utilized.

TASKS	2020						2021												2022											
	JULY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT			
Submittal of Initial Grant Application Packet (JWMAB/ NRD)	●																													
Notice to Proceed		●																												
Receipt of First Round of NEMA Comments/RFI		●																												
Response to NEMA (Pending Review of RFI)			●																											
Final Submission of Application to FEMA (Pending Review, Approval by NEMA)			■																											
Obligation of HMGP Funds and Authorization to Proceed with Design Phase								●																						
Final Design of Improvements									■																					
Submittal of Final Design, Updated Funding Request to NEMA/FEMA for Construction Phase															●															
Obligation of HMGP Funds and Authorization to Proceed with Construction Phase																	●													
Bidding/Negotiation																			■											
Construction																					■									

NORTH BEND CUTOFF DITCH

ASSISTANCE WITH HMGP APPLICATION AND ENGINEERING OF BANK MITIGATION AND RESILIENCY MEASURES

QUALIFICATIONS AND PROJECT PROPOSAL



**JOINT WATER
MANAGEMENT
ADVISORY
BOARD**

400 East Military Avenue
Fremont, NE 68025



LETTER OF INTEREST

FYRA ENGINEERING

7 July 2020

Joint Water Management Advisory Board (JWMAB)
c/o City of Fremont
Attn: Brian Newton, City Administrator
400 East Military Avenue
Fremont, NE 68025

Re: Professional Services for the North Bend Drainage District (District)
North Bend Cutoff Ditch - Assistance with HMGP Application and Engineering of Bank Mitigation and Resiliency Measures

Dear Selection Committee:

FYRA Engineering (FYRA) is pleased to submit for your review and consideration, our qualifications and project proposal for professional services for the above-referenced project. FYRA possesses all of the required skill sets in-house to complete this work. Our roles are described within this proposal.

FYRA brings the Hazard Mitigation Grant (HMG) experience to provide the North Bend Drainage District with initial grant application (completion) expertise, assistance in preparing Requests for Information (RFI) and the subsequent grant management services through post-construction grant requirements. Given the listed selection criteria in the RFP, we are confident that we are best suited to assist you on this project, as described with the following four criteria:

1. We have documented in our approach how we would move this project forward with the understanding that the repair, mitigation and resiliency measures desired for the ditch must both meet District needs and fit within the NEMA 404 program to maximize outside funding. FYRA has recent and relevant experience in both drainage channel repair projects and working with NEMA/FEMA on repair/mitigation projects to maximize funding. This experience is detailed in our approach and experience matrix contained within.
2. FYRA has unmatched experience in securing funding for water resources projects. This includes funding available through local, state, and federal programs. We have either completed or are currently working on six NEMA/FEMA-funded projects utilizing 2019 disaster relief/mitigation funds. These projects are for the City of Deshler, Nebraska (Deshler Parcel Level Flood Risk Management Plan), Lower Platte North NRD (Camp Ashland Fuse Plug Levee Repair and Lake Wanahoo Spillway Repair/Mitigation), Lower Loup NRD (Duncan East Drainage District Repair), Lower Elkhorn NRD Elkhorn River (Scribner, NE) Bank Repair/Stabilization, and the Sarpy County SID 101 (Chris/Hanson Lakes) Short-term and Long-term Flood Damage Repair and Floodproofing Resiliency projects. All five of these clients can attest to the support we have offered in managing the entire process from NOI submittal through post-project close out. (The projects are all at various levels of initiation through construction.)
3. In addition to the similarly funded projects we list above for recent/relevant experience, FYRA takes great pride in our long-term success in helping Midwest clients with their water resources engineering needs. The project experience matrix included within this proposal details other similar projects that not only highlight our experience on similar projects, but also the trusted relationships we have built with local clients with similar needs. Our success on past projects is what we attribute our firm success to.
4. We have addressed our ability to staff this project with the experienced professionals shown within. We do what it takes to meet project deadlines, and our client references for the current NEMA/FEMA

LETTER OF INTEREST

FYRA ENGINEERING

projects, and all of our projects, can attest to our commitment. We would not be where we are today if we didn't deliver quality projects on time.

We trust that our enthusiasm and commitment to this project shines through in our proposal. We will work for you to help secure funding and will remain invested throughout implementation of the final project. We understand that we will not receive compensation for our work if the grant application is not approved/funded.

FYRA has a long and successful history of implementing water-focused projects in Nebraska, and we welcome the opportunity to continue bringing our passion for this type of work to the JWMAB and North Bend Drainage District. Our team has the capabilities, resources, availability, and critical experience to effectively implement flood resiliency measures.

Thank you for the opportunity to submit this project proposal. If you have any questions or need clarification on any of the information presented, please do not hesitate to contact me. I look forward to hearing from you soon and the opportunity for FYRA to create a long-term relationship with the JWMAB and the District.

For the Team,



Michael K. Sotak, PE



NORTH BEND CUTOFF DITCH

ABOUT FYRA

FYRA ENGINEERING



Our Name

Founded in 2012 by four engineers with expertise in water resources engineering, **FYRA** is a consulting engineering firm known for responsiveness, agility, and service that's truly personal. Taken from the Swedish word for the number four, **FYRA** represents our four founders but it's more than just a number. Synonymous with the fourth gear of a race car and the launching of a rocket, our name represents our ability to adapt quickly to an ever-changing landscape and the responsiveness we strive to show to each and every one of our clients.

We Build Relationships

As a water resources engineering firm, we design stormwater solutions, analyze floodplains, prepare technical assessments and studies, build and repair dams and levees, and restore streams and lakes. While our projects are varied, we view every one of them as opportunities to deliver results and build relationships with our clients.

Many of our clients are Midwest state agencies and municipalities who have been working with our team members for at least 20 years and trust our track record of success. They continue to partner with us because they know they are not numbers here. They're people. We believe we all share a strong work ethic, listen well and show an uncommon attention to detail with every project we undertake. We enjoy unique projects and have been privileged to work on some of the most challenging projects in the Midwest. We tailor our approach to our clients' needs and design projects with their unique concerns and requirements in mind.



NORTH BEND CUTOFF DITCH

PROJECT UNDERSTANDING AND APPROACH

FYRA ENGINEERING

PROJECT UNDERSTANDING

The North Bend Cutoff Ditch (Ditch) sustained damage during the 2019 flood due to high waters and velocities that caused localized scour and other damage due to a combination of saturated embankments, bank scour, damaged protective measures, and ice flows.

After initially pursuing repair and improvements through the JWMAB's planned comprehensive study of the Dodge County area, the North Bend Drainage District (District) was encouraged by NEMA to submit a Notice of Intent (NOI) for necessary repairs and desired mitigation for their individual component of the project since the overall comprehensive project has not yet been funded with NEMA/FEMA funds. The NOI has been submitted and an application is to be submitted by mid-July in order to take advantage of uncommitted mitigation funds associated with the State of Nebraska's 2019 flood disaster recovery award.

The JWMAB and the District needs first from its consultant familiarity with the application process and an understanding of how the initial stages of the application and feasibility investigation process will affect later phases of the project including materials to be used, mitigation dollars available, and how to separate costs and project components into the repair and mitigation "categories". The consultant will help finalize the application and respond to RFIs during this phase.

Assuming funding is approved, the project then becomes more of a traditional design/bid/build project delivery with the consultant performing normal duties related to the preparation of design documents, bidding, and construction observation. During this time, periodic correspondence with NEMA/FEMA is required to update the project information in the grant portal such as anticipated costs, project schedule, and other program requirements.

PROJECT APPROACH

Given our stated understanding of the project, for the purpose of this project proposal, we have focused on the following responsibilities (bolded sections below) your consultant will provide services for.

COORDINATION WITH NEMA/FEMA AND PROJECT PARTNERS

FYRA is currently working with NEMA/FEMA on multiple projects, providing these same services to several NRDs and local municipalities, and have found that a rapid response keeps your project, "on top of the pile". Developing a history of providing detailed, accurate information helps reviewers work through your responses faster. We understand that providing the application reviewers, who are extremely busy, quick action will bring your project to the forefront. Once this project is approved for funding, FYRA will provide assistance to the JWMAB with any contractual matters so that work can begin on the next project steps quickly.

Once design begins and depending on the representative who is responsible for your funding, you can expect to participate in weekly to bi-weekly coordination calls with NEMA/FEMA. These are usually very short meetings and typically just to check on project progress. These meetings provide an excellent avenue to ask questions and clarify any ambiguities in project direction. FYRA can participate in these calls with you, or for you, and provide you with summaries so that the discussions are well documented.

The next step for your consultant may be assisting with the Benefit:Cost Analysis (BCA). To use mitigation funds, FEMA requires a BCA exceeding 1. FEMA will likely run an initial analysis on the construction cost estimated in the original application, and if it is close to 1, they may require some additional information from the applicant. FYRA is highly adept in providing BCAs for State and Federal projects and can assist when needed.

Once construction begins, NEMA/FEMA will request updates on progress and cost. Often, specific costs may need to be separated from others to meet requirements of multiple funding sources. FYRA has provided these summaries in the past, and believe these are important in providing a clear channel of communication between off-site FEMA reviewers and project sponsors.

Through construction and even post-construction, NEMA/FEMA will require documentation of all payments to contractors, sub-contractors, or other suppliers. FYRA will manage this detailed paperwork for you and work with the General Contractor to provide all necessary information which means reimbursement for this project will be issued in a timely manner.

PROJECT UNDERSTANDING AND APPROACH

FYRA ENGINEERING

With our past experience with NEMA/FEMA funding and project implementation, we understand the following tasks are important to keep your project moving forward. Collectively, this approach will make the required grant coordination as painless as possible:

- Gaining access to the grant portal and define roles of the consultant in portal maintenance.
- Immediately review all cost estimates previously prepared.
- Being MORE than prepared for regularly scheduled coordination meetings and addressing required submittals with detailed and accurate information.
- Keeping current on all cost projections.
- Using appropriate language and materials (to fit within the funding programs and alleviate concerns from off-site reviewers) in the design of the repairs/mitigation measures.
- Develop a project cash flow schedule that works with reimbursement schedules and keep current on all information required to receive reimbursement as soon as possible.

NORTH BEND CUTOFF DITCH PERFORMANCE

Due to the size, flat grades, and hydrologic inter-connections of the North Bend Cutoff Ditch (Ditch) and the surrounding infrastructure, the development of a reliable, predictable hydrologic and hydraulic model is difficult at best. FYRA's approach would be to use the "boots on the ground" historical understanding of the system to make management and design decisions. It is understood that Shell Creek has long been the "nemesis" of the system, but also that improvements are being made in the Shell Creek Watershed by the LPNNRD, NDOT, and landowners that are addressing the problem, at least in part. Other changes to surrounding drainage infrastructure, such as improvements to the Fremont enhanced ditch bank, the straightening of Maple Creek, the river berm protecting the Riverview development, and other projects all present new challenges to the system and alter how the system performs. This understanding, which will guide the approach and design, is contained in the following discussions about ideas to improve Ditch performance. These ideas have been summarized into the following categories to match the Ditch deficiencies noted to date which include debris and sediment accumulation, insufficient capacity and overtopping, and bank sloughing.

Debris and Sediment Accumulation

Debris and sediment will accumulate due to two primary factors; the size of the particles being carried and the velocity of the stream that is carrying the material. While the nature of the materials is not going to change, land management practices such as vegetation, cover cropping, and many others can help to reduce the volume of sediment being carried and therefore what is deposited in the Ditch.

While ditch grades cannot be modified enough to make a meaningful difference, maintenance and keeping a uniform channel cross section can help to reduce pinch points and localized areas where sediment and debris are likely to be deposited.

Overall, ditch management and maintenance has been performed quite well, given the condition of the ditch today. Minor improvements in maintenance frequency and some features to improve the ease of maintenance can be considered in the overall design to help reduce future deposition problems. This can also serve as a long-term in-kind contribution of the NBDD to the project in lieu of cash resources.

Insufficient Capacity and Overtopping

Overall the ditch has performed very well throughout the years. Overtopping events have been limited and not often catastrophic with the exception of 2019. It is understood that the overtopping locations have varied over the years but are generally concentrated in the southern portion of the ditch, where Platte River backwater reduces ditch capacity.

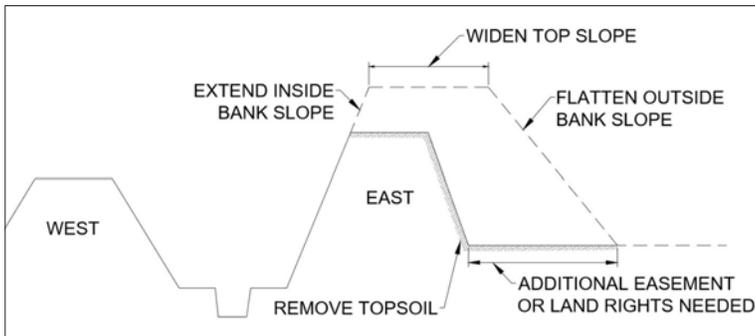
The planned raises to the east enhanced ditch bank will help to eliminate overtopping frequency and severity. The planned widening of the ditch bank will help to eliminate damage from any future overtopping that does occur. FYRA will assist in analyzing the ditch bank geometry and perform a cost analysis on raises of varying heights (potentially up to



The confluence of the NBCD and the O'Hare ditch shows how inefficient hydraulics can cause sediment deposition.

PROJECT UNDERSTANDING AND APPROACH

FYRA ENGINEERING



The planned raises, top width increases, and any flattening of the outside bank slope will require additional easements to be acquired from adjacent landowners.

18 inches), and planned widening (potentially up to 26 feet) that has been estimated to date. This will assist in the cost and risk-based decision on how much bank fill to potentially add.

Additionally, FYRA will analyze the system and determine where sediment/debris accumulates and where other pinch points exist that are reducing ditch capacity. This will be done by looking at capacity within the ditch, but also across the ditch as overtopping events are analyzed to protect neighboring property to the east.

Bank Sloughing

It is understood that sloughing occurs along the ditch banks. This occurs when there is an instability in the soils and their ability to stand on a slope. Slope steepness, soil materials, vegetative cover and degree of saturation all factor into the potential to create small sloughing, which are small slides or slope failures. FYRA will categorize the location of sloughing and help to analyze the nature of the sloughing to assist in creating standard repair and maintenance procedures to try and address them throughout the ditch.



This image shows a consistent slough line evidenced by the change in vegetation pattern that was likely caused by a saturated inside ditch line. The sloughed area is now impeding the invert of the channel and reducing channel capacity as well.

FYRA has worked with other NRDs to address bank sloughing in various systems in southeast Nebraska. In the past, bank stabilization using riprap was the primary method of stabilizing bank sloughs in the region. Since the 2019 flood, riprap and other rock materials have seen an extreme increase in material and hauling costs. Because of this, FYRA developed a lower cost method to address bank sloughing which utilizes inexpensive geogrids and geowebbs to stabilize bank slopes. We will look at various types of slough stabilization methods for this project and determine the most cost effective and sustainable method for this ditch.

We have stated above our understanding of these three technical issues above and know that additional focuses may occur during the investigation/inspection of the ditch such as any needed culvert repairs or other ditch features. Once a complete "wish list" of repairs and mitigation measures is assembled, we will work with the project sponsors to determine how large of a NEMA/FEMA funded project can be prepared and will design a bid package that maximizes the value the NBDD can get from the funding available. FYRA will use our

experience in similar past projects to pay close attention to constructability issues such as borrow area quality/location, access routes along a linear path, staging and work areas needed for the type of construction equipment that will be needed, and how this is all affected by the linear nature of the project.

In conjunction with the design, FYRA will pay special attention to identifying those benefitting and contributing to the project. We understand that CDBG Block Grant money has been identified to cover the local cost share of the NEMA/FEMA grant. This is a rare, but amazing opportunity when federal money is allowed to match federal money.

PROPOSED TEAM MEMBERS

FYRA ENGINEERING

JOINT WATER
MANAGEMENT
ADVISORY BOARD

NORTH BEND DRAINAGE DISTRICT

STAKEHOLDERS
NEMA AND FEMA
LANDOWNERS AND
UTILITIES

PROJECT MANAGER



Mike Sotak, PE, D.WRE

CLIENT MANAGER
FUNDING ASSISTANCE
ECONOMICS
QUALITY CONTROL

PLANNING AND DESIGN TEAM



Lindy Rogers, PE

DITCH DESIGN
CONSTRUCTION DOCUMENTS
CONSTRUCTION OBSERVATION/
OVERSITE



Bob Gregalunas, PE

HYDROLOGY & HYDRAULICS
DITCH DESIGN
GEOTECHNICAL ASSESSMENTS



Janel Kaufman, PE

ENVIRONMENTAL PERMITTING
QUALITY CONTROL



Sara Mechtenberg, PE

CONSTRUCTION DOCUMENTS



Ryan Roenigk, EI

DITCH DESIGN
CONSTRUCTION DOCUMENTS
CONSTRUCTION OBSERVATION



Eric Suing, EI

CONSTRUCTION DOCUMENTS
CONSTRUCTION OBSERVATION

TEAM MEMBERS AND PREVIOUS EXPERIENCE

FYRA ENGINEERING

The following Project Team and Previous Experience matrix highlights a few of the individuals from the FYRA Team that are proposed to work on this project in key roles, and details project experience and individual experience relevant to their roles. As you can see, our team offers a broad depth of experience and understanding that relates specifically to this project and the funding and technical expertise required. Our team has built our reputation on delivering quality products, on time. As with every project pursuit, we carefully assess our ability to deliver on every project. Our team has the capacity to complete this project on time, with the staff shown in this matrix.

Project Team and Previous Experience						
Staff Chart by Task and Project						
General Project Task						
	Mike Sotak, PE, D.WRE	Bob Gregalunas, PE	Lindy Rogers, PE	Janel Kaufman, PE	Ryan Roenigk, EI	Eric Suing, EI
Project Management	A,B,C,D		E,F,G,H,I,J,K			
NEMA/FEMA Funding Assistance	A,B,C,D		A,B,K			
Earthen Drainage Ditch Design		F,H,I	E,F,G,H,I,J			
Channel Hydraulics		A,D,F,G,H,I, K, L	F,G,H,I,J,K		I	
Penetrations Repair		F,G,H,I	E,F,G,H,I,J		F,G,I,J	E,G,J
Geotechnical Assessment		F,H,I	F,H,I			
Environmental Permitting			E,F,G,H,I,J	A,E,F,G,H,I,J		
Construction Observation Performed/Planned			E,F,G,H,I,J		F,G	B,E,F,G,J

Indicates Firm Principal

Experience	
A	Wanahoo Dam Stilling Basin Rehabilitation
B	Camp Ashland Fuse Plug Levee Repair
C	SID 101 Floodproofing
D	LENRD Elkhorn River Bank Stabilization
E	No Name Dike Rehabilitation Project
F	Big Papio Levee Culverts Project
G	Little Papillion Creek Levee Penetration Repair
H	Federal Levees R-613 and R-616-613
I	Investigative Phase for Papillion Levee Certification
J	Salt Creek Penetration Repairs
K	City of Deshler Parcel Level Flood Risk Mitigation Plan
L	Leshara Levee Breach Repair

PROJECT EXPERIENCE

FYRA ENGINEERING

SID 101 FLOODPROOFING STUDY

SARPY COUNTY, NEBRASKA

Sarpy County (Nebraska) Sanitary and Improvement District (SID) 101 is a Platte River left bank sand pit community made up of five unconnected sand pit lakes and approximately 350 homes. The community has been affected by Platte River flooding several times over the past few decades and during March of 2019, very few homes and cabins weren't inundated with flood waters as Platte River water surface elevations nearly matched the effective 100-year flood level.

SID 101 hired FYRA Engineering to conduct a flood proofing study that would assess flood proofing options from the current level at which overland (from Platte River) flooding begins up to the 100-year water surface elevation. The study will assess permanent and temporary floodproofing solutions to try and build flood resiliency within the community.

FYRA is assessing the cost of floodproofing the SID at 1' depth increments and by associating those depths with flood frequencies on the Platte River, can create a risk-based cost analysis and assist the SID factors. This project

economics and innovative design solution capabilities that continue to serve lake communities.

This project is currently pursuing NEMA/FEMA Hazard Mitigation Funds for implementation. FYRA has begun preparing information for the anticipated Benefit Cost Analysis (BCA).

CLIENT

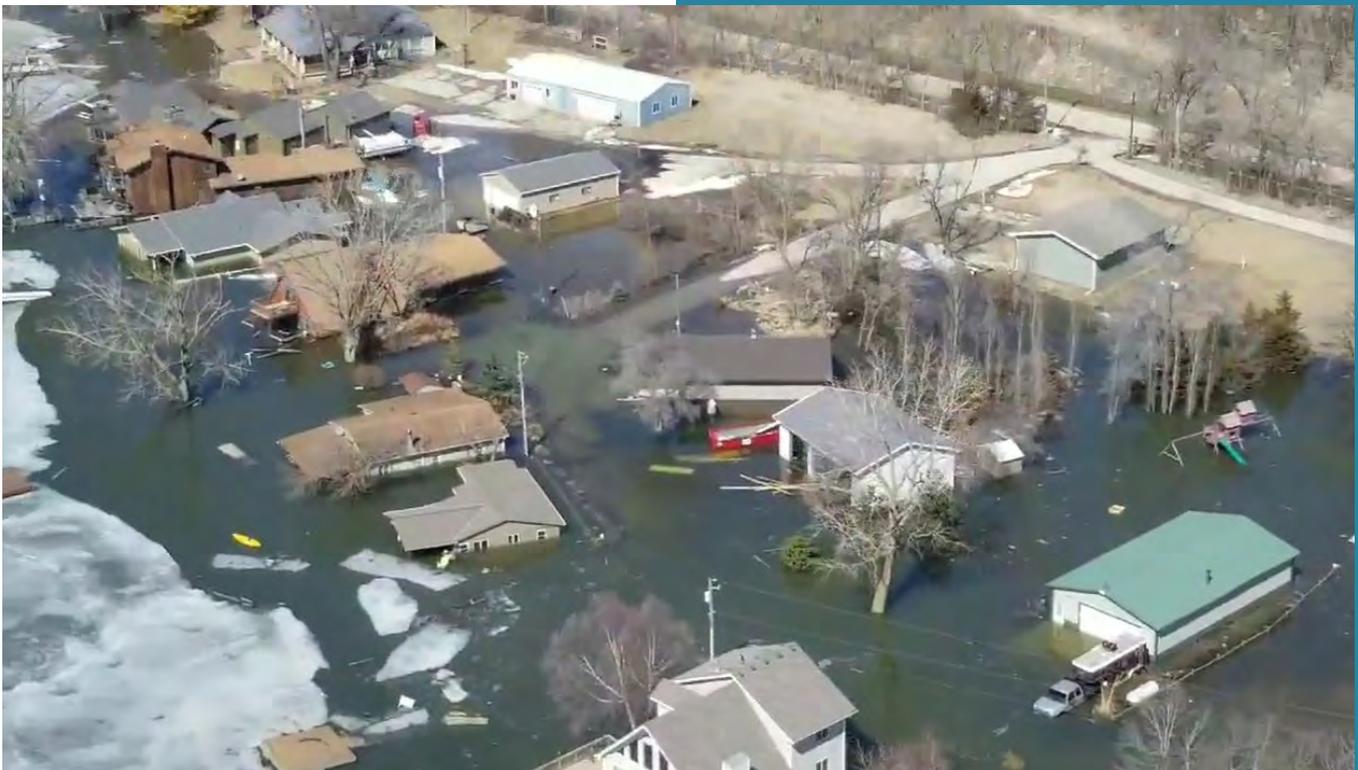
Olmsted and Perry Consulting Engineers
10730 Pacific Street, Suite 232
Omaha, Nebraska 68114
Mr. Jim Olmsted, PE
402.399.8552

PROJECT START: October 2019

PROJECT COMPLETION: Current

PROJECT SIGNIFICANCE

This project highlight's FYRA riverine modeling, risk-based project economics, innovative mitigation methods that were adapted to fit the needs of this particular location and implementation budget. This project is also pursuing HMGP funds through NEMA/FEMA.



NORTH BEND CUTOFF DITCH

PROJECT EXPERIENCE

FYRA ENGINEERING

BIG PAPIO LEVEE CULVERTS - FINAL DESIGN AND CONSTRUCTION

DOUGLAS AND SARPY COUNTIES, NEBRASKA

FYRA Engineering was contracted for the final design and construction observation of 13 aging stormwater penetrations along the Big Papio Creek levees. After completing an alternatives analysis phase, FYRA met with the client to determine the desired design solutions for each penetration. It was determined that there would be three penetrations that would require full removal and replacement, six penetrations that would use a combination of remove/replace and sliplining culvert rehabilitation, three penetrations that would be rehabilitated with sliplining, and one penetration that would be abandoned in place. Two of the penetrations fell within federal channeled sections and all of the penetrations were part of the PL 84-99 program. This required coordination and design reviews from the Omaha District US Army Corps of Engineers. The project also required 408 and 404 approval from the USACE planning and regulatory divisions.

A hydrologic study was performed on each penetration to determine base flows for each area. Two of the sites used HEC-HMS to determine basin hydrology and timing. By using HEC-HMS and an unsteady state HEC-RAS model, FYRA was able to determine the precise timing of the flow and ensure that culverts were efficiently designed. Utilizing the unsteady state models not only saved the client significant material costs, but also ensured the local landowner that the proposed

culverts would pass flows as needed and would eliminate farm field flooding that had been a continual problem.

FYRA provided bid phase and construction observation services as part of this project. This allowed the client to ensure the project was constructed as intended and provided one point of contact.

CLIENT

Papio-Missouri River NRD
8901 South 154th Street
Omaha, Nebraska 68138
Mr. Marlin Petermann, PE
Mr. Martin Cleveland, PE
402.444.6222

PROJECT START July 2014

PROJECT COMPLETION July 17

PROJECT SIGNIFICANCE

This project shows FYRA's attention to detail during the alternatives analysis phase. This detailed analysis helps to develop the most cost-effective and long-term rehabilitation plan for each conduit. This project also showcases FYRA's understanding of design considerations for linear ditch projects.



NORTH BEND CUTOFF DITCH



PROJECT EXPERIENCE

FYRA ENGINEERING

WANAHOO DAM STILLING BASIN REHABILITATION PROJECT

SAUNDERS COUNTY, NEBRASKA

The Lake Wanahoo Dam stilling basin suffered damage in the 2019 flood including the removal of a portion of the stilling basin's end sill and the development of a large scour hole that has undermined the basin's existing concrete apron. This high hazard potential structure on the north side of Wahoo, Nebraska is owned and operated by the Lower Plate North NRD.

FYRA was hired in the fall of 2019 and has investigated the basin area using bathymetric surveying equipment and has utilized a local fire department's dive team to get an accurate depiction of what damage occurred underwater.

A spillway repair and improvement has been designed and the project is ready for fall 2020 construction. The inability to feasibly draw down water elevations significantly in the area has led to a design utilizing wet construction methods and materials.

This project is currently using approved FEMA Hazard Mitigation funds for implementation. FYRA has assisted the NRD with FEMA coordination and securing construction funds for the project.

CLIENT

Lower Platte North NRD
Tom Mountford
Assistant General Manager
511 Commercial Park Road
Wahoo, NE 68066
tmountford@lpnrd.org

PROJECT START October 2019

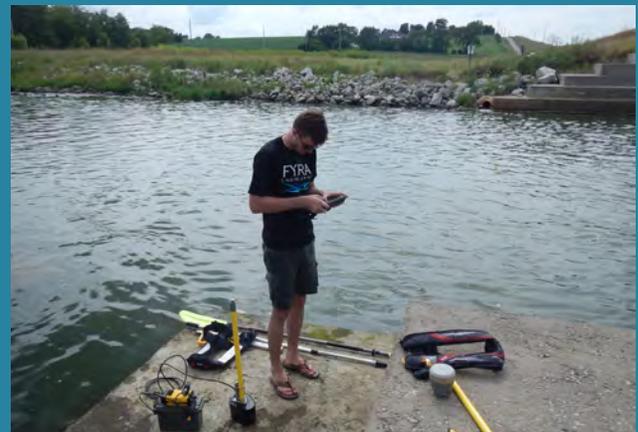
PROJECT COMPLETION Current

PROJECT SIGNIFICANCE

This project is currently using repair/mitigation funds through NEMA/FEMA and showcases FYRA's understanding of the funding process and how to maximize funds for the local sponsor.



NORTH BEND CUTOFF DITCH



PROJECT EXPERIENCE

FYRA ENGINEERING

CAMP ASHLAND FUSE PLUG LEVEE REPAIR

SAUNDERS COUNTY, NEBRASKA

The Camp Ashland fuse plug levee was removed during the 2019 flood as part of levee operations spelled out in a local agreement to reduce flood damage in the area.

The original USACE design was used to develop a set of construction documents that could be easily assembled and bid in short time. FYRA prepared those plans in less than two weeks. Construction was then bid immediately, and the project was under construction in less than three weeks.

This project utilized approved FEMA Disaster Recovery funds for the levee repair. FYRA has assisted the NRD with FEMA coordination and documentation of funds used through construction.

CLIENT

Lower Platte North NRD
Bob Heimann
Maintenance Supervisor
511 Commercial Park Road
Wahoo, NE 68066
bheimann@lpnnrd.org

PROJECT START September 2019

PROJECT COMPLETION December 2019

PROJECT SIGNIFICANCE

This project showcases FYRA's ability to accelerate a project schedule and meet the needs of a project funded with emergency funds from NEMA/FEMA for flood repair.



NORTH BEND CUTOFF DITCH



PROJECT EXPERIENCE

FYRA ENGINEERING

ELKHORN RIVER BANK REPAIR/MITIGATION PROJECT

DODGE COUNTY, NEBRASKA

The Elkhorn Riverbank near Scribner, Nebraska was severely damaged during the 2019 flood. An existing USACE Section 14 River Restoration project was flanked and the river shortcut it's downstream path around a bridge and over a highly traveled highway north and east of Scribner, NE.

FYRA was hired to design both a project repair to the USACE Section 14 project and mitigation measures to improve riverine hydraulics and develop a risk-based approach to improving the channel capacity and bank to handle more flow, but also pass future flood flows that exceed channel capacity in a more stable fashion.

The Lower Elkhorn NRD is partnering with the City of Scribner and the Dodge County Highway Department to plan improvements to the area that improve flood resiliency.

This project is pursuing FEMA Disaster Recovery and Hazard Mitigation funds for the riverbank repair and improvement. FYRA is assisting the NRD with FEMA coordination through the application process.

CLIENT

Lower Elkhorn NRD
Curt Becker
Projects Manager
1508 Square Turn Boulevard
Norfolk, NE 68701
cbecker@lenrd.org

PROJECT START March 2019

PROJECT COMPLETION Current

PROJECT SIGNIFICANCE

FYRA is currently working with the LENRD to maximize repair/mitigation for funding on this bank stabilization project.



NORTH BEND CUTOFF DITCH



PROJECT EXPERIENCE

FYRA ENGINEERING

NO NAME DIKE CULVERT REHABILITATION PROJECT PROJECT

DOUGLAS COUNTY, NEBRASKA

The Papio-Missouri River Natural Resources District (P-MRNRD) contracted FYRA Engineering for the design, permitting and construction observation of these 2 aging stormwater penetrations along the No Name Dike Levee System in Douglas County, Nebraska.

While performing maintenance work in the vicinity of these penetrations, the P-MRNRD noticed corrosion on the sides of the corrugated metal pipes. A video inspection was then performed on both penetrations which revealed large perforations throughout both pipes. FYRA performed an alternatives analysis for several non-invasive rehabilitation methods and a full removal and replacement. Non-invasive rehabilitation methods that were looked at included sliplining with SnapTite high density polyethylene (HDPE) pipe, placing a cured in place pipe (CIPP) liner, and coating the pipe with centrifugally cast concrete pipe (CCCP). The cost analysis revealed that CCCP rehabilitation would be the most economical. Because this levee system is enrolled in the PL 84-99 program, the USACE Omaha District Levee Safety Group performed a technical review of the project. Future USACE guidance on levee penetrations will only allow rehabilitation methods that include a liner pipe and grouting between the liner pipe and host pipe on penetrations that have areas of void in the pipe, so the USACE discouraged the use of the CCCP method. It was then decided that the best method of rehabilitation would be sliplining with SnapTite and grouting the annular space. Final design on this method was completed and the project went out for bid in late

Construction is expected to begin in August 2020. Due to the proximity of water at the inlet and outlet of the penetrations, continuous dewatering and coffer dam construction will be required prior to placing the liner. It is expected that there are several voids around the culverts and these voids will be grouted. Construction is expected to take 30 working days. FYRA Engineering will provide construction observation services as part of this project to ensure that the project is constructed as intended and will provide one point of contact between the contractor and the client. Preparation of weekly field reports, change applications, and pay applications will be part of these construction services.

CLIENT

Papio-Missouri River NRD
8901 South 154th Street
Omaha, Nebraska 68138
402.444.6222

Mr. Marlin Petermann, PE

Mr. Martin Cleveland, PE

PROJECT START December 2018

PROJECT COMPLETION Current

PROJECT SIGNIFICANCE

This project demonstrates FYRA's ability to evaluate multiple methods of rehabilitation to develop plans that are economical, non-invasive and approved by the USACE. This project further showcases FYRA's understanding of the design nuances of linear (ditch/levee) projects.



NORTH BEND CUTOFF DITCH



MICHAEL K. SOTAK, PE, D.WRE

FYRA ENGINEERING



EDUCATION

MASTERS OF BUSINESS
ADMINISTRATION - UNIVERSITY
OF NEBRASKA-LINCOLN (2001)

BS CIVIL ENGINEERING -
UNIVERSITY OF NEBRASKA-
LINCOLN (1992)

PROFESSIONAL REGISTRATIONS

DIPLOMATE, WATER RESOURCES
ENGINEER (D.WRE) FROM THE
AMERICAN ACADEMY OF WATER
RESOURCES ENGINEERS

PROFESSIONAL ENGINEER:
NEBRASKA (#E8759, 1997),
IOWA (#16681, 2003), KANSAS
(#17431, 2002), MISSOURI (PE-
2006031321, 2006, INACTIVE),
ARIZONA (#35258, 2000),
SOUTH DAKOTA (#13778, 2018),
NCEES (#21734, 2003)

AFFILIATIONS

SOCIETY OF AMERICAN MILITARY
ENGINEERS

AMERICAN SOCIETY OF CIVIL
ENGINEERS

AMERICAN COUNCIL OF
ENGINEERING COMPANIES

NATIONAL SOCIETY OF
PROFESSIONAL ENGINEERS

ASSOCIATION OF STATE DAM
SAFETY OFFICIALS

OMAHA SUBURBAN ROTARY

OMAHA ENGINEERS CLUB

LEADERSHIP OMAHA CLASS 25

Mike has 29 years of experience in water resources engineering, serving as a lead staff engineer and project manager for several projects. He has extensive experience on projects for natural resources districts including watershed planning, economic analyses, river restoration/bank stabilization and levee and dam design. He also has extensive grant writing and funding program identification experience. Mike's experience in watershed planning has been gained largely by bringing aged PL-566 and watershed improvement projects not implemented to current standards through cost and benefit updating related to design services and flood reduction and recreation economics.

Mike has led diverse teams of design and NEPA professionals through the project formulation, planning and design phases of all types of water resources projects including some of the more unique projects in the Midwest. He has served as the field, design and project manager on several structural watershed improvement projects and has personally been involved with the design and construction of over 100 dams since 1990. Lastly, he has rendered risk assessment studies in relation to the formation and implementation of Emergency Action Plans.

Finally, Mike brings a passion of preparing successful funding applications for projects, helping clients acquire tens of millions of dollars from Federal, State and other funding sources.

HONORS & AWARDS

American Consulting Engineers Council/Nebraska Grand Project Award – Campbell's Nursery Dam, 2006

WORK EXPERIENCE

FYRA Engineering | Omaha, Nebraska
July 2012 to Current • Principal Engineer/Owner

Tetra Tech | Omaha, Nebraska
January 2008 to June 2012 • Program Manager/Office Lead

Olsson Associates | Omaha, Nebraska
July 2001 to December 2007 • Project Engineer/Water Resources Group Leader

Olsson Associates | Phoenix, Arizona
July 2000 to July 2001 • Project Engineer/Office Manager

Olsson Associates | Omaha, Nebraska
July 1997 to July 2000 • Office Manager/Water Resources Group Leader

Olsson Associates | Lincoln, Nebraska
September 1990 to July 1997 • Assistant Engineer

RELEVANT PROJECT EXPERIENCE

LEVEES

MISSOURI RIVER FEDERAL LEVEE SYSTEMS R-613 AND R-616-613 LEVEE CERTIFICATION DESIGN AND PERMITTING • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • SARPY COUNTY, NE (2012-CURRENT)
Project manager and civil engineer of record for the final design of \$30M in levee improvements required for FEMA accreditation. The 18.2 miles of earthen levee system protects billions in local infrastructure and commerce. Proposed levee modifications include levee raises, closure section reconstruction at two locations, drainage penetration and flood gate structure updates/reconstruction, and seepage berm and relief well placement. The project requires a Major 408 permit which is being coordinated with the U.S. Army Corps of Engineers NWO levee safety team.

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OWNER-PRINCIPAL ENGINEER

BIG PAPIILLION CREEK LEVEE CULVERTS REPAIR - PHASES 1 AND 2 • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • DOUGLAS AND SARPY COUNTY, NE (2015-CURRENT) Civil engineer of record for the investigation and alternatives development for the repair of 29 aging levee penetrations within the Big Papillion Creek Levees. This project consisted of site investigations, utility research, evaluation of each penetration for invasive and non-invasive methods of rehabilitation, development of best cost solutions for each penetration and 404 permitting for each site. Project included a final recommendation report for P-MRNRD to be submitted to the USACE for review under the guidelines of the PL 84-99 program and section 408 permitting requirements.

INVESTIGATIVE PHASE FOR PAPIILLION LEVEE CERTIFICATION • CITY OF PAPIILLION • PAPIILLION, NE (2019) Quality control engineer for the investigative phase of the West Branch Papillion Creek levee certification project.

NORTH LAKE – PLATTE RIVER LEVEE INSPECTION • NORTH LAKE PARK ASSOCIATION • SARPY COUNTY, NE (2014) Project engineer for the levee inspection and recommendation report for North Lake's Platte River Levee. Project involved an intensive site investigation to locate all levee deficiencies and an in depth evaluation of both riverside and landside levee conditions. Prepared an in depth report detailing all observations at 35 different levee locations. Recommendations were made to North Lake Park Association to identify areas in need of immediate attention and long-term operation and maintenance items that should be implemented.

WHITETAIL LAKE LEVEE CERTIFICATION • WHITETAIL LAKE HOA • PLATTE COUNTY, NE (2009) Design engineer for the investigation and planning of levee improvements to meet FEMA accreditation needs for the ring levee along the Loup and Platte Rivers.

DAMS

LONG PINE CREEK WATERSHED PLAN • MIDDLE NIOBRARA NATURAL RESOURCES DISTRICT • BROWN COUNTY, NE (CURRENT) Mike will assist with overall project management functions, coordinate the WAC/TAT teams for the Community-Based Planning and provide overall quality control oversight.

RESTORATION OF THE WEST LAKE COMPLEX (LAKE OF THE HILLS) • PRELIMINARY AND FINAL DESIGN • SCOTT COUNTY CONSERVATION BOARD • SCOTT COUNTY, IA (CURRENT) Quality Control manager and designer for the small dam impoundments (water quality basins) and dam riser/outlet modifications to facilitate drainage and dredging within reservoir.

PAPIILLION CREEK WATERSHED REGIONAL DETENTION SITE WP 2 - PRELIMINARY DESIGN • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • SARPY COUNTY, NE (CURRENT) Project manager and civil engineer of record for the preliminary design of a rehabilitation of an existing dam site including hydrology and hydraulics, reservoir planning, dam layout, geotechnical engineering, permitting and utility relocations for a high hazard dam that is part of the Papillion Creek Watershed Management Plan. Responsible for client and agency coordination, design decisions and oversight of preliminary design documents.

DEADMANS RUN WEST TRIBUTARY/FLEMING FIELDS DETENTION BASIN • LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT • LINCOLN, NE (CURRENT) Mike served as the client and project manager for the project and performed overall design direction and quality control review of technical submittals.

LAKE WINNEBAGO DAM RELOCATION • RENAISSANCE INFRASTRUCTURE GROUP • CASS COUNTY, MO (CURRENT) Project manager for the investigation and economic analysis for relocating the existing dam at Lake Winnebago downstream to increase the size of the lake. Includes the review of available existing information and a refined hydraulic analysis of a gated dam to develop the lowest cost alternative for the project.

PAPIILLION CREEK WATERSHED REGIONAL DETENTION SITES WP 6&7 PLANNING AND FINAL DESIGN • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • SARPY COUNTY, NE (CURRENT) Project manager and civil engineer of record for the feasibility analysis, final design, permitting and construction of two high hazard dams and reservoirs as part of the Papillion Creek Watershed Management Plan. The project included dam and spillway design, fisheries structures, upstream water quality basins, and new/existing roadway design and improvements. Responsible for client and agency coordination, design decisions and oversight of construction documents.

PCWP FLOOD CONTROL ECONOMICS STUDY • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • DOUGLAS COUNTY, NE (CURRENT) Lead economist in study of economic impacts of multiple dams in Papillion Creek Watershed. Project economics included use of FEMA and GIS-based practices.

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PAPILLION CREEK WATERSHED HYDROLOGIC MODELING UPDATE • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • DOUGLAS AND SARPY COUNTIES, NE (CURRENT) Quality control reviewer for hydrometeorological study to update hydrologic modeling within the Papillion Creek Watershed and assess anticipated changes on levee systems, dam designs and resulting water surface elevations of the regulated floodplain.

SOUTHERN SARPY WATERSHED MANAGEMENT PLAN (WMP) • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • SARPY COUNTY, NE (CURRENT) Project management oversight and economics/financing for project.

OAK-MIDDLE & UPPER SALT 2015 DAM REHABILITATIONS • LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT • LANCASTER COUNTY, NE (2015) Project manager and lead designer for the rehabilitation of two spillways at NRCS-implemented watershed dam sites.

BIG SANDY CREEK RECONNAISSANCE STUDY • LITTLE BLUE NATURAL RESOURCES DISTRICT • NEAR DAVENPORT, NE (2013) Project manager for the investigation and economic analysis of a reconnaissance study for Davenport Dam. The study includes a technical feasibility analysis of site hydrology and dam hydraulics, and an economic assessment of the impacts of a proposed dam on local infrastructure, groundwater recharge, flood reductions and recreation benefits.

UPPER SALT CREEK WATERSHED REHABILITATION OF 10 AGING DAMS - DESIGN, PERMITTING AND CONSTRUCTION • LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT • LANCASTER COUNTY, NE (2012) Project manager for the investigation and feasibility study for the most cost effective method of rehabilitating the principal spillway for ten aging dams. This included field investigations, conceptual design and cost comparisons of alternative rehabilitation methods.

WEEPING WATER CREEK WATERSHED SITE 8A DAM REHABILITATION • LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT • CASS COUNTY, NE (2012) Project manager and civil engineer of record for the investigation, design, permitting and construction of the rehabilitation of an aging dam structure including the renovation of the armored stilling basin and outlet channel.

FORT PECK RESERVOIR RISER CURTAIN DESIGN • UNITED STATES CORPS OF ENGINEERS, OMAHA DISTRICT • FORT PECK, MT (2012) Quality control reviewer for temperature control curtain planned for Fort Peck reservoir.

UPPER SALT CREEK WATERSHED REHABILITATION OF 10 AGING DAMS-FEASIBILITY REPORT • LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT • LANCASTER COUNTY, NE (2012) Project manager for the investigation and feasibility study for the most cost effective method of rehabilitating the principal spillway for ten aging dams. This included field investigations, conceptual design and cost comparisons of alternative rehabilitation methods.

WEEPING WATER CREEK WATERSHED SITE 4J DAM REHABILITATION • LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT • CASS COUNTY, NE (2011) Project manager and civil engineer of record for the investigation, design, permitting and construction of the rehabilitation of an aging dam structure including the stabilization of the upstream wave attenuation berm and renovation of the armored stilling basin.

MILL CREEK WATERSHED SITE 5 DAM REHABILITATION • LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT • CASS COUNTY, NE (2010) Project manager and civil engineer of record for the investigation, design, permitting and construction of the rehabilitation of an aging road dam structure including the improvement to the internal drainage system to address seepage issues.

WEEPING WATER CREEK WATERSHED FLOOD CONTROL STRUCTURES - PROJECT ECONOMICS • LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT • EASTERN NE (2008) Project manager for NEPA and engineering services provided to the Lower Platte South Natural Resources District (LPSNRD) Weeping Water Creek Watershed Project economics including 19 flood control structures. Provided breach risk assessment, flood reduction analysis, and analysis for recreation applications.

SAND CREEK DAM SITES • LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT • NE (2008) Civil engineer for U.S. Army Corps of Engineers Sand Creek dam sites 2, 3, 6, 12, 13, 15, 16.

LAKE WANAHOO DAM DESIGN AND PERMITTING • LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT • WANAHOO, NE (2008) Project manager and civil engineer of record for the design of a high hazard dam and reservoir, including the design of a roller compacted concrete auxiliary spillway. This was a multi-agency project that required management of several funding sources and coordination with Nebraska Department of Roads for the highway that was designed along the backside of the dam. Fisheries structures were

MICHAEL K. SOTAK, PE, D.WRE

OWNER-PRINCIPAL ENGINEER

designed for the reservoir to improve habitat and angler access.

SAND CREEK ENVIRONMENTAL RESTORATION PROJECT • UNITED STATES ARMY CORPS OF ENGINEERS • NEAR WAHOO, NE (2008) Project manager for U.S. Army Corps of Engineers Section 206 Program project that analyzed various land treatment, structural and non-structural measures to provide both flood control and pollutant reduction.

SILVER CREEK WATERSHED PROJECT • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • BURT COUNTY, NE (2008) Design engineer for dam design to provide flood control, sediment storage, and grade stabilization for Papio-Missouri River Natural Resources District (NRD), which included up design from class "C" to class "A" hazard classification.

LEIGH DAM • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • LEIGH, NE (2007) Project manager and civil engineer of record for a high hazard dam and reservoir near Leigh, Nebraska. Responsible for the investigation, design and permitting of the dam embankment and associated in-lake fisheries structures.

LAKE WANAHOO UTILITIES RELOCATION • UNITED STATES ARMY CORPS OF ENGINEERS, OMAHA DISTRICT • WAHOO, NE (2006) Design engineer for Lake Wanhoo Utilities Relocation (USACE Sand Creek Study), Wahoo, Nebraska. Site sanitary sewer connected through dam corridor via deep foundation alignment.

STEVENS CREEK WATERSHED DAM AND SKY RANCH SITES • LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT • NE (2005) Design engineer for LPSNRD Stevens Creek Watershed Dam Sites A2-1, A3-2, A5-A6-A7-A9-A9-6, A11-2, A17-1, and Sky Ranch sites. Ten high hazard sites designed for flood control and stream grade stabilization in developing watershed east of Lincoln, Nebraska.

CAMPBELL'S DAM ENGINEERING DESIGN • CAMPBELL'S NURSERY • LINCOLN, NE (2005) Design engineer for Campbell's Dam, in Lincoln. High hazard site designed in upscale neighborhood and incorporated first fuse-plug spillway in Nebraska.

WATERFORD ESTATES DAM • LINCOLN, NE (2004) Design engineer for Waterford Estates Dam in Lincoln, Nebraska. This high hazard site is redesign of Stevens Creek Sky Ranch site with the pool enlarged for private development.

GAEBEL DAM DESIGN • LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT • CASS COUNTY, NE (2004) Design engineer for Gaebel Dam in Cass County. High hazard site designed for rural flood control south of Louisville, Nebraska.

PAWNEE COUNTY LAKE - LARGE, MULTI-PURPOSE RESERVOIR STUDY • NEMAHA NATURAL RESOURCES DISTRICT • SOUTHEAST NE ON NE/KS STATE BORDER (2003) Project manager for large, multi-purpose reservoir study in southeast Nebraska. Responsible for providing flood control evaluation in Kansas, recreation analysis, potable water supply and economic stimulus analysis.

PIGEON-JONES CREEK WATERSHED STRUCTURE 15 DESIGN • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • DAKOTA COUNTY, NE (2003) Design engineer for P-MRNRD Pigeon-Jones Creek Watershed Structure 15 in Dakota County. Preliminary design of high hazard site was completed for funding through Nebraska Resources Development Fund.

PIGEON CREEK SITE 3 DESIGN • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • HUBBARD, NE (2003) Design engineer for P-MRNRD Pigeon Creek Site 3, Hubbard, Nebraska. High hazard site was designed for flood control through Hubbard, Nebraska and for possible private development around the lake.

RAIKES FLOOD CONTROL STRUCTURE DESIGN • RON RAIKES • ASHLAND, NE (2003) Design engineer for Raikes Flood Control Structure, Ashland, Nebraska. Site designed for rural flood control and cattle watering.

KC ROAD PARKWAY DAM ENGINEERING • CITY OF OLATHE • OLATHE, KS (2002) Design engineer for City of Olathe's KC Road Parkway Dam. Site designed to upgrade high hazard structure to meet current dam design criteria as part of park renovation and included R.C. spillway formed into limestone abutment.

SAND CREEK WATERSHED - WATERSHED-WIDE ENVIRONMENTAL RESTORATION PROJECT • U.S. ARMY CORPS OF ENGINEERS, OMAHA DISTRICT • EASTERN NE (2002) Provided non-dollar quantifiable assessment of restoration output units in ECO-EASY. Also provided evaluation of flood control, recreation and performed risk assessments.

MAPLE CREEK WATERSHED PROJECT FLOOD CONTROL EVALUATIONS • LOWER ELKHORN NATURAL RESOURCES DISTRICT • NORTHEAST NE (2001)

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Project manager for evaluations of 28 flood control structures in northeast Nebraska watershed originally proposed under PL-566. Provided evaluation of flood control, recreation and risk assessment.

JOHNSON COUNTY DETENTION STUDY • JOHNSON COUNTY, KS (2001) Project engineer for study of potential urban flood reduction benefits in Johnson County, Kansas.

ROAD DAM SITE 14AD-13-4 • LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT • BUTLER COUNTY, NE (1991) Design engineer for road dam site 14ad-13-4, Butler County, Nebraska, LPSNRD. Site was designed to provide flood protection in the watershed in lieu of replacing damaged county road bridge.

WEeping WATER CREEK WATERSHED DAM SITES DESIGN ENGINEERING • LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT • NE (2000) Design and field engineer for Weeping Water Creek Watershed Dam Sites 4f, 4j, 5h, 5k, 7g, 8a, 15b, 15g, 6b, 7c, 21a, 2a, 2l, 15l, 17d, 17l, and 19c, Lower Platte South NRD. Sites designed for rural flood control in Southeastern Nebraska watershed, providing recreation and flood control for several small towns.

UPPER LITTLE NEMAHA WATERSHED DAM SITES • NEMAHA NATURAL RESOURCES DISTRICT • NE (2000) Design engineer for Upper Little Nemaha Watershed Dam Sites 21, 23, 25, 31, 61, 42, 50, 63, Nemaha NRD. Sites designed for rural flood control in Southeastern Nebraska watershed.

WALNUT CREEK LAKE (FORMERLY PAPIO DAM SITE 21) • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • PAPHILLION, NE (1997) Project manager for economic, environmental (NEPA) and technical evaluations related to high-hazard, multi-purpose reservoir in Paphillion, Nebraska. Analysis included flood reduction, recreation and dam breach risk assessment.

SKULL CREEK DAM SITE ENGINEERING • LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT • NE (1997) Design engineer for LPNDRD Skull Creek Dam Sites 30, 31 and 55. Watershed flood control project provided flood control and recreation benefits in Central Nebraska.

LAKE WANAHOO STUDY • LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT • WAHOO, NE (1994) Project manager for evaluations of high-hazard, multi-purpose reservoir near Wahoo, Nebraska. Analysis included flood reduction, recreation application and risk assessment. Project design was completed within Environmental Impact Statement for project.

SKULL CREEK WATERSHED PROJECT EVALUATION • LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT • EASTERN NE (1994) Project manager for four flood control and recreation structures in Eastern Nebraska originally proposed under PL-566. Provided evaluation of flood control, recreation, and associated risk assessments.

ROAD DAM SITES • LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT • CASS COUNTY, NE (1993) Design and field engineer for road dam sites 7, 12ba, 36cb, Cass County, LPSNRD. Sites provided flood control in lieu of replacing damaged county road bridges.

UPPER LITTLE NEMAHA WATERSHED PROJECT • NEMAHA NATURAL RESOURCES DISTRICT • SOUTHERN NE (1993) Project manager for economic, environmental (NEPA) and technical analysis of 21 flood control structures in southeastern Nebraska. Project included evaluations for flood reduction, recreation, and breach risk assessment.

STEVENS CREEK WATERSHED PROJECT - FLOOD CONTROL AND OPEN SPACE STUDY • LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT • LINCOLN, NE (1993) Project manager for study of flood control and open space in watershed east of Lincoln. Project involved flood control study, flood mitigation, and risk assessment.

RIVERS AND STREAMS

ELKHORN RIVER AT 240TH STREET BANK STABILIZATION DESIGN AND PERMITTING, LONG-TERM SOLUTION • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • SARPY COUNTY, NE (CURRENT) Project manager and civil engineer of record for the final design and permitting for bank stabilization of flood damages near 240th Street. The planned design will restore a historic channel of the Elkhorn River, providing backwater habitat for the Pallid Sturgeon, while diverting channel energy away from the 240th Street corridor and its related infrastructure. Currently developing the 404 individual permit application and submission package.

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OWNER-PRINCIPAL ENGINEER

WAHOO CREEK WATERSHED PLAN-ENVIRONMENTAL ASSESSMENT • LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT • WAHOO, NE (CURRENT) Project manager, taking the lead role in the preparation of multiple funding applications for the Wahoo Creek Watershed Plan-EA. This included the NRCS Regional Conservation Partnership Program (RCPP) and Natural Resources Commission Water Sustainability Fund (WSF) funding applications for planning, design, and construction of two dam sites (Sites 26 and 27) that were identified in the 1998 Wahoo Creek Watershed Plan-EIS (Plan-EIS). Outside funding also included an NRCS Watershed and Flood Prevention Operations (WFPO) grant for the planning and design of eight additional dam sites included in the 1998 Plan-EIS. Collectively, nearly \$15M was awarded to this project. FYRA's economic analysis included flood damage reduction benefits, recreation benefits and land value improvement benefits to compare against the project costs.

PAPIO-MISSOURI RIVER BASIN WATER QUALITY MANAGEMENT PLAN • NORTHEAST NEBRASKA • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT (CURRENT) Quality Reviewer for developing a basin-wide water quality management plan that adheres to the EPA's nine elements for watershed planning for the area that drains to the waterbodies located within the Papio-Missouri River NRD's boundaries. This includes data assessment and analysis for modeling pollutant loads and developing management solutions for the basin, as well planning components prioritization, implementation and public outreach. Stakeholder coordination and public outreach efforts were performed and all planning efforts were coordinated with the Nebraska Department of Environmental Quality to ensure the plan qualifies for their Section 319 Funding Program.

STANDING BEAR BOAT RAMP IMPROVEMENT • NEBRASKA GAME AND PARKS • NE (CURRENT) Quality control review of boat ramp, access parking lot modification, rock jetty and localized dredging.

PONCA STATE PARK BOAT RAMPS • NEBRASKA GAME AND PARKS • NE (2014) Quality control reviewer.

MULBERRY BEND BOAT RAMP • NEBRASKA GAME AND PARKS • NE (2014) Quality control reviewer.

ELKHORN RIVER IPA BANK STABILIZATION CONSTRUCTION SERVICES • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • DOUGLAS COUNTY, NE (2012) Project manager and civil engineer of record for \$1.3M in construction of bank stabilization for 2010 Elkhorn River flood damages through the five mile stretch of the Improvement Project Area (IPA). Project challenges during construction included contractor access for working within the river corridor and permitting constraints.

ELKHORN RIVER AT WATERLOO BANK STABILIZATION REVIEW • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • WATERLOO, NE (2012) Review engineer for bank stabilization measures designed for the Elkhorn River near Waterloo, Nebraska.

2011 MISSOURI RIVER HIGH WATER MARKS • UNITED STATES CORPS OF ENGINEERS, OMAHA DISTRICT • MISSOURI RIVER VALLEY, NE (2012) Quality control reviewer for post-2011 flood high water marks surveyed, set and recorded along Missouri River from mouth to headwaters.

ELKHORN RIVER IPA BANK STABILIZATION DESIGN AND PERMITTING • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • DOUGLAS COUNTY, NE (2012) Project manager and civil engineer of record for the investigation, design and permitting for bank stabilization of 2010 Elkhorn River flood damages through the five mile stretch of the Improvement Project Area (IPA). This included developing construction plans and specifications for 13 locations identified as needing immediate attention during the investigation phase. A 404 nationwide permit was obtained for the majority of the work and a Regional General Permit 11-02 was obtained for one stabilization site.

ELKHORN RIVER AT 240TH STREET BANK STABILIZATION DESIGN, PERMITTING AND CONSTRUCTION - SHORT TERM SOLUTION • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • SARPY COUNTY, NE (2012) Project manager and civil engineer of record for the design and permitting of flood damaged bankline near 240th Street that needs immediate attention. A short-term solution was developed to qualify for a 404 nationwide permit that would provide interim protection, while the long-term solution is designed and permitted. Construction plans and specifications were developed, the 404 nationwide permit was obtained and construction oversight was provided during implementation.

DEADMANS RUN CHANNEL IMPROVEMENTS PROJECT • LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT • NE (1993) Field engineer for Lower Platte South NRD Deadman's Run Channel Improvements. Channel armoring provided erosion protection for channel through developed Lincoln, Nebraska.

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LAKES/WATER QUALITY

WEST LAKE (LAKE OF THE HILLS) • SCOTT COUNTY CONSERVATION BOARD - IOWA DEPARTMENT OF NATURAL RESOURCES • DAVENPORT, IOWA (CURRENT) Lead Quality Control Reviewer for all watershed and in-lake design components, construction specifications, and cost estimates. Review focused on proposed dredging and sediment storage operations, shoreline erosion and improvement alternatives, and assessment of feasibility/constructability of all design features.

NPPD SUTHERLAND CANAL • NEBRASKA PUBLIC POWER DISTRICT • NE (CURRENT) Quality control reviewer.

STORM LAKE DREDGING ENHANCEMENT • CITY OF STORM LAKE • STORM LAKE, IA (CURRENT) Principal engineer and contributing author.

CARTER LAKE WATER QUALITY IMPROVEMENTS CONSTRUCTION SERVICES • METROPOLITAN AREA PLANNING AGENCY • CARTER LAKE, IA AND OMAHA, NE (2013) Project manager for \$3.5M construction project which implemented in-lake management practices focusing on nutrient reduction of 320-acre Carter Lake. Includes shoreline stabilization, detention basin construction, hydraulic dredging and spoils disposal. In-water construction and complex water budget issues added to the project complexity. The project utilized six funding sources and required coordination and involvement with thirteen stakeholder agencies/organizations.

SUNDOWN LAKE DREDGING - PRELIMINARY AND FINAL DESIGN • SUNDOWN LAKE RECREATION IMPROVEMENT ZONE BOARD • MORAVIA, IA (CURRENT) Designer for preliminary and final design of modifications to an existing dam structure to serve as a settling basin for a dredging project within the reservoir.

RESTORATION OF THE WEST LAKE COMPLEX (LAKE OF THE HILLS) • PRELIMINARY AND FINAL DESIGN • SCOTT COUNTY CONSERVATION BOARD • SCOTT COUNTY, IA (CURRENT) Quality Control manager and designer for the small dam impoundments (water quality basins) and dam riser/outlet modifications to facilitate drainage and dredging within reservoir.

LAKE MANAWA WATER QUALITY IMPROVEMENTS PROJECT • IOWA DEPARTMENT OF NATURAL RESOURCES • COUNCIL BLUFFS, IA (CURRENT) Principal engineer responsible for project coordination, dredging design and final implementation. Led the community-based planning component for the water quality improvements. Performed coordination with project stakeholders to determine feasibility and preferred management alternatives.

BLAIR SOUTH/PLACID POND, WASHINGTON COUNTY, NE (CURRENT) Principal engineer responsible for the coordination and oversight of a drainage study analyzing streambank incision and erosion encroaching upon the newly constructed Highway 30. A HEC-HMS analysis was completed to determine discharge to the area for various events and various alternatives were analyzed to determine possible solutions to the area. Alternatives included analysis of a detention structure with a broke-back culvert outlet and associated energy dissipators, stream bank stabilization using sheet pile, and creating a channel to divert flows through the property and then discharge through a series of drop structures in the existing stream. Project included wetland delineation and coordination with the USACE regulatory group.

FIVE ISLAND LAKE RESTORATION - WATERSHED MANAGEMENT PLAN AND PRELIMINARY DESIGN • EMMETSBURG, IOWA (2018) Lead designer for lake outlet modification to facilitate improved hydraulic performance and lake drawdown for dredging and other water quality improvements.

LAKE MITCHELL RESTORATION PROJECT • CITY OF MITCHELL • MITCHELL, SOUTH DAKOTA (2018) Project engineer for employing the Seven Steps of Lake Management and developing the water quality management plan to improve the water quality at Lake Mitchell. Project included development of a water budget and nutrient mass balance model and the lake response model and community-based planning efforts and development of preferred management practices.

LITTLE BLUE WATER QUALITY MANAGEMENT PLAN EA • LITTLE BLUE NATURAL RESOURCES DISTRICT (2015) Contributing engineer, reservoir design and recharge. Responsible for assessing an array of options for water quantity improvements in the Little Blue River watershed including groundwater recharge, flow augmentation and floodplain/wetland storage of channel flows. Project costs and environmental impacts were assessed at a reconnaissance level.

CUB CREEK 12A RESERVOIR RENOVATION • LAKETECH • BEATRICE, NE (2015) Quality control engineer for reservoir renovation.

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CITY OF OMAHA AND P-MRNRD BASIN WATER QUALITY MANAGEMENT PLAN • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • NE (2015) Quality reviewer.

GINGER COVE LAWSUIT • GINGER COVE • DOUGLAS COUNTY, NE (2015) Principal engineer.

BATHYMETRIC SURVEYS • LITTLE BLUE NATURAL RESOURCES DISTRICT (2015) Quality control reviewer.

RIVERSIDE ALUM INJECTION AND NB STUDY • RIVERSIDE LAKES • WATERLOO, NE (2014) Quality control reviewer.

CARTER LAKE WATER QUALITY IMPROVEMENTS FINAL DESIGN AND PERMITTING • METROPOLITAN AREA PLANNING AGENCY • CARTER LAKE, IA, AND OMAHA, NE (2012) Project manager and civil engineer of record that performed the design and permitting of best management practices to improve the water quality in Carter Lake. This included features such as shoreline stabilization, wetland creation, wet detention basins and dredging. Developed construction plans, specification and bid tabulations, and obtained the necessary 404 nationwide permit for the construction activities.

CARTER LAKE WATERSHED MANAGEMENT AND FINAL ALTERNATIVES ANALYSIS • METROPOLITAN AREA PLANNING AGENCY • CARTER LAKE, IA, AND OMAHA, NE (2009) Project manager for developing the watershed management plan to improve the water quality Carter Lake in order to remove it from the 303(d) list of impaired waters. Assessed the cost effectiveness and site specific feasibility of watershed and in-lake best management practices to reduce the pollutant loading to the lake. Determined the most cost effective combination of alternatives to reach the water quality goals and take into final design and construction.

LAKE MANAWA DIAGNOSTIC AND FEASIBILITY STUDY • IOWA DEPARTMENT OF NATURAL RESOURCES • COUNCIL BLUFFS, IA (2008) Project manager for development of diagnostic and feasibility study for Lake Manawa to improve water quality including a major dredging project and the implementation of watershed better management practices to improve water quality.

CUNNINGHAM LAKE AQUATIC HABITAT IMPROVEMENT PROJECT DESIGN, PERMITTING AND CONSTRUCTION • NEBRASKA GAME AND PARKS COMMISSION • OMAHA, NE (2006) Project manager for Nebraska Game and Parks Commission Cunningham Lake Aquatic Habitat Improvement Project. Project provided riser modification, habitat enhancement, in-lake shoreline erosion control, fishery enhancements and dredging to improve water quality.

CUNNINGHAM LAKE LAND USE ANALYSIS PROJECT • CITY OF OMAHA • OMAHA, NE (2005) Project manager for City of Omaha Cunningham Lake Land Use Analysis Project. Project created overlay district to help guide the appropriate BMPs for watershed development to help protect water quality work recently performed in Cunningham Lake.

STORMWATER

SADDLE HILLS DEMONSTRATION – 2 • CITY OF OMAHA • OMAHA, NE (2015) Quality control reviewer of construction documents.

OAKBROOK CHANNEL CULVERT STUDY • CITY OF OMAHA • OMAHA, NE (2015) Project manager and principal design engineer.

REAMS STORMWATER SYSTEM INSPECTIONS 2014 AND 2015 • REAMS ENTERPRISES • OMAHA, NE (2014 & 2015) Quality control reviewer.

BLAIR HAZARD MITIGATION GRANT • CITY OF BLAIR • BLAIR, NE (2015) Quality control reviewer.

SADDLE HILLS GRANT APPLICATION • CITY OF OMAHA • OMAHA, NE (2014) Quality control reviewer.

26TH & CORBY NEIGHBORHOOD COMBINED SEWER SEPARATION STUDY AND DESIGN • CITY OF OMAHA • OMAHA, NE (2012) Stormwater design engineer for the investigation, modeling and design of the partial separation of the combined sewers in the neighborhood.

RAVEN OAKS STORM DRAINAGE IMPROVEMENTS • CITY OF OMAHA • OMAHA, NE (2001) Design engineer for City of Omaha Raven Oaks Storm Drainage Improvements. The residential storm sewer improvement project addressed some localized drainage problems and a few safety issues related to overland flow of stormwater runoff.

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OTHER

MISSOURI RIVER FEDERAL LEVEES R-613/616-613 LEVEE CERTIFICATION WSF APPLICATION • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • BELLEVUE, NE (2015) Primary author and principal engineer.

PAPILLION CREEK WATERSHED DAMS WP-6&7 WSF APPLICATION • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • SARPY COUNTY, NE (2015) Primary author and principal engineer.

NEBRASKA WATER FUNDING TASK FORCE (LB517) FACILITATION AND CONSULTATION • STATE OF NEBRASKA - NEBRASKA STATE LEGISLATURE IN ACCORDANCE WITH 2013 LEGISLATIVE BILL 517 • NE (2013) Consultant team member responsible for the development of ranking and weighting criteria for the proposed Water Sustainability Fund, given input from the Task Force. Other responsibilities included the organization of current sustainability-themed projects throughout Nebraska from which the annual program funding level was set.

CARTER LAKE WELL DESIGN AND PERMITTING • CITY OF OMAHA • OMAHA, NE (2010) Civil engineer of record for the planning and design of the supplemental supply well and delivery system to Carter Lake.

MAPPING AND DATA MANAGEMENT FOR MASTER PLAN • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • OMAHA, NE (1998) Provided mapping services and database management, Papio-Missouri River NRD 10-year Master Plan.

PRESENTATIONS

Sotak, Michael K. 2007. Space Saving Fuse Plug Spillway in Lincoln, Nebraska. In: Association of State Dam Safety Officials 2007 West Regional Technical Seminar; Omaha, Nebraska.

Sotak, Michael K. 2007. Surprise! You Own a High Hazard Dam In: Kansas Dam Safety Seminar 2007; Wichita, Kansas.

Sotak, Michael K. 2007. Fuse Plug Auxiliary Spillway In: Kansas Dam Safety Seminar 2007; Wichita, Kansas.

Sotak, Michael K. 2009. Lake Manawa Geophysical Investigation In: Kansas Dam Safety Seminar 2009; Lawrence, Kansas.

Sotak, Michael K. 2010. A Unique Approach to Investigating Levees – A Toolbox Approach In: American Society of Professional Floodplain Managers (ASFPM) National Conference, Oklahoma City, Oklahoma.

Sotak, Michael K. 2012. Geophysical Investigations for Levee Systems – Killing Several Birds with One Stone In: United States Society on Dams (USSD) National Conference.

Sotak, Michael K. 2013. Sliplining vs. Cut & Cover Spillway Rehabilitation – Lessons Learned. Association of State Dam Safety Officials National Conference, Providence, Rhode Island.

Sotak, Michael K. 2015. Rehabilitating CMP Pipes with HDPE. American Public Works Association – Eastern Nebraska Spring Conference, Omaha, Nebraska.

Sotak, Michael K. 2017. The Conjunctive Management Analysis Tool (CMAT) - Gaining Confidence on Your NRD's Water Use - Nebraska Association of Resources Districts Legislative Conference, Lincoln, Nebraska.

Sotak, Michael K. 2017. Papillion Creek Hydrology Updates - Nebraska APWA Spring Conference.

REFERENCES

Marlin Petermann, P-MRNRD, 402.444.6222

Paul Zillig, General Manager, Lower Platte South NRD, 402.476.2729

George Antoniou, Iowa DNR, 515.725.8449

BOB GREGALUNAS, PE

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EDUCATION

BS CIVIL ENGINEERING -
UNIVERSITY OF NEBRASKA-
LINCOLN (2005)

REGISTRATIONS

PROFESSIONAL ENGINEER:
NEBRASKA (#E13416, 2010)

AFFILIATIONS

NEBRASKA FLOODPLAIN AND
STORMWATER MANAGERS
ASSOCIATION

SOFTWARE

ARCGIS
HEC-HMS
HEC-RAS (1D AND 2D)
GEOSTUDIO
SLOPE/W
SEEP/W
HEC-SSP
HEC-FDA
SMS
SRH2D
RIVERFLO-2D
SITES

Bob has over 15 years of experience on watershed development projects, hydrologic and hydraulic investigations, joint probability assessments, dam design, canal inspections, levee design and stormwater management. Bob has worked on some of the most complex hydrologic and hydraulic water resources projects in the state of Nebraska and has an unparalleled understanding of project modeling. He has used his exceptional modeling expertise to investigate and modify basin hydrology, analyze some of the most complex riverine systems in the area, guide alternatives development, support project permitting requests, develop project economics to support project funding and implementation, and analyze floodplains and floodway extents. Bob has also developed his own models and programs which have been used to assist clients and the public to better understand system responses to changes in hydrology and/or hydraulics.

Most recently, Bob has completed a risk and reliability analysis utilizing HEC-FDA for Federal Levee System R-613/R-616-613, performed a two-dimensional river analysis on the Elkhorn River Bank Stabilization Project, and utilized HEC-HMS and HEC-RAS (steady and unsteady state) to assist with the alternatives analysis of drainage structure sizing for the Papio-Missouri River NRD. He is also working with new hydrometeorological methods to develop a more accurate hydrologic model that will be used for floodplain mapping in the Papillion Creek basin.

Bob is also well versed in stochastic modeling applications which allow his clients to make intelligent, risk-based decisions about project design functions. Collectively, Bob's talents have led to significant savings for his clients and reliable projects that stand the test of time.

WORK EXPERIENCE

FYRA Engineering, Omaha, Nebraska
July 2012 to Current • Project Engineer/Owner

Tetra Tech, Omaha, Nebraska
January 2008 to June 2012 • Program Manager/Office Lead

Tetra Tech, Omaha, Nebraska
April 2008 to June 2012 • Engineer in Training/Project Engineer

Olsson Associates, Omaha, Nebraska
December 2005 to March 2008 • Engineer in Training

RELEVANT PROJECT EXPERIENCE

MODELING

INDIAN CREEK HYDROLOGIC AND HYDRAULIC STUDY • HGM ASSOCIATES • LINN COUNTY, IA (2020)
Responsible for review of H&H modeling for Indian Creek in Council Bluffs, Iowa. The Project found significant modeling discrepancies from as-built conditions that severely impacted modeled performance. The Project is currently moving forward as a LOMR filing to correct these issues. The Project will ultimately remove 70% of mapped parcels from the floodplain.

180TH AND GILES HYDROLOGIC AND HYDRAULIC STUDY • SARPY COUNTY PUBLIC WORKS DEPARTMENT • SARPY COUNTY, NE (2016)
Responsible for assisting project engineer with a H&H study and evaluation of an existing culvert at 180th and Giles and alternatives analysis to prevent future road overtopping of 180th Street. Responsible for initial site assessment and site survey, set up of preliminary hydrologic model utilizing HEC-HMS, development of project hydrology and tailwater elevations from the South Papillion Creek, set up of a hydraulic model utilizing HEC-

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RAS, assessment of existing culverts and project alternatives with HY8, and preliminary project report.

NPPD SUTHERLAND CANAL • NEBRASKA PUBLIC POWER DISTRICT • LINCOLN COUNTY, NE (2016) Project engineer for the investigation of hydraulics and biological impact on the loss of conveyance capacity in the canal, as well as the source of aquatic plant life that must be disposed of at John A Gentleman power plant. A site investigation was performed, as well as reviews of hydraulic modeling and baseline geomorphological assessment. FYRA provided sediment removal extents based on hydraulic performance and expected sediment mobility.

PAPILLION CREEK HYDROLOGY UPDATE • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • SARPY AND DOUGLAS COUNTIES, NE (CURRENT) Responsible for the review and update of hydrologic models used by FEMA for remapping efforts in Sarpy and Douglas Counties and determination of storm-size that was utilized in the HEC-HMS hydrologic model. Calibrated the hydrologic model to past storm events and updated the hydraulic analysis of Big Papillion Creek utilizing an unsteady-state model in HEC-RAS.

SOUTHERN SARPY WATERSHED MANAGEMENT PLAN • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • SARPY COUNTY, NE (CURRENT) Project engineer working on a watershed management plan for southern Sarpy County. The multiphase project has included hydrologic and hydraulic (H&H) analyses for existing and future conditions, stream stability assessments and outlooks, as well as preliminary policies, plans, and actions for future inclusion in the Watershed Management Plan. Future phases will include finalization of the plan as well as more detailed, FEMA-compliant H&H analysis/mapping, and detailed stream stability work to assess project needs as development pressures increase.

PAPILLION CREEK SUPPLEMENTAL WATERSHED WORK PLAN-EA • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • PAPILLION, NE (CURRENT) Project engineer working on an update for an outdated NRCS plan to construct seven watershed structures to control stream grade degradation in the Papillion Creek Watershed. Work has included preliminary hydrologic and hydraulic analyses, structure design concepts and field work to ascertain stream stability and project needs. Future work will include updating of the WFPO plan document for submission to NRCS to attain federal funding for the construction of the seven watershed projects.

PLATTE RIVER MODELING • PAPIO-MISSOURI RIVER NRD • SARPY COUNTY, NE (CURRENT) Due to changes within the Platte River floodplain, the existing hydraulic model was deemed too inaccurate to estimate flood elevations. In an effort to improve upon the existing modeling, a 2-D HEC-RAS model was assembled along the lower Platte River to support the R-613 Levee Certification project. The 2-D hydraulic model took into account the dramatic effects of the mobile bed of the Platte River in an effort to calibrate the modeling of the largest event on record. Mobilized bed depths of up to 18-feet were found along several constrictions in the river alignment. The calibrated modeling assisted the creating of a steady-state 1-D HEC-RAS model through simplification of the complex ineffective areas as well as guiding the Manning's adjustments. Resulting base flood elevations were lowered by up to 1.4 feet over the steady state model with better calibration results.

LEVEES/CANALS

INVESTIGATIVE PHASE FOR PAPILLION LEVEE CERTIFICATION • CITY OF PAPILLION • SARPY COUNTY, NE (CURRENT) Prepared a levee analysis with updated hydrologic and hydraulic data to determine the most cost effective alternatives that would allow for future levee certification and accreditation by FEMA. The investigative phase included a full-site investigation including wetland delineations, ordinary high water mark determinations and stream assessments in culvert locations that may be modified. Bridge modifications were assessed to determine if improved hydraulics would lower improvement costs. Oversaw a full geotechnical investigation with laboratory testing and slope stability, seepage and settlement analysis.

MISSOURI RIVER FEDERAL LEVEE SYSTEMS R-613 AND R-616-613 • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • SARPY COUNTY, NE (CURRENT) Completed an economic analysis for the levee modifications supporting an application for EDA grant request. HEC-HMS was used to investigate the possibility of a new pumping station. Completed an interior drainage analysis required for FEMA accreditation using HEC-HMS. Performed hydrologic and hydraulic modeling for the interior drainage analysis to determine flooding impacts on the landside of the levees system at each drainage penetration using HEC-HMS and HEC-RAS models. HEC-SSP was utilized for an updated hydrologic study on the lower Platte River incorporating a joint-probability assessment at the Missouri/Platte River confluence. Performed a risk and reliability assessment on all three rivers systems using

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HEC-FDA to analyze possible impacts due to the project construction.

NORTH LAKE – PLATTE RIVER LEVEE INSPECTION • NORTH LAKE PARK ASSOCIATION • CASS COUNTY, NE (2014) Civil engineer for the levee inspection and recommendation report for North Lake's Platte River Levee. Project involved an intensive site investigation to locate all levee deficiencies and an in depth evaluation of both riverside and landside levee conditions. Final deliverable included a recommendation report for North Lake Park Association to identify areas in need of immediate attention and long term operation and maintenance items that should be implemented. These recommendations included of riverside slope stabilization methods, landside (lake side) shore protection and slope stabilization, vegetation removal and monitoring, rodent extermination, and filling of rodent holes with cementitious grout.

CANAL INSPECTIONS • UNITED STATES BUREAU OF RECLAMATION • STATEWIDE WASHINGTON (2010) Staff engineer performing field inspections of existing U.S. Bureau of Reclamation canals in Washington State. Field inspections included lined and unlined canal sections walkthroughs to document potential integrity issues of the canal prism due to scour/sedimentation, sloughing/slope failure, concrete panel failure, vegetation, and seepage.

PAPILLION CREEK WATERSHED REGIONAL DETENTION SITE WP 6 & WP 7 – FINAL DESIGN • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • SARPY COUNTY, NE (CURRENT) Project engineer for the feasibility analysis and final design of two high hazard dams and reservoirs as part of the Papillion Creek Watershed Management Plan. The project included dam and spillway design, fisheries structures, upstream water quality basins, and new/existing roadway design and improvements. Responsible for H&H analysis and Geotech oversight.

DAMS

LONG PINE CREEK WATERSHED PLAN • MIDDLE NIOBRARA NATURAL RESOURCES DISTRICT • BROWN COUNTY, NE (CURRENT) Project engineer working on the hydrologic, hydraulic and stream stability aspects of the WFPO plan. These considerations include geomorphologic understanding of the area streams, flood frequency studies, meteorological trend analysis of stream flow rates, ecological implications of changing stream geometry and flow frequency, and infrastructure risk assessment.

PAPILLION CREEK WATERSHED REGIONAL DETENTION SITE WP2 - PRELIMINARY DESIGN • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • SARPY COUNTY, NE (CURRENT) Project engineer for the preliminary design and final geotechnical design of a regional detention structure within the Papillion Creek watershed. The project has included hydrologic and hydraulic analysis utilizing the latest meteorological guidance developed during the Papillion Creek DFIRM remapping project to establish design elevations and structure sizing. Geotechnical investigation included a full-site study of a unique site with a large scale glacial sand deposit beneath the dam foundation.

PAPILLION CREEK WATERSHED REGIONAL DETENTION SITE WP 6 & WP 7 – FINAL DESIGN • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • SARPY COUNTY, NE (CURRENT) Project engineer for the feasibility analysis and final design of two high hazard dams and reservoirs as part of the Papillion Creek Watershed Management Plan. The project included dam and spillway design, fisheries structures, upstream water quality basins, and new/existing roadway design and improvements. Responsible for H&H analysis and Geotech oversight.

LAKE WINNEBAGO DAM RELOCATION • RENAISSANCE INFRASTRUCTURE GROUP • CASS COUNTY, MO (2014) Project engineer for the investigation and economic analysis for relocating the existing dam at Lake Winnebago downstream to increase the size of the lake. Includes the review of available existing information and a refined hydraulic analysis of a gated dam to develop the lowest cost alternative for the project.

BIG SANDY CREEK RECONNAISSANCE STUDY • LITTLE BLUE NATURAL RESOURCES DISTRICT • NEAR DAVENPORT, NE (2013) Project engineer for the investigation and economic analysis of a reconnaissance study for Davenport Dam. Includes the review of existing information, updating hydrology and hydraulic analyses using HEC-RAS/HEC-HMS, compute control elevations for dam design using SITES, water budget including groundwater recharge, computation of groundwater recharge benefits, and development of cost-benefit analysis.

FORKVIEW DAM BREACH ANALYSIS • NORTH AMERICAN COAL • WOOD COUNTY, TX (2010) Project engineer for dam breach analysis of Forkview Dam for inclusion in required Emergency Action Plan. HEC-HMS was used to develop the flood hydrograph and simulate the dam breach. An iterative approach was taken with HEC-RAS/HEC-HMS to tune the breach parameters to

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downstream controlling hydraulic conditions.

SAND CREEK RESTORATION PROJECT - SEVEN UPSTREAM SITES • LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT • SAUNDERS COUNTY, NE (2008) Project engineer for a comparative study of NRCS to USACE design criteria for seven water quality reservoirs upstream of Lake Wanahoo. Project included dam design, dam breach analysis, unsteady hydraulic modeling, and risk and uncertainty assessment.

RIVERS/STREAMS

ELKHORN RIVER AT 240TH STREET BANK STABILIZATION DESIGN AND PERMITTING, LONG-TERM SOLUTION • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • SARPY COUNTY, NE (2015-2020) Project engineer performing 1-D and 2-D hydraulic modeling for stream stability work along the Elkhorn River. HEC-RAS and SMS (SRH2D) were utilized to model proposed alternatives for stabilizing a significantly altered bend of the Elkhorn River through creation of a cut-off channel.

HIGHWAY 137 BRIDGE REPAIR • NEBRASKA DEPARTMENT OF TRANSPORTATION • NEWPORT, NE (CURRENT) Project Engineer overseeing the design of an emergency repair along the Niobrara River at HWY 137. During the March 2019 flood event, significant damage was caused to an existing slope stability project along a bridge abutment. The project fixes this damage and has been robustly designed to withstand a flood of similar severity.

PONCA STATE PARK AND MULBERRY BEND BOAT RAMPS • NEBRASKA GAME AND PARKS • DIXON AND DAKOTA COUNTIES, NE (2018) Project engineer performing statistical analysis on the Missouri River to establish stage-probability relationships in non-gauged areas. The relationships were used as a decision-making tool in designing new boat ramps that could provide better site access in times of low water. The analysis included long-term degradation trends in the Missouri River channel due to the loss of upstream sediment sources.

MISSOURI RIVER FEDERAL LEVEE SYSTEMS R-613 AND R-616-613 LEVEE CERTIFICATION DESIGN AND PERMITTING • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • SARPY COUNTY, NE (CURRENT) Completed an economic analysis for the levee modifications supporting an application for EDA grant request. HEC-HMS was used to investigate the possibility of a new pumping station. Completed an interior drainage analysis required for FEMA accreditation using HEC-HMS.

NDOT EMERGENCY SITES #5 AND #12 • NEBRASKA DEPARTMENT OF TRANSPORTATION • NORTHEAST, NE (2019) FYRA Engineering was selected to assist with emergency stream stability work at two sites in northeast Nebraska. Following significant rainfall events, several sites developed issues ranging from bank erosion and migration, to failure of an existing grade control structure, which threatened a highway bridge. Working with NDOT, FYRA quickly designed simple structures to combat bank erosion, as well as several options to replace a failed grade control structure. While each site had challenges, the grade control structure was unique due to the inability to dewater the site and large scour hole that had formed with the previous structure's failure. The rapid turnaround allowed the projects to be submitted for emergency funding with FHWA and are currently under construction.

PLATTE RIVER MODELING • PAPIO-MISSOURI RIVER NRD • SARPY COUNTY, NE (2018) Due to changes within the Platte River floodplain, the existing hydraulic model was deemed too inaccurate to estimate flood elevations. In an effort to improve upon the existing modeling, a 2-D HEC-RAS model was assembled along the lower Platte River to support the R-613 Levee Certification project. The 2-D hydraulic model took into account the dramatic effects of the mobile bed of the Platte River in an effort to calibrate the modeling of the largest event on record. Mobilized bed depths of up to 18-feet were found along several constrictions in the river alignment. The calibrated modeling assisted the creating of a steady-state 1-D HEC-RAS model through simplification of the complex ineffective areas as well as guiding the Manning's adjustments. Resulting base flood elevations were lowered by up to 1.4 feet over the steady state model with better calibration results.

CITY OF BLAIR SOUTH CREEK FLOOD MITIGATION • CITY OF BLAIR, NE • WASHINGTON COUNTY, NE (2018) Responsible for a feasibility analysis to determine if a drainage control structure could be constructed upstream to reduce floodplain extents (and subsequent flood damages). Oversaw development of a rainfall-runoff model (HEC-HMS) and a hydraulic model (HEC-RAS) to size an online drainage structure capable of reducing peak flows and flooding extents. Directed field survey efforts to collect channel, culvert, and roadway crossing information needed for model development. Also assisted with development of a Hazard Mitigation

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Grant Application to FEMA for potential federal funding to assist the City in addressing the flood-related issues.

NO-RISE CERTIFICATE FOR TD2 • TD2 • SARPY COUNTY, NE (2018) Responsible for oversight of a no-rise model for levee construction by a private landowner along the Platte River. The modeling consisted of three seasons (open water snow, open water rain, and ice affected) and spanned three overlapping FEMA models which did not correspond well to mapped conditions.

WANN PLANT NO RISE • WESTERN SAND & GRAVEL CO. • ASHLAND, NE (2017) Responsible for QA/QC of hydrologic and hydraulic modeling of the Wann Plant for WS&G. The plant desired to expand operations and required a no-rise permit to attain a floodplain development permit. Several alternatives were modeled before an optimal mining plan was discerned to prevent a rise from occurring.

BLUE RIVER BRIDGE SOUTH OF FAIRBURY • NEBRASKA DEPARTMENT OF TRANSPORTATION • JEFFERSON COUNTY, NE (2017) Lead H&H engineer on the project responsible for hydrologic and hydraulic analysis of existing and proposed bridge structures for Blue River Bridge to determine performance of proposed structure in relation to the effective Base Flood Elevation ensuring that FEMA guidelines were followed. A scour analysis was completed to determine the stability of the proposed structure.

US HIGHWAY 30 – ROGERS TO FREMONT EXPRESSWAY • NEBRASKA DEPARTMENT OF TRANSPORTATION • DODGE COUNTY, NE (2017) Project engineer responsible for H&H assessments of the Platte River and Rawhide Creek for project design and floodplain permitting. Performed ice jam analysis and seasonal hydrology for both taking existing levees and other flood control measures into consideration.

SOUTH LOGAN CREEK • NEBRASKA DEPARTMENT OF TRANSPORTATION • WAYNE, NE (2018) Lead H&H engineer on the project responsible for a 2-D hydraulic analysis (HEC-RAS) of a failing bridge structure on Logan Creek. Developed emergency and long-term repair options to protect Highway 15.

ELKHORN RIVER IPA BANK STABILIZATION DESIGN AND PERMITTING • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • DOUGLAS COUNTY, NE (2012) Design engineer performing 1-D and 2-D hydraulic modeling with sedimentation and scour simulations for stream stability work along the Elkhorn River. Hydraulic modeling in HEC-RAS and SMS (SRH2D) supported design work associated with mitigation and stability improvements following a significant flooding event in 2010.

2011 MISSOURI RIVER HIGH WATER MARKS • UNITED STATES CORPS OF ENGINEERS OMAHA DISTRICT • MISSOURI RIVER VALLEY (2012) Quality control reviewer and survey specialist for post-2011 flood high water marks surveyed, set and recorded along Missouri River from mouth to headwaters.

NURSERY BRIDGE HYDRAULIC MODELING • UNITED STATES ARMY CORPS OF ENGINEERS • WASHINGTON (2011) Design engineer performing hydraulic modeling for stream restoration work within a degrading channel downstream of a drop structure. Work included multiple sensitivity models to assess previous hydraulic modeling assumptions, design of A-Weir step pools for grade control, and meeting flow/velocity requirements for sustained fish passage. HEC-RAS and SMS (SRH2D) were used to model the stream and proposed improvements and direct design alternatives.

H&H ANALYSIS • UNION PACIFIC RAILROAD • NATIONWIDE (2008) Project engineer performing hydrologic and hydraulic investigations of railroad structure replacements throughout the United States. Studies included: site investigations, field survey, rainfall-runoff modeling using TR55, TR20, and HEC-HMS, steady and unsteady-state hydraulic routing using HEC-RAS, sediment and scour analysis, 401/404 and floodplain permitting, as well as failure analysis.

LAKES/WATER QUALITY

LAKE MANAWA WATER BUDGET AND NUTRIENT MASS BALANCE • IOWA DEPARTMENT OF NATURAL RESOURCES • COUNCIL BLUFFS, IA (CURRENT) Project engineer to develop water budget and analyze groundwater/surface water interaction of Lake Manawa, as well as to develop a nutrient mass balance model to assess water quality alternatives. Incorporates groundwater piezometer readings and water quality samples collected by FYRA staff.

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STORM LAKE DREDGING ENHANCEMENT • CITY OF STORM LAKE • STORM LAKE, IA (CURRENT) Project Engineer performing water balance modeling and alternative modeling for Riverside Lakes. Water balance modeling was constructed utilizing stochastic techniques to understand the uncertainty associated with the limited information available. Several alternatives were investigated and simulated to understand their impact on long-term water balance of the lake.

SUNDOWN LAKE HYDRAULIC DREDGING • SUNDOWN LAKE RURAL IMPROVEMENT ZONE • MORAVIA, IA (CURRENT) Providing hydraulics and geotechnical review and guidance related to water handling and sediment consolidation/dewatering components of a hydraulic dredging project to remove and store between 125,000 and 175,000 cubic yards of consolidated sediment from Sundown Lake, a private lake in Southern Iowa. Developed dewatering pump specifications, reviewed sediment underdrain design, and performed benchtop/laboratory study of sediment to estimate consolidation and dewatering rate of dredged slurry material.

RIVERSIDE LAKES BATHYMETRY AND DREDGING • RIVERSIDE LAKES • WATERLOO, NE (CURRENT) Project Engineer performing water balance modeling and alternative modeling for Riverside Lakes. Water balance modeling was constructed utilizing stochastic techniques to understand the uncertainty associated with the limited information available. Several alternatives were investigated and simulated to understand their impact on long-term water balance of the lake.

HEGI FARM DRAINAGE STUDY • BWJ ATTORNEYS • LINCOLN, NE (2013) Project Engineer and Expert Witness at a trial for Hegi Farms. The Project consisted of providing expert witness testimony and modeling regarding a drainage problem associated with recent construction by multiple parties.

CARTER LAKE WATERSHED MANAGEMENT AND FINAL ALTERNATIVES ANALYSIS • METROPOLITAN AREA PLANNING AGENCY • CARTER LAKE, IA, AND OMAHA, NE (2009) Project engineer for hydrologic and hydraulic investigation of proposed improvements to Carter Lake. Study included proposed seepage impacts, optimizing pumping scenarios, and a water budget utilizing stochastic methods.

LAKE MANAWA DIAGNOSTIC AND FEASIBILITY STUDY • IOWA DEPARTMENT OF NATURAL RESOURCES • COUNCIL BLUFFS, IA (2008) Project engineer for analysis of water budget and groundwater/surface water interaction of Lake Manawa. Work included stochastic modeling as well as seepage modeling with BlueBird and SeepW, and rainfall-runoff modeling with HEC-HMS.

STORMWATER

BLAIR HAZARD MITIGATION GRANT • CITY OF BLAIR • BLAIR, NE (2015) Project Engineer for hydrologic and hydraulic investigation into an online detention structure to mitigate flooding throughout Blair, Nebraska. The Project included a Hazard Mitigation Funding Application, FEMA BCA, and HAZUS modeling. The Project was halted for a subsequent LOMR filing when an error in H&H modeling was found that eliminated the need for the online detention structure.

BLAIR FLOODPLAIN MITIGATION FEASIBILITY STUDY • CITY OF BLAIR • BLAIR, NE (2015) Project Engineer for the hydrologic and hydraulic analysis associated with the remapping of several DFIRM panels through the City of Blair.

26TH AND CORBY NEIGHBORHOOD COMBINED SEWER SEPARATION STUDY AND DESIGN • CITY OF OMAHA • OMAHA, NE (2012) Design engineer for hydrologic and hydraulic investigation of combined sewer separation project. Modeling of the existing combined system included sensitivity analysis of downstream conditions and multiple proposed scenarios within Autodesk Storm and Sanitary Analysis (SSA). HEC-HMS was used to calibrate and validate rainfall-runoff assumptions within SSA.

AREA 34 WATER BALANCE • BARRICK/CORTEZ GOLD MINES • UT (2010) Project engineer developing a water balance simulation utilizing Monte Carlo simulations for a leachate storage pool and pumping system at a proposed gold mine. Work included development of functional water balance model incorporating proposed system design, meteorological assessments to develop statistical distributions for precipitation and evaporation data, modeling to assess design compliance with the International Cyanide Management Code (ICMC). HEC-HMS was utilized to formulate rainfall-runoff curves for incorporation into the probabilistic analysis. Unsteady-state HEC-RAS was utilized to model flow through diversion channels to assess potential of overtopping and violation of ICMC.

LIBERTY FUELS LIGNITE MINE • NORTH AMERICAN COAL • KEMPER COUNTY, MI (2010) Design engineer for hydrologic and hydraulic investigation of a proposed lignite mine for inclusion in Environmental Impact Study and necessary FERC permitting. HEC-HMS was utilized for rainfall-runoff and reservoir operations modeling. Steady-state and unsteady-state HEC-RAS models were

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developed to support levee design and assessment of changes in sediment load to a downstream wildlife management area.

WEST PAPILLION CREEK WATERSHED DFIRM MAPPING REVIEW • CITY OF PAPILLION • PAPILLION, NE (2008) Project engineer for independent review of recently completed DFIRM mapping of West Papillion Creek. Review of HEC-RAS and HEC-HMS Model of mapping revisions with reference to proposed flood reduction reservoirs.

OTHER

MISSOURI RIVER FEDERAL LEVEES R-613/616-613 LEVEE CERTIFICATION WSF APPLICATION • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT (2015) Economic analysis.

PAPILLION CREEK WATERSHED DAMS WP-6&7 WSF APPLICATION • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT (2015) Economic analysis.

CARTER LAKE WELL DESIGN AND PERMITTING • CITY OF OMAHA • OMAHA, NE (2010) Project engineer for the planning and design of the supplemental supply well and delivery system to Carter Lake.

PRESENTATIONS

GREGALUNAS, ROBERT. The Impact of Coincidental Flooding. In: Nebraska Floodplain and Stormwater Managers Association Conference 2019; Nebraska City, Nebraska.

GREGALUNAS, ROBERT. Changing Floodplains. In: Nebraska Planning and Zoning Association Annual Conference 2016; Kearney, Nebraska.

GREGALUNAS, ROBERT. ABC's of Levee Inspections. In: Association of State Flood Plain Managers Annual Meeting 2011; Louisville, Kentucky.

GREGALUNAS, ROBERT. Missouri River High Water Marks. In: Nebraska Floodplain and Stormwater Managers Association Conference; Kearney, Nebraska.

GREGALUNAS, ROBERT. Elkhorn River Flooding Post Flood Modeling and River Repair. In: Nebraska Floodplain and Stormwater Managers Association Conference 2013; Nebraska City, Nebraska.

GREGALUNAS, ROBERT. The Conjunctive Management Analysis Tool (CMAT) - Gaining Confidence on Your NRD's Water Use - Nebraska Association of Resources Districts Legislative Conference, Lincoln, Nebraska, January 2017.

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EDUCATION

BS CIVIL ENGINEERING - TEXAS
A&M UNIVERSITY (1994)

REGISTRATIONS

PROFESSIONAL ENGINEER:
NEBRASKA (#E-17243)
TEXAS (#87037)
MISSOURI (#2020002922)
NCEES (19-077-94)

AFFILIATIONS

AMERICAN PUBLIC WORKS
ASSOCIATION (APWA) – DIRECTOR
AND COMMUNICATIONS CHAIR

SOCIETY OF AMERICAN
MILITARY ENGINEERS (SAME)

NEBRASKA FLOODPLAIN AND
STORMWATER MANAGERS
ASSOCIATION (NEFSMA)

PAPILLION AREA LIONS CLUB

PAPILLION LA VISTA COMMUNITY
SCHOOLS BOARD OF DIRECTORS
MEMBER

CHI HEALTH MIDLANDS CAMPUS
COMMUNITY BOARD MEMBER

LEADERSHIP SARPY 2012-2013

SAME STUDENT MENTOR

MODELS & SOFTWARE

AUTOCAD CIVIL 3D

ARCGIS

GLOBAL MAPPER

HEC-HMS

HEC-RAS

SWMM 5

Lindy has over 26 years of civil engineering experience, with extensive experience in hydrologic and hydraulic modeling, levee analysis and design, stormwater pollution prevention, stormwater management design, residential and land development design, roadway design, and recreational trail design.

Lindy has been involved with student mentoring in various levels throughout her career. Currently, Lindy serves as a mentor with the Society of American Military Engineer's Student Mentoring Program and also serves on an advisory board focused on educating young ladies on careers in engineering. Lindy has worked with several area schools to assist educators in developing hands-on field studies and classroom teaching sessions that can be integrated with grade-specific curricula to better engage students in engineering, scientific principals, and general problem solving.

WORK EXPERIENCE

FYRA Engineering | Omaha, Nebraska
July 2012 to Current • Project Engineer/Manager/Owner

Tetra Tech | Omaha, Nebraska
October 2009 to June 2012 • Project Engineer

Ehrhart Griffin and Associates | Omaha, Nebraska
February 1996 to August 2006 • Project Engineer

Vickery and Associates | San Antonio, Texas
August 1994 to October 1995 • Engineer-in-Training

Ehrhart Griffin and Associates | Omaha, Nebraska
May 1992 to May 1994 • Survey Crew Member and CADD Technician

PROJECTS

LEVEES

FEDERAL LEVEE SYSTEMS R-613 AND R-616-613 LEVEE CERTIFICATION DESIGN, PERMITTING AND CONSTRUCTION • PAPIO-MISSOURI RIVER NRD • SARPY COUNTY, NE (CURRENT) Project engineer for the final design of \$22M in levee improvements required for levee certification and FEMA accreditation. The 18.2 miles of earthen levee systems protect billions in local infrastructure and commerce. Levee modifications include levee raises, closure section reconstruction at two locations, drainage penetration and flood gate structure rehabilitation/reconstruction, and seepage berm/relief well placement. Project work for the certification phase includes hydrologic and hydraulic modeling, sediment scour analysis, NEPA coordination, planning and cost analysis, and overall project coordination. All design information is being compiled into the project GIS database which will be used to provide the client with up-to-date and easily accessible information and system history. The project received 408 approval, which was coordinated with the USACE Omaha District Levee Safety group. Construction was delayed on this project because of the 2019 flood, but is currently underway. Construction is expected to be complete in 2021.

LITTLE PAPIO CHANNEL CULVERTS REHABILITATION • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • OMAHA, NE (CURRENT) Project engineer responsible for the preliminary and final design phases for 45 aging culvert penetrations through the federally constructed Little Papio Channel system. The preliminary design phase includes site investigations, topographic surveys, utility investigations, and detailed review and reporting of culvert video inspections. A list of culvert deficiencies was developed, and recommendations for rehabilitation methods will be provided to the client. Detailed cost estimates are being developed to assist the client with rehabilitation method

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selection. A full wetland delineation and associated report is being completed. Final design will include a detailed study of contributing drainage basins and hydrology for each culvert, culvert analysis to determine the optimum sizing of each structure which included HEC-HMS and HEC-RAS investigations on contributing drainage channels, design of bank stabilization methods at culvert outlets and an on-site constructability review with suppliers and contractors to ensure designed options were viable and cost-effective solutions. Coordination occurred with the City of Omaha and several private businesses will take place. Because these culverts all fall within a federally constructed channeled sections, this project requires a technical 408 review from the USACE Omaha District Levee Safety Group and 404 permits from the USACE Omaha District Regulatory Group.

NO NAME DIKE CULVERT REHABILITATION • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • OMAHA, NE (CURRENT) Project engineer responsible for the rehabilitation design of two aging CMP culverts through No Name Dike Levee along the Platte River left bank. The work included a site investigation and survey, review of culvert videos and assessment of the existing culvert conditions, development of a drainage report to assess discharge to the culverts, alternatives analysis of applicable rehabilitation methods, and the preparation of final construction documents including construction plans and specifications. Bidding just occurred on this project and FYRA will perform construction observation services on this project beginning in August.

SALT CREEK PENETRATION REPAIRS • LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT • LANCASTER COUNTY, NE (CURRENT) Project engineer responsible for rehabilitation of 4 aging CMP culvert through the Salt Creek federally constructed levee. The work included site investigations and site surveys, review of culvert videos and assessment of the existing culvert conditions, development of a drainage report to assess discharge to the culverts, alternatives analysis of applicable rehabilitation methods, and preparation of final construction documents including construction plans and bid documents and construction specifications. Because these culverts are within a federally constructed levee, a 408 approval of alterations was required and was coordinated with the USACE Omaha District Levee Safety Group. 404 permits were also coordinated with the USACE Omaha District Regulatory Division. FYRA will manage the project bidding and construction observation.

BIG PAPION CREEK LEVEE CULVERTS REPAIR – ALTERNATIVES DEVELOPMENT AND FINAL DESIGN PHASES 1 AND 2 • PAPIO-MISSOURI RIVER NRD • OMAHA, NE (CURRENT) Project engineer responsible for both the alternative analysis/development stage and final design stage for 29 aging culvert penetrations through the Big Papio levees. The alternatives analysis phase included site investigations, topographic surveys, utility investigations, and detailed review and reporting of culvert video inspections. A list of culvert deficiencies was developed, and recommendations were provided to the client. Detailed cost estimates were also developed to assist the client with rehabilitation method selection. The final design phase of the project included wetland delineations and reports, a detailed study of contributing drainage basins and hydrology for each culvert, culvert analysis to determine the optimum sizing of each structure which included HEC-HMS and HEC-RAS investigations on contributing drainage channels, design of bank stabilization methods at culvert outlets and an on-site constructability review with suppliers and contractors to ensure designed options were viable and cost-effective solutions. Coordination occurred with the City of Omaha and the City of Bellevue for culverts within the respective city limits. Because several of these culverts fall within federally constructed leveed/channeled sections or levees enrolled in the PL 84-99 program, these projects required technical review and 408 approval from the USACE Omaha District Levee Safety Group and 404 permits from the USACE Omaha District Regulatory Group.

CAMP ASHLAND FUSE PLUG REPAIR • LOWER PLATTE NORTH NRD • ASHLAND, NEBRASKA (2019) Engineer involved with the repair of the fuse plug that is an integral part of the Clear Creek Federal Levee System. Prepared construction documents, technical specifications and cost estimates for the project.

VALMONT LEVEE ASSESSMENT AND RISK ANALYSIS • VALMONT INDUSTRIES • VALLEY, NEBRASKA (2019) Project engineer responsible for the levee assessment and risk analysis for the levee that provides flood protection to the Valmont Industries plant in Valley, Nebraska. Work included a site survey and database development of all levee features, and comparison of existing levee height to the Platte River effective 1% Annual Chance Event water surface elevations to determine areas of risk. A technical memorandum was prepared that provided information on levee heights, road crossings, utilities, and encroachments, and made recommendations on how Valmont could reduce future flood risk to their site.

EMERGENCY ASSESSMENT OF THE PLATTE RIVER UPSTREAM OF FREMONT, NEBRASKA • OMAHA SAME POST STATE EMERGENCY RESPONSE TEAM (SERT) • FREMONT, NE (2019) Key member of the five person volunteer State Emergency Response Team responsible for assessing the condition of a series of levees upstream of Fremont. During the 2019 March flood event along the Platte River, several levees in the vicinity breached or became compromised and became areas of significant concern to the Dodge County and Nebraska

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Emergency Management teams. The team was deployed immediately and began a site assessment upstream near the Ames Diking levee which was breached. The group continued the site assessment downstream into Fremont and then began to review drone imagery of the entire area to determine the areas of risk. Within 36 hours, the team prepared a detailed assessment that defined the areas of vulnerability, provided a preliminary cost estimate for repair of the breached areas along with funding guidance, and developed a recommended path forward to reduce risk of flooding in the City of Fremont.

INVESTIGATIVE PHASE FOR CITY OF PAPIILLION LEVEE CERTIFICATION • CITY OF PAPIILLION • PAPIILLION, NE (2019) Project Engineer responsible for the investigative phase of the West Branch Papillion Creek levee certification project. In coordination with Papio-Missouri River Natural Resources District, the City of Papillion is investigating the viability of certifying the West Branch Papillion Creek levees. These levees were constructed by the Papio-Missouri River Natural Resources District in the late 1990s, but development in the watershed and increases in discharges through this area caused FEMA mapping updates to show that the levee provides no flood protection to the surrounding area. The work included an environmental site assessment and wetland delineation report, detailed site investigation and survey to categorize all the levee appurtenances, and development of a GIS database for the client to use in the future. Updates to the FEMA effective HEC-RAS model were made to include updated LiDAR and levee survey information and updated hydrology. A full geotechnical investigation was completed that included borings in the levee, and assessment of slope stability, seepage and settlement in the existing and proposed levee section. A final recommendation was made that include preliminary plans for levee modifications, a detailed cost estimate and full cost:benefit analysis.

O'KEEFE RESIDENCE • MR. TIMOTHY O'KEEFE • ASHLAND, NE (2016) Project engineer responsible for the review of the O'Keefe residence design plans in reference to the North Lake levee along the Platte River. The technical memorandum provided recommendations to strengthen the North Lake levee in the areas of the residence.

NORTH LAKE – PLATTE RIVER LEVEE INSPECTION • NORTH LAKE PARK ASSOCIATION • CASS COUNTY, NE (2014) Project engineer for the levee inspection and recommendation report for North Lake's Platte River Levee. Project involved an intensive site investigation to locate all levee deficiencies and an in-depth evaluation of both riverside and landside levee conditions. Prepared an in-depth report detailing all observations at 35 different levee locations. Recommendations were made to North Lake Park Association to identify areas in need of immediate attention and long-term operation and maintenance items that should be implemented.

FEDERAL LEVEE SYSTEMS R-613 AND R-616-613 INVESTIGATIVE PHASE AND ALTERNATIVE ANALYSIS PHASE • PAPIO-MISSOURI RIVER NRD • SARPY COUNTY, NE (2012) Project engineer for the investigative and alternative analysis phases required for FEMA accreditation. The investigative phase included levee inspections and final inspection report in accordance with the U.S. Army Corps of Engineers Levee Safety Program, stakeholder coordination, cost:benefit analysis, review of existing hydrology and hydraulics utilizing HEC-RAS, interior drainage analysis (HEC-HMS), and system analysis. Responsibilities during the alternative analysis phase included coordination of geophysical resistivity analysis and geotechnical field investigations, development of levee setback scenarios, sediment/scour research and analysis along the Papillion Creek and Missouri River, update of Platte River and Papillion Creek hydraulics, and 2011 flood inventory into GIS database.

LAKES/WATER QUALITY

BEVERIDGE MIDDLE SCHOOL WATER QUALITY AND DETENTION BASIN DESIGN • DLR ARCHITECTS • OMAHA, NE (2016) Lead engineer responsible for determining site hydrology and design of two water quality and water quantity basins and associated outlet structures required for a building site improvement project for the Omaha Public Schools.

CARTER LAKE WATER QUALITY IMPROVEMENTS FINAL DESIGN AND PERMITTING • METROPOLITAN AREA PLANNING AGENCY • CARTER LAKE, IA AND OMAHA, NE (2011) Responsible for storm sewer routing and wet detention pond design focused on the nutrient reduction of 320-acre Carter Lake. Utilized SWMM 5 to analyze existing storm sewer and proposed wet detention impacts.

RIVERS/STREAMS

BLAIR SOUTH/PLACID POND • NEBRASKA DEPARTMENT OF TRANSPORTATION • WASHINGTON COUNTY, NE (CURRENT) Project engineer responsible for the assessment and alternatives analysis required to mitigate erosion damage from a culvert passing under a Nebraska State Highway near Blair, Nebraska. Prior to the construction of the highway discharge from the area flowed into a stream which was adjacent to a private landowners property. Changes in the discharge timing and velocities caused the stream channel to begin

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migrating through the private property. Responsibilities on the project included determining site hydrology and developing HEC-RAS hydraulic models that looked at several alternatives to mitigate the channel migration and head cut of the existing stream.

PARCEL LEVEL FLOOD RISK ASSESSMENT AND MITIGATION PLAN • CITY OF DESHLER • DESHLER, NE (CURRENT) Project engineer responsible for developing a parcel levee flood risk assessment for the City of Deshler, Nebraska. Developed documents and coordinated all reporting as required for all projects funded with FEMA Hazard Mitigation Grant dollars. Oversaw the development of updated hydrologic (HEC-HMS) and hydraulic (HEC-RAS) models to better understand the method and extents of flooding and options that may be considered to mitigate flooding. Responsible for site survey and development of parcel level and city level mitigation options that would provide flood mitigation in the area. Conducted all public meetings to inform residents of the plan, met with individual parcel owners, prepared parcel level reports for each parcel in the study area, and prepared an update to the City of Deshler's Hazard Mitigation Plan that included a technical memorandum of all the work completed during the study and assessment.

STORMWATER

LONG ROAD CULVERT DESIGN • SID NO. 3 • SAUNDERS COUNTY, NE (2020) Project engineer responsible for the design of a road culvert through Long Lane. In the past, a culvert ran under Long Lane to discharge water from an upstream pond. Long Lane acted as a low-hazard dam until the original culvert and associated riser failed and washed the road away. The design for this project required coordination with the Nebraska Dam Safety division to ensure that the culvert was designed so that water was not impounded behind the road and that Long Lane would not be considered a dam. Coordination also occurred with the USACE Omaha District Regulatory Division to ensure mitigation of wetlands would not be required. Construction drawings, bid documents and project specifications were created and project bidding was facilitated. The project is currently under construction and FYRA is providing construction observation for the client.

HEMMINGSEN PROPERTY STORMWATER CALCULATIONS • CHERYL HEMMINGSEN • COUNCIL BLUFFS, IA (2018) Project engineer responsible for preparing a hydrologic study assessing the pre- and post-hydrologic conditions to a landowner's property from the construction of a residential subdivision upstream of the landowner's property.

SITE EVALUATION FOR OMAHA PUBLIC SCHOOLS • OMAHA PUBLIC SCHOOLS • OMAHA, NE (2016) Project engineer responsible for investigation of two sites that were candidates for future district schools. Investigation focused on stormwater and stormwater conveyance through the project sites to determine the probability of jurisdictional water ways and permitting requirements for future construction. Investigation included on-site inspection and surrounding drainage areas, research of historic drainage patterns, determination of USGS soil classifications, review of FEMA digital maps, and review of Title 117 stream and lake databases. Site specific narratives and recommendations were prepared to assist the Omaha Public Schools in site selection decisions.

MONTESSORI CO-OP SCHOOL RAIN GARDEN AND DRAINAGE SWALE • MONTESSORI CO-OP • OMAHA, NE (2016) Project engineer responsible for preliminary design of several on-site rain gardens to help alleviate current drainage problem areas and develop an educational space for active learning. Project work included site investigations to determine on-site drainage patterns, contributing drainage, and hydrology. Work also involved interaction with school parent groups to determine needs, wishes, and maintenance participation. Plans were developed for two rain gardens to capture and detain overland flow and roof drains and remediate on-site drainage issues. Assisted parent co-op in successfully applying for a grant to assist with construction and plant purchases for rain gardens.

CITY OF BLAIR LOMR SUBMITTAL FOR CAUBLE CREEK • CITY OF BLAIR • WASHINGTON COUNTY, NE (2016) Lead engineer responsible for refining basin hydrology and hydraulics along Cauble Creek. Involved in public meetings to present the results of the study to the public, coordination with FEMA STARR team for the LOMR submittal and client coordination. The project was approved by FEMA in November 2018.

CITY OF BLAIR HAZARD MITIGATION GRANT • CITY OF BLAIR • WASHINGTON COUNTY, NE (2016) Engineer responsible for development of a FEMA Hazard Mitigation Grant Application for a proposed detention site to reduce flood hazards along South Creek in the city of Blair, Nebraska. Developed a feasibility study and cost estimate of a possible detention site for flood mitigation. After determining that efficiencies could be gained through updating hydrology and hydraulics for South Creek, led the team to refine basin hydrology to determine design storm discharges and the hydraulic model to develop an accurate floodway model for LOMR submittal. The project

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was approved by FEMA in September 2018.

CITY OF BLAIR HAZARD MITIGATION GRANT • CITY OF BLAIR, NEBRASKA • WASHINGTON COUNTY, NE (2015) Project manager for the evaluation of a proposed detention structure within the City of Blair, Nebraska. This project involved recreating the effective HEC-RAS model for Cameron Ditch Tributary 1, and using this model, evaluated the proposed detention structure. A cost:benefit analysis using FEMA's BCA Module was completed to determine the maximum flood benefit that can be provided. Project included preparation of a Hazard Mitigation Grant application for the selected alternative and final presentation to Blair City Council members and city staff.

26TH & CORBY NEIGHBORHOOD COMBINED SEWER SEPARATION STUDY AND DESIGN • CITY OF OMAHA PUBLIC WORKS DEPARTMENT • OMAHA, NE (2012) Design engineer responsible for assisting in the development of the stormwater model for the partial separation of the combined sewers in the project vicinity.

FIRST UNION SID 2005 • CITY OF LAFAYETTE • LAFAYETTE, CO (2006) Roadway design and construction plans for gravel roads in SID 2005. Responsible for roadway design and detailed drainage analysis to determine acceptable design cross sections for drainage and economy. Prepared all construction drawings including demolition plans, drainage plans, plan and profiles and detailed cross sections. Cross sections were shown at 10-foot intervals with stormwater to ensure all drainage was within acceptable limits as defined by the City of Lafayette.

HILLS OF CEDAR CREEK • DUGGAN LAND DEVELOPMENT • COUNCIL BLUFFS, IA (2005) Design engineer assisting in the design of stormwater detention basins and preparation of final construction drawings for a 110-acre, 245-lot residential subdivision in Council Bluffs, IA.

FERNDALE SUBDIVISION (PHASE I AND PHASE II) • DUGGAN LAND DEVELOPMENT • COUNCIL BLUFFS, IA (1998) Design engineer responsible for the design and preparation of construction documents for a 164-lot residential subdivision in Council Bluffs Iowa. Responsibilities included design and preparation of overlot grading and erosion control plans, drainage analysis and detention basin design. Prepared paving, sanitary sewer, storm sewer and erosion control plans in accordance with the City of Council Bluffs guidelines. Performed all design calculations for storm sewer. Responsible for monitoring all construction staking and field inspection activities during the construction phase of the project.

NORTHRIDGE SUBDIVISION • TOWN OF ERIE • ERIE, CO (1997) Design and preparation of construction documents for a 73-lot residential subdivision in Erie, Colorado. Prepared overlot grading and erosion control plans using Town of Erie and City of Denver guidelines for residential development. Designed and prepared roadway and utility plans and profiles for all subdivision roadways. Design included sanitary sewer and water layouts. Performed drainage calculations to design storm sewer system including several detention basins, storm release outfall structures and inverted siphons.

BOBOLINK DRAINAGE STUDY • CITY OF SAN ANTONIO • SAN ANTONIO, TX (1994) Analysis and redesign of an existing drainage channel within the City of San Antonio, Texas. Analyzed existing and proposed drainage conditions to determine areas of concern. Designed several options for drainage improvements and developed cost and quantity estimates for each option.

OTHER

PLATTE RIVER BICYCLE/PEDESTRIAN TRAIL • PAPIO-MISSOURI RIVER NRD • SARPY COUNTY, NE (2006) Responsible for design of trail, drainage analysis and culvert design for 2.4 miles of concrete bicycle/pedestrian trail. Prepared all construction drawings for the project including plan and profile sheets, and detailed cross sections for project length. Coordinated with utilities to develop alternate routings. Worked with the client on submittals required to procure government funding.

BELLEVUE LOOP TRAIL (PHASE III) • PAPIO-MISSOURI RIVER NRD • SARPY COUNTY, NE (1999) Responsible for design of 2.4 miles of concrete bicycle/pedestrian trail. Developed detailed plan and profile sheets for all bridge undercrossing areas to ensure that activities would not impact the respective floodway. Worked closely with the Papio-Missouri River NRD to ensure that flood protection level of levees were maintained at all times during construction. Obtained all permits and easements required for construction activities and worked closely with the client to ensure all forms and permits required for government funding were submitted and finalized.

LINDY ROGERS, PE

OWNER-PROJECT ENGINEER

CHALCO HILLS CONNECTOR TRAIL • PAPIO-MISSOURI RIVER NRD • OMAHA, NE (1999) Responsible for design of 1-mile concrete connector trail. Developed all construction drawings.

HALLECK PARK TRAIL • PAPIO-MISSOURI RIVER NRD AND CITY OF PAPIILLION • PAPIILLION, NE (1998) Responsible for design of 2.7 miles of concrete bicycle/pedestrian trail. Developed detailed plan and profile sheets for all bridge undercrossing areas to ensure that activities would not impact the respective floodway. Worked closely with the Papio-Missouri River NRD to ensure that flood protection level of levees were maintained at all times during construction. Obtained all permits and easements required for construction activities and worked closely with the client to ensure all forms and permits required for government funding were submitted and finalized. Performed field inspection and coordination during construction phase of the project.

KEYSTONE TRAIL PHASE V • PAPIO-MISSOURI RIVER NRD • OMAHA, NE (1998) Responsible for design of 2.6 miles of concrete bicycle/pedestrian trail. Developed detailed plan and profile sheets for all bridge undercrossing areas to ensure that activities would not impact the respective floodway. Worked closely with the Papio-Missouri River NRD to ensure that flood protection level of levees were maintained at all times during construction. Obtained all permits and easements required for construction activities and worked closely with the client to ensure all forms and permits required for government funding were submitted and finalized. Performed field inspection and coordination during construction phase of the project.

WELD COUNTY ROAD 10.5 • WELD COUNTY, CO (1997) Roadway design for 1.1 miles of construction. Responsible for design of roadway, drainage, drainage channel and irrigation ditch crossing, as well as utility coordination. Prepared all construction drawings, coordinated for utility relocations and worked closely with the Colorado Department of Transportation to procure state funding for the project.

ROADWAY RENOVATION PROJECTS • TEXAS DEPARTMENT OF TRANSPORTATION • SAN ANTONIO, TX (1994) Preparation of construction plans for three roadway improvement projects within the City of San Antonio, Texas. Responsible for developing preliminary and final design of improved roadway sections. Created plan and profiles, cross sections and drainage plans, and assembled guidelines to ensure against stormwater pollution, erosion and sedimentation during the construction process. Developed preliminary cost and quantity estimates.

REFERENCES

MR. PAUL WOODWARD, PE | GROUNDWATER MANAGEMENT ENGINEER | PAPIO-MISSOURI RIVER NRD | PWOODWARD@PAPIONRD.ORG | 402.444.6222

MR. ALLEN SCHOEMAKER | DIRECTOR OF PUBLIC WORKS | CITY OF BLAIR, NEBRASKA | ARS@BLAIRNEBRASKA.ORG | 402.426.4195

JANEL KAUFMAN, PE

ENVIRONMENTAL ENGINEER/PERMITTING



Janel has over 12 years of experience in environmental permitting and civil engineering design across the country and her diverse background provides her with a unique perspective as an environmental engineer. Janel has worked on a wide variety of projects involved with every level of government (federal, state and local) and has worked on projects ranging from watershed plans to water rights determinations. She is extremely knowledgeable with the NEPA process and has been involved with projects in all aspects of permitting and design including site and watershed investigations, report writing, data collection and analysis, application development, and public involvement. Janel has a BS in Civil Engineering from the University of Nebraska, an MS in Civil and Environmental Engineering from the University of California-Berkeley, and is a licensed Civil Engineer.

EDUCATION

MASTER OF SCIENCE CIVIL AND ENVIRONMENTAL ENGINEERING UNIVERSITY OF CALIFORNIA - BERKELEY (2006)

BACHELOR OF SCIENCE CIVIL ENGINEERING - UNIVERSITY OF NEBRASKA - OMAHA (2005)

REGISTRATIONS

PROFESSIONAL ENGINEER: SOUTH CAROLINA (#28225, 2010)

AFFILIATIONS

ENGINEERS WITHOUT BORDERS

GARRETT ACADEMY PRE-ENGINEERING ADVISORY NEBRASKA FLOODPLAIN AND STORMWATER MANAGERS ASSOCIATION

NATIONAL ASSOCIATION OF ENVIRONMENTAL PROFESSIONALS

PARTNERSHIP 4 KIDS

SOFTWARE

AUTOCAD, AUTODESK, MICROSTATION AND INROADS

ARCGIS

HEC-2 AND HEC-RAS

GEOPAK DRAINAGE

HY-8

WORK EXPERIENCE

FYRA Engineering | Omaha, Nebraska
March 2016 to Current • Project Environmental Engineer

Union Pacific Railroad | Omaha, Nebraska
January 2015 to March 2016 • Project Design Engineer / Manager Structures Design

HDR Engineering, Inc. | Charleston, South Carolina
May 2007 to September 2012 • Environmental Engineer

Stetson Engineers | San Rafael, California
June 2006 to March 2007 • Water Resources Engineer

Omaha Public Power District | Omaha, Nebraska
April 2003 to July 2005 • Engineering Co-Op

PROJECT EXPERIENCE

WAHOO CREEK WATERSHED PLAN-ENVIRONMENTAL ASSESSMENT • LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT • WAHOO, NE (CURRENT) Environmental engineer leading funding applications, NRCS and other agency coordination, stakeholder involvement, and Plan and Environmental Assessment development. Project includes preparing and submitting applications for funding assistance. Funding awarded to the project includes Natural Resources Commission Water Sustainability Fund, NRCS Regional Conservation Partnership Program, and NRCS Watershed and Flood Prevention Operations Program. Preparation of NRCS Watershed Plan and NEPA document includes analysis of watershed characteristics and alternatives analysis study to provide NEPA and Clean Water Act Section 404 compliant flood risk reduction to the watershed. Project also includes developing a public participation plan and leading the coordination of multi-agency and public meetings to help guide discussions regarding goals of project and involve stakeholders at all levels throughout the planning process. Environmental resources assessment includes threatened and endangered species review and coordination with USFWS, NGPC and NRCS, working with NRCS for the cultural resources review, social and demographic assessment, erosion and sedimentation, as well as preliminary design and economics analysis to determine cost:benefit ratio and selection of NED plan. Field assessment includes assessment of existing habitat, woodlands, and wetland and waters of the United States determination that complies with NRCS and USACE guidelines.

DUCK AND BUCK CREEK SUPPLEMENTAL WATERSHED PLAN-ENVIRONMENTAL ASSESSMENT • NEMAHA NATURAL RESOURCES DISTRICT • NEMAHA COUNTY, NE (2019) Environmental engineer leading NRCS and other agency coordination, stakeholder involvement and Environmental Assessment. Project includes preparation of an NRCS approved, NEPA compliant Supplemental Watershed Plan and Environmental Assessment and Clean Water Act Section 404 permit. Field assessment includes

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ENVIRONMENTAL ENGINEER/PERMITTING

assessment of existing woodlands, including a tree survey, and identification of wetlands, other waters of the United States, and wetlands covered under the swampbusters provisions to comply with both NRCS and USACE guidelines.

PAPILLION CREEK SUPPLEMENTAL WATERSHED WORK PLAN-EA • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • PAPILLION, NE (CURRENT) Environmental engineer leading the planning effort of seven grade stabilization and flood damage reduction structures within the Papillion Creek Watershed. Preparation of the Supplemental Watershed Work Plan and Environmental Assessment includes NRCS and other agency coordination, assessment of sensitive resources, wetland delineations.

PAPILLION CREEK WATERSHED REGIONAL DETENTION SITE WP 2 - PRELIMINARY DESIGN • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • SARPY COUNTY, NE (CURRENT) Permitting lead for the Clean Water Act Section 404 individual permit for the rehabilitation of an existing dam site including wetland and other jurisdiction waters of the United States determination, stream assessment of current and future conditions using the Nebraska Stream Condition Assessment Protocol, agency coordination, and wetland and stream mitigation plan. Responsible for permitting oversight, client and agency coordination, leading field analysis, assisting with design decisions related to minimizing wetland impacts and other permitting obstacles, preparation and analysis of the 404(b)(1) alternatives analysis, and document preparation and review.

WEST LAKE (LAKE OF THE HILLS) SCOTT COUNTY CONSERVATION BOARD • IOWA DEPARTMENT OF NATURAL RESOURCES • DAVENPORT, IA (2019) Permitting lead for nine nationwide and one individual Clean Water Act Section 404 permits including wetland and other jurisdiction waters of the United States determination, identifying stream mitigation requirements using the Iowa Stream Mitigation Method, agency coordination, and wetland and stream mitigation plan. Responsible for permitting oversight, client and agency coordination, leading field analysis, assisting with design decisions related to minimizing wetland and stream impacts and other permitting obstacles, and 404 document preparation and review.

SOUTHERN SARPY WATERSHED MANAGEMENT PLAN • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • SARPY COUNTY, NE (CURRENT) Environmental engineer responsible for environmental resources analysis and stream stability analysis of Buffalo Creek Basin, Springfield Creek Basin and Zwiebel Creek Basin, and client and agency coordination. Project includes analysis of existing and future conditions, hydrologic and hydraulic analysis, and stream stability analysis using field and desktop assessments to identify and document areas of significant concern and assess potential effects of watershed development. Project also includes water quality analysis and environmental analysis, including desktop and field collection of data on environmentally sensitive areas; developing and implementing protocol to assess and analyze existing conditions, assess and mitigate potential impacts to environmentally sensitive areas; and compiling all data into GIS and within the written Plan.

BIG PAPIO LEVEE CULVERTS PROJECT PHASE 2 • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • DOUGLAS AND SARPY COUNTIES, NE (CURRENT) Environmental engineer and permitting lead for fifteen Clean Water Act Section 404 nationwide permits to replace levee penetrations. Responsibilities include field determination of wetlands and other jurisdictional waters of the United States, agency coordination, and document preparation and review.

BLAIR SOUTH DRAINAGE PROJECT • NEBRASKA DEPARTMENT OF TRANSPORTATION • WASHINGTON COUNTY, NE (CURRENT) Permitting lead for the Clean Water Act Section 404 permit for the stream and wetland restoration and enhancement of over 500 feet of deeply incised channel and existing wetlands including determination of wetlands and other jurisdiction waters of the United States, stream assessment of current and future conditions using the Nebraska Stream Condition Assessment Protocol, and agency coordination. Responsible for permitting oversight, client and agency coordination, leading field analysis, assisting with design decisions related to minimizing wetland impacts and designing a permissible project, and document preparation and review.

MISSOURI RIVER FEDERAL LEVEE SYSTEMS R-613 AND R-616-613 LEVEE CERTIFICATION DESIGN AND PERMITTING • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • SARPY COUNTY, NE (CURRENT) Environmental engineer responsible for assisting with field determination of wetlands and other jurisdictional waters of the United States and review of Clean Water Act Section 404 permit and NEPA Environmental Assessment documents.

OAKBROOK CHANNEL STABILIZATION DESIGN CITY OF OMAHA PUBLIC WORKS DEPARTMENT • OMAHA, NE (2018) Environmental engineer for agency coordination, analyzing existing and future conditions using the Nebraska Stream Assessment Protocol, obtaining Section 404 Nationwide permit, and minimizing stream impacts and design for stormwater pipe extension and channel

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restoration. Also responsible for tree survey, tree mitigation plan, and developing monitoring plan and documents.

PAPILLION CREEK WATERSHED REGIONAL DETENTION SITES WP 6&7 PLANNING, PERMITTING, AND FINAL DESIGN • PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT • SARPY COUNTY, NE (2017) Environmental engineer responsible for assisting with the Section 404 permit individual permit application, 404(b)(1) alternatives analysis, analysis of existing environmental resources, stream mitigation plan, and review of wetland determination and stream assessment documents of two regional detention dams that are part of the Papillion Creek Watershed Plan to reduce flooding on the Papillion Creek.

DAM REHABILITATIONS DESIGN, PERMITTING AND CONSTRUCTION • LOWER PLATTE SOUTH NATURAL RESOURCES DISTRICT • NE (CURRENT) Environmental engineer for desktop review and field assessment of project sites including determination of wetlands and other waters of the United States when applicable, and Section 404 permitting including agency and client coordination for the rehabilitation of aging NRCS-designed dam structures.

PAPILLION CREEK HYDROLOGY UPDATE • PAPIO-MISSOURI RIVER NRD • SARPY AND DOUGLAS COUNTIES, NE (2016) Responsible for the review and update of hydrologic models used by FEMA for remapping efforts in Sarpy and Douglas Counties and determination of storm size that was utilized in the HEC-HMS hydrologic model. Calibrated the hydrologic model to past storm events and updated the hydraulic analysis of Big Papillion Creek utilizing an unsteady-state model in HEC-RAS.

ENVIRONMENTAL SERVICES

BLAIR SOUTH, PLACID POND • NEBRASKA DEPARTMENT OF TRANSPORTATION • WASHINGTON COUNTY, NE (2018) Environmental engineer responsible for wetland delineation, wetland report, stream assessment, agency coordination, obtaining 404 Nationwide permit, and minimizing stream impacts.

PAPILLION LEVEE CERTIFICATION INVESTIGATIVE PHASE • CITY OF PAPILLION • PAPILLION, NE (CURRENT) Environmental engineer responsible for leading desktop review and field investigation of over five miles of existing levees to determine locations of wetlands and other jurisdictional Waters of the United States and preparation and review of reporting documents.

SCDOT US 17 WIDENING – ACE BASIN DESIGN-BUILD • SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION • BEAUFORT COUNTY, SC (2012) Environmental engineer for monitoring, evaluating, and reporting on environmental compliance of federal, state, and local guidelines, regulations, and laws. Assisted in the interpretation and implementation of engineering erosion control design plans to ensure environmental compliance.

I-385 IMPROVEMENTS • SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION • GREENVILLE COUNTY, SC (2011) Environmental engineer for analyzing environmental data and preparing USACE Nationwide Maintenance Permit and Environmental Compliance Plan.

US-78 OVER S-39 AND SCL RAILROAD • SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION • CHARLESTON COUNTY, SC (2011) Environmental engineer for writing and obtaining storm water permit for bridge replacement.

BASSETT REDEVELOPMENT • TOWN OF MOUNT PLEASANT • MOUNT PLEASANT, SC (2011) Project manager for writing and obtaining storm water permit for parking lot and side street redevelopment.

JOHNNIE DODDS IMPROVEMENTS PHASE 3 • TOWN OF MOUNT PLEASANT • MOUNT PLEASANT, SC (2011) Environmental engineer for performing storm water permit review for road improvement project.

STORMWATER

HUNGRY NECK BLVD. PHASE IV • TOWN OF MOUNT PLEASANT • MOUNT PLEASANT, SC (2010) 2012 Project engineer for performing drainage design using Geopak Drainage for a two-mile new location roadway project and the design of crossline drainage, storm water BMPs, and erosion control design. Wrote and obtained storm water permit. Conducted environmental investigations and analyzed environmental data to write and obtain Section 404/401 Nationwide permit.

HARBOR VIEW ROAD IMPROVEMENTS • CHARLESTON COUNTY • CHARLESTON COUNTY, SC (2012) Project engineer for performing drainage design using Geopak Drainage for a two-mile roadway widening project. Designed of cross line drainage, storm water BMPs, and

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ENVIRONMENTAL ENGINEER/PERMITTING

erosion control design. Wrote and obtained storm water permit. Participated in public meetings to communicate engineering design alternatives to the public and other interested groups and to provide assistance and advice to resolve public concerns and engineering design and environmental concerns.

SIX-MILE MASTER PLAN • TOWN OF MOUNT PLEASANT • MOUNT PLEASANT, SC (2012) Project engineer for assisting with erosion control design for parking lot expansion and road improvement. Lead, wrote, and obtained storm water permit.

SILAS CREEK WATERSHED PROJECT • WINSTON-SALEM, NC (2012) Project engineer for performing hydrologic calculations and creating, updating and calibrating XPSWMM watershed model for the Silas Creek watershed.

GEORGETOWN COUNTY STORM WATER ORDINANCE • GEORGETOWN COUNTY • GEORGETOWN COUNTY, SC (2011) Project engineer for writing and updating Storm Water Management Ordinance for Georgetown County, South Carolina.

CELIVER ROAD WIDENING • SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION • ROCK HILL, SC (2011) Project engineer for performing hydrologic and hydraulic analysis for drainage and erosion control design for 1.2-mile road widening project. Lead writer for Environmental Assessment NEPA document.

SCDOT US 17 WIDENING – ACE BASIN DESIGN REVIEW • SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION • BEAUFORT COUNTY, SC (2011) Project engineer for performing drainage and erosion control design review for the US 17 Design-build widening project.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RAIL • ALAMANCE COUNTY, NC (2010) Project engineer for performing drainage and erosion control design on a 1.5-mile railroad siding and main line relocation project near Graham, North Carolina. Duties included field assessment of existing structures, ditch stability calculations, design of cross line drainage, and erosion control design.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION OPEN-END HYDRAULICS CONTRACT • NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (2010) Project engineer for performing roadway drainage design, culvert hydraulics and bridge hydraulics on various roads, culverts and bridges throughout the state.

HUNGRY NECK/I-526/US 17 INTERCHANGE • TOWN OF MOUNT PLEASANT • MOUNT PLEASANT, SC (2010) Project engineer for performing drainage design using Geopak Drainage for a proposed interchange and the design of crossline drainage, storm water BMPs, and erosion control design. Wrote and obtained storm water permit.

DUKE ENERGY CORPORATION RECONSTRUCTION OF THE LEE RAIL SPUR • DUKE ENERGY CORPORATION • CHEROKEE COUNTY, SC (2010) Project engineer for performing hydrologic and hydraulic analysis of existing crossline culverts and providing design recommendations.

CHARLOTTE AREA TRANSIT SYSTEM NORTH CORRIDOR COMMUTER RAIL PROJECT • CITY OF CHARLOTTE • MECKLENBURG AND IREDELL COUNTY, NC (2009) Project engineer for performing drainage design on 25-mile railroad upgrade and track relocation. Duties included field data collection, hydraulic analysis of crossline drainage structures, ditch stability calculations, and erosion control design.

OTHER

PORT OF TUCSON UNIVERSAL CROSSOVER • UNION PACIFIC RAILROAD • TUCSON, AZ (2016) Project manager for coordination and track design of universal crossover and rail raise.

PORT OF TUCSON INDUSTRIAL LEADS • UNION PACIFIC RAILROAD • TUCSON, AZ (2016) Project manager for coordination and track design of multiple industrial leads.

LORDSBURG MANIFEST • UNION PACIFIC RAILROAD • NEW MEXICO (2016) Project manager for track design and structures design, coordination, and track design of Lordsburg Manifest Yard.

MCCONNELL AIR FORCE BASE ENVIRONMENTAL ASSESSMENT OF INSTALLATION DEVELOPMENT • U.S. DEPARTMENT OF DEFENSE • KS (2012) Project engineer for performing environmental investigations and data analysis to write noise sections of IDEA document.

JOINT BASE CHARLESTON ENVIRONMENTAL ASSESSMENT • U.S. DEPARTMENT OF DEFENSE • NORTH CHARLESTON, SC (2012) Project engineer for conducting environmental investigations and analysis, and writing the Cumulative Effects and Cumulative Impacts for Environmental Assessment.

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FAIRCHILD AIR FORCE BASE ENVIRONMENTAL ASSESSMENT OF INSTALLATION DEVELOPMENT • U.S. DEPARTMENT OF DEFENSE 8 • WA (2012)
Project engineer for performing environmental investigations and data analysis to write noise sections of IDEA document.

I-95/US-301 INTERCHANGE IMPROVEMENT AND US-301 EXTENSION TO SC-6 • SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION • ORANGEBURG COUNTY, SC (2012) Project engineer for performing wetland field investigation, data analysis, and preparation for Jurisdictional Determination for USACE. Performed data analysis and assist with preparation of Environmental Assessment.

SC-707 • SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION • HORRY COUNTY, SC (2012) Project engineer for performing data analysis and impact calculations to prepare and submit Individual Permit for USACE.

WELLFORD LANDFILL METHANE AND GREENHOUSE GAS TO ENERGY PROJECT • SPARTANBURG COUNTY • SPARTANBURG COUNTY, SC (2011)
Project engineer for conducting field investigation for wetland and jurisdictional waters delineation and preparation of Jurisdictional Determination for USACE. Assisted in the analysis of environmental data to write Environmental Assessment NEPA document.

CSX TRANSPORTATION EROSION CONTROL • CSX TRANSPORTATION • TROUP COUNTY, GA (2011) Project engineer for performing multi-phase erosion control design on a railroad siding and storage track project in West Point, Georgia.

W. DAVIDSON AVE BRIDGE REPLACEMENT • CITY OF GASTONIA • GASTONIA, NC (2009) Project engineer responsible for creating and improving HEC-2 model for existing and proposed bridge conditions.

CONOCONNARRA SWAMP • SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION 8 • HALIFAX COUNTY, NC (2009) Project engineer for analyzing and updating HEC-RAS model for bridge replacement. Prepared Bridge Survey Report and No Rise Certification.

LITTLE FISHING CREEK • SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION • HALIFAX COUNTY, NC (2009) Project engineer for analyzing and updating HEC-RAS model for bridge replacement. Calculated and compared current and proposed FEMA flood zones and created Conditional Letter of Map Revision.

PROFESSIONAL REFERENCES

TOM MOUNDFORD • LPNDRD • 402.443.5339

AMY ZOTSKI • FHU • 402.858.3276

AMANDA GRINT • P-MRNRD • 402.315.1722

Joint Water Management Advisory Board
August 4, 2020 - 9:00 A.M.
Fremont Municipal Building, 2nd Floor Meeting Room,
400 East Military, Fremont Nebraska

Videoconference Meeting Participation Notice

In the interest of public health and safety, this meeting will be conducted both in person and online through the Zoom link below. Citizens may also call into the meeting by dialing one of the numbers listed below.

Join Zoom Meeting

<https://zoom.us/j/95129201187>

Meeting ID: 951 2920 1187

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Agenda:

1. Meeting called to order – Bob Missel
2. Roll call.
3. Approval of the minutes from the May 19, 2019 meeting.
4. Grant Updates
 - a.
 - b. Elkhorn Township Drainage Study – Tom Smith
 - c. Platte River Cameras and Sensors – Tom Mountford/Tom Smith
 - d. Platte River Breach (Rod & Gun Club) – Tom Mountford/Tom Smith
 - e. North Bend Drainage District – Larry Ruzicka/Tom Smith
 - i. Letters of commitment for local match

- f. Joint Water Management Advisory Board Resiliency Plan – Lottie Mitchell
 - i. Hazard Mitigation Grant Program
 - ii. EDA FY2019 Disaster Supplemental Funding
 - iii. Natural Resources Conservation Service Watershed & Flood Prevention Operations
 - g. Ames Dike – Grant Hanson
 - h. Community Development Block Grant Funding Opportunities – Susan Nickerson
5. Other grants
 6. Member updates
 7. Public comments
 8. Adjournment.

A meeting notice was printed in the Fremont Tribune and the agenda was posted at the Municipal Building on July 29, 2020, 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 2nd floor meeting room for review by the public.

**Joint Water Management Advisory Board
Meeting Minutes, May 19, 2019 - 9:00 A.M.
Fremont Municipal Building, 2nd Floor Meeting Room,
400 East Military, Fremont Nebraska**

1. **Meeting called to order.** A meeting of the Joint Water Management Advisory Board (JWMAB) was called to order by Bob Missel. It was noted that a copy of the Open Meetings Act is posted continually for public inspection near the entrance door and a notice of the meeting was printed in the Fremont Tribune.
2. **Roll call.** Authorized representatives and guests attending in person and by Zoom were asked to identify themselves and are shown on the attached attendance sheet. A quorum was established.
3. **Approval of the November 5, 2019 meeting minutes.** A motion was made by Nielsen and seconded by Saalfeld to approve the meeting minutes as submitted. Ayes: City of Fremont: Jacobus and Jensen; City of North Bend: Busse; Cotterell Dike: Eason; Ames Dike: Hansen; SID #5: Arps; Lower Platte North Natural Resource District (LPNNRD): Saeger and Pollard; Dodge County: Missel and Saalfeld; Inglewood: Nielsen; and North Bend Drainage: Ruzicka and Taylor. Nays: none. Motion carried 9-0.
4. **Dodge County Hazard Mitigation Grant Program (HMPG) projects update – Tom Smith, Dodge County Emergency Management Director.**
 - a. **Elkhorn Township Drainage Study.** Smith reported that Dodge County received that the Notice of Interest for a study of Elkhorn Drainage has been prioritized for an Advance Assistance Grant through the Nebraska Emergency Management Agency (NEMA). Smith is working with Haggerty (State consultant) on a final review of the plan.
 - b. **Platte River Gauge.** Smith reported that a grant of \$18,200, requiring a 25% local match, has been secured to install a river gauge on the Highway 77 Bridge. Smith will be working with various organizations to split the cost of the local match dollars as well as the ongoing operational costs.
 - c. **Residential Buyout and Construction.** Dodge County is working with 11 applicants that are interested in potentially using grants funds to help elevate their home out of the floodplain.
 - d. **Update on State Action Plan-Community Development Block Grant Disaster Recovery.** The State is working on the Action Plan and should be announcing the public comment period soon.
5. **Other flood related project updates.**
 - i. **Inglewood - Stormwater sewer system and lift station.** Albert Nielsen reported that Inglewood has hired JEO Consulting to help them with repairs to the sewer line, lift station, and Village streets damaged by the flood.
 - ii. **North Bend Drainage District - Drainage and bank improvement grant.** Larry Ruzicka reported that the District's Notice of Interest for \$1.7 million of work to the ditch and bank has been prioritized by NEMA. He noted that the flood waters from Shell Creek damaged the bank during the flood in 2019. The deadline to submit the full application to NEMA is June 30, but considering the information that is required, this deadline will be impossible to meet. In a recent call with NEMA, the deadline might be extended to

September 30, due to the COVID-19 pandemic. Newton suggested that the District develop a Request for Proposal (RFP) for design and construction, and solicit bids contingent upon an extension by NEMA, so the District would be prepared to meet a new application deadline. Members of the Board agreed with this approach.

- iii. **SID #3 (Ventura) flood mitigation efforts.** It was reported that Ventura Board approved a dredging project this summer and the dredged material will be placed in the open Rod & Gun Club breach.
- iv. **SID #5 (Timberwood) flood mitigation efforts.** Arps noted that FEMA has not yet prioritized the claim for their access road because of easement issues. Congressman Fortenberry, via Kim Kwapnioski, is aware of the issue.
- v. **Rod & Gun Club Levee repairs.** John Miyoshi reported that over \$200,000 has been spent filling the breach. There is now an opportunity to use the dredge material from Lake Ventura to help re-establish the levee, however the Corps of Engineers requires stabilization. Cost estimates from JEO for this work is estimated to be \$570,000. Club resources are completely spent of prior flood damage repairs over the past two years. Members of the Board discussed various grant funding sources, including Emergent Threat under the Community Development Block Grant program. The Club will work with Lottie Mitchell to explore these and other grant options.

6. City Grants update – Lottie Mitchell

a. HMGP – Hazard Mitigation Grant Program

- i. **JWMB Resiliency Plan.** A Notice of Interest was submitted, but the Governor’s Task Force did not recommend prioritization because the Corp of Engineers claimed they did much of the work when studying the levee for Fremont.
- ii. **Residential Mitigation Actions.** The City initially had 40 applicants interested in elevating their home, but do to the changing guidelines from NEMA, only 8 remain.

b. WSF – Water Sustainability Fund – matching funds for JWMB

Resiliency Plan. This was intended for the 25% match required by NEMA for the HMGP, but it was denied. Members of the Board discussed the possibility that this fund may work as the matching funds for the North Bend Drainage HMGP project.

c. Rebuild the Heartland – 25% matching funds for HMGP Residential

Mitigation Actions. The Greater Dodge County Long Term Recovery Group has qualified for \$125,000 in grant funds to help City residents with their HMGP match (25%) as they elevate their homes.

d. CDBG – Community Development Block Grant

- i. **Emergent Threat – Ames Dike and Fremont, Farmland, and Railroad Levee Repairs.** CDBG funds of \$485,000 are currently being used as the local 25% match for permanent repairs being made to the Ames Dike and \$72,000 of CDBG funds are being used to assess and survey the Fremont, Farmland and Railroad Levee and \$485,000 has been secured for tree removal.
- ii. **Disaster Relief Funding (\$108 million).** Dodge, Douglas and Sarpy Counties are eligible for up to \$87 million in Disaster Relief Funds.

Lottie said as soon as the applications are made available, the City will be submitting an application.

e. EDA FY2019 Disaster Supplemental Funding – JWMB Resiliency Plan.

Northeast Nebraska Economic Development District (NENEDD) is working on an EDA grant application for the Resiliency Plan. Tina Engelbart with NENEDD talked about the procurement process we used to award the proposed work under the Plan to JEO and how this will preclude JEO from bidding on any further engineering work funded through an EDA grant. Lalit Jha with JEO said he understood that, but still recommended we proceed with the EDA grant application.

7. **Other Grants.** Grant Hanson provided an update on the progress of the repairs to the Ames Dike and the CDBG funds being used as their local match with the Corps of Engineers. Lalit Jha with JEO reported that the grant from the Nebraska Natural Resources Commission has a deadline of July 31, 2020. He said this grant can fund 100% of both planning and construction activities; he will contact the commission to inquire about applying for a grant.
8. **Public Comments.** none
9. **Adjournment.** A motion was made by Pollard and seconded by Eason to adjourn the meeting at 10:05 am. By roll call vote, the motion was unanimously approved.

Minutes prepared by Brian Newton, Fremont City Administrator

DRAFT

August 10, 2020

Nebraska Emergency Management Agency
2433 NW 24th Street
Lincoln NE 68524

RE: North Bend Drainage District– Cutoff Ditch Improvements

To Whom it May Concern,

The North Bend Drainage District is requesting financial assistance through FEMA's Hazard Mitigation Grant Program to address drainage issues and more importantly, to mitigate the risks of Platte River flood events.

As part of the Joint Water Management Advisory Board, Lower Platte North Natural Resources District (LPNNRD) is budgeting up to a maximum \$100,000 for the North Bend Drainage District Improvement Project in FY 2021. LPNNRD's final contribution is contingent on the amount of grant assistance and other partner funding contributions secured for the project. Funding and other responsibilities will be outlined in an Interlocal Agreement between JWMAB members to include the North Bend Drainage District, Dodge County, City of Fremont, and LPNNRD. Funding outlined in the Interlocal Agreement will be available for the duration of this project.

Dodge County, on behalf of the North Bend Drainage District, will be applying for a Community Development Block Grant, which may also cover a portion of the local share of the project. Should Dodge County not receive the block grant, LPNNRD will contribute our share of the local match towards the project.

If you have any questions, please feel free call the LPNNRD Office at 402-443-4675.

Sincerely,

Eric Gottschalk, General Manager
Lower Platte North Natural Resources District

Tom Mountford

From: Becky Appleford <rappleford@jeo.com> on behalf of Becky Appleford
Sent: Wednesday, July 22, 2020 2:01 PM
To: Hindt, Lexy
Cc: Tom Mountford; 'Chris Poole'; Green, Joseph; Slack, McKenzie
Subject: RE: LPN NRD HMP - FEMA Review RFI #1

Good afternoon,

We have reviewed the required revisions and areas for improvement as outlined in the LPNNRD HMP RFI #1. Before finalizing the edits to the plan, please find below an outline of the approach being implemented to address these revisions. Please advise if additional changes or change in approach is recommended to assist with minimizing the potential for a second RFI.

Element B2

1. As recommended in the RFI, a Hazard Matrix will be added to each of the County Profiles which will include each of the jurisdictions in the County and the 15 hazards profiled in the plan. Along with the table, the following introductory paragraph will be included:
 - a. "The following table provides a summary of hazards that have or have the potential to affect each jurisdiction in Saunders County. Each jurisdiction was evaluated for previous hazard occurrence and the probability of future hazard events on each of the 15 hazards profiled in this plan. The evaluation process was based on data collected and summarized in Table SAU.9, County Hazard Loss History; previous impacts or the potential for impacts to infrastructure, critical facilities, people, and the economy; and the proximity to certain hazards such as dams and levees. For example, while there have not been instances of dam failure in the County, there exists a possibility for a dam to fail in the future due to the presence of dams in the County."

Element B3

2. An overall summary of vulnerability is already included for each hazard in Section Four with a table identifying the applicable vulnerabilities to people, economy, built environment, infrastructure, and critical facilities, which provides a comprehensive overview of vulnerability for all of the jurisdictions. Specific community vulnerabilities are addressed in each community profile in the Hazard Prioritization discussions.
 - a. All communities with an SFHA will be reviewed to ensure that flooding discussions appropriately depict the vulnerability to the hazard. Where a more robust discussion on vulnerability to flooding is needed, updates to the discussion will be made.
 - b. In each of the community profiles, a column will be added to the Parcel Improvements and Value in the Floodplain table indicating the percentage of the improvements (i.e. the community) is in the floodplain. This information will then be tied back to the flooding discussion to indicate potential community exposure to flooding; for example, generally a higher percentage of the community in the floodplain equates to a higher vulnerability to assets at risk to flooding.
 - c. In Section Four: Flooding, a summary table of Parcel Improvements and Value in the Floodplain by County and Total Planning Area along with a discussion will be added to the Regional Vulnerabilities section.
3. In Section Four: Flooding, Table 59 NFIP Policies in Force and Total Payments, two additional columns will be added to include data on Total Losses and Total Payments by community.
4. As recommended in the RFI, the lead-in sentence under the Hazard Prioritization section in the Community Profiles will be rewritten to the following:
 - a. "The hazards discussed in detail below were selected by the local planning team from the regional hazard list as the relevant hazards for the community. The selected hazards were prioritized by the

local planning team based on historical hazard occurrences, potential impacts, and the community's capabilities.”

We will also address many of the areas of improvement where feasible, but we do have a couple of questions to further clarify what needs to be addressed. Both questions are from Element A.

1. RFI indicates that Tables 20 and 21 are duplicates. Table 20 is Inventory of Care Facilities and Table 21 is Vulnerable Populations. Please provide further clarification on which tables were duplicated.
2. It is not clear what further improvements are needed to identify how cited documents were incorporated into the plan. We take exhaustive efforts to ensure citations to sources are used throughout the document, but the comment indicates the “plan does not identify what section(s) in the plan benefited from the identified source documents.”

Thank you for your assistance and guidance. If you would like to discuss our revision methodology or any of the items on the FEMA HMP Review Tool for this plan, we would be open to a conference call with NEMA and the NRD and the planning staff. We will ensure that the required revisions are addressed as requested and resubmit the revised plan by the July 30th deadline.

Sincerely,
Becky

REBECCA APPLEFORD, CFM | Senior Planner | Hazard Mitigation and Emergency Planning
JEO CONSULTING GROUP INC
11717 Burt Street | Omaha, Nebraska 68154-1510
d: 402.392.9915 | m: 217.741.0117 | o: 402.934.3680 | f: 402.934.3681
rappleford@jeo.com

From: Hindt, Lexy <lexy.hindt@nebraska.gov>
Sent: Thursday, July 9, 2020 1:50 PM
To: 'tmountford@lpnrd.org' <tmountford@lpnrd.org>
Cc: 'Chris Poole' <cpoole@lpnrd.org>; Becky Appleford <rappleford@jeo.com>; Green, Joseph <joe.green@nebraska.gov>; Slack, McKenzie <mckenzie.slack@nebraska.gov>
Subject: LPN NRD HMP - FEMA Review RFI #1
Importance: High

Good Afternoon Tom-

FEMA has completed their review of the Lower Platte North NRD Hazard Mitigation Plan.

Upon completion of their review, they have identified a few areas that need improvement prior to approval. I have attached RFI #1 to this email. On page 4 & 6 the elements that require revisions. Please have these revisions returned to the State on or before **July 30, 2020**.

If you have any questions, do not hesitate to reach out to myself or Joe Green.

Lexy Hindt

Deputy State Hazard Mitigation Officer | RECOVERY

Nebraska Emergency Management Agency

2433 N.W. 24th St., Lincoln, NE 68524-1801

CELL 531-739-7051

FAX 402-471-7433

lexy.hindt@nebraska.gov



Invoice

July 30, 2020

Project No: R170337.00

Invoice No: 118330

Invoice Amount: 4,659.88

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

Project Manager Rebecca Appleford

Project R170337.00 Lower Platte North NRD Hazard Mitigation Plan 2020 Update

Professional Services through July 24, 2020

Table with 6 columns: Lump Sum Phase(s), Contract Amount, Percent Complete, Billed-to-Date, Previous Billing, Current Billing. Rows include Project Management, Public and Stakeholder Engagement, Data Collection, Develop Mitigation Plan, Submission and Adoption of the HMP, Parcel-Level Flood Risk Assessment - Fremont, Parcel-Level Flood Risk Assessment - Schuyler, Project Screening and Additional Project Tasks, Saunders County, Prague, Wahoo, Yutan Dam Hazard Zoning Overlays, and Total.

Email invoice to: Tom Mountford; tmountford@lpnrd.org & Jill Breunig; jbreunig@lpnrd.org



MONTHLY PROGRESS REPORT
Lower Platte North NRD Hazard Mitigation Plan Update

JEO PROJECT NO. 170337.00
Project Contact: Becky Appleford, 402.392.9915

Through the Period of July 24, 2020

1. Overall Project and Budget Status:

- Project Completion: 99% Budget: 99%

2. Work completed during current period (thru July 24, 2020)

a. Hazard Mitigation Plan Update

- Comments received from FEMA on required revisions to HMP on July 9th
- Developed plan to address required revisions to HMP
- Began revising HMP for resubmittal

b. Saunders County, Prague, Wahoo, Yutan Dam Hazard Zoning Overlays

- Project setup following approval from NRD board
- Coordination with County and communities to schedule meetings

3. Planned accomplishment for next period (July 25 – August 21, 2020):

a. Hazard Mitigation Plan Update

- Finalize required revisions to HMP by July 30th and submitted to NEMA/FEMA
- Provide notice of approval and adoption resolutions post plan approval
- Provide information to the NRD and other stakeholders as requested

b. Saunders County, Prague, Wahoo, Yutan Dam Hazard Zoning Overlays

- Facilitate the following scheduled meetings:

	Open House Meeting	Publication	Planning	Governing Body
Saunders	NA	26-Aug	14-Sep	29-Sep
Wahoo	NA	14-Aug	3-Sep	24-Sep
Yutan	18-Aug		TBD	15-Sep
Prague	20-Aug		31-Aug	17-Sep

- Develop zoning text for Yutan and Prague
- Complete mapping of dam inundation areas for zoning
- Trace 7 USACE dam inundation maps, if shapefiles not provided and NRD board approval

4. Action items:

- Resubmit HMP to NEMA/FEMA for review and approval
- Complete maps
- Provide correspondence as needed

5. Project schedule:

- On schedule

6. Information from NRD or Planning Team:

- None

7. Next Meeting Dates and Times:

- None

Itinerary of Chief Lohr's Visit to Nebraska

Tuesday, August 4

- **9:30 p.m.** Craig will pick up Chief Lohr at the Lincoln airport from United flight #5535 and take him to his hotel.

Wednesday, August 5

- **7:30 a.m.** Craig will pick up Chief Lohr at the hotel. They will ride together to [Lake Wanahoo Education Building](#).
- **8:30 a.m.** Arrive Lake Wanahoo

Meet with Lower Platte North Natural Resources District staff/board members, Wahoo NRCS field office staff and other staff/partners including: Brad Soncksen, NRCS Assistant State Conservationist for Programs; Joanna Pope, NRCS State Public Affairs Officer; Steve Nelson, President of the Nebraska Farm Bureau; Ralph Pieke, former NRD board member; Dean Edson, Executive Director of the Nebraska Association of Resources Districts; and Kent Zimmerman, president of the National Association of State Conservation Agencies (others?)

* Brad and Joanna can travel to Wahoo together in a vehicle. Brad can ride back to Lincoln with Jim Reedy and Brian Baskerville (check out van or larger GOV to spread out) to keep numbers low for Rogers Memorial Farm visit since they are asking for small number of visitors.

- **8:30 – 8:45 a.m.** Welcome Chief Lohr to Nebraska and provide introductions – Craig Derickson, Nebraska NRCS State Conservationist
- **8:45 – 9:00 a.m.** NRCS employees introduce themselves and briefly share about the work they're doing
- **9:00 – 9:45 a.m.** NRD Discussion – Eric Gottschalk, Lower Platte North NRD General Manager and Tom Mountford, Lower Platte North NRD Assistant Manager
 - Overview/history of the NRD system and its roles and responsibilities
 - Lake Wanahoo
 - Important conservation field work in the Lower Platte North NRD
 - Shell Creek (Ralph Pieke)
 - History of PL-566 dams in the Lower Platte North NRD
 - Wahoo Creek Watershed
- **9:45 – 10:00 a.m.** Overview of the Nebraska Association of Resources Districts roll – Dean Edson, Executive Director of NACD
- **10:00 – 10:15 a.m.** Nebraska Department of Natural Resources/National Association of State Conservation Agencies update - Kent Zimmerman, NASCA President
- **10:15 – 10:30 a.m.** Break

- **10:30 – 11:15 a.m.** Demo of LIDAR and survey equipment – Jim Reedy, NRCS State Technology Engineer & Josh Charles, Soil Conservation Technician
- **11:15 – 11:45 a.m.** Demo of GIS tools used for wetland determinations – Brian Baskerville, NRCS Area Technology Specialist
- **11:45 – 12:30 p.m.** Lunch (Eric offered to purchase lunches from Subway. We can eat at the Wahoo Environmental Education Center or if we're running behind, we can eat on the road)
- **12:30 – 12:45 p.m.** Travel to Beginning Farmer site
- **12:45 – 1:30 p.m.** Tour/visit with beginning farmer Joe Petersen about how he's worked with NRCS to make conservation improvements on his farm – Jami Thoene, NRCS Resource Conservationist and State Beginning Farmer/Rancher Coordinator will facilitate
- **1:30 – 2:00 p.m.** Travel to [Rogers Memorial Farm](#) – 18630 Adams Street, Lincoln NE (Invited in addition to those presenting on site: Corey Schmidt, NRCS District Conservationist; Mike Bergert, NRCS Resource Conservationist, Steve Wellman, Nebraska Department of Agriculture Director, Orval Gigstadt. We have been requested by the Rogers Farm staff to keep attendee size small due to COVID. All attendees will need to mask up. If raining, will only have access to bldg. the size of a 2-stall garage. No rest rooms available. Will make pit stop in Waverly).
- **2:00 – 3:00 p.m.** Tour farm and cover crop plots, followed by a presentation about the tillage study - Paul Jasa, Extension Engineer
- **3:00 – 3:30 p.m.** Soil Health Demonstration – Aaron Hird, NRCS State Soil Health Specialist
- **3:30 – 4:00 p.m.** Travel to Mike McDonald's field near Douglas, NE (Invite: Britt Weiser, NRCS State Resource Conservationist; Neil Dominy, NRCS Assistant State Conservationist for Partnerships and Initiatives, Doug Wagner, NRCS Area Conservationist)
- **4:00 – 4:30 p.m.** View Mike's cover crop field and learn about his role in the Soil Health Taskforce
- **4:30 – 5:15 p.m.** Travel back to the hotel
- **6:30 – 8:30 p.m.** Dinner with Chief (10-12 maximum, outdoors if possible)

Thursday August 6

- **7:00 a.m.** - Craig and Allen Gehring will pick up Chief Lohr at his hotel. (Chief will need to check out of hotel.) During the drive Allen Gehring, NRCS State Engineer will provide an overview of EWP and watershed projects in Nebraska.
- **7:00 - 8:00 a.m.** Travel to Kirkpatrick Wildlife Management Area just west York (*NRD could be rain alternative site*) Invite: Andy Bishop, Rainwater Basin Joint Venture Coordinator; Kim Siebert, area landowner; Dave Eigenberg, Upper Big Blue Natural Resources District General Manager; Roric Pallman, Rainwater Basin Joint Venture board member; Brad Dunbar, Lindsay Cooperation; Gayle Marsh, landowner; James Huntwork, NRCS Area Conservationist; Josh Bowers and the York NRCS field office staff. (**Should make a rest room stop at rest area along I-80 just before York.*)
- **8:00 - 8:15 a.m.** Introductions and History of RWBs the JV and partnership – Andy Bishop, RWBJV Coordinator

- **8:15 – 8:35 a.m.** Kim Siebert will talk about how he's using his cattle to graze Kirkpatrick WMA through public/private partnership between NRDs/RWBJV/NRCS to help manage wetland and provide forage for his cattle. [See story here](#)
- **8:35 – 9:15 a.m.** Irrigation Innovation
 - "Divots in the Pivots" RCPP - Gayle Marsh and Brad Dunbar
 - NRD Irrigation projects - Dave Eigenberg
 - NRD water programs in the Platte Valley for the past 30 years - James Huntwork
- **9:15 – 10:30 a.m.** Travel back to the Federal Building
- **10:30 a.m. – 10:45 a.m.** Break
- **10:45 – 11:15 a.m.** Meet with NRCS employees in Room 397 A&B include field staff via Teams
- **11:15 a.m.** Lunch brought into 397 A&B for Chief and combined Nebraska state office and National Soil Survey Center (NSSC) leadership staffs
- **11:30 a.m.** Begin discussion on NSSC operations via Teams for offsite National Leaders – Nebraska state office leadership staff invited to stay. Each National Leader will have 10 minutes to highlight what their branch is doing for NRCS and the conservation partnership
- **12:50 p.m.** Kellogg Soil Survey Lab tour including processing, archive, and lab
- **1:30 p.m.** Return to 372 or Nebraska NRCS state office for wrap up.
- **1:45 p.m.** Head to Lincoln airport
- **3:16 p.m.** Chief Lohr's flight leaves Lincoln

NRCS Staff should make every attempt to carpool to keep number of GOVs low at each site. Should also try to reserve larger GOVs and spread out within the vehicle, masks on, windows cracked. Masks will be required at indoor locations and at Rogers Memorial Farm – even while outside. Remember to social distance at all tour sites, including for photos. Other partner agencies may have different COVID-19 safety protocol, but we need to follow NRCS policy and do everything we can to keep the Chief safe and comfortable while traveling.