

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

1. UNFINISHED BUSINESS
  - None.
2. SWCP
  - A. SWCP Application Approvals
    - None.
  - B. SWCP Payments
    - None.
  - C. SWCP Cancellations
    - None.
  - D. Wahoo Creek Cost Share Approvals
    - None.
3. WATERSHEDS

A. Shell Creek

1. Shell Creek Environmental Enhancement Plan Implementation  
Elliott, Mountford and Matt Bailey met with Colfax County and Pruss Excating representatives on November 16th to discuss plans to complete the Shell Creek South Channel Improvement/Benching Project. Pruss will start work in December and have the project completed by next spring.

Attached is JEO's November 24, 2021, \$4,976.50 invoice and progress report for updating the Shell Creek Watershed Water Quality Plan. After this payment, \$2,855 will remain under our \$31,630 contract. Work for the plan update is being reimbursed from our EPA 319 grant.

Just after the Project Committee Meeting, we received two invoices, totaling \$19,530.03, as attached from UNL for completion of the Shell Creek Survey. This is an LPNNNRD approved project, but since the payment request came in after the Committee Meeting, a motion for payment will be added to the Board's December 13th Additional Agenda items.

- a. Shell Creek Grant Funding Update
  - No new updates.
2. Septic System Maximum Assistance Increase  
The Nebraska Department of Environment & Energy (NDEE) has raised the maximum cost share limit for septic system upgrades as attached. LPNNNRD has offered 60% 319 EPA grant assistance administered by NDEE, (no local



\$3,462.50 will remain under our \$31,630 contract. Work for the plan update is being reimbursed from our EPA 319 grant.

a. Septic System Maximum Assistance Increase

As mentioned in the Shell Creek agenda item, the Nebraska Department of Environment & Energy (NDEE) has raised the maximum cost share limit for septic system upgrades as attached. LPNNRD has also offered 60% 319 EPA grant assistance administered by NDEE, (no local LPNNRD funds are used) to cooperators in the Wahoo Creek Watershed based on the maximum limit established by NDEE. While this may potentially use more of our approved 319 grant funds for this practice, it will likely not be a factor in most cases. We plan to use the new limits, unless the committee feels otherwise.

1. Wahoo Creek Septic System Upgrade Payment

Ron Sabatka's septic system has been replaced and we are awaiting paperwork.

4. Lands For Conservation

We awaiting LFC certification paperwork from NRCS

4. JOINT WATER MANAGEMENT ADVISORY BOARD

Attached is the JWMAB November 18, 2021, meeting minutes to update partners on various project progress.

A. Platte River Cameras/Gauges Project Update

Attached are the minutes from the November 5, 2021, partner meeting to coordinate activities with USGS. USGS will be establishing five cameras and two additional water gauges along the Platte River. Cameras will be placed at HW 64, 77, 79 & 15 bridges and one on private property tentatively planned at Bellwood Lakes. Additional gauges will be placed at HW 64 and 77 bridges. The plan is to place equipment and have it available to view on their website in December.

B. Rawhide Creek Work Plan-Environmental Assessment Update

An agency meeting, followed by a public meeting on the Rawhide Watershed Plan Assessment were held at the Fremont City Auditorium on November 18. Attached is a fact sheet and survey form provided. JEO's plan is to have the Plan completed in 2022. After the Plan receives NRCS approval, the next step for JWMAB partners will be to pursue federal and state assistance for identified flood reduction projects.

C. North Bend Drainage District Improvement Project

A meeting with FYRA occurred on November 30th to discuss the economic analysis being conducted for potential FEMA funding assistance. A minimum of one to one cost/benefit analysis is required to be eligible. Because of multiple potential flooding events in the Rawhide Creek Watershed from not only Rawhide Creek, but also from Shell Creek and the Platte River, it is challenging to obtain a positive cost/benefit ratio. It appears that improvements to the North Bend Levee need to be included to make this a viable project. This will require a scope change in the FEMA grant application. A meeting will be set up with NEMA/FEMA in the near future to discuss this possibility.

5. HAZARD MITIGATION PLAN UPDATE

No new information.

6. EROSION AND SEDIMENT RULES AND REGULATIONS

Update given on Allen Kaspar/Prochaska complaint.

7. OTHER

A. Bellwood Watershed Drainage Ditch #4 Request - 8:00 a.m.

As discussed last month, the Bellwood Ditch 4 system is approximately 4.5 miles in length from the bluffs to the south, to the Platte River. It was proposed by the SCS/NRCS in the mid 60's that the ditches from the Bellwood Watershed Dams be improved and maintained. The only segment that LPNNRD easements were obtained was on a 3/4 mile segment of ditch 4 (see attached map). Landowner Dennis Kucera has reminded us that we have O & M on this 3/4 of a mile. There are numerous trees to be taken out, a breach on the west bank and a large beaver dam that should be removed. Mountford, Elliott, Moore, Dokulil and Bob Hilger met with Butler County representatives and Mr. Kucera on November 16 to inspect our project easement area. Our O & M crew has since removed the majority of the trees in the ditch and is making plans to remove the beaver dam. This work will be coordinated with Butler County.

Mr. Kucera also requested LPNNRD and County assistance to clear more of the ditch, specifically the last 1/2 mile that flows from our 3/4 mile project area to the Platte River. Drainage on the 1/2 has been the landowner's responsibility. Mr. Kucera has asked if a public interest is determined by LPNNRD and/or Butler County to assist landowners to remove trees and debris in the subject area, would we offer assistance? Mr. Kucera was present at 8:00 a.m. to discuss his request and will provide more information in the future. Attached is Mr. Kucera's map and narrative.

B. FEMA Hazard Mitigation Property Acquisition Grant Platte County

We have been contacted by Platte County Emergency Manager Tim Hofbauer and Mary Baker, JEO, asking if we would be interested in purchasing a Platte County property in LPNNRD that is eligible for FEMA grant (75%) funding (attachments) for an entity to purchase, remove buildings that are subject to flooding and have it for public use. A similar request was brought to the Board on May 11, 2020, regarding a property in Dodge County, east of Fremont. While no formal motion was made at that time, the Board did not express interest in being the lead entity to participate in this property buyout program. This Platte County property, referred to as the Mohrman parcel, consists of 3.12 acres. Looking back at our 2020 committee and board minutes, an attachment of the Mohrman parcel in Platte County was also included, but there wasn't specific discussion about that location. Looking back at the May 11, 2020 Board minutes, it was discussed that LPNNRD might consider some assistance if another entity took the lead depending on how the property would be used.

Mountford spoke with Matt Bailey who indicated he didn't feel this property purchase was something the Shell Creek Watershed Improvement Group would be interested in pursuing. The committee did not express a desire to pursue purchasing this property and no recommendation was made.

C. Morse Buff Dike Repair Assistance Discussion

The Morse Buff Dike runs approximately two miles west from the HW 79 bridge in Sauders County. The Dike & Drainage District disbanded in the late 1980's. After the 2019 floods, a 1000 foot breach occurred. An update on the current status of this area was given. LPNNRD may be requested by the landowners to participate in a project to repair the breach.

8. ADJOURNMENT

The Projects Committee adjourned at 9:00 a.m.



Invoice

November 24, 2021

Project No: R210166.00

Invoice No: 129033

Invoice Amount: 4,976.50

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

Project Manager Adam Rupe

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

**Professional Services through November 19, 2021**

- Progress Report attached

	<b>Contract Amount</b>	<b>Percent Complete</b>	<b>Billed-to-Date</b>	<b>Previous Billing</b>	<b>Current Billing</b>
<b>Lump Sum Phase(s)</b>					
Task 1: Evaluate Water Quality Data	\$4,540.00	100 %	\$4,540.00	\$4,540.00	0.00
Task 2: Quantify Pollutant Loads	\$13,240.00	100 %	\$13,240.00	\$11,240.00	\$2,000.00
Task 3: Quantify Pollutant Reductions	\$11,420.00	75 %	\$8,565.00	\$5,710.00	\$2,855.00
Task 4: Project Management	\$2,430.00	100 %	\$2,430.00	\$2,308.50	\$121.50
<b>Total</b>	<b>\$31,630.00</b>		<b>\$28,775.00</b>	<b>\$23,798.50</b>	<b>\$4,976.50</b>

**Total Amount Due Upon Receipt : \$4,976.50**

Email invoice to : [tmountford@lpnrd.org](mailto:tmountford@lpnrd.org) and [jbreunig@lpnrd.org](mailto:jbreunig@lpnrd.org)



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

JEO Project #: 210166.00  
Through: November 22, 2021



1. **Work completed during current period**
  - Ongoing coordination with LPNNRD and NDEE.
  - Internal project management.
  - Complete initial drafts of report for pollutant load estimates and BMP reduction estimates.
  - Complete initial draft of BMP Calculator.
  
2. **Planned accomplishments for next period**
  - Deliver final drafts of all project deliverables:
    - GIS and other technical data
    - Water quality analysis report
    - Pollutant load and reduction report
    - BMP calculator
  - Complete final edits following LPNNRD and NDEE review.
  - Project closeout.
  
3. **Project schedule**
  - Anticipated project close out by the end of 2021.
  
4. **Information needed from project partners**
  - None at this time
  
5. **Next Meeting Date and Time**
  - None at this time
  
6. **Other Notes**
  - Project team will continue to monitor COVID-19 health directives and recommendations, as they may relate to any meetings

Please contact Adam Rupe at 402.322.0377 or at [arupe@jeo.com](mailto:arupe@jeo.com) for any questions or concerns regarding this progress report



**Invoice Number:** BOSR-2310  
**Invoice Date:** 7/23/2021  
**Payment Terms:** NET 30

**Billing Through:** 7/23/2021  
**Due Date:** 7/23/2021

**Bill To:**

Attn: Katie Pekarek  
 Shell Creek  
 University of Nebraska - Lincoln  
 612 Harding Hall  
 Lincoln NE 68583-0972  
 USA

# INVOICE

Description	Amount
PERSONNEL	\$ 12,055.30
COPIES	\$ 0.23
INDIRECT FEE	\$ 826.41
POSTAGE REGULAR MAIL	\$ 966.69
PRINTING / PUBLISHING / PHOTOGRAPHY	\$ 2,198.05
PRINTING ENVELOPES	\$ 481.50
<b>Total Amount Due This Invoice:</b>	<b>\$ <u>16,528.18</u></b>

**Please remit payment to:**

BOSR  
 907 Oldfather Hall  
 PO Box 880325  
 Lincoln NEBRASKA 68588-0325  
 United States



**Invoice Number:** BOSR-2204  
**Invoice Date:** 3/25/2021  
**Payment Terms:** NET 30

**Billing Through:** 3/25/2021  
**Due Date:** 3/25/2021

**Bill To:**

Attn: Katie Pekarek  
Shell Creek  
University of Nebraska - Lincoln  
612 Harding Hall  
Lincoln NE 68583-0972  
USA

## INVOICE

Description	Amount
PERSONNEL	\$ 2,851.76
INDIRECT FEE	\$ 150.09
<b>Total Amount Due This Invoice:</b>	<b>\$ <u>3,001.85</u></b>

**Please remit payment to:**

BOSR  
907 Oldfather Hall  
PO Box 880325  
Lincoln NEBRASKA 68588-0325  
United States

# Shell Creek Watershed Survey Report

Prepared: June 2021



The contents of this report conform to our highest standards for data collection and reporting. If you should have any questions or concerns regarding the information reported within, please contact us.

Bureau of Sociological Research  
Department of Sociology  
PO Box 880325 • Lincoln, NE 68588-0325  
402-472-3672 (local) • 800-480-4549 (toll free)  
email: [bosr@unl.edu](mailto:bosr@unl.edu) • <http://bosr.unl.edu>

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## Introduction

This report presents a detailed account of the design of the Shell Creek Watershed Survey. The project was commissioned and administered by researchers at the School of Natural Resources at the University of Nebraska-Lincoln (UNL) and conducted by the Bureau of Sociological Research (BOSR) at the University of Nebraska-Lincoln. The purpose of this project was to assess the water quality of the Shell Creek area and to understand the knowledge local residents have about their watershed.

## Sampling Design

A sample of 977 producers in and around the Shell Creek Watershed was provided by the researchers. Of the 977 sample provided, there were 91 duplicates, resulting in a sample of 886. This sample included potential respondents' names, contact information, and other demographic information. The sample was cleaned by BOSR project staff.

## Questionnaire Design

The final questions were determined as the outcome of a joint effort between researchers of this project at UNL and BOSR, with reference to the 2020 Wilber-Turkey Creek Watershed Survey. The final form was an eight-page mail survey. The survey questions focused on water quality and different chemicals. The survey was in English only. A copy of the survey can be found in Appendix A.

## Data Collection Process

The data collection process involved three mailings. In the initial contact, a survey packet including a cover letter explaining the survey, a copy of the survey, a brochure containing information about the Shell Creek Watershed, along with a postage pre-paid addressed business reply envelope for the survey to be mailed back to BOSR was mailed to each producer. The initial invitation was sent on April 7, 2021. For each address, we asked the person who was managing or renting the land to complete the questionnaire. One week after the first mailing, all addresses were mailed a postcard reminding them to complete the survey or expressing appreciation if they had already completed the survey. This reminder postcard was sent on April 14, 2021. Finally, a survey package, which contained the same contents as the initial mailing, was sent to all non-respondents. The final mail survey package was sent out on April 28, 2021. All communication materials were in English and can be found in Appendix B. The Shell Creek brochure can be found in Appendix C.

## Response Rate

In total, 196 surveys were completed by the end of the field period on June 16, 2021. The response rate of 22.1% was calculated using the American Association for Public Opinion Research's (AAPOR) standard definition for Response Rate 2. Of the 886 addresses sampled, 1.5% (n=13) were undeliverable addresses with unknown eligibility. Refusals (e.g., blank survey returned; letter, phone call, or e-mail stating refusal to participate) and refused mail were obtained from 0.8% (n=7) of the sample.

## Data Processing

Mail survey data were entered using Epi Info 6 software with data saved on BOSR's secure networked file server. Data entry was completed by experienced data-entry staff. All of the data-entry workers had previous experience in data entry using Epi Info 6 on other mail survey projects. The data-entry staff was supervised by full-time BOSR project staff.

Data entry was completed in two steps. First, one data-entry worker would enter responses from a single survey. Second, another data-entry worker would re-key the survey and be alerted to any discrepancies with the first entry. Supervisory staff members were available to answer questions about discrepancies or illegible responses. The data-entry staff is paid by the hour, not by the number of surveys entered. This method of payment is used so that we can ensure the high quality of the data collected by our staff.

## Data Cleaning

The data was recorded and stored on a secure server located within the Sociology Department at UNL. The Statistical Package for the Social Sciences (SPSS) software package was used to process and document the dataset. The dataset was exported from Epi Info 6 into an SPSS system file. BOSR removed any cases that were duplicate or blank. The first step in data cleaning was to run frequency distributions on each of the variables in the survey. The second step was to generate variable and value labels. The final step in data cleaning was to check for out-of-range values on all survey items. Recoding was done to correct for the most obvious errors/inconsistencies in the data.

## Questions

Any questions regarding this report or the data collected can be directed to the Bureau of Sociological Research (BOSR) at the University of Nebraska-Lincoln by calling (402) 472-3672 or by sending an e-mail to [bosr@unl.edu](mailto:bosr@unl.edu).

## Findings

When respondents were asked whether they had their drinking water tested for nitrates in the past five years, Figure 1 shows more than half (57.5%), said they had not.

Figure 1. Whether respondents had their drinking water tested for nitrates in the past five years (n=193)

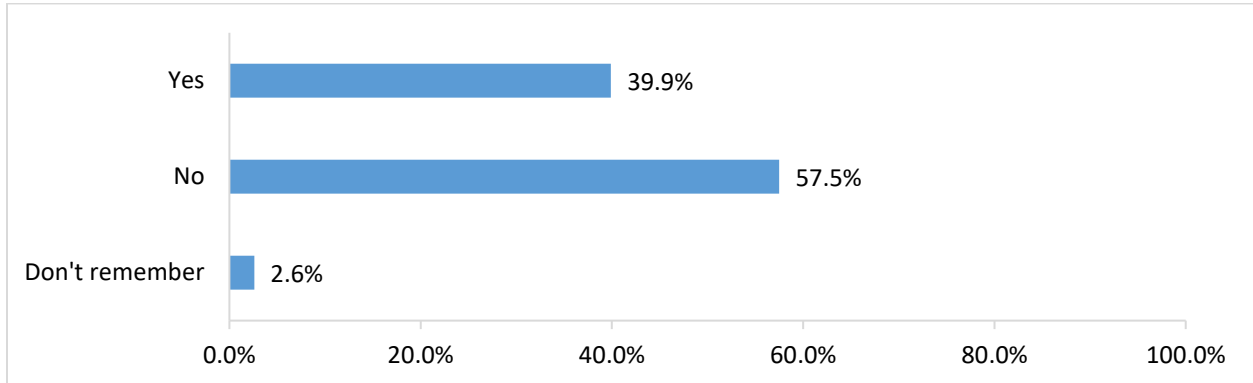
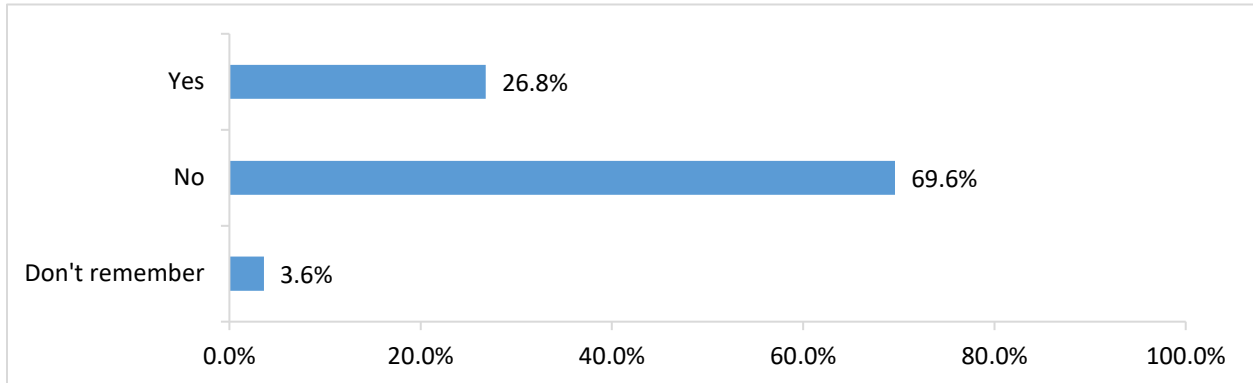


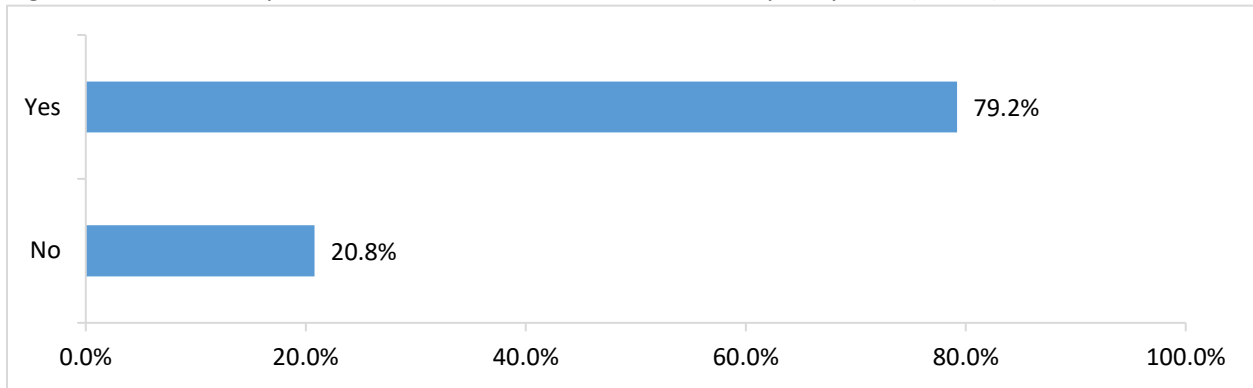
Figure 2 displays that several (69.6%) respondents have not had their drinking water tested for *E. coli* in the past five years.

Figure 2. Whether respondents had their drinking water tested for *E. coli* in the past five years (n=194)



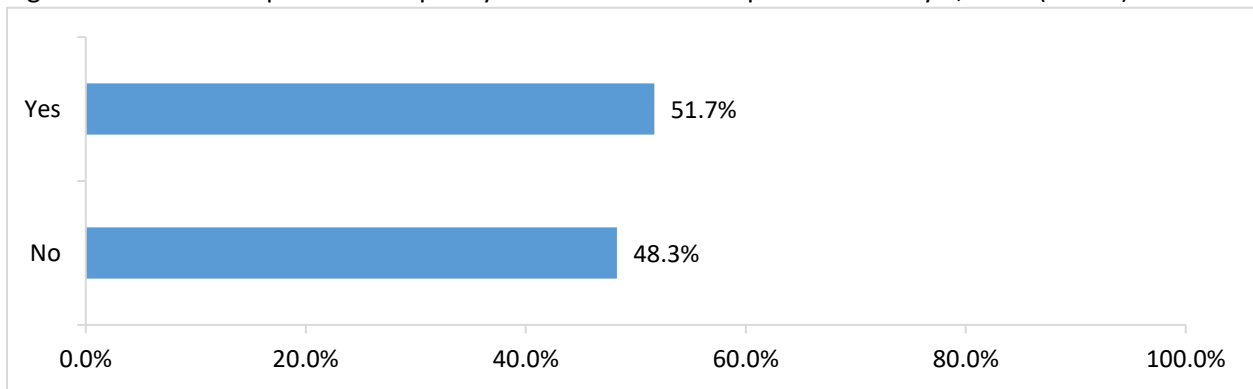
Over three quarters of respondents (79.2%) wastewater has been treated with a septic system (Figure 3).

Figure 3. Whether respondents' wastewater is treated with a septic system (n=183)



In figure 4, half (51.7%) of respondents septic system was installed prior to January 1, 2020.

Figure 4. Whether respondents' septic systems were installed prior to January 1, 2020 (n=147)



Over half of respondents' (65.6%; Figure 5) septic systems or lagoons have not been inspected within the last five years.

Figure 5. Whether respondents' septic system or lagoon has been inspected within the last five years (n=151)

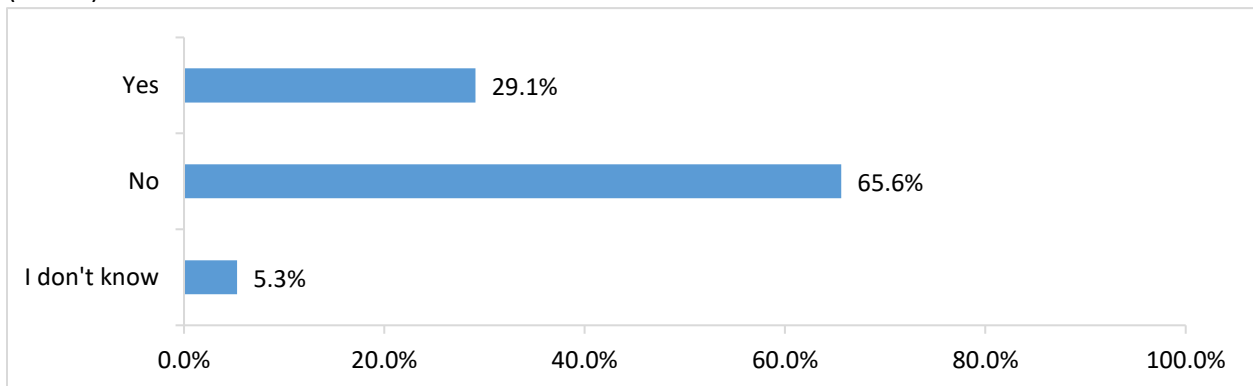
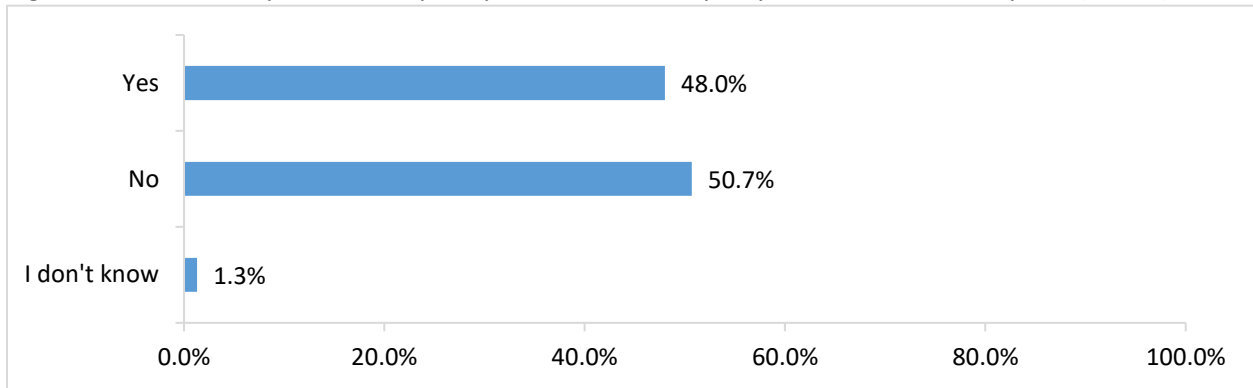


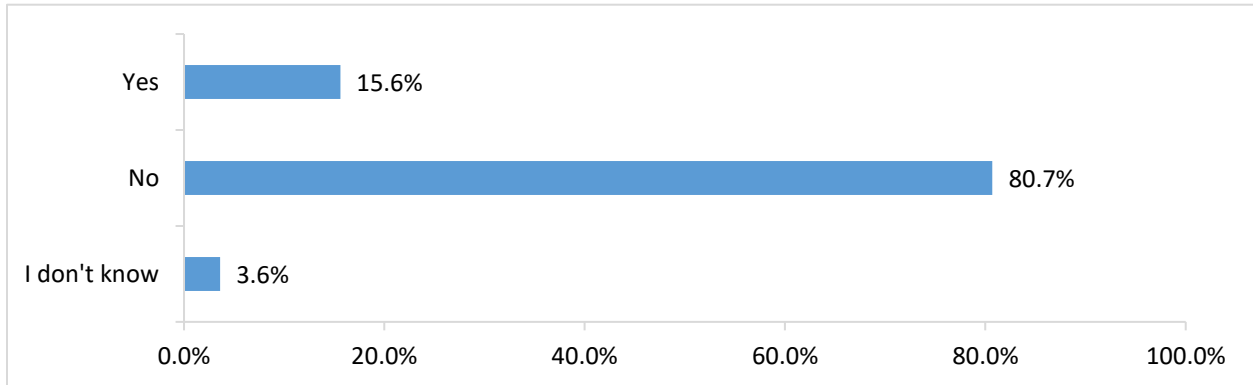
Figure 6 shows half of respondents' (50.7%) septic systems have not been pumped within the last 5 years.

Figure 6. Whether respondents' septic systems have been pumped within the last 5 years (n=152)



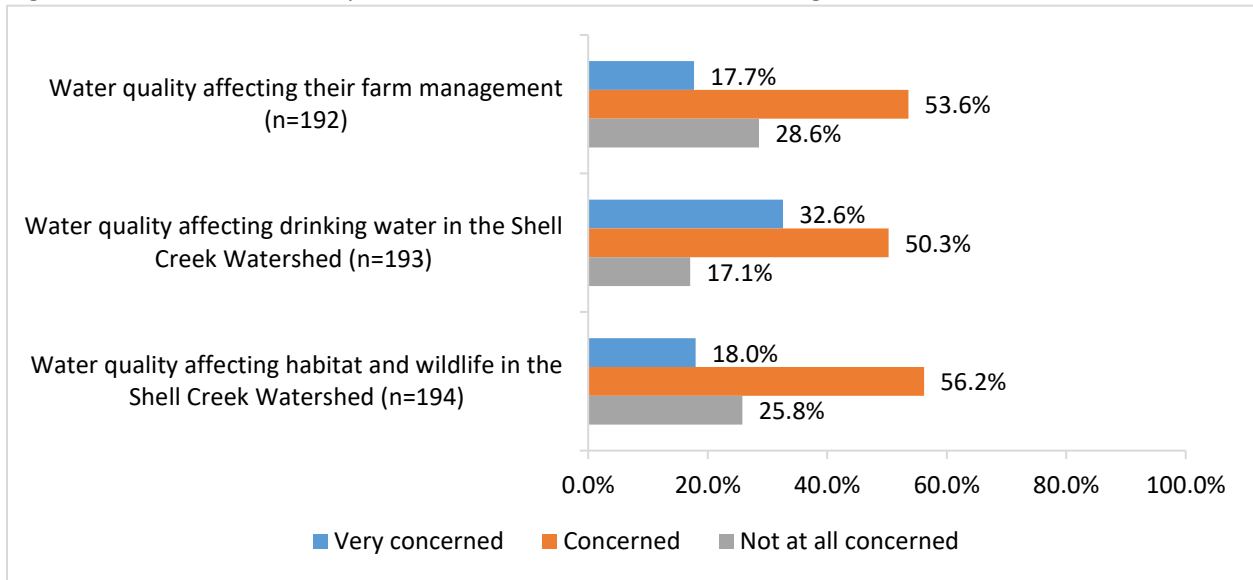
According to Figure 7, most respondents (80.7%) do not have an unused or abandoned well on a farm they own or rent.

Figure 7. Whether respondents have an unused or abandoned well on a farm they own or rent (n=192)



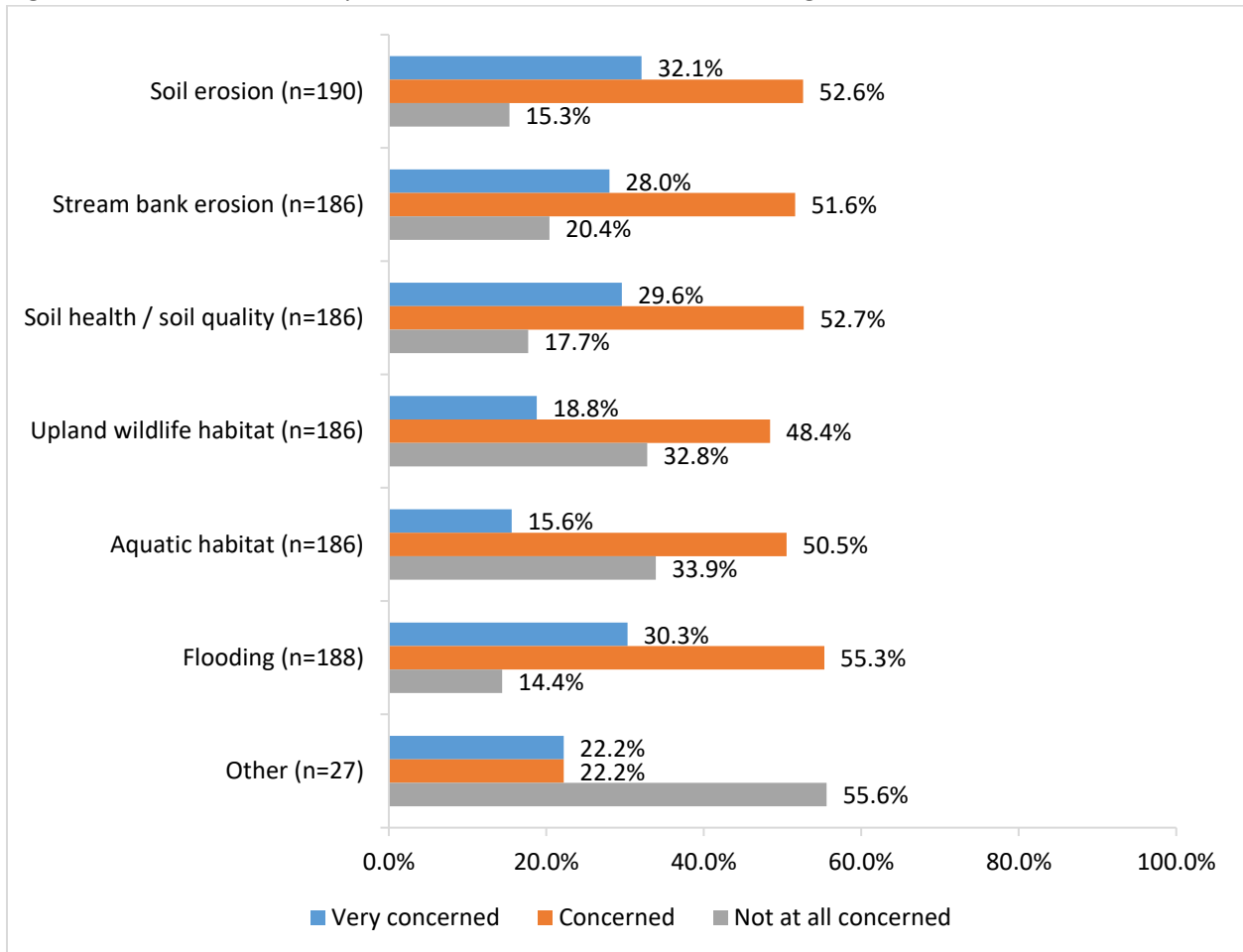
When respondents were asked how concerned they are with each of the following, half (53.6%) said they were concerned with water quality affecting their farm management. Half (50.3%) said they were concerned with water quality affecting drinking water in the Shell Creek Watershed and half (56.2%) said they were concerned about water quality affecting habitat and wildlife in the Shell Creek Watershed (Figure 8).

Figure 8. How concerned respondents are with each of the following



According to Figure 9, more than half of respondents show concern with resource issues in flooding (55.3%), soil health/soil quality (52.7%), soil erosion (52.6%), stream bank erosion (51.6%), aquatic habitat (50.5%), and upland wildlife habitat (48.4%).

Figure 9. How concerned respondents are with each of the following resource issues

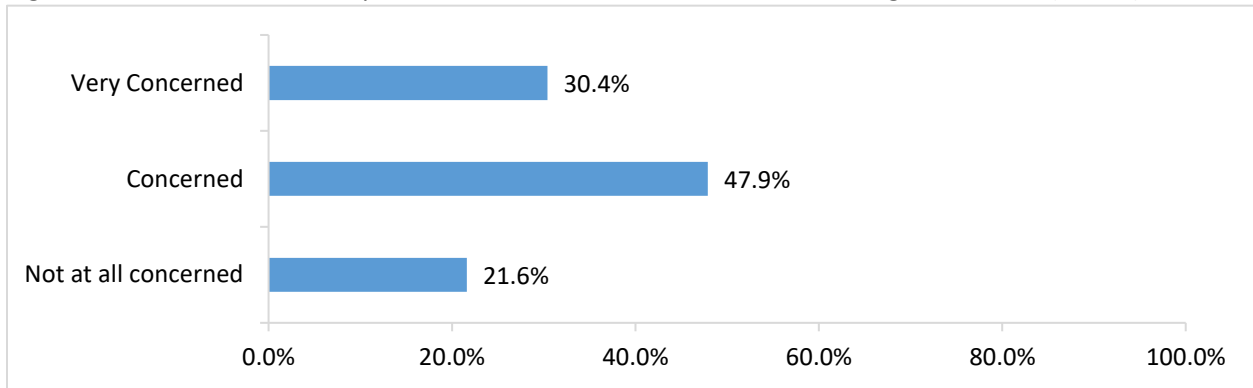


When respondents were asked what other concerns they have about resource issues in the Shell Creek Watershed, one respondent said cattle and hog waste pumped into Shell Creek and other water bodies. Other concerns were chemicals washing down the hills, lack of trees, restrictions on irrigation, water quantity, saturated soils, and a high water table.

Some other concerns were the government overreaching and too high of re-taxes do not allow for landowners to improve their property.

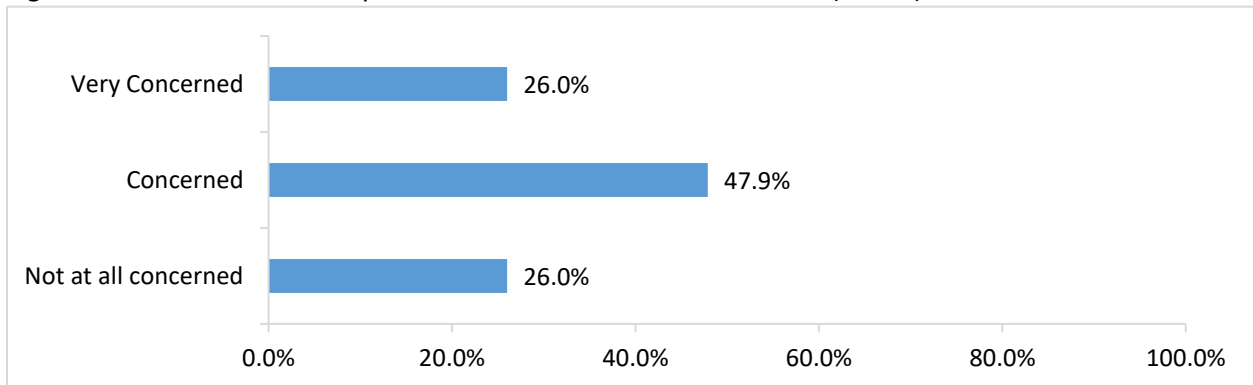
In Figure 10, close to half (47.9%) of respondents replied they are concerned with nitrate levels in their groundwater and almost a third (30.4%) are very concerned.

Figure 10. How concerned respondents are with the nitrate levels in their groundwater (n=194)



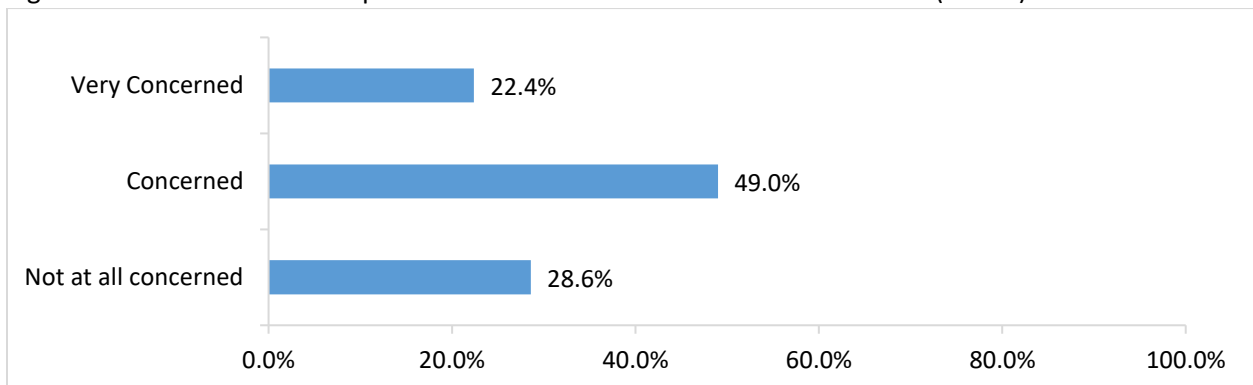
As displayed in Figure 11, almost half (47.9%) of respondents are concerned with *E. coli* in Shell Creek, while a quarter are either very concerned (26.0%) or not at all concerned (26.0%).

Figure 11. How concerned respondents are with *E. coli* in Shell Creek (n=192)



Nearly half of respondents (49.0%) are concerned with Atrazine levels in Shell Creek (Figure 12).

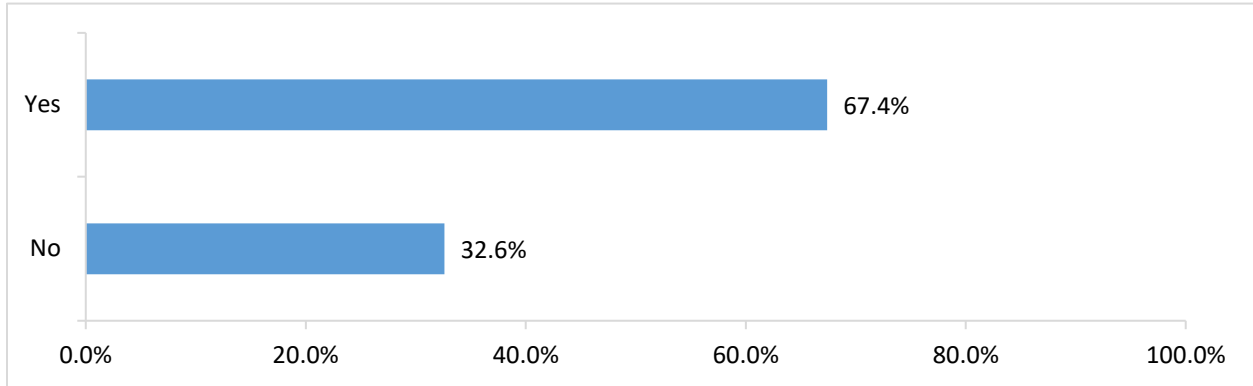
Figure 12. How concerned respondents are with Atrazine levels in Shell Creek (n=192)



Respondents were asked what issues needed to be addressed in the Shell Creek Watershed. Some common issues that were mentioned, included, soil erosion, flooding, hog confinements, water quality, and animal waste or run off from feed lots.

Figure 13 shows more than half (67.4%) of respondents are currently implementing Best Management Practices which benefit water quality.

Figure 13. Whether respondents currently implement any Best Management Practices (BMP) (n=181)



When respondents were asked if they have received a cost share payment for the BMP, most respondents (87.3%) said they have not (Figure 14).

Figure 14. Whether respondents have received a cost share payment for the BMP (n=181)

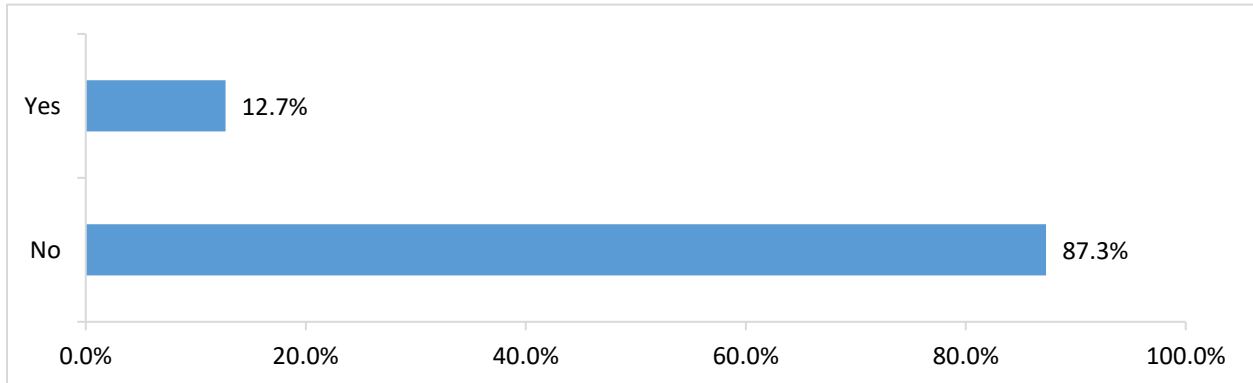


Figure 15 shows more than half of respondents are more likely to adopt or maintain a BMP or conservation practice if they had evidence that the practices would improve their profitability (54.3%). While close to half responded if they could get financial assistance to implement the practices (46.9%) and if they had evidence that the practices would not reduce yield (46.9%).

Figure 15. Whether respondents would be more likely to adopt or maintain a BMP or conservation practice if the following applied

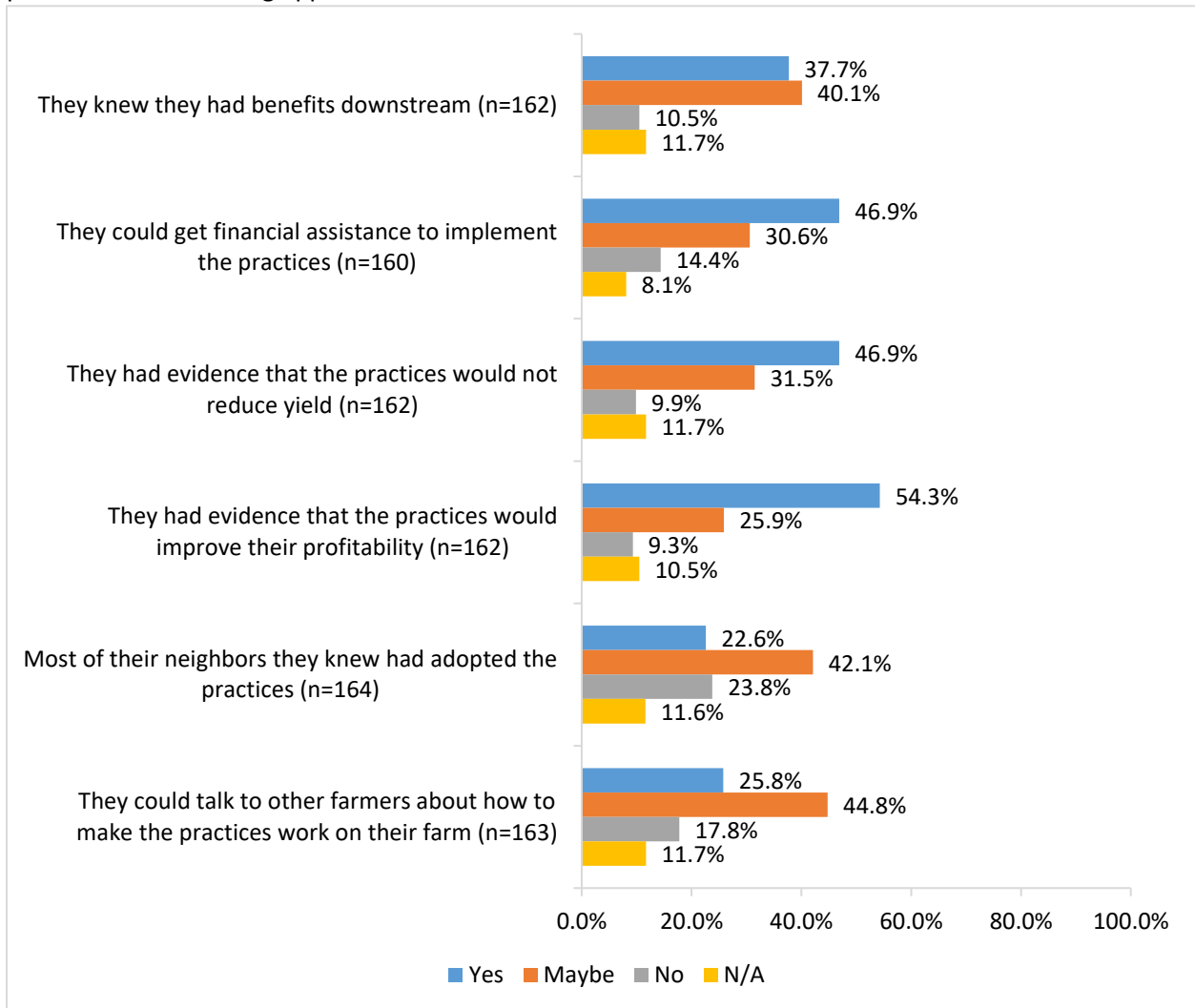
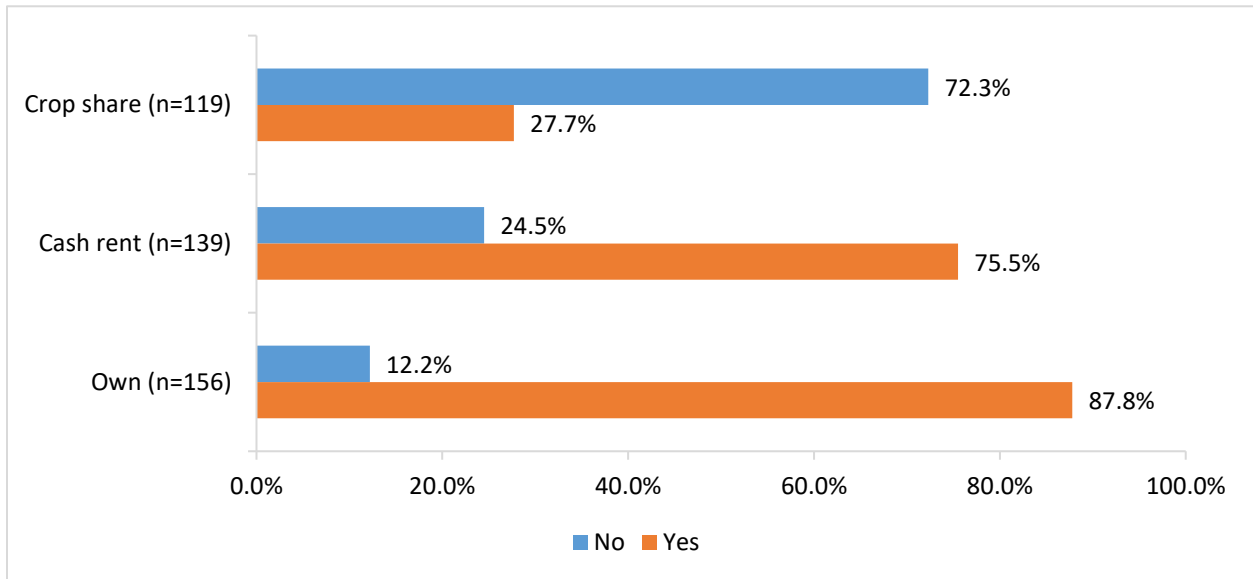


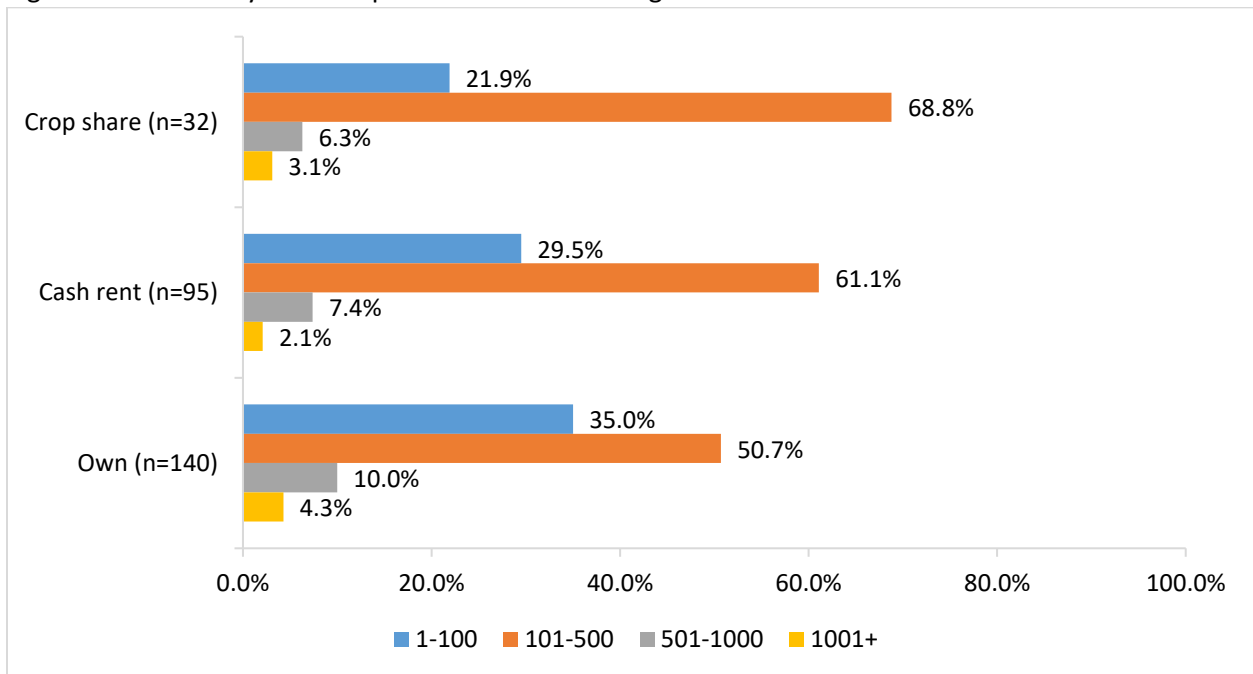
Figure 16 shows when respondents were asked to describe their ownership or management arrangements on their farm(s) in the Shell Creek Watershed, most respondents own (87.8%) and/or cash rent (75.5%) their farm(s).

Figure 16. Respondents' ownership or management arrangement of their farm in the Shell Creek Watershed



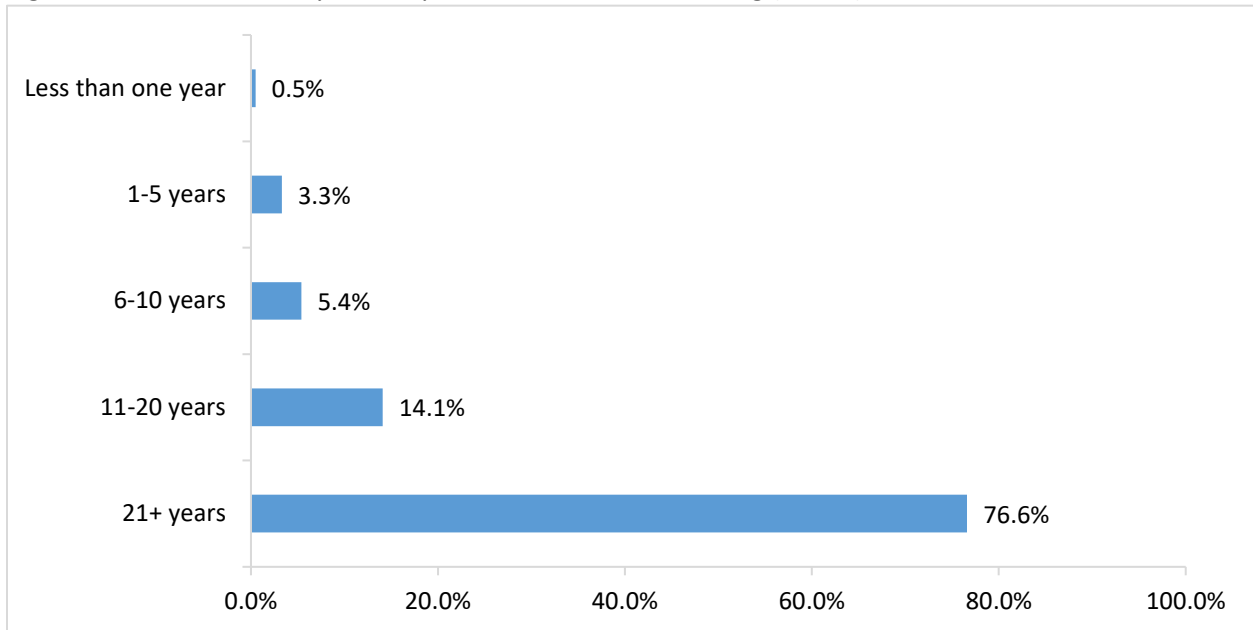
The majority of respondents have between 101 and 500 acres of farm land that they crop share (68.8%), cash rent (61.1%) or own (50.7%; Figure 17).

Figure 17. How many acres respondents own or manage



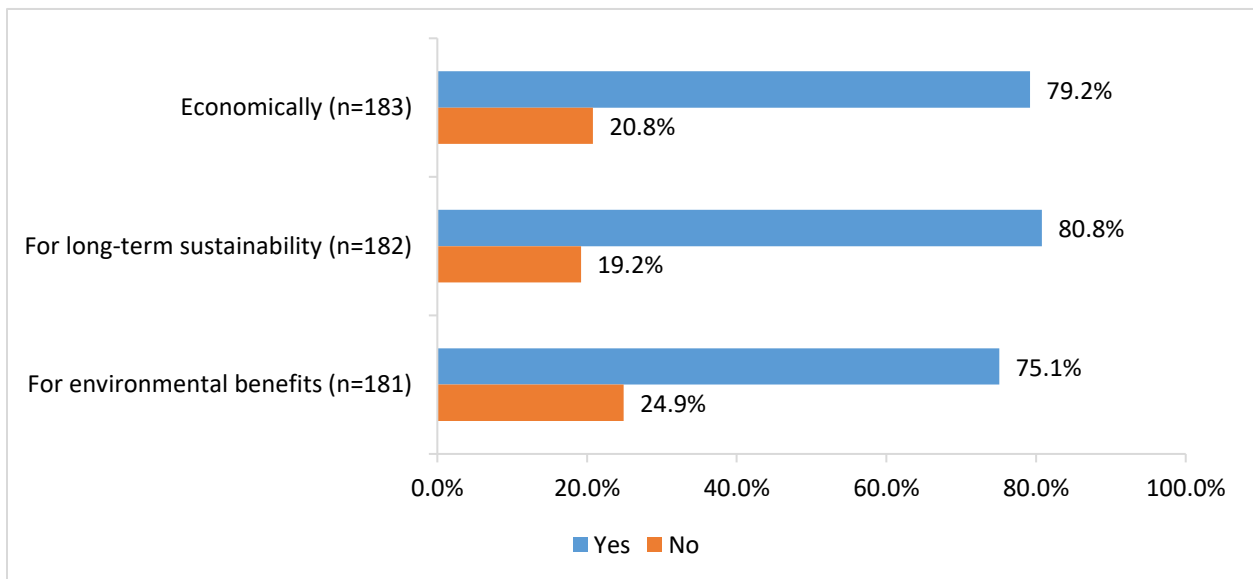
In Figure 18, most respondents (76.6%) have been farming at least twenty-one years.

Figure 18. The number of years respondents have been farming (n=184)



Over three quarters of respondents changed the way they farmed in the past five years in attempt to make their farm more successful economically (79.2%), for long-term sustainability (80.8%), and for environment benefits (75.1%; Figure 19).

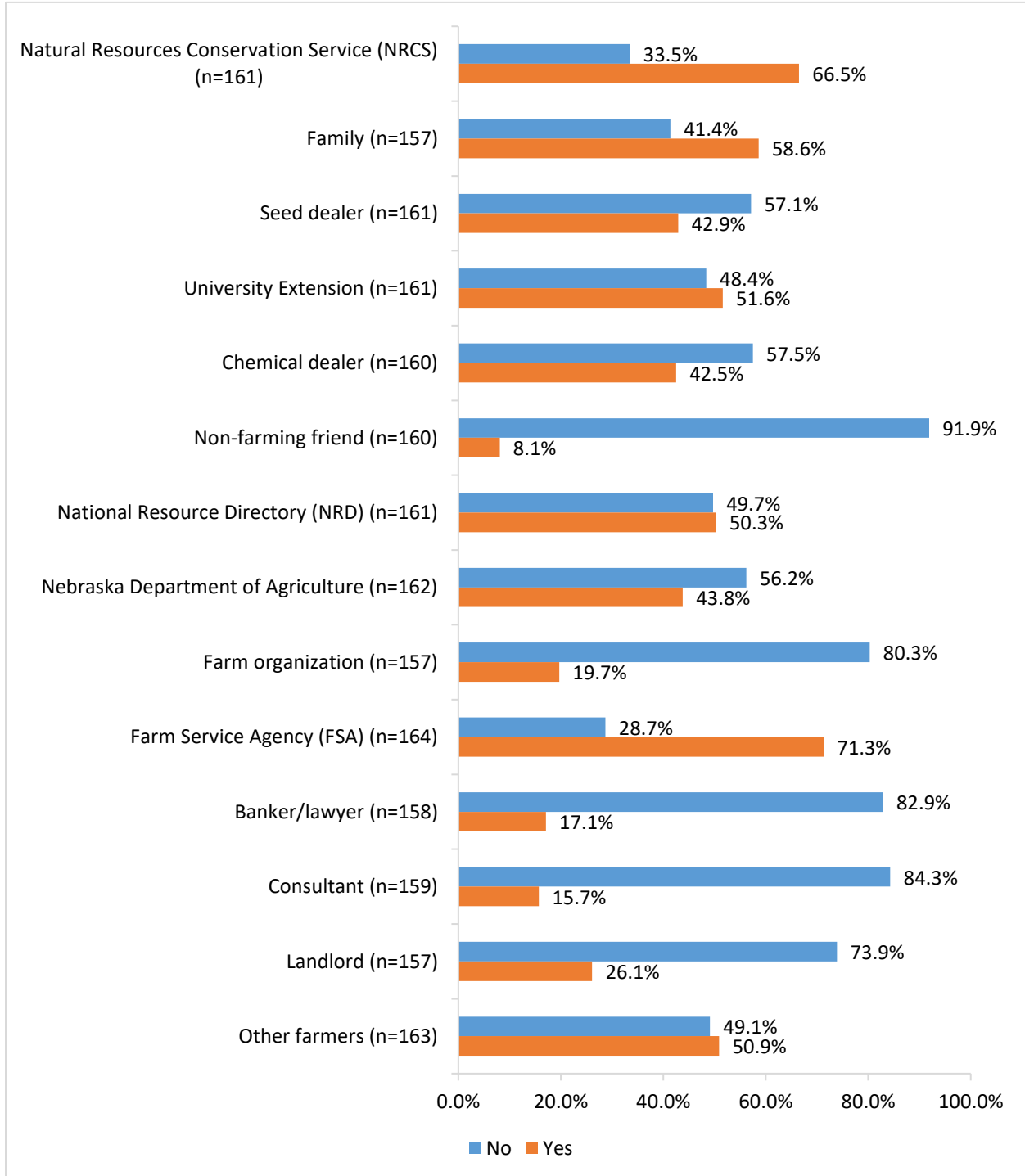
Figure 19. Whether respondents changed the way they farm in the past five years in attempt to make their farm more successful



As shown in Figure 20, almost three quarters of respondents use a Farm Service Agency (71.3%) when selecting conservation practices for their farming operation. Other main sources respondents use when selecting conservation practices for their farming operation include a Natural Resource Conservation

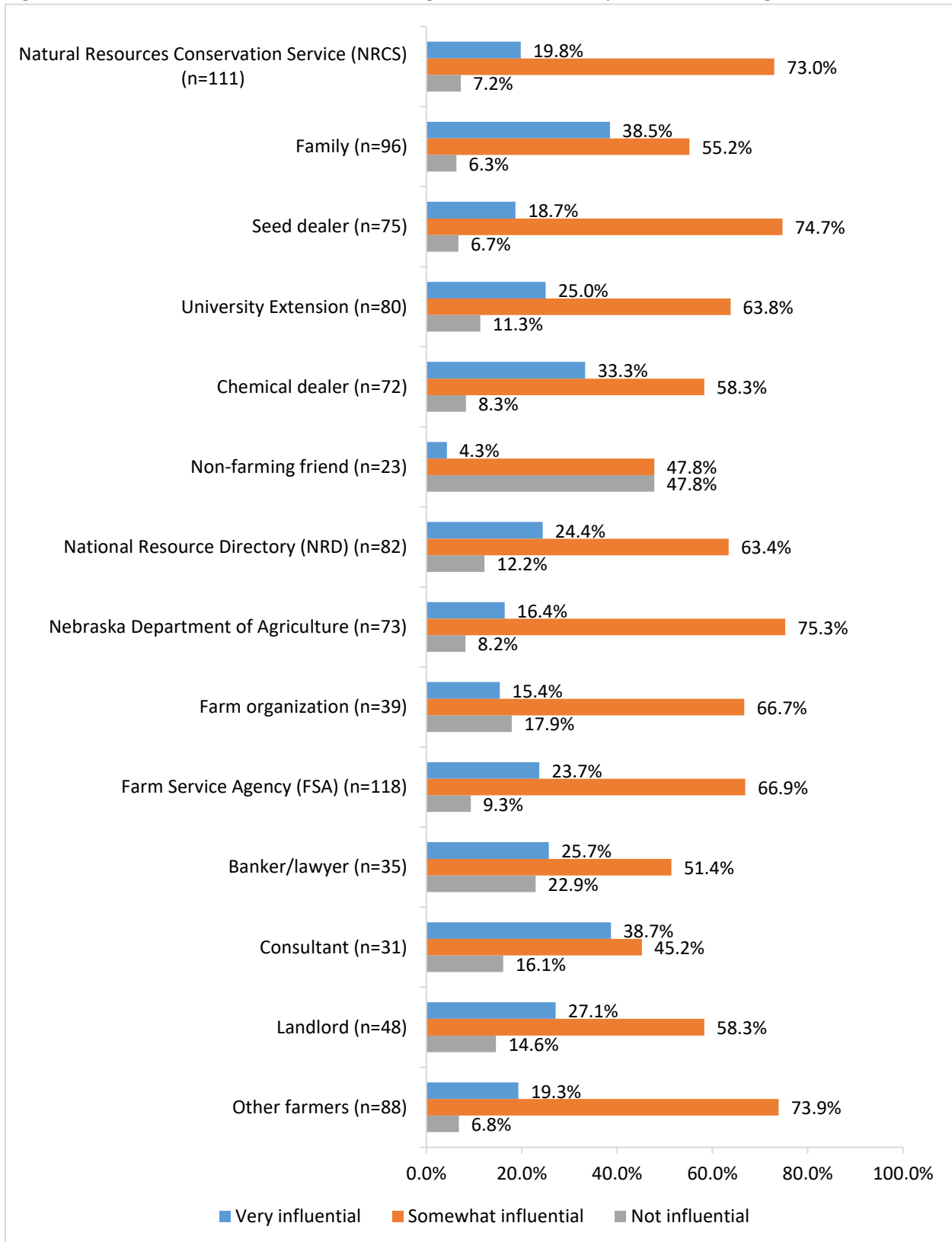
Service (NRCS) (66.5%), family (58.6%), University Extension (51.6%), other farmers (50.9%), and the National Resource Directory (NRD) (50.3%).

Figure 20. Whether respondents use the following sources when selecting conservation practices for their farming operation



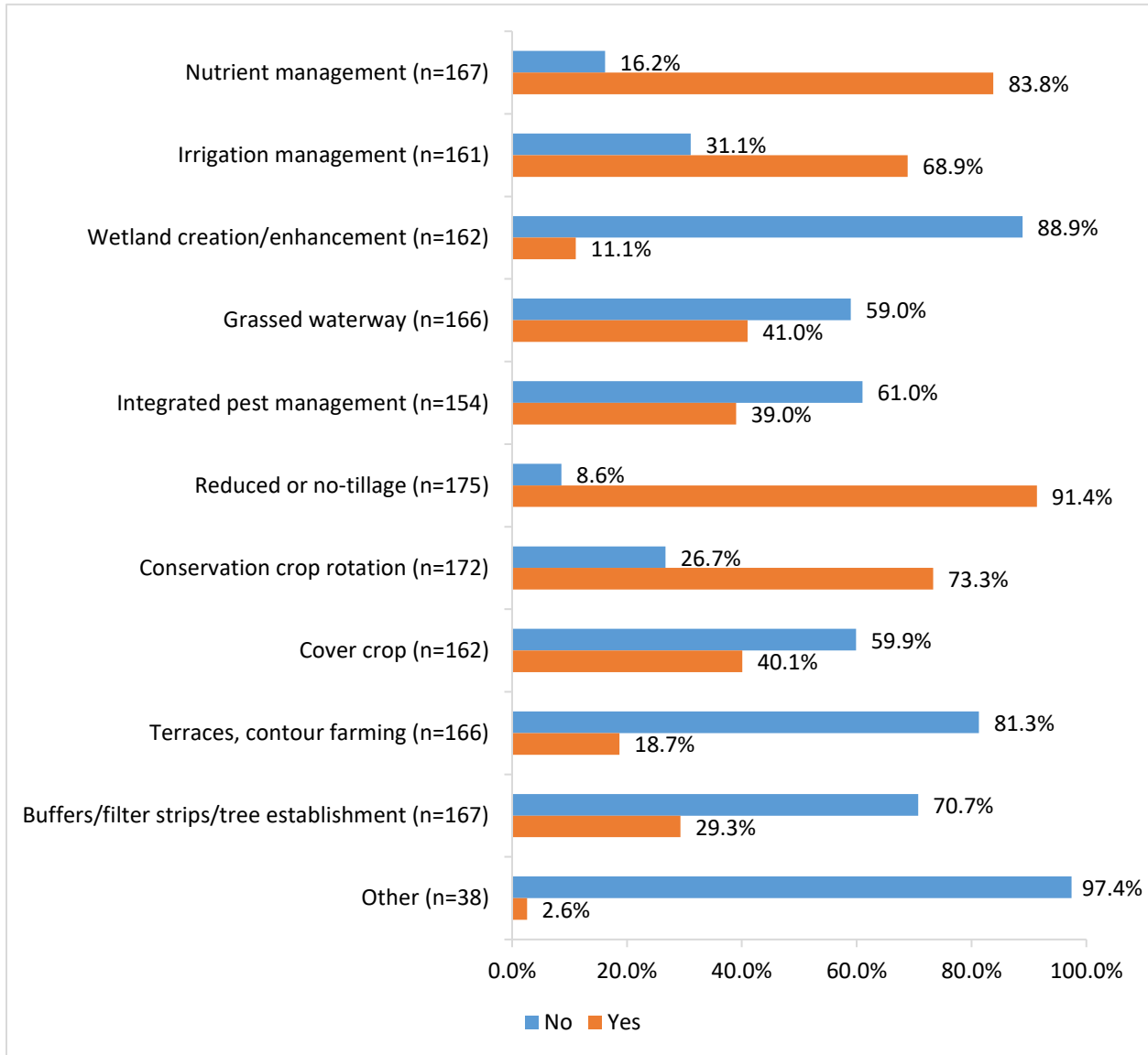
According to Figure 21, the majority of respondents feel that all sources are somewhat influential in their farming decisions. However, over a quarter of respondents feel that a consultant (38.7%), family (38.5%), and a chemical dealer (33.3%) are very influential. Nearly half (47.8%) responded that non-farming friends are not influential.

Figure 21. How influential each of the following sources are on respondents' farming decisions



As shown in Figure 22, the most used cropland practices respondents use on their farm are reduced or no-tillage (91.4%), nutrient management (83.8%), conservation crop rotation (73.3%) and Irrigation management (68.9%).

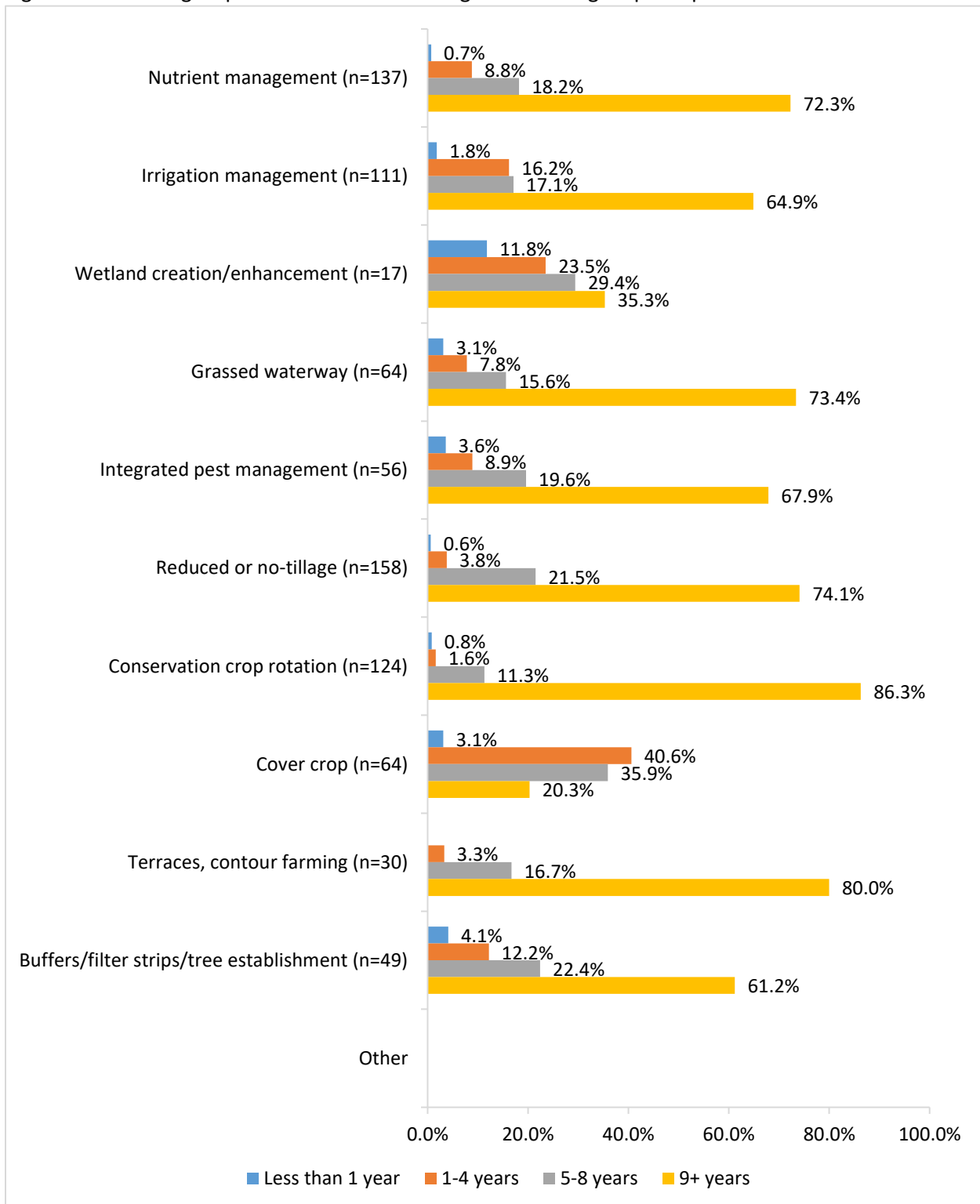
Figure 22. Whether respondents have been currently using each of the following cropland practices on their farm



A few other cropland practices respondents currently use on their farm are CRP (Conservation Reserve Program), soil sample, all pasture CRP, and trying to establish buffers (n=4).

As shown in Figure 23, many respondents who have been currently using the cropland practices have been following conservation crop rotation (86.3%) and nutrient management (72.3%) for nine or more years.

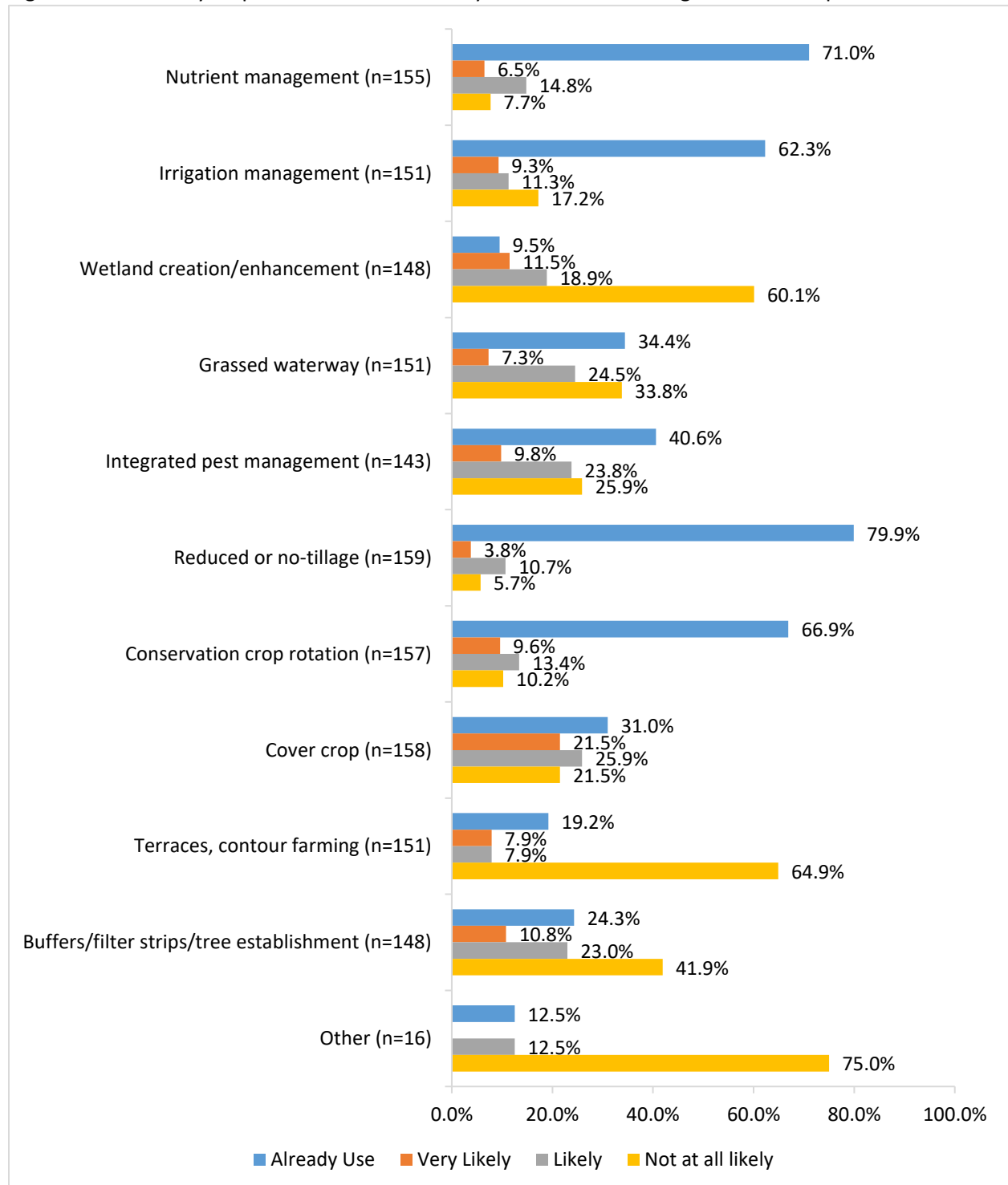
Figure 23. How long respondents have been using the following cropland practices



Respondents were asked how likely they would be to try each of the following conservation practices if money and time were not an issue. Figure 24 displays a good majority of respondents already use

reduced or no-tillage (79.9%), nutrient management (71.0%), conservation crop rotation (66.9%), and irrigation management (62.3%). Conservation practices respondents were not likely to use included terraces, contour farming (64.9%), wetland creation/enhancement (60.1%), and buffers/filter strips/tree establishment (41.9%).

Figure 24. How likely respondents would be to try each of the following conservation practices



More respondents (62.0%) do not raise livestock in the Shell Creek Watershed (Figure 25).

Figure 25. Whether respondents raise livestock in the Shell Creek Watershed (n=184)

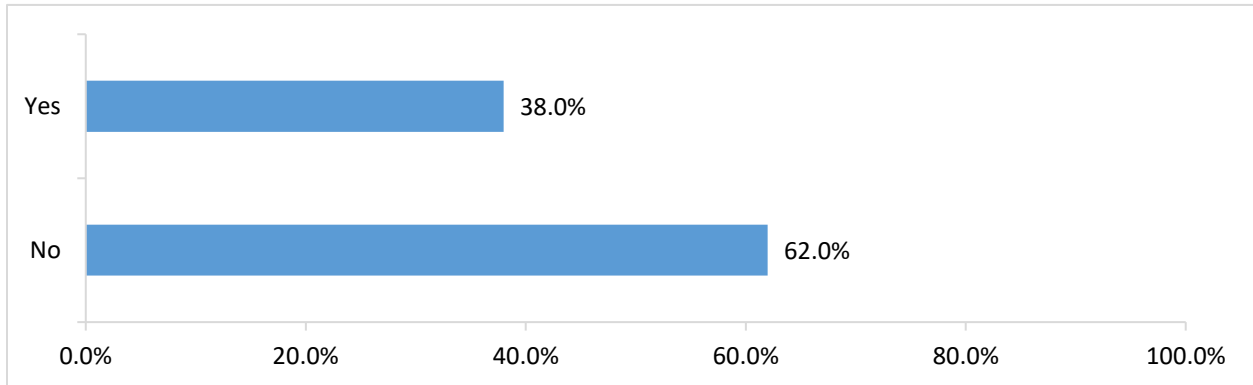
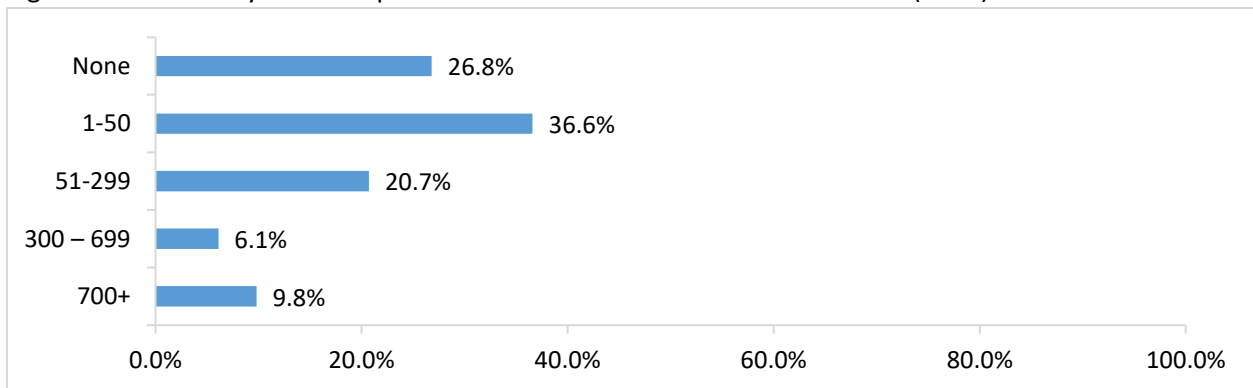


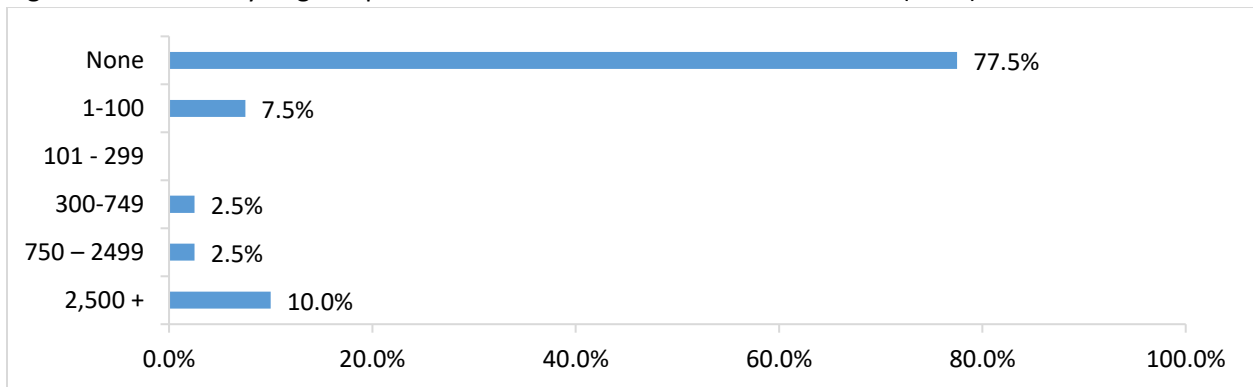
Figure 26 displays the majority (36.6%) of those who raise livestock in the Shell Creek Watershed raise between one and fifty cattle.

Figure 26. How many cattle respondents raise in the Shell Creek Watershed (n=82)



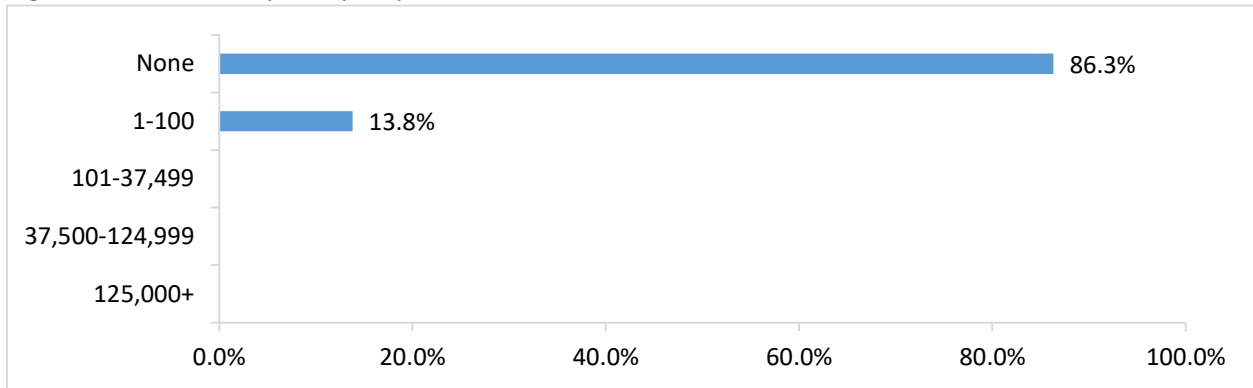
Of those who raise livestock, more than three quarters (77.5%) of respondents do not raise hogs. For those who do raise hogs, most (10.0%) raise 2,500 or more (Figure 27).

Figure 27. How many hogs respondents raise in the Shell Creek Watershed (n=80)



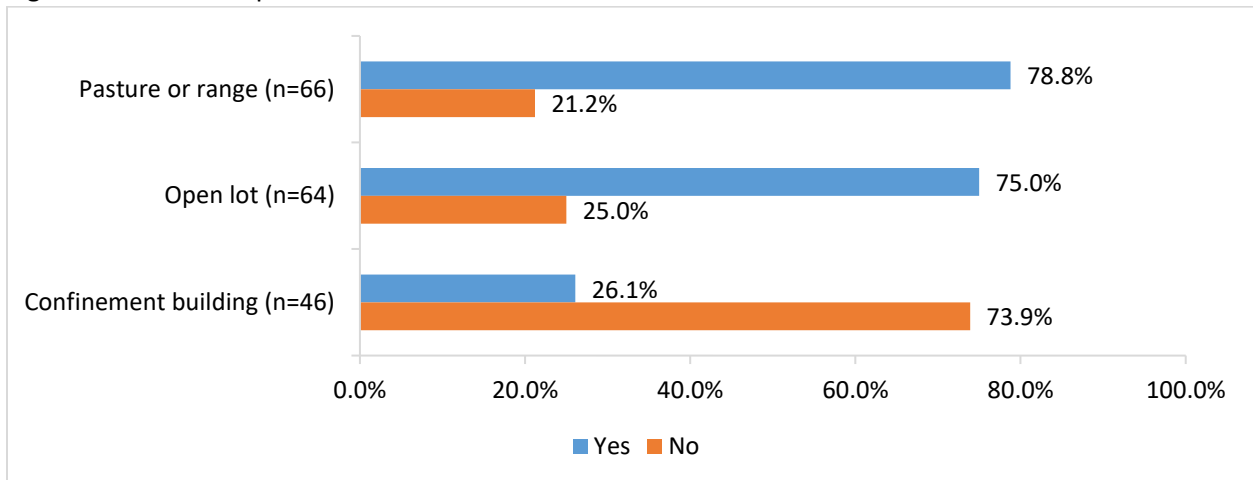
In Figure 28, respondents either do not raise poultry (86.3%) or raise between one and one hundred (13.8%).

Figure 28. How much poultry respondents raise in the Shell Creek Watershed (n=80)



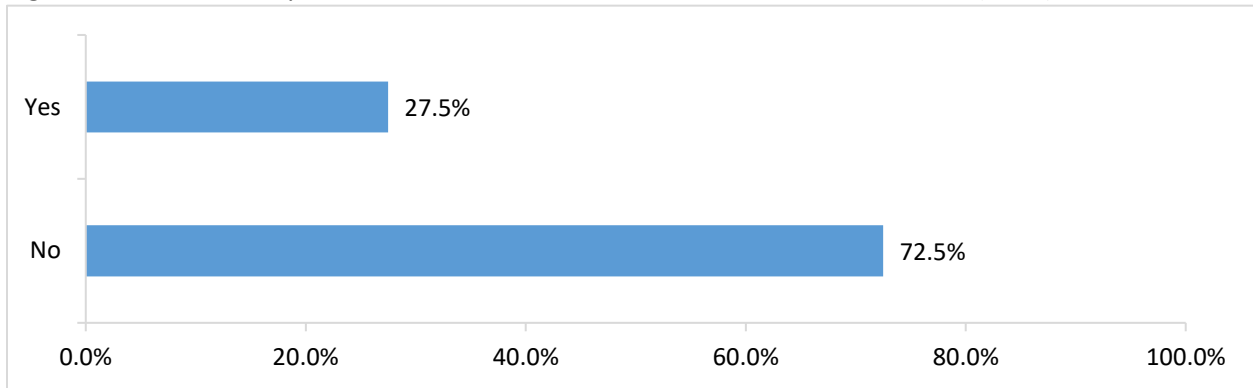
When respondents were asked where they maintain their livestock, several responded on a pasture or range (78.8%), or an open lot (75.0%; Figure 29).

Figure 29. Where respondents maintain their livestock



According to Figure 30, almost three quarters (72.5%) of respondents' livestock do not have access to an intermittent stream which flows after a rain storm.

Figure 30. Whether respondents livestock have access to an intermittent stream (n=80)



Most respondents (78.8%) do not have access to a perennial stream or continuously flowing water for their livestock (Figure 31).

Figure 31. Whether respondents' livestock have access to a perennial stream (n=80)

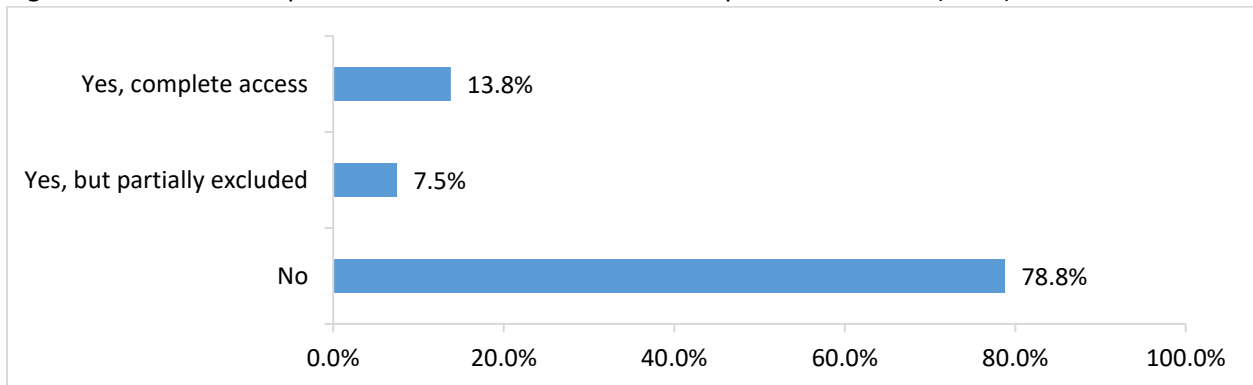
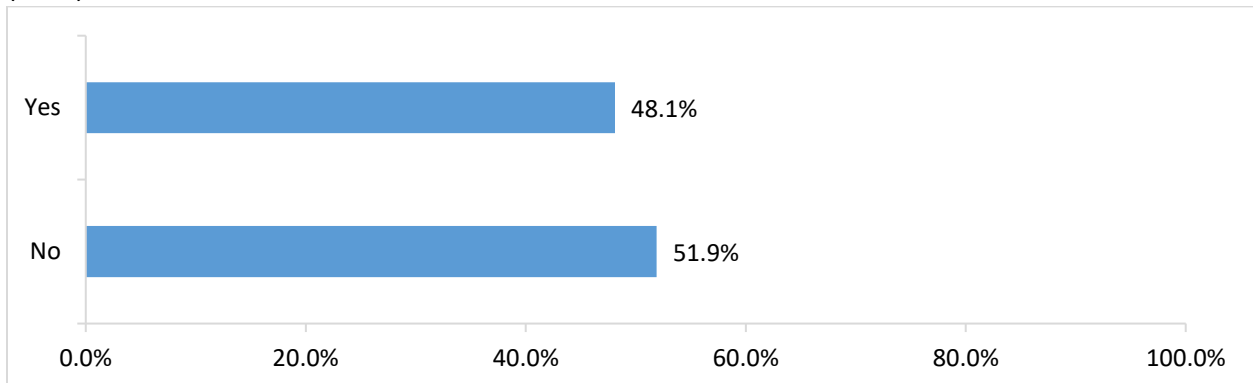


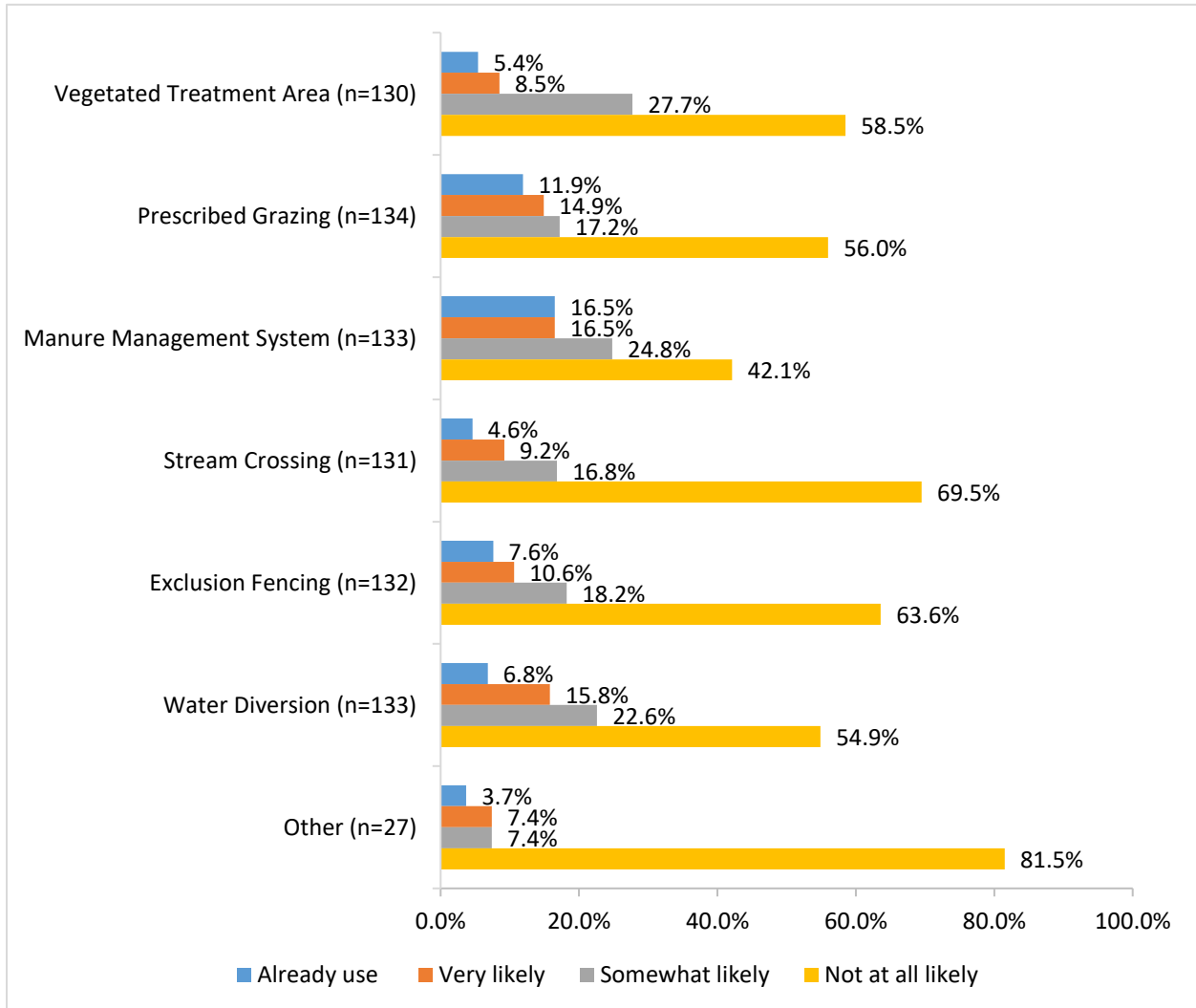
Figure 32 displays when respondents were asked whether their pastured livestock are in a rotational or managed grazing system, about half (48.1%) said they do while just over half (51.9%) said they do not.

Figure 32. Whether respondents' pastured livestock are in a rotational or managed grazing system (n=79)



More than half of respondents are not at all likely to use stream crossing (69.5%), exclusion fencing (63.6%), vegetated treatment areas (58.5%), prescribed grazing (56.0%), or water diversion (54.9%) conservation practices as seen in Figure 33.

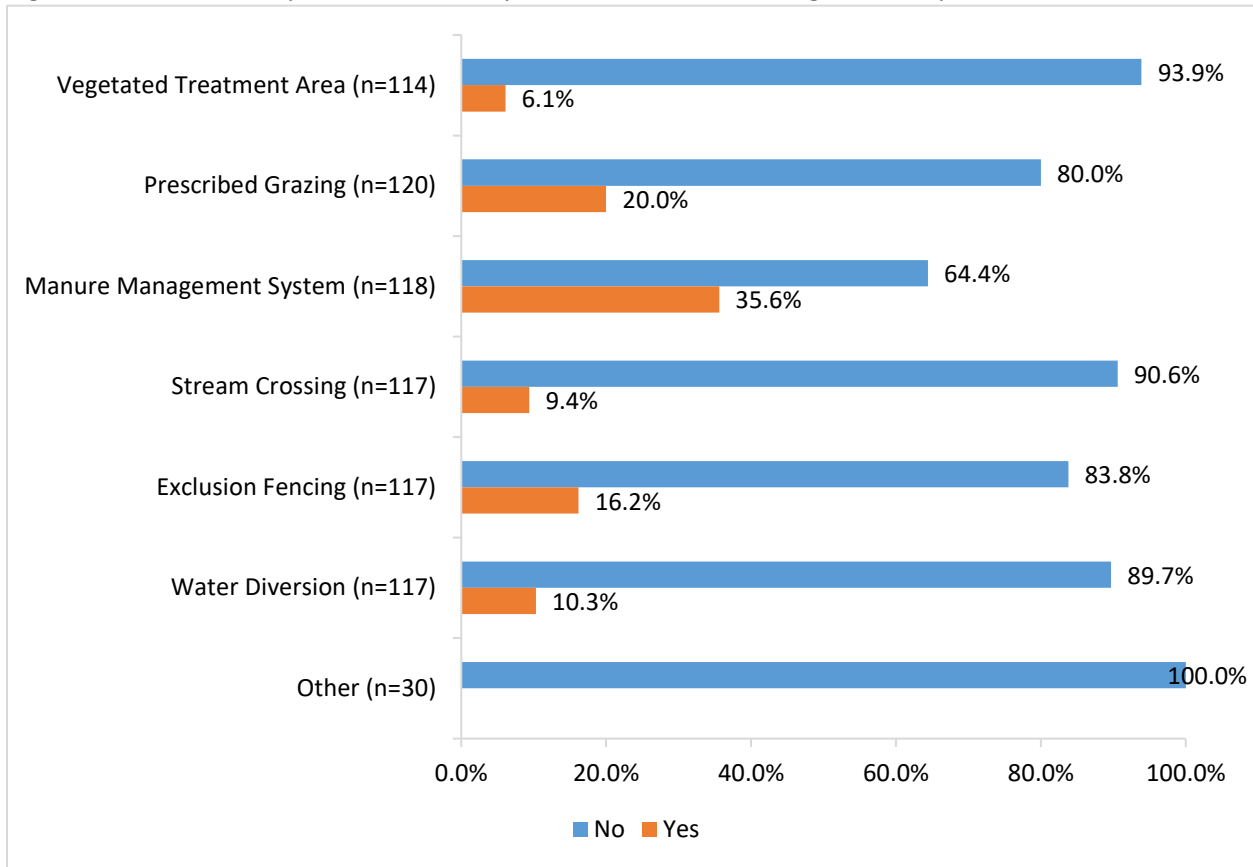
Figure 33. How likely respondents would be to try each of the following conservation practices if money and time were not an issue



When respondents were asked how likely they would be to try other practices if money and time were not an issue, one mentioned a rotational grazing with tank well water and another said a Conservation Reserve Program (CRP).

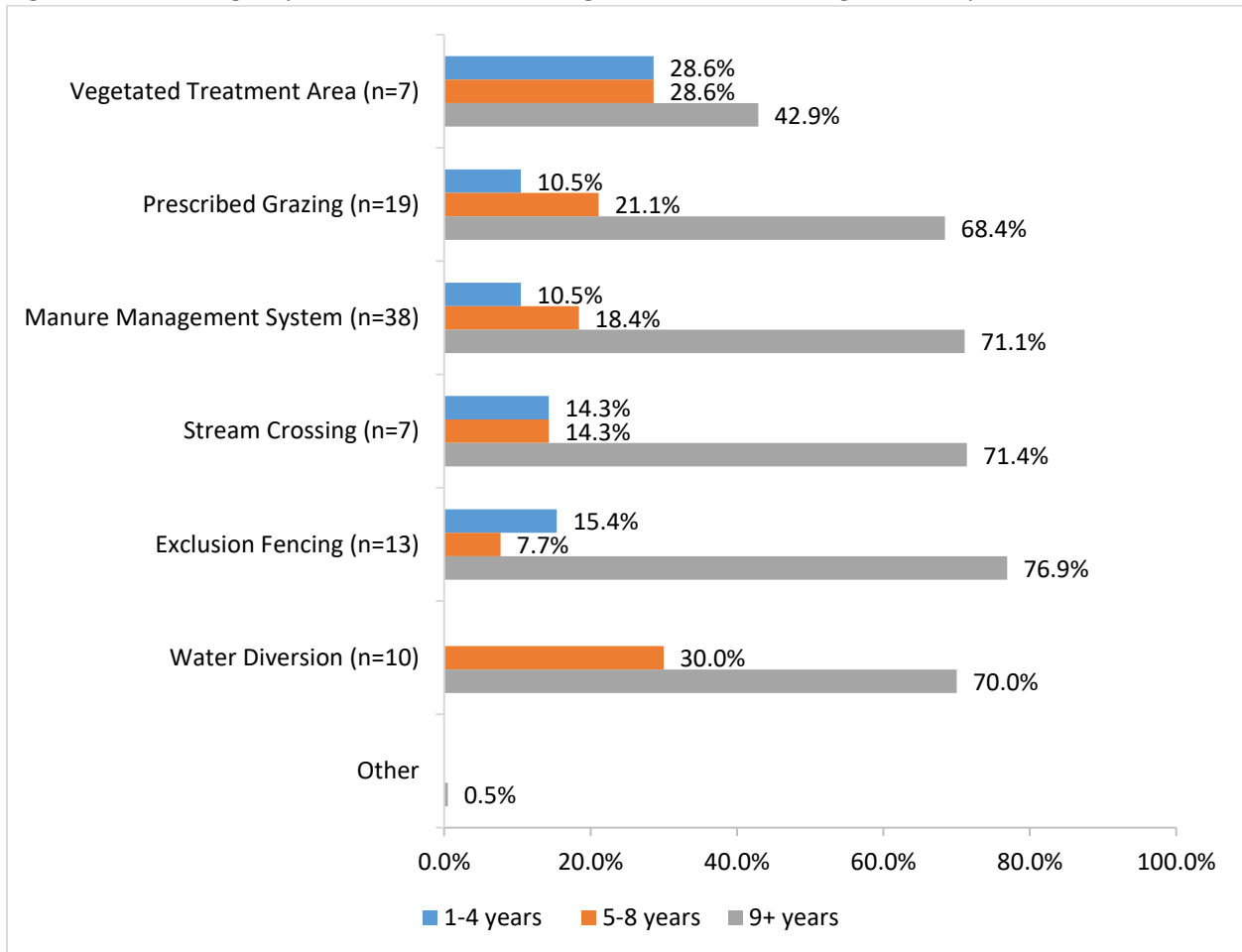
The majority of respondents shown in Figure 34 do not currently follow these livestock practices on their farms.

Figure 34. Whether respondents currently use each of the following livestock practices on their farm



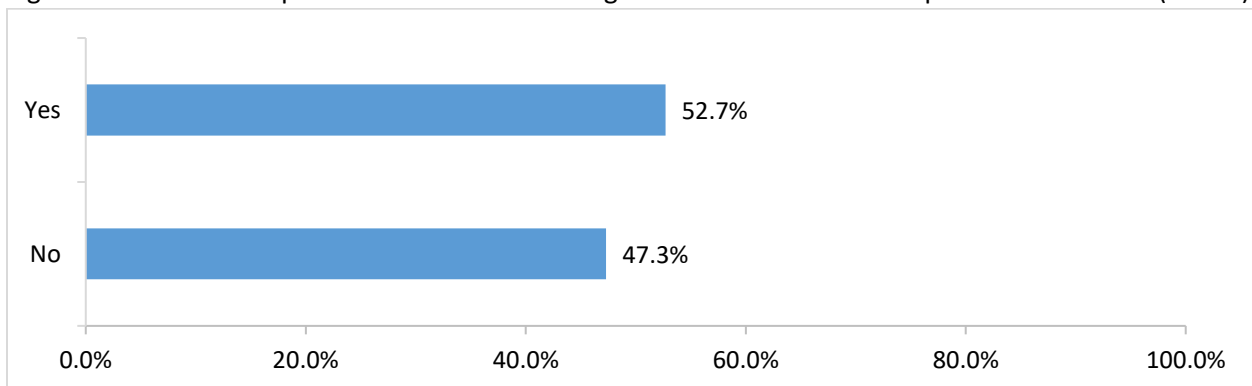
Of those respondents who currently use the following livestock practices, the majority answered they have been using vegetated treatment areas (42.9%), prescribed grazing (68.4%), a manure management system (71.1%), stream crossing (71.4%), exclusion fencing (76.9%), and water diversion (70.0%) on their farm for at least nine years (Figure 35).

Figure 35. How long respondents have been using each of the following livestock practices on their farm



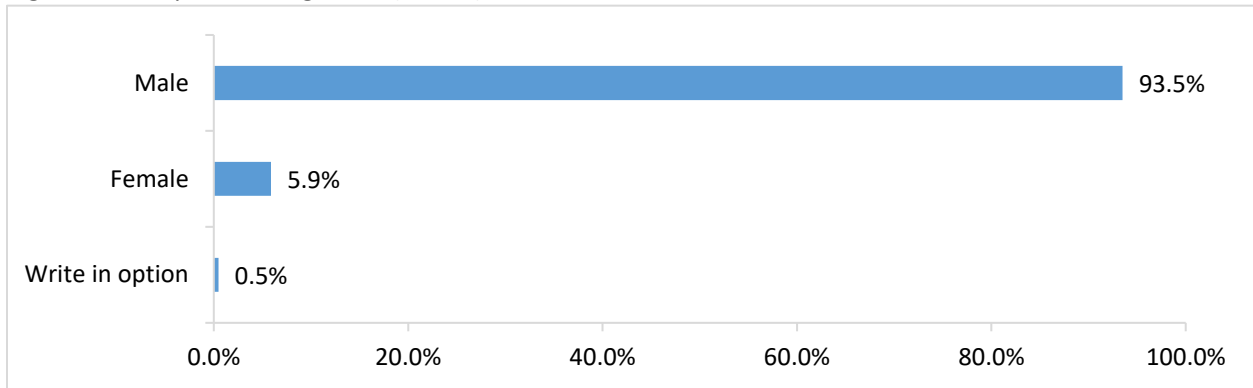
In Figure 36, just over half (52.7%) of respondents answered that they or someone else graze livestock on their cropland after harvest.

Figure 36. Whether respondents or someone else graze livestock on their cropland after harvest (n=165)



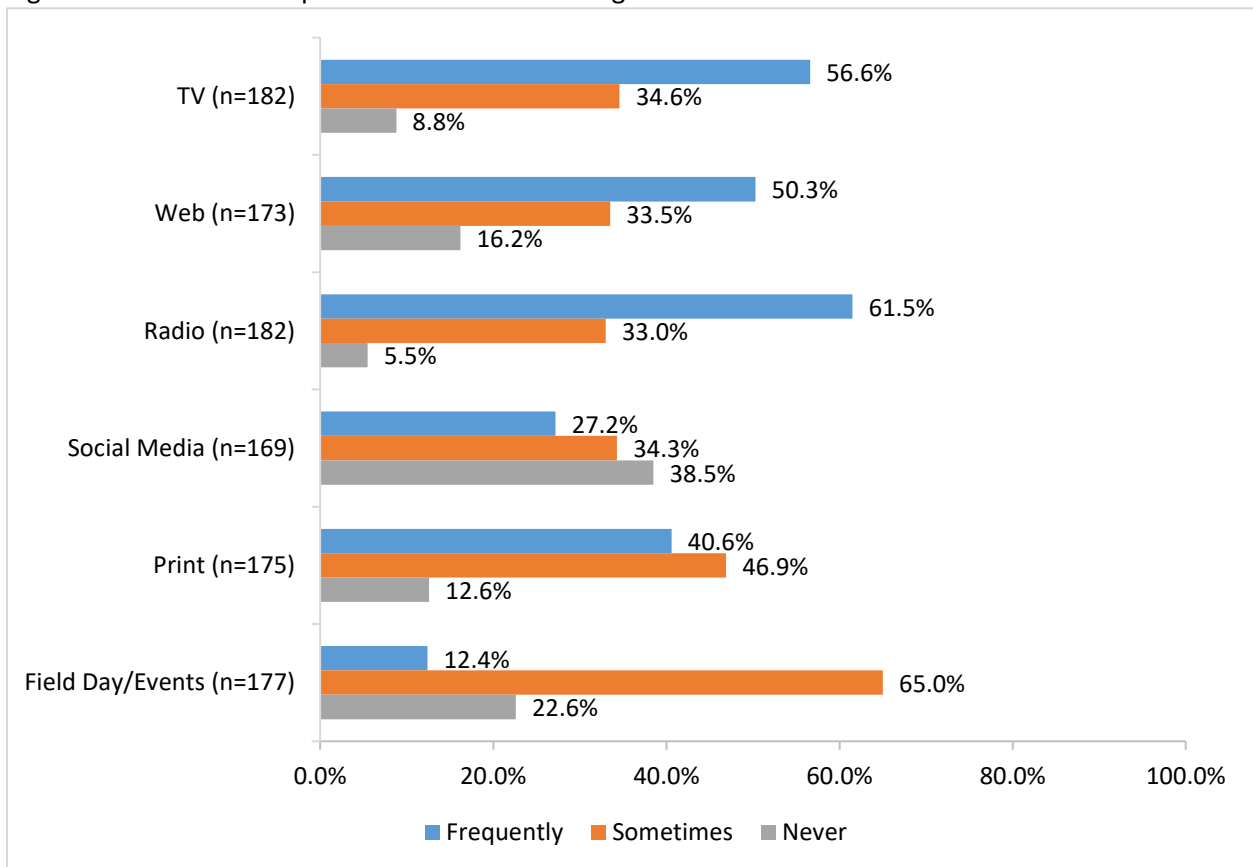
The majority of respondents who completed this Shell Creek survey are male (93.5%; Figure 37).

Figure 37. Respondent's gender (n=185)



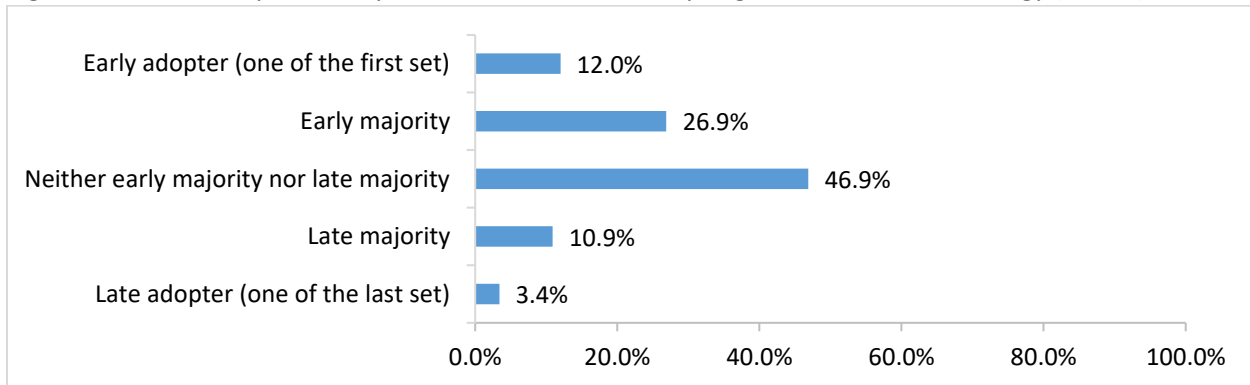
As displayed in Figure 38, respondents most frequently use the radio (61.5%), TV (56.6%), and Web (50.3%) media platforms. More than half of respondents (65.0%) use field day/events and almost half (46.9%) use print. Over a quarter or respondents never use social media (38.5%).

Figure 38: How often respondents use the following media formats



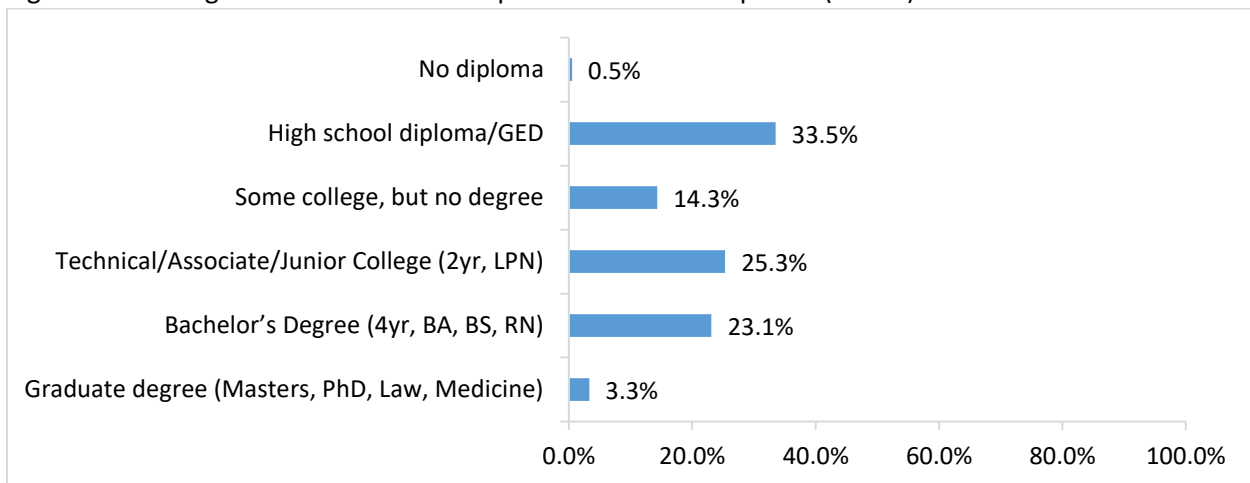
Most respondents (46.9%) placed themselves into neither early nor late majority when asked when they adopted new technologies compared to when other farmers adopt conservation technologies (Figure 39).

Figure 39. Where respondents place themselves into adopting conservation technology (n=175)



As seen in Figure 40, one-third of respondents have a high school diploma/GED (33.5%), while a quarter (25.3%) have technical/Associate/Junior College (2yr., LPN) education, and just under a quarter (23.1%) have a bachelor's degree (4yr, BA, BS, RN).

Figure 40. The highest level of education producers have completed (n=182)



Respondents were then asked to provide any feedback or comments. One person brought up that the feed lot east of Lindsay is too close to town while another said control is needed for runoff on cattle feeders and dairymen who chop all their corn off and plant no cover crops. It was also mentioned that CRP food plot buffers strip trees. One individual feels that those who work and till highly erodible land should be dealt with more strictly. They also mentioned that some NRCS and FSA employees could be more friendly and down to earth and that it would be more helpful if they could explain information rather than just telling people what they are in violation of or what they have done wrong.

One respondent said they test all their wells and they keep getting better, while another said they do not want to be told what to do with or on their land or water resources they own.

Another respondent brought up that their land is near Chad Creek in Grand Prairie Township where it is flat with very little run-off evidence. There is evidence of water pooling and only one area at run-off. Someone else said, the land that they owned and rented drains to the Looking Glass Watershed, in which the divide goes through their property.

It was brought up that if real estate taxes were lower, more landowners/farmers could afford management practices on marginal acres. They also said that Nebraska is one of the highest taxed states in the nation and it affects how the gets farmed.

One person said programs such as SWIG, NRD and Nebraska buffer programs are not a one size fits all and the programs need to be adjusted to fit different needs because not all areas experience the same problems or degree of flood damage. It was also said that the NRD does not utilize the volumes of data to analyze trends as a result of that program.

One person was thankful for continued work on environment and water quality. Someone also said that SCWIG has been a model organization for with a high level of success. One respondent included that both print and online farm trade magazines are a major source of information.

## Shell Creek Watershed

### Water Quality

1. Have you had your drinking water tested for nitrates in the past 5 years?

- Yes
- No
- Don't remember

2. Have you had your drinking water tested for bacteria (*E. coli*) in the past 5 years?

- Yes
- No
- Don't remember

3. Is your wastewater treated with a septic system?

- Yes
- No (skip to question 7)

4. Was your septic system installed prior to January 1, 2000?

- Yes
- No

5. Has your septic system or lagoon been inspected within the last 5 years?

- Yes
- No
- I don't know

6. Has your septic system been pumped within the last 5 years?

- Yes
- No
- I don't know

7. Do you have an unused or abandoned well on a farm you own or rent?

- Yes
- No
- I don't know

8. How concerned are you about each of the following?

	Very concerned	Concerned	Not at all concerned
a. Water quality affecting your farm management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Water quality affecting drinking water in the Shell Creek Watershed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Water quality affecting habitat and wildlife in the Shell Creek Watershed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. How concerned are you about the following resource issues in the Shell Creek Watershed?

	Very concerned	Concerned	Not at all concerned
a. Soil erosion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Stream bank erosion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Soil health / soil quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Upland wildlife habitat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Aquatic habitat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Flooding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Other, please specify:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="text"/>			

### Nitrate

Nitrate is both a natural and manmade inorganic compound. It may originate from fertilizer, manure, human waste and decaying organic matter. It enters groundwater through infiltration through the soil and enters streams through overland runoff.

10. How concerned are you with the nitrate levels in your groundwater?

- Very concerned
- Concerned
- Not at all concerned

### E. coli

E. coli bacteria are excreted in the feces of humans and animals. It enters a stream, river, or lake by direct deposit from livestock, wildlife, and/or runoff from animal feedlots or land application of manure. Discharges also may come from municipal and private wastewater systems.

11. How concerned are you with E. coli in Shell Creek?

- Very concerned
- Concerned
- Not at all concerned

### Atrazine

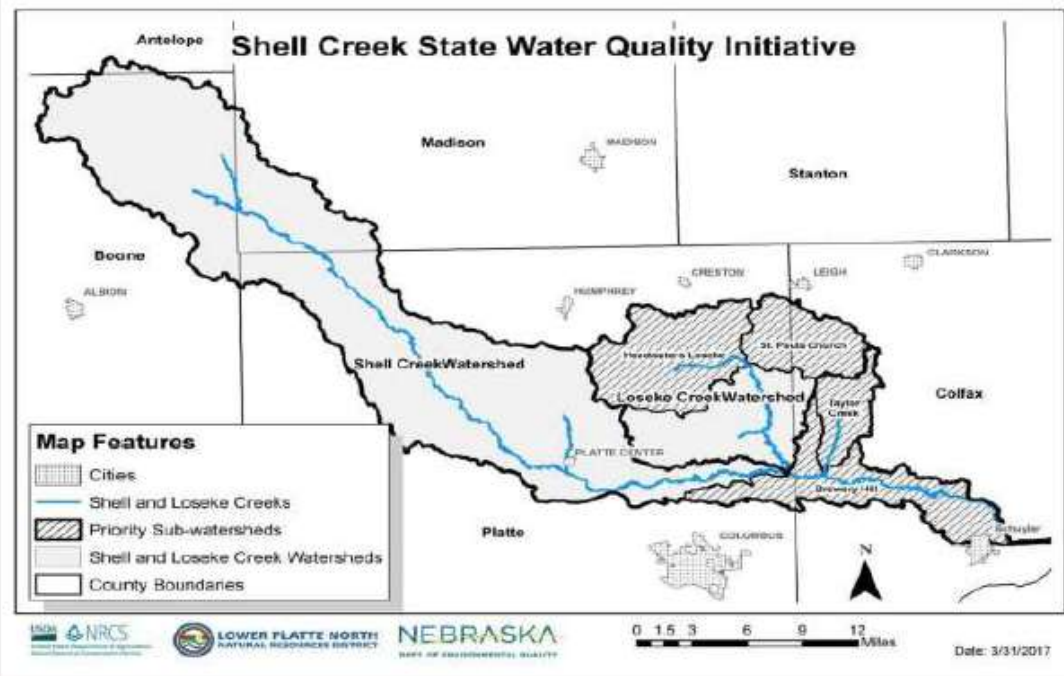
Atrazine is a manmade compound that does not naturally occur in nature. It enters streams through spills, over-spray and runoff of land application.

12. How concerned are you with Atrazine levels in Shell Creek?

- Very concerned
- Concerned
- Not at all concerned

## Shell Creek Watershed Needs

13. Please circle on the map any area of the Shell Creek Watershed that you feel needs attention.



14. What issues need to be addressed in the area(s) you circled?

15. If you would like to meet with someone to talk about specific issues you would like to see addressed in the Shell Creek Watershed, please provide your contact information below.

Name:

Email address:

Phone number:

### Best Management Practices

16. Do you currently implement any best management practices (BMPs) which benefit water quality?

- Yes  
 No

17. Have you received a cost share payment for the BMP?

- Yes  
 No

18. Would you be more likely to adopt or maintain a BMP or conservation practice if...

	Yes	Maybe	No	N/A
a. You knew they had benefits downstream	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. You could get financial assistance to implement the practices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. You had evidence that the practices would not reduce yield	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. You had evidence that the practices would improve your profitability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Most of your neighbors you knew had adopted the practices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. You could talk to other farmers about how to make the practices work on your farm	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Farming

19. Please describe the ownership or management arrangement of your farm(s) in the Shell Creek Watershed. Do you:

	No	Yes	How many acres?
a. Crop share	<input type="radio"/>	<input type="radio"/>	If yes → <input type="text"/>
b. Cash rent	<input type="radio"/>	<input type="radio"/>	If yes → <input type="text"/>
c. Own	<input type="radio"/>	<input type="radio"/>	If yes → <input type="text"/>

20. How many years have you been farming?

- Less than one year  
 1-5 years  
 6-10 years  
 11-20 years  
 21+ years

21. Have you changed the way you farm in the past 5 years in an attempt to make your farm more successful...

	Yes	No
a. Economically?	<input type="radio"/>	<input type="radio"/>
b. For long-term sustainability?	<input type="radio"/>	<input type="radio"/>
c. For environmental benefits?	<input type="radio"/>	<input type="radio"/>

22. Do you use the following sources when selecting conservation practices for your farming operation? If yes, how influential are the following on your farming decisions?

Source of conservation information	Use			Influence on your farming decisions		
	No	Yes		Very influential	Somewhat influential	Not influential
a. Natural Resources Conservation Service (NRCS)	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Family	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Seed dealer	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. University Extension	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Chemical dealer	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Non-farming friend	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. National Resource Directory (NRD)	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Nebraska Department of Agriculture	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Farm organization	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Farm Service Agency (FSA)	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Banker/lawyer	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l. Consultant	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
m. Landlord	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
n. Other farmers	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Cropland

23. Do you currently use each of the following cropland practices on your farm? If yes, how long have you been using each practice?

Conservation Practice	Use			Length of practice			
	No	Yes		Less than 1 year	1-4 years	5-8 years	9+ years
a. Nutrient management	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Irrigation management	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Wetland creation/enhancement	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Grassed waterway	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Integrated pest management	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Reduced or no-tillage	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Conservation crop rotation	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Cover crop	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Terraces, contour farming	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Buffers/filter strips/tree establishment	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Other, please specify:	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input style="width: 100%; height: 20px;" type="text"/>							

24. If money and time were not an issue, how likely would you be to try each of these practices?

Conservation Practice				
	Already Use	Very Likely	Likely	Not at all likely
a. Nutrient management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Irrigation management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Wetland creation/enhancement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Grassed waterway	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Integrated pest management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Reduced or no-tillage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Conservation crop rotation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Cover crop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Terraces, contour farming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Buffers/filter strips/tree establishment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Other, please specify:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="text"/>				

### Livestock

25. Do you raise livestock in the Shell Creek Watershed?

- Yes  
 No → Go to #33

26. How many cattle do you raise in the Shell Creek Watershed?

- None  
 1-50  
 51-299  
 300 – 699  
 700+

27. How many hogs do you raise in the Shell Creek Watershed?

- None  
 1-100  
 101 - 299  
 300-749  
 750 – 2499  
 2,500 +

28. How much poultry do you raise in the Shell Creek Watershed?

- None  
 1-100  
 101-37,499  
 37,500-124,999  
 125,000+

29. Where do you maintain your livestock?

	Yes	No
a. Pasture or range	<input type="radio"/>	<input type="radio"/>
b. Open lot	<input type="radio"/>	<input type="radio"/>
c. Confinement building	<input type="radio"/>	<input type="radio"/>

30. Do your livestock have access to an intermittent stream (only flows after rain storm)?

- Yes  
 No

31. Do your livestock have access to a perennial stream (continuously flowing water)?

- Yes, complete access  
 Yes, but partially excluded  
 No

32. Are your pastured livestock in a rotational, or managed, grazing system?

- Yes  
 No

33. If money and time were not an issue, how likely would you be to try each of these practices?

Conservation Practice	Already Use	Very Likely	Somewhat Likely	Not at all likely
a. Vegetated Treatment Area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Prescribed Grazing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Manure Management System	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Stream Crossing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Exclusion Fencing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Water Diversion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Other, please specify: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

34. Which of the following livestock practices do you currently use on your farm?

Conservation Practice	Use			Length of practice		
	No	Yes		1-4 years	5-8 years	9+ years
a. Vegetated Treatment Area	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Prescribed Grazing	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Manure Management System	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Stream Crossing	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Exclusion Fencing	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Water Diversion	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Other, please specify: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	If yes →	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

35. Did you or someone else graze livestock on your cropland after harvest?

- Yes  
 No

### Demographics

36. What is your gender?

- Male  
 Female

37. How often do you use the following media formats?

	Frequently	Sometimes	Never
a. TV	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Web	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Radio	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Social Media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Print	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Field Day/Events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

38. On a continuum of early conservation adopter to late adopter, where "Early Adopter" is adopting a new technology along with the first set of farmers and "Late Adopter" is adopting the technology after most farmers adopt it, where would you place yourself?

- Early adopter (one of the first set)
- Early majority
- Neither early majority nor late majority
- Late majority
- Late adopter (one of the last set)

39. What is the highest level of education you have completed?

- No diploma
- High school diploma/GED
- Some college, but no degree
- Technical/Associate/Junior College (2yr, LPN)
- Bachelor's Degree (4yr, BA, BS, RN)
- Graduate degree (Masters, PhD, Law, Medicine)

40. Please use the space below to provide any comments or feedback.

## Thank you!

Please use the postage-paid return envelope included in your survey packet to return your questionnaire.

Questions or requests from this survey can be directed to:

Bureau of Sociological Research  
University of Nebraska-Lincoln  
907 Oldfather Hall | PO Box 880325  
Lincoln, NE 68588-0325  
Phone: 1-800-480-4549 (toll free)  
E-mail: bosr@unl.edu

## Appendix B: Communication Language

### Invitation Letter



DATE

«City» Producer  
«Addy1» «Addy2»  
«City», «STATE\_ABBR» «ZIP»-«ZIP4»

Dear «City» Producer,

The Shell Creek Watershed Improvement Group (SCWIG) has been working with producers, landowners, and communities since 1999 to address flooding, water quality, and identify & promote priority conservation practices. We are conducting a survey to examine conservation attitudes and identify actions which should be taken to continue to improve the Shell Creek Watershed.

The Bureau of Sociological Research at the University of Nebraska-Lincoln is conducting this survey on behalf of the Institute of Agriculture and Natural Resources (IANR), in cooperation with the Shell Creek Watershed Improvement Group and Lower Platte North NRD.

This survey is to be filled out by the person who is managing or renting the land. If you have received this questionnaire and are a land owner, but are not the person actively working it, we would appreciate you giving it to the correct individual (i.e. renter, operator, etc.) or contacting us to let us know to whom we should send it (402-472-3672 or [bosr@unl.edu](mailto:bosr@unl.edu)).

Participation in the survey is voluntary, but can help guide actions taken to improve the Shell Creek Watershed. This survey should only take about 15 minutes. The answers you provide will be kept confidential. There are no known risks to participating in the survey.

Questions? We are happy to answer any questions you may have about the survey. You can contact the Bureau of Sociological Research at 1-800-480-4549 or email [bosr@unl.edu](mailto:bosr@unl.edu) with any questions about filling out or returning your survey. If you have questions about the purpose of the survey, you may contact one of the members of SCWIG: Gene Wissenburg 402-750-1796, Matt Bailey 402-615-0376 or Katie Pekarek, Water Quality Extension Educator (402) 413-1166 / [kpekarek2@unl.edu](mailto:kpekarek2@unl.edu). In addition, this study has been reviewed and approved by the Institutional Review Board (IRB# 20210321011EX). If you have questions about your rights as a participant, you may contact the IRB office at 402-472-6965.

Sincerely,

Lindsey Witt-Swanson  
Assistant Director  
Bureau of Sociological Research  
University of Nebraska-Lincoln

 Bureau of Sociological Research  
907 Oldfather Hall | P.O. Box 880325 | Lincoln, NE 68588-0325 | 402.472.3672 | 1.800.480.4549 | [bosr@unl.edu](mailto:bosr@unl.edu)  
[unl.edu](http://unl.edu)

## Postcard Reminder

### Front

	<b>NON PROFIT US POSTAGE PAID UNL</b>
<p>DEPARTMENT OF SOCIOLOGY Bureau of Sociological Research</p>	
<p>907 Oldfather Hall P.O. Box 880325 Lincoln, NE 68588-0325</p>	
<p>RETURN SERVICE REQUESTED</p>	

### Back

**DATE**

Last week we sent you a survey seeking important feedback from your household about land management practices in the Shell Creek Watershed. This survey examines conservation attitudes and identifies actions which should be taken to improve the Shell Creek Watershed. If you have already completed the questionnaire, please accept our sincere thanks. If not, we ask that you complete the survey today. This study has been reviewed and approved by the Institutional Review Board (IRB # 20210321011EX).

If you did not receive a survey, or if it was misplaced, please call the Bureau of Sociological Research toll-free at 1-800-480-4549 and they will get another one in the mail to you immediately. If you have questions about your rights as a participant, you may contact the IRB office at 402-472-6965.

Sincerely,

Lindsey Witt-Swanson  
Bureau of Sociological Research  
University of Nebraska-Lincoln

Reminder Letter



DATE

«City» Producer  
«Addy1» «Addy2»  
«City», «STATE\_ABBR» «ZIP»-«ZIP4»

Dear [City] Producer,

A few weeks ago we asked your household to complete the Shell Creek Watershed survey. To the best of our knowledge a member of your household has not yet returned the questionnaire.

Please help the Shell Creek Watershed Improvement Group with this important study, which aims to identify actions which should be taken to improve the Shell Creek Watershed and examine conservation attitudes.

Your feedback is of critical importance to this data collection effort. Please complete and return the questionnaire in the postage-paid, addressed return envelope enclosed in the survey packet as soon as possible.

This survey is to be filled out by the person who is currently working and managing the land. If you have received this questionnaire and are a land owner, but are not the person actively working it, we would greatly appreciate you giving it to the correct individual (i.e. renter, active irrigator, etc.) or contacting us to let us know to whom we should send it (402-472-3672 or [bosr@unl.edu](mailto:bosr@unl.edu)).

Participation in the survey is voluntary, but can help guide actions taken to improve the Shell Creek Watershed. This survey should only take about 15 minutes. The answers you provide will be kept confidential. There are no known risks to participating in the survey.

Questions? We are happy to answer any questions you may have about the survey. You can contact the Bureau of Sociological Research at 1-800-480-4549 or email [bosr@unl.edu](mailto:bosr@unl.edu) with any questions about filling out or returning your survey. If you have questions about the purpose of the survey, you may contact one of the members of SCWIG: Gene Wissenburg 402-750-1796, Matt Bailey 402-615-0376 or Katie Pekarek, Water Quality Extension Educator (402) 413-1166 / [kpekarek2@unl.edu](mailto:kpekarek2@unl.edu). In addition, this study has been reviewed and approved by the Institutional Review Board (IRB# 20210321011EX). If you have questions about your rights as a participant, you may contact the IRB office at 402-472-6965.

Sincerely,

Lindsey Witt-Swanson  
Assistant Director  
Bureau of Sociological Research

Bureau of Sociological Research  
907 O'Farther Hall | P.O. Box 880325 | Lincoln, NE 68588-0325 | 402.472.3672 | 1.800.480.4549 | [bosr@unl.edu](mailto:bosr@unl.edu)  
[unl.edu](http://unl.edu)

## Appendix C: Shell Creek Brochure

The Shell Creek covers almost 110 miles, running through 5 different counties in Nebraska, and drains approximately 304,873 acres of surrounding farmland.



**240+**

producers have participated in conservation efforts in the Shell Creek Watershed.

**340+**

conservation management practices have been implemented in the Shell Creek Watershed.



### CONTACT INFO

Shell Creek Watershed  
Improvement Group

Bill Bos  
NRCS Program Assistant  
(402) 564-0506 Ext. 3  
william.bos@ne.usda.gov

**SHELL CREEK  
WATERSHED  
IMPROVEMENT  
GROUP**

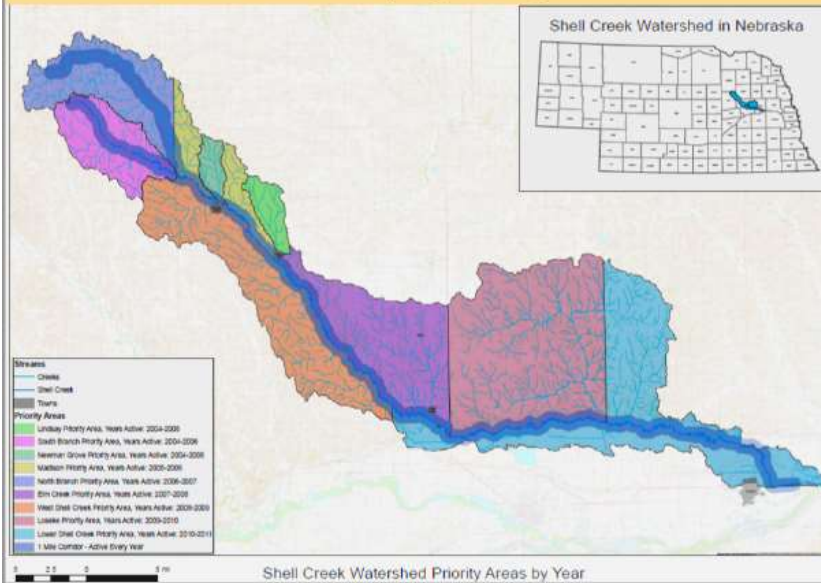
PUTTING THE SHELL BACK IN  
SHELL CREEK!

## BACKGROUND

Over the last 20 years, concerns about poor water quality and the effect of erosion on agriculture production led to the formation of a local group and grassroots efforts to identify and promote essential conservation practices in the Shell Creek Watershed.

The Shell Creek Watershed Improvement Group (SCWIG) was initiated in 1999 to work with landowners and producers in the watershed to identify and promote priority conservation practices and engages various agencies on the local, state, and federal level to provide additional assistance.

Engaging youth, families and communities is a priority for the SCWIG. In 2002, SCWIG engaged two local high schools and their science and ag instructors, to develop the Shell Creek Watershed Monitoring Program, for high school students.



## OUR VALUES

### COLLABORATIVE CONSERVATION

Combined efforts by the Shell Creek Watershed Improvement Group, landowners, partners, and agencies have collectively spent more than \$3.7 million on land and water conservation practices since the SCWIG formed in 1999.

### PARTNERS

Partners historically involved in this project include: SCWIG, Lower Platte North NRD, NDEE, NET, Nebraska Extension, USDA NRCS, US EPA, Nebraska Game & Parks Commission, Pheasants Forever, Prairieland RC&D, USGS, and the Newman Grove and Schuyler High School Science Programs.

### LOCALLY DRIVEN SOLUTIONS

Local conservation management practices are key in improving the water quality in the Shell Creek Watershed.

## Appendix D: AAPOR Transparency Initiative Immediate Disclosure Items

1. Who sponsored the research study.

### **Introduction**

2. Who conducted the research study.

### **Introduction**

3. If who conducted the study is different from the sponsor, the original sources of funding will also be disclosed.

### **Introduction**

4. The exact wording and presentation of questions and response options whose results are reported. This includes preceding interviewer or respondent instructions and any preceding questions that might reasonably be expected to influence responses to the reported results.

### **Appendix B**

5. A definition of the population under study and its geographic location.

### **Sampling Design**

6. Dates of data collection.

### **Data Collection Process**

7. A description of the sampling frame(s) and its coverage of the target population, including mention of any segment of the target population that is not covered by the design. This may include, for example, exclusion of Alaska and Hawaii in U.S. surveys; exclusion of specific provinces or rural areas in international surveys; and exclusion of non-panel members in panel surveys. If possible the estimated size of non-covered segments will be provided. If a size estimate cannot be provided, this will be explained. If no frame or list was utilized, this will be indicated.

### **Sampling Design**

8. The name of the sample supplier, if the sampling frame and/or the sample itself was provided by a third party.

### **Sampling Design**

9. The methods used to recruit the panel or participants, if the sample was drawn from a pre-recruited panel or pool of respondents.

### **Not applicable**

10. A description of the sample design, giving a clear indication of the method by which the respondents were selected, recruited, intercepted or otherwise contacted or encountered, along with any eligibility requirements and/or oversampling. If quotas were used, the variables defining the quotas will be reported. If a within-household selection procedure was used, this will be described. The description of the sampling frame and sample design will include sufficient detail to determine whether the respondents were selected using probability or non-probability methods.

### **Sampling Design**

11. Method(s) and mode(s) used to administer the survey (e.g., CATI, CAPI, ACASI, IVR, mail survey, web survey) and the language(s) offered.

### **Questionnaire Design**

12. Sample sizes (by sampling frame if more than one was used) and a discussion of the precision of the findings. For probability samples, the estimates of sampling error will be reported, and the discussion will state whether or not the reported margins of sampling error or statistical analyses have been adjusted for the design effect due to weighting, clustering, or other factors. Disclosure requirements for non-probability samples are different because the precision of estimates from such samples is a model-based measure (rather than the average deviation from the population value over all possible samples). Reports of non-probability samples will only provide measures of precision if they are accompanied by a detailed description of how the underlying model was specified, its assumptions validated and the measure(s) calculated. To avoid confusion, it is best to avoid using the term “margin of error” or “margin of sampling error” in conjunction with non-probability samples.

**Sampling Design**

13. A description of how the weights were calculated, including the variables used and the sources of weighting parameters, if weighted estimates are reported.

**Not applicable to this project**

14. If the results reported are based on multiple samples or multiple modes, the preceding items will be disclosed for each.

**Not applicable to this project.**

15. Contact for obtaining more information about the study.

**Questions**

**Natural Resources Conservation Service**  
**FINDING OF NO SIGNIFICANT IMPACT**  
for  
**Environmental Assessment; Upper Wahoo Creek Watershed**  
**Upper Wahoo Creek Watershed Plan in Saunders County, Nebraska**

The Natural Resources Conservation Service (NRCS) has prepared an Environmental Assessment in compliance with the National Environmental Policy Act (NEPA), as amended. Pursuant to the implementing regulations for NEPA (40 CFR parts 1500-1508); the USDA Departmental Policy for the NEPA (7 CFR part 1b); the NRCS Regulations (7 CFR part 650); and the NRCS policy (General Manual Title 190, Part 410); the NRCS gives notice that an environmental impact statement is not being prepared for constructing 10 single-purpose floodwater retarding dams in the Upper Wahoo Creek Watershed in Saunders County, Nebraska. The Environmental Assessment was developed in coordination with the sponsoring local organization (Lower Platte North Natural Resources District) for 10 single-purpose floodwater retarding dams in the Upper Wahoo Creek Watershed to enhance flood risk reduction within the watershed. Upon consideration of the affected environment, alternatives, environmental consequences, and comments and coordination with concerned public and agencies, the State Conservationist for NRCS, Nebraska found that based on the significance and context and intensity as defined in 40 CFR parts 1508.27, that the proposed action is not a major federal action significantly affecting the quality of the human environment. Thus, a Finding of No Significant Impact (FONSI) is being made.

The Lower Platte North Natural Resources District concurs with this determination and supports the proposed project to construct 10 single-purpose floodwater retarding dams to current NRCS requirements and for a design life expectancy of 50 years. The following action is proposed to construct a combination of low and significant-hazard design class dams to control a combined drainage area of approximately 26-square miles in an agricultural setting and capture and store 2,080 acre-feet of sediment over their lifespan.

For information regarding this finding, contact: John Wilson, Acting State Conservationist, U.S. Department of Agriculture, Natural Resources Conservation Service, Federal Building, Room 152, 100 Centennial Mall North, Lincoln Nebraska 68508-3866; telephone (402) 437-5300.

Conclusion: I find that the proposed action is not a major federal action significantly affecting the quality of the human environment. Thus, a Finding of No Significant Impact (FONSI) has been made.

Signed in Lincoln, Nebraska on \_\_\_\_\_.

\_\_\_\_\_  
JOHN WILSON  
Acting State Conservationist

\_\_\_\_\_  
Date



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

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

**Invoice number:** 022-070  
**Date:** 11/29/2021  
**Project:** 022-17-02 WAHOO CREEK WATERSHED  
PLAN/EA

For Services Through November 26, 2021

<b>ADDITIONAL SERVICES WATERSHED PLAN EA</b>			
	Hours	Rate	Billed
<b>Engineer Intern</b>			
Anna Bakke	19.00	\$110.00	\$2,090.00
<b>Senior Environmental Engineer</b>			
Janel Kaufman	28.00	\$160.00	\$4,480.00
<b>Phase subtotal</b>			<b>\$6,570.00</b>

<b>Invoice total</b>	<b>\$6,570.00</b>
----------------------	-------------------

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



**INVOICE SUMMARY**

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



**INVOICE SUMMARY**

Description	Contracted Fee	Previously Billed	This Invoice	Total To Date	% Complete
Agency Coord	\$7,680.00	\$6,181.00	\$0.00	\$6,181.00	80.48
Breach Analysis	\$26,343.00	\$36,054.50	\$0.00	\$36,054.50	136.87
Hydraulics/Structure Sizing	\$19,244.00	\$30,321.25	\$0.00	\$30,321.25	157.56
Develop Land Rights & Structure Costs	\$29,784.00	\$29,048.25	\$0.00	\$29,048.25	97.53
Land Rights Assessment	\$4,534.00	\$1,496.25	\$0.00	\$1,496.25	33.00
Site Survey	\$14,779.00	\$5,080.00	\$0.00	\$5,080.00	34.37
Additional Services Watershed Plan EA	\$48,000.00	\$6,289.27	\$6,570.00	\$12,859.27	26.79
Additional Services-Economic-Project Management	\$8,329.00	\$5,570.00	\$0.00	\$5,570.00	66.87
Additional Services-Economics-Flood Damage Reduction Economics	\$64,690.00	\$66,770.50	\$0.00	\$66,770.50	103.22
Additional Services-Economics-Revised Plan Economics	\$22,450.00	\$10,187.75	\$0.00	\$10,187.75	45.38
Site 83 Removal	\$22,305.00	\$19,167.50	\$0.00	\$19,167.50	85.93
<b>Total</b>	<b>\$740,763.00</b>	<b>\$725,750.25</b>	<b>\$6,570.00</b>	<b>\$732,320.25</b>	<b>98.86</b>

**Aging Summary**

Invoice Number	Invoice Date	Outstanding	Current	Over 30	Over 60	Over 90	Over 120
022-070	11/29/2021	6,570.00	6,570.00				
	Total	6,570.00	6,570.00	0.00	0.00	0.00	0.00

Progress Report for Wahoo Creek Watershed Dams Sites



Lower Platte North NRD

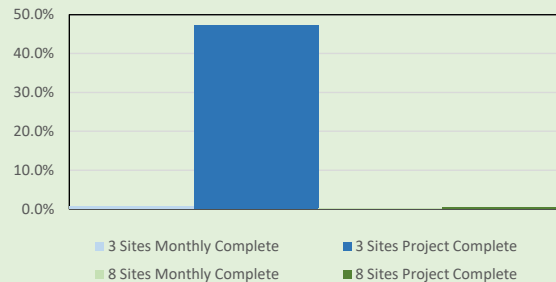
For Work Completed During The Month Of : **November, 2021**  
(through 11/27/21)

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		0.0%	\$ 6,654.79	30.5%
020 - Geotechnical Engineering	\$ 222,485	\$ 769.75	0.3%	\$ 204,239.50	91.8%
030 - Dam Design	\$ 173,160		0.0%	\$ 44,845.67	25.9%
040 - Permitting	\$ 79,960	\$ 2,553.96	3.2%	\$ 9,093.44	11.4%
050 - Survey and Legal Descriptions	\$ 10,780		0.0%	\$ 11,360.33	105.4%
060 - Community/Public Participation	\$ -			\$ -	
070 - Construction Services	\$ 75,600			\$ -	
				\$ -	
<b>3 Sites Totals</b>	<b>\$ 583,825</b>	<b>\$ 3,323.71</b>	<b>0.6%</b>	<b>\$ 276,193.73</b>	<b>47.3%</b>

Project # A18-3423 (separate invoice) Sites 55, 66, 77, 82, 84, 85, &86 Project Phase	Phase Totals	Billings for Month		Project Total Billings to Date	
		Current Earned/Billings	% Completed This Month	JTD Earned/Billings	% Completed Overall
100 - Project Management/Meetings	\$ 62,400	\$ 901.76	1.4%	\$ 901.76	1.4%
110 - Geotechnical Engineering	\$ 607,460	\$ 1,384.88	0.2%	\$ 1,384.88	0.2%
120 - Dam Design	\$ 436,278	\$ 1,217.72	0.3%	\$ 1,217.72	0.3%
130 - Permitting	\$ 251,140	\$ 576.98	0.2%	\$ 576.98	0.2%
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	\$ -			\$ -	
<b>7 Sites Totals</b>	<b>\$ 1,416,153</b>	<b>\$ 4,081.34</b>	<b>0.3%</b>	<b>\$ 4,510.36</b>	<b>0.3%</b>

<b>Billings For Month</b>	<b>\$ 7,405.05</b>
Total Billings To Date	\$ 280,704.09
Project Budget	\$ 1,999,978
Budget Remaining	\$ 1,719,273.91

% Budget Spent Per Site



Summary Of Work Completed This Month

Sites 26A, 26B, & 27	Sites 55,66,77,82,84,85, & 86
-Previous permitting and stream assesment reviews that were completed and then project was put on hold. -Previous geotechnical review of geotechnical data.	-Project Kickoff meeting with the design team -Review of Watershad Plan document in preperation for water resources and environmental design. -Geotechnical and drilling coordiantion with landowners for site access.

Planned Work For Next Month

Site 26A, 26B, & 27	Sites 55, 66, 77, 82, 84, 85, & 86
-Design for the first 3 dams continue to be on-hold until further notice from NRD and/or NRCS.	-Field operations including site visit, soil test borings, and surveying. -Start coordination with USACE regarding permitting -Review of current dam alignments from Watershed Plan

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

**Invoice**



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

December 01, 2021  
Invoice No: 405705

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

**Invoice Total \$3,323.71**

Olsson Project # 018-34230 Lower Platte North NRD Wahoo Creek Watershed & 3 Dam Sites  
Professional services rendered August 9, 2020 through November 27, 2021 for work completed in accordance with agreement.

---

Phase	020	Geotechnical Engineering		
<b>Labor</b>				
			<b>Hours</b>	<b>Amount</b>
Principal			.50	92.70
Project Professional			5.50	677.05
	Totals		6.00	769.75
	<b>Total Labor</b>			<b>769.75</b>
			<b>Total this Phase</b>	<b>\$769.75</b>

---

Phase	040	Permitting		
<b>Labor</b>				
			<b>Hours</b>	<b>Amount</b>
Assistant Professional			28.50	2,553.96
	Totals		28.50	2,553.96
	<b>Total Labor</b>			<b>2,553.96</b>
			<b>Total this Phase</b>	<b>\$2,553.96</b>

<b>Billing Limits</b>	<b>Current</b>	<b>Prior</b>	<b>To-Date</b>
Total Billings	3,323.71	274,460.32	277,784.03
Limit			583,825.00
Balance Remaining			306,040.97
	<b>AMOUNT DUE THIS INVOICE</b>		<b>\$3,323.71</b>

Email invoice to [tmountford@lpnrd.org](mailto:tmountford@lpnrd.org)

Authorized By: Andrew Phillips

**Invoice**



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

December 01, 2021  
 Invoice No: 405707

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

**Invoice Total \$4,081.34**

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

Professional services rendered Novmeber 2, 2021 through November 27, 2021 for work completed in accordance with agreement.

---

Phase	100	Sites 55 66 77 82 83 84 85 86	Project Management		
<b>Labor</b>					
			<b>Hours</b>	<b>Amount</b>	
Principal			4.00	901.76	
	Totals		4.00	901.76	
	<b>Total Labor</b>				<b>901.76</b>
<b>Billing Limits</b>					
		<b>Current</b>	<b>Prior</b>	<b>To-Date</b>	
Total Billings		901.76	0.00	901.76	
Limit				21,840.00	
Balance Remaining				20,938.24	
			<b>Total this Phase</b>		<b>\$901.76</b>

---

Phase	110	Geotechnical Engineering			
<b>Labor</b>					
			<b>Hours</b>	<b>Amount</b>	
Project Professional			11.25	1,384.88	
	Totals		11.25	1,384.88	
	<b>Total Labor</b>				<b>1,384.88</b>
<b>Billing Limits</b>					
		<b>Current</b>	<b>Prior</b>	<b>To-Date</b>	
Total Billings		1,384.88	0.00	1,384.88	
Limit				21,840.00	
Balance Remaining				20,455.12	
			<b>Total this Phase</b>		<b>\$1,384.88</b>

---

Phase	120	Dam Design			
-------	-----	------------	--	--	--

INVOICE PAYMENT IS REQUESTED WITHIN 30 DAYS

**Labor**

	Hours	Amount
Assistant Professional	12.00	1,217.72
Totals	12.00	1,217.72
<b>Total Labor</b>		<b>1,217.72</b>

**Billing Limits**

	Current	Prior	To-Date
Total Billings	1,217.72	0.00	1,217.72
Limit			21,840.00
Balance Remaining			20,622.28
		<b>Total this Phase</b>	<b>\$1,217.72</b>

-----  
Phase 130 Permitting

**Labor**

	Hours	Amount
Principal	1.00	198.75
Assistant Professional	3.75	378.23
Totals	4.75	576.98
<b>Total Labor</b>		<b>576.98</b>

**Billing Limits**

	Current	Prior	To-Date
Total Billings	576.98	0.00	576.98
Limit			21,840.00
Balance Remaining			21,263.02
		<b>Total this Phase</b>	<b>\$576.98</b>

**AMOUNT DUE THIS INVOICE \$4,081.34**

Email invoice to [tmountford@lpnrd.org](mailto:tmountford@lpnrd.org)

Authorized By: Andrew Phillips



Invoice

November 24, 2021

Project No: R170124.00

Invoice No: 129032

Invoice Amount: 3,098.00

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

Project Manager Adam Rupe

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

**Professional Services through November 19, 2021**

- Progress Report attached

	Contract Amount	Percent Complete	Billed-to-Date	Previous Billing	Current Billing
<b>Lump Sum Phase(s)</b>					
Task 1: Evaluate Water Quality Data	\$4,540.00	100 %	\$4,540.00	\$4,540.00	0.00
Task 2: Quantify Pollutant Loads	\$13,240.00	100 %	\$13,240.00	\$13,240.00	0.00
Task 3: Quantify Pollutant Reductions	\$11,420.00	75 %	\$8,565.00	\$5,710.00	\$2,855.00
Task 4: Project Management	\$2,430.00	75 %	\$1,822.50	\$1,579.50	\$243.00
<b>Total</b>	<b>\$31,630.00</b>		<b>\$28,167.50</b>	<b>\$25,069.50</b>	<b>\$3,098.00</b>
<b>Total Amount Due Upon Receipt :</b>					<b>\$3,098.00</b>

Email invoice to : [tmountford@lppnrd.org](mailto:tmountford@lppnrd.org) and [jbreunig@lppnrd.org](mailto:jbreunig@lppnrd.org)



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

JEO Project #: 170124.00  
Through: November 22, 2021



1. **Work completed during current period**
  - Ongoing coordination with LPNNRD and NDEE.
  - Internal project management.
  - Complete initial drafts of report for pollutant load estimates and BMP reduction estimates.
  - Complete initial draft of BMP Calculator.
  
2. **Planned accomplishments for next period**
  - Deliver final drafts of all project deliverables:
    - GIS and other technical data
    - Water quality analysis report
    - Pollutant load and reduction report
    - BMP calculator
  - Complete final edits following LPNNRD and NDEE review.
  - Project closeout.
  
3. **Project schedule**
  - Anticipated project close out by the end of 2021.
  
4. **Information needed from project partners**
  - None at this time
  
5. **Next Meeting Date and Time**
  - None at this time
  
6. **Other Notes**
  - Project team will continue to monitor COVID-19 health directives and recommendations, as they may relate to any meetings

Please contact Adam Rupe at 402.322.0377 or at [arupe@jeo.com](mailto:arupe@jeo.com) for any questions or concerns regarding this progress report

**Joint Water Management Advisory Board  
Meeting Minutes, November 18, 2021  
West Meeting Room, City Auditorium,  
925 North Broad Street, 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 were asked to identify themselves and are shown on the attached attendance sheet. A quorum of nine representatives from member organizations (Lower Platte North NRD, Dodge County, Ames Dyke, City of Fremont, SID #3, SID #5, North Bend Drainage, Inglewood, and Platte Township) were in attendance.
3. **Approval of the July 21, 2021 meeting minutes.** A motion was made by Mayor Spellerberg and seconded by Pollard to approve the meeting minutes as submitted. Motion carried unanimously 9-0.
4. **Grant Updates.**
  - a. **Platte River Gauge Monitoring – Tom Mountford.** Mountford said a committee comprised of representatives from the Lower Platte NRD, Papio-Missouri NRD, Dodge County, and City of Fremont are working with USGS to place additional monitoring gauges along the Platte River per the interlocal agreement approved by the parties. Proposed locations for cameras are bridges on Highways 15, 64, 79, and 77. He also said another possible location is on private property where the Loop and Platte Rivers come together.
  - b. **Rod & Gun Club Breach Repair/Closeout – Tom Smith & Kirk Brown.** Smith and Brown reported that the final site inspection occurred on August 20 and that a public hearing will be held on December 1.
  - c. **North Bend Cutoff Ditch – Mike Sotak, FRYA.** Sotak presented findings from the North Bend Cutoff Ditch study saying that there must be approximately \$45,000 in average benefits for every \$1 million in grant funds received. He noted that in order to achieve a positive cost benefit ratio, the North Bend Levee may have to be included in the study. A meeting with North Bend officials will be held to determine their interest in studying the levee.
  - d. **Rawhide Creek Watershed Work Plan – John Peterson, JEO.** At 2pm, Peterson held a joint agency meeting with various public organizations that could be affected by the watershed study.
  - e. **East Fremont & Elkhorn Township Drainage Improvement Project – Kevin Kruse, JEO.** Kruse reported that this study is closely tied with the Rawhide Creek Watershed Work Plan and that hydraulic and hydrology work is underway. He said this project may be eligible for an Advance Planning Grant and that a positive benefit cost ratio must be obtained before FEMA funds can be used for specific mediation projects.
  - f. **Other Grants.** Smith reported that BRIC/FEMA funds may be available to look at flooding impacts from Highway 77 to Ames.

5. **Member updates.** Larry Ruzicka noted that the Central Cutoff Ditch has been repaired and that the Fremont Cutoff Ditch still needs work done. Grant Hanon said the Corps of Engineers conducted its biannual inspection of the Ames Dike. Marlin Peterman asked if the elevation of Highway 30 would have any impact on future flooding. It was explained that the Nebraska Department of Transportation generally engineers new highways to be sure they have no adverse impact on surface water movements.
6. **Public comments.** None
7. **Virtual Rawhide Creek Watershed Scoping Meeting Hosted by JEO at 2pm.** The meeting continued with the Agency Scoping Meeting hosted by JEO, both in person and via virtual attendance. The PowerPoint presentation used for the scoping meeting is attached.
8. **Public Meeting for Rawhide Creek Watershed Environmental Assessment from 6:00-8:00 p.m.** It was noted that a public meeting would be held in the same location from 6-8pm for the Rawhide Creek Watershed Environmental Assessment. The PowerPoint presentation for the meeting is attached.
9. **Adjournment.** The meeting was declared adjourned by Chairman Missel. Motion carried.

Minutes prepared by Brian Newton, Fremont City Administrator



Joint Water Management Advisory Board  
 Roll Call Attendance  
 Thursday, November 18, 2021

Name	Representing	Email address
Karl Klueh	Linn County	
BOB MISSEL	DODGE COUNTY	BOB@SAMPERS.COM
FRANK FOLLAND	LPNNRD	FFolland@usa.com
Larry Ruzicka	North Bend Drainage Dist	lruzicka23@hotmail.com
Tom Mountford	Lower Platte North WRI	tmountford@lpnnrd.org
SEAN ELLIOTT	LPNNRD	SELLIOTT@LPNNRD.ORG
Joey Spellerberg	Fremont	joey.spellerberg@fremontne.gov
Thomas Smith	Dodge County Emergency Mgmt	dodgecoens@gmail.com
MIKE WOSTAK	FYDA	WOSTAK@FYDAENGINEERING.COM
Albert Winkler	Ingham	
Kevin Kruse	JEO Consulting Group	kkruse@jeo.com
Lalit Jha	JEO Consulting Group	ljha@jeo.com
John Petersen	JEO	jpetersen@jeo.com
BRIAN NEWTON	CITY OF FREMONT	BRIAN.NEWTON@FREMONTNE.GOV

**JWMAB North Bend Drainage Ditch  
H&H Modeling & Economics  
Progress/Update Meeting**

18 November 2021



# H&H Modeling Background

## Existing Models

Current FIS Model

Rawhide Creek Models

NDOT Hydraulic Models

USACE Fremont Section 205 Study

Recent USACE Flow Frequency Update

Anticipated Future Work

## What is Needed for NBDD Project?

Localized Flood Source Analysis

Detailed Hydraulics of NBDD & Surrounding Infrastructure

Improved Platte River Floodplain Resolution

Ability to Analyze Joint Probability Events (Rawhide/Shell/Platte)

# FYRA Modeling Approach

## Updated 2-Dimensional HEC-RAS Model

Shows flow direction/velocity for optimum validation

Easily input into other modeling platforms:

- FYRA's Proprietary Econ Tool (Crop and Pasture/Structures)
- FEMA's BCA Module (FEMA-recognized benefits/calibration)
- HEC-FIA (Calibration)

## Considering Future Uses of the Model

Easily combinable with other models to form regional model

Useful in future management decisions

- Stage prediction
- Floodplain development (Roads, development, etc.)
- Ice affected flow regimes

# H&H Modeling Update

## Model Review

Model complete

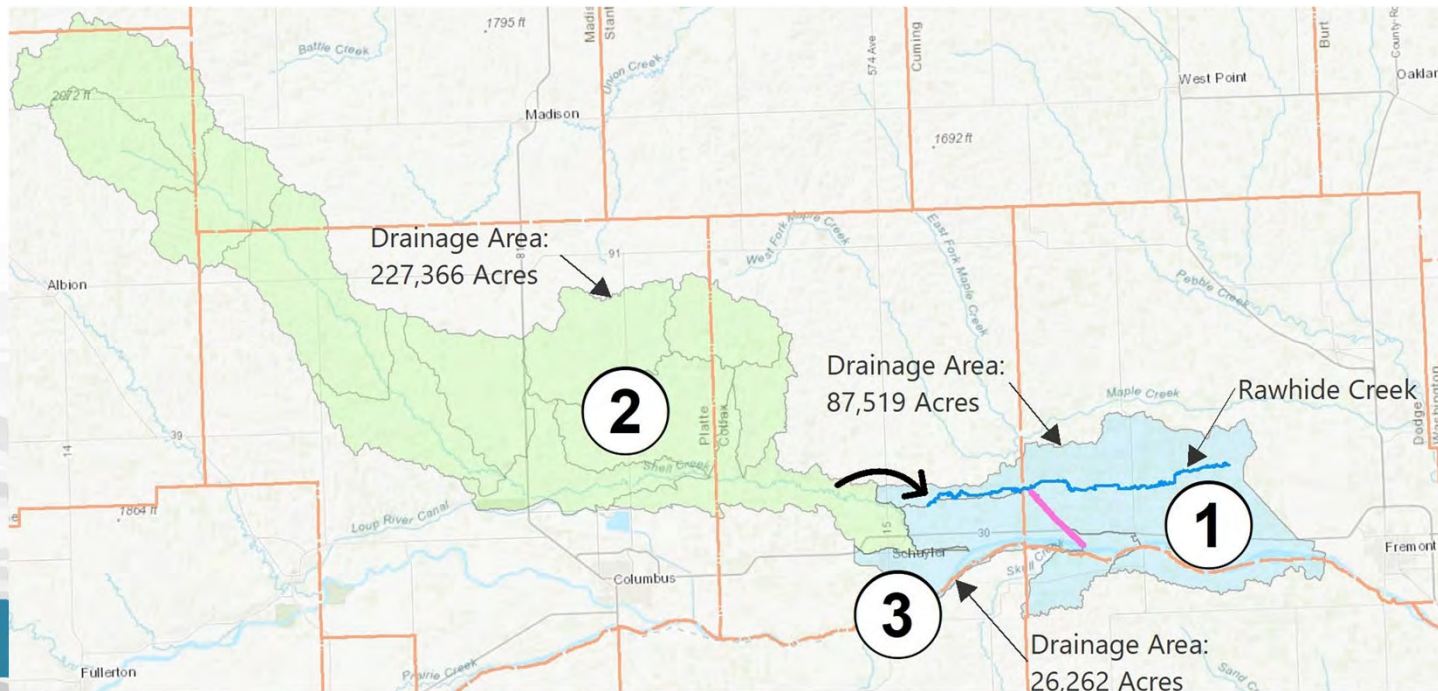
## Model Capabilities

Multiple flooding sources

Storage/ponding area routings and cascading overtopping

Tailwater dependent channel capacity

Downstream Inundation mapping through North Bend + further



# H&H Modeling Update

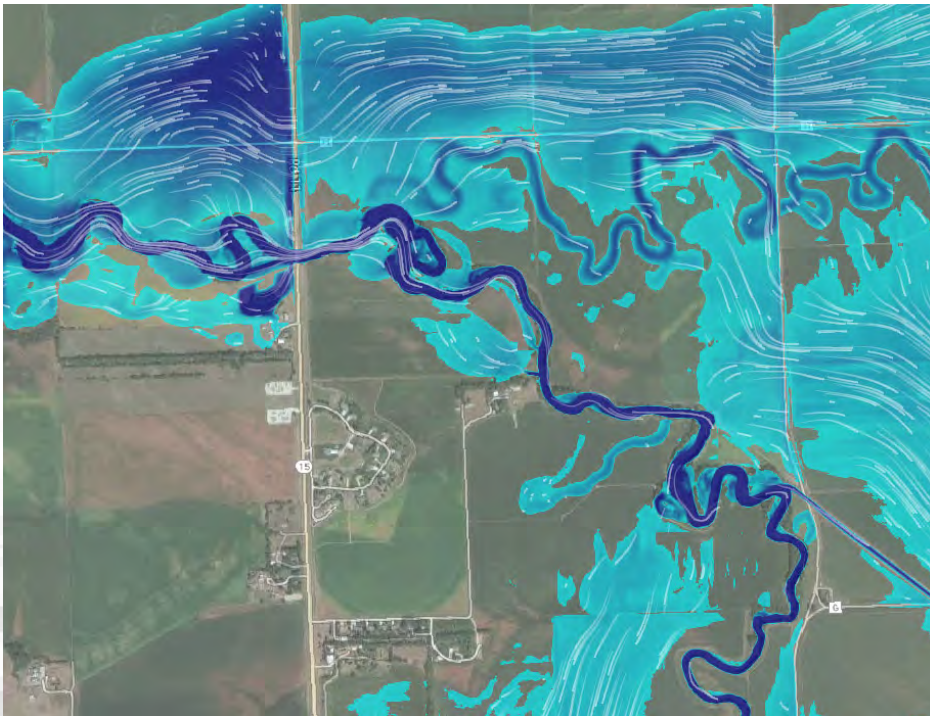
## Model Calibration / Validation

Direct rainfall runoff

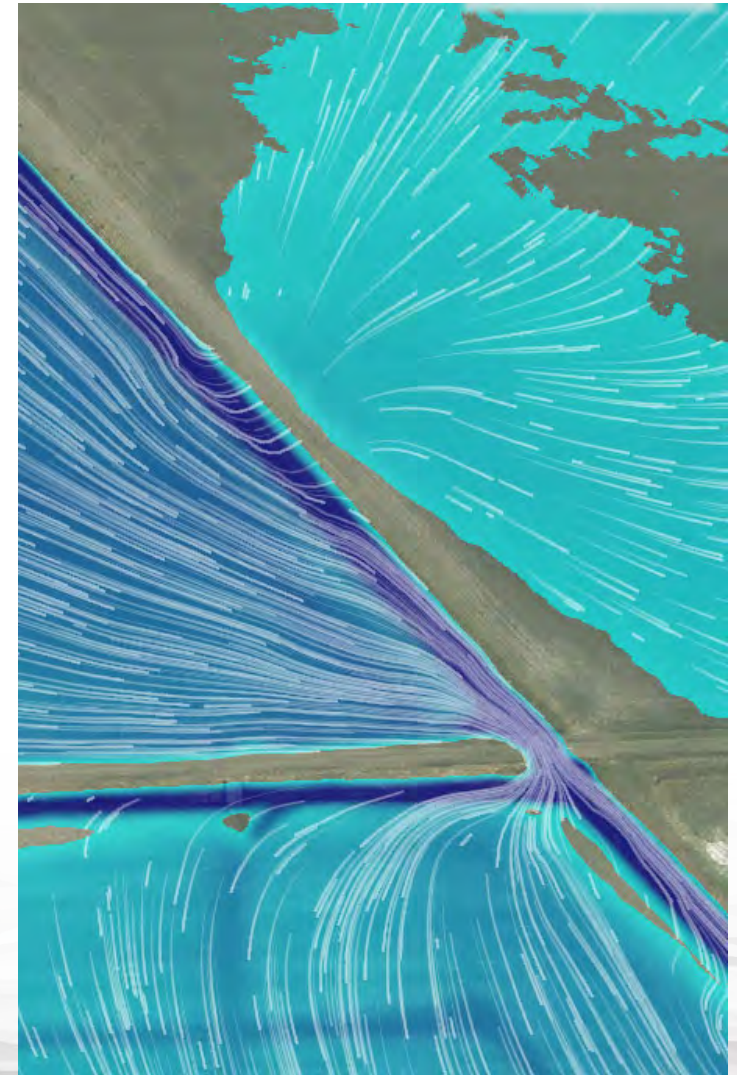
Current land use and soil data

Shell Creek FIS restudy/USACE study

Colloquial Accounts



Shell Creek and HWY 15



NBDD and Rd S

# H&H Modeling Update

## NBDD Performance

### Current Performance

- Berm protection sufficient for moderate events (e.g., 2008:  $\leq 50$ yr). Larger events (1990: 100yr, 2019: 250yr), protections are insufficient.
- Current channel capacity is influenced by sedimentation, sloughing, and vegetation.



Platte Confluence to UP RR



HWY 30 to CO RD 3



CO RD 5 to CO RD 2

# H&H Modeling Update

## NBDD Performance

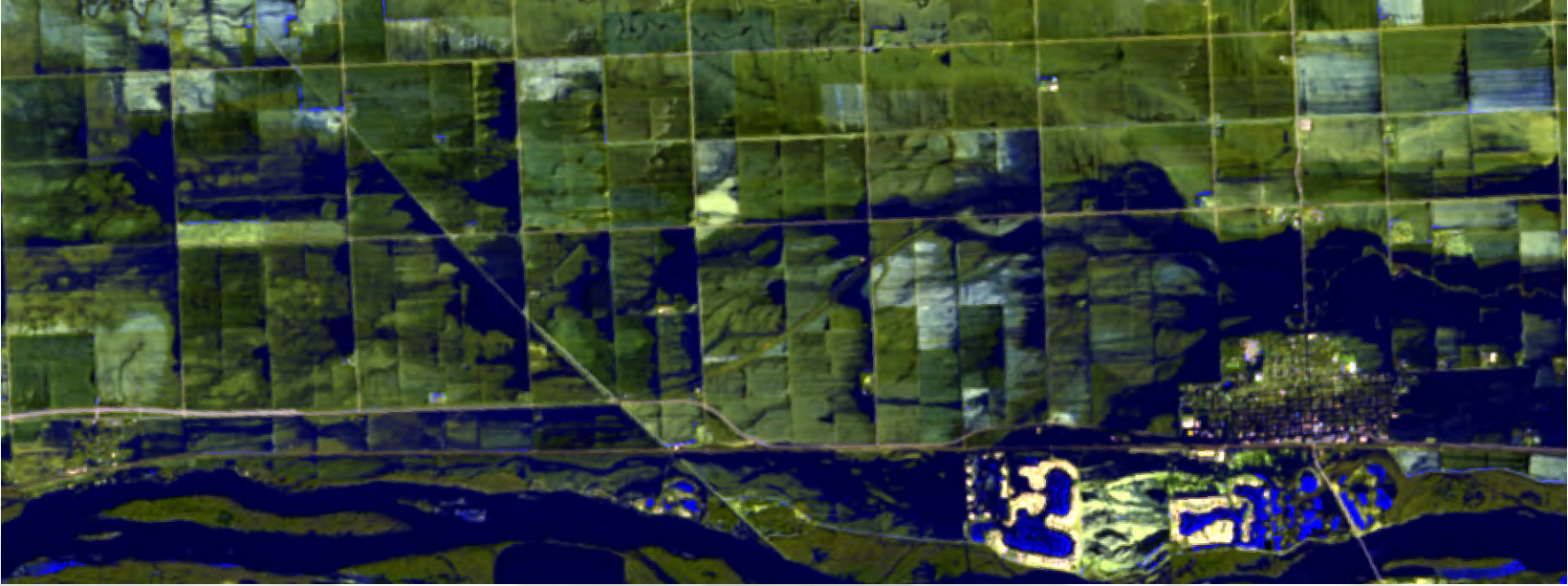
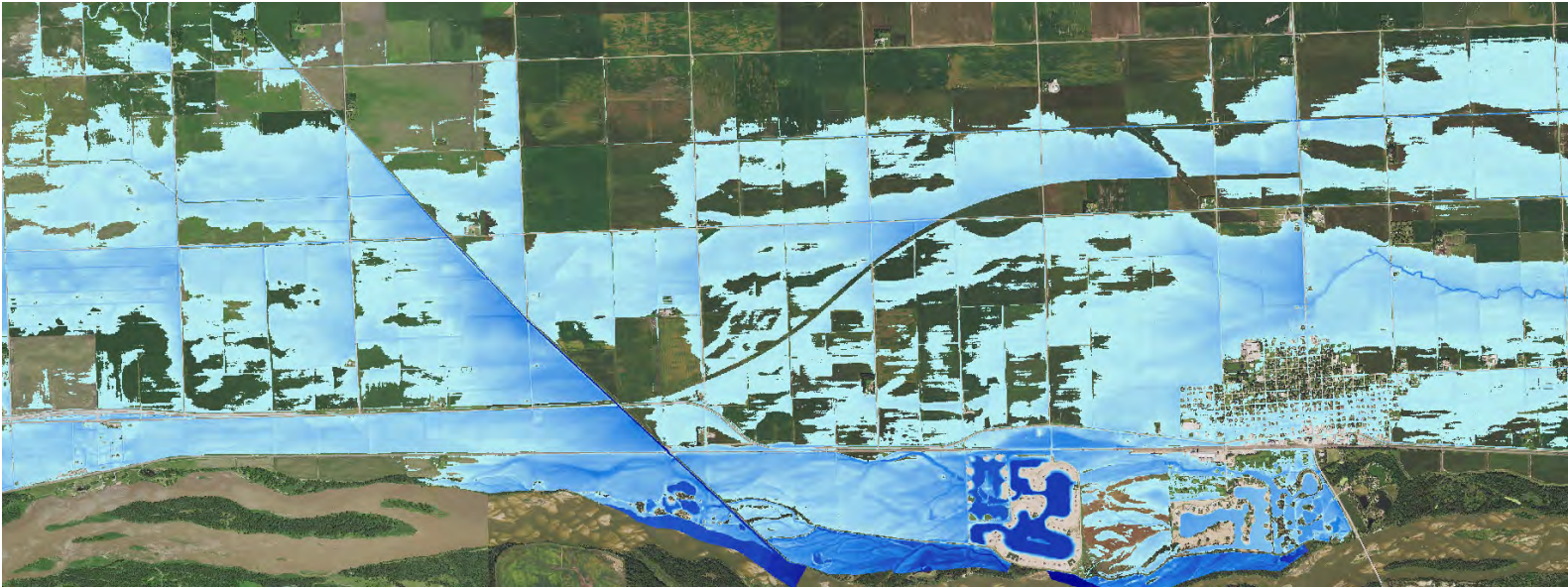


Left: 2019 Aerial at McGinn's Lake looking west, Right: 2019 Aerial at McGinn's Lake looking east  
(Image: Dodge County Operations Center, 2019)

### Past Performance –

- Overtopping/failures occurred in several place in 1990/2019
  - Co. Rd. S Bridge, O'Hare Ditch, N. of Co. Rd. 2 Bridge, UPRR/McGinn's Bridge, Bodell/Raus Property

# H&H Modeling - 2019 Flooding Extents



# H&H Modeling Results

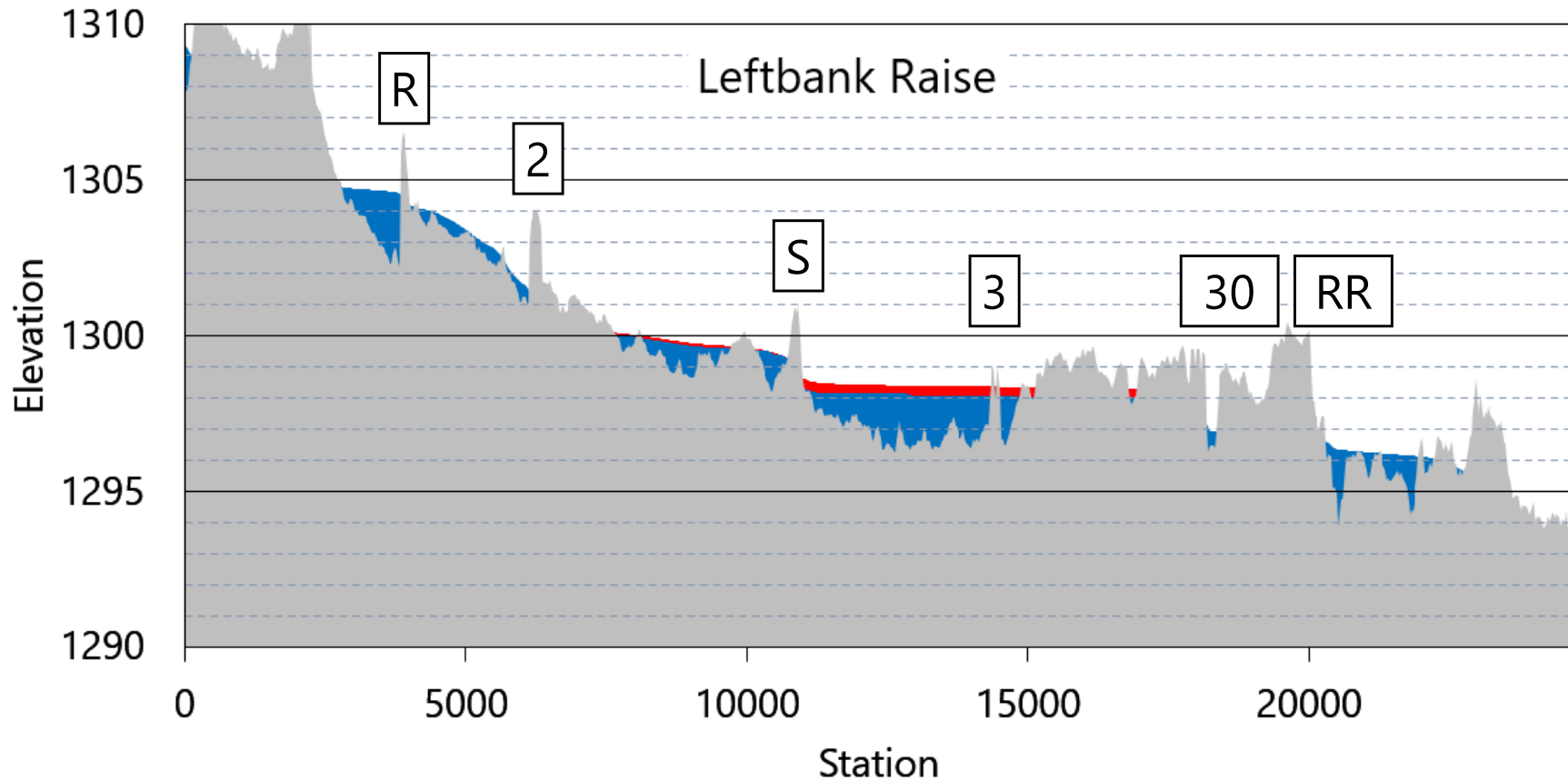


75-Year Event



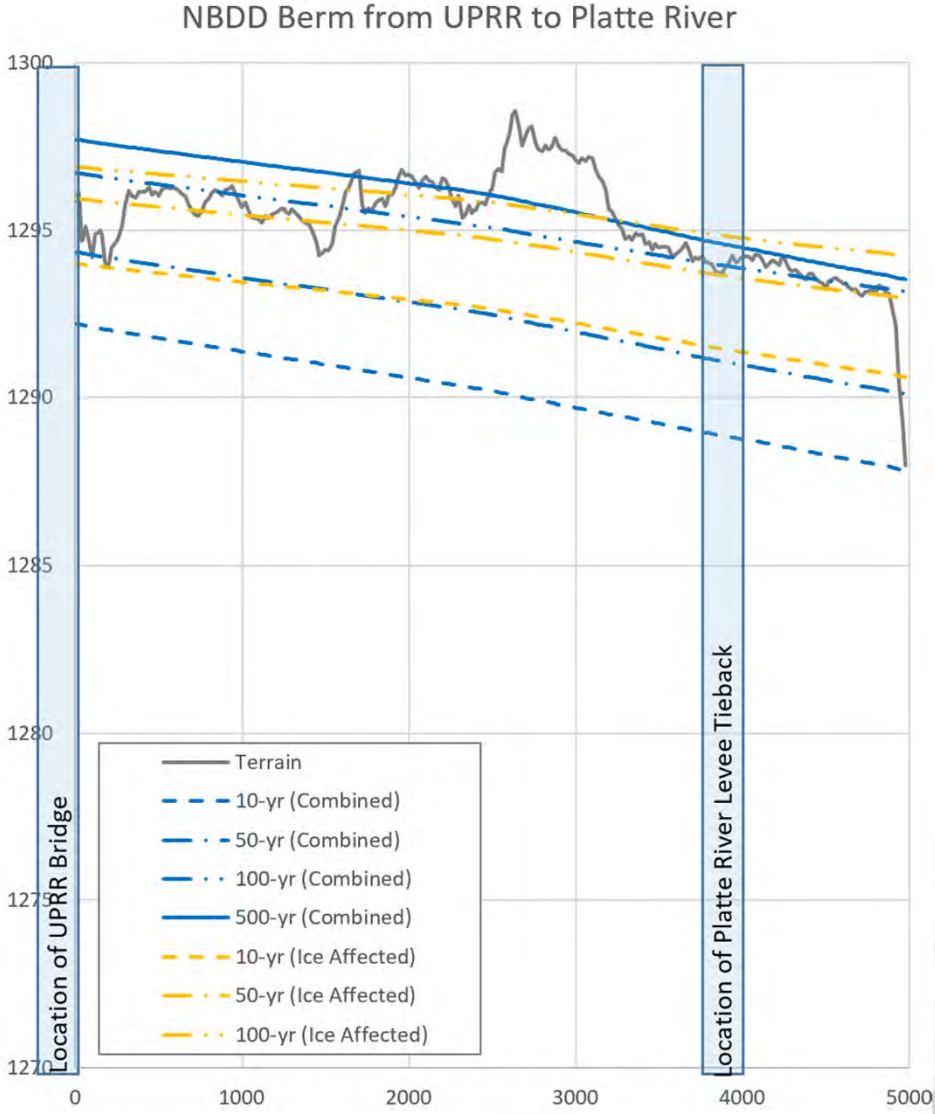
2019 Event

# H&H Modeling Update

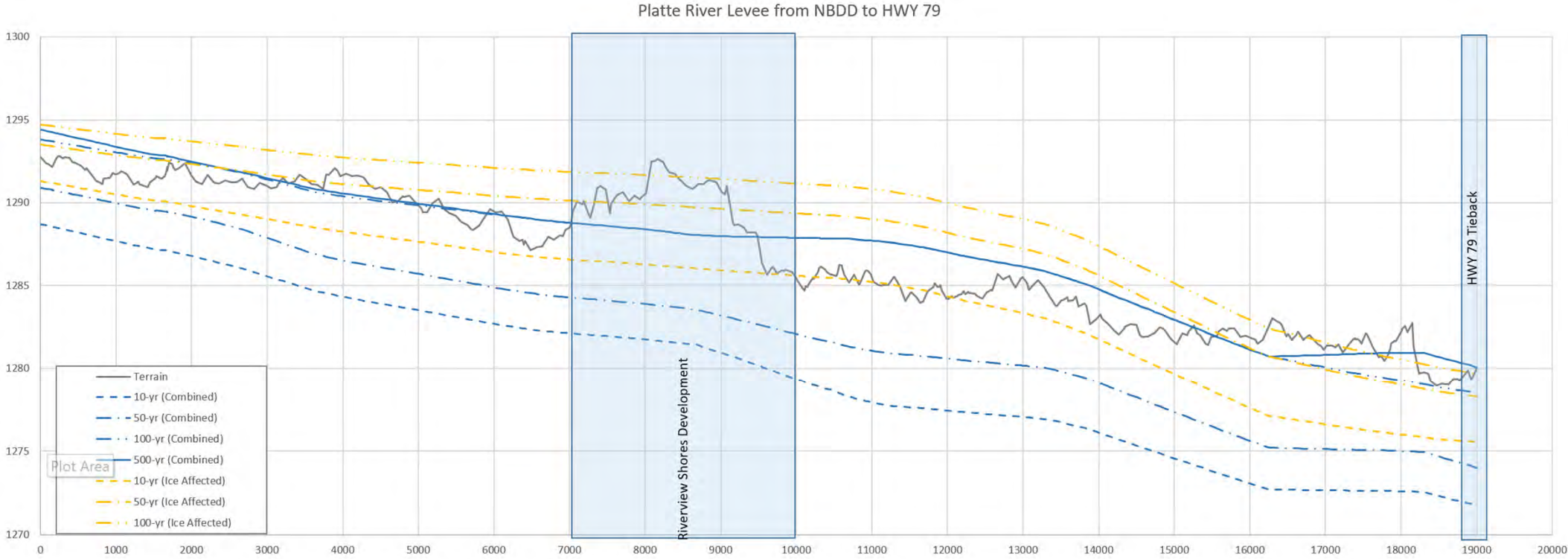


- Berm raise to contain 100-yr Shell Creek flood with 100-yr tailwater
- Berm raise to contain 100-yr interior storm with 100-yr tailwater
- Existing Berm

# H&H Modeling - Platte River Influence



# H&H Modeling - Platte River Influence



# Economics Approach

## Economics Analysis:

Damages compared pre- to post-project

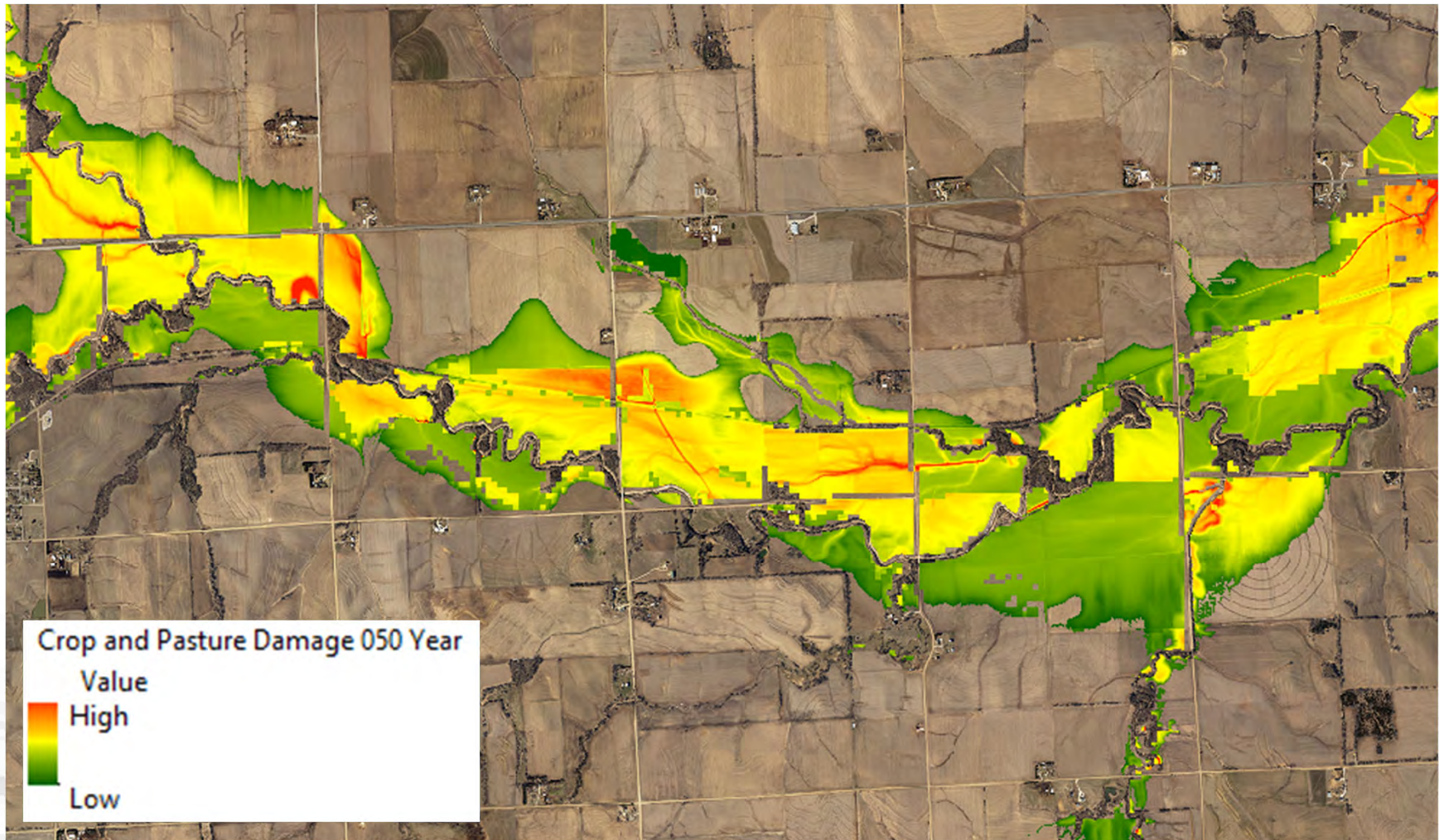
Need to assign probability and consequences

Damages to be assessed:

1. Crop and Pasture (FYRA)
2. Structural (FYRA)
3. Bridge Damages (FYRA)
4. Transportation Delays (FEMA)
5. Social Impacts (FEMA)

# Economics Approach

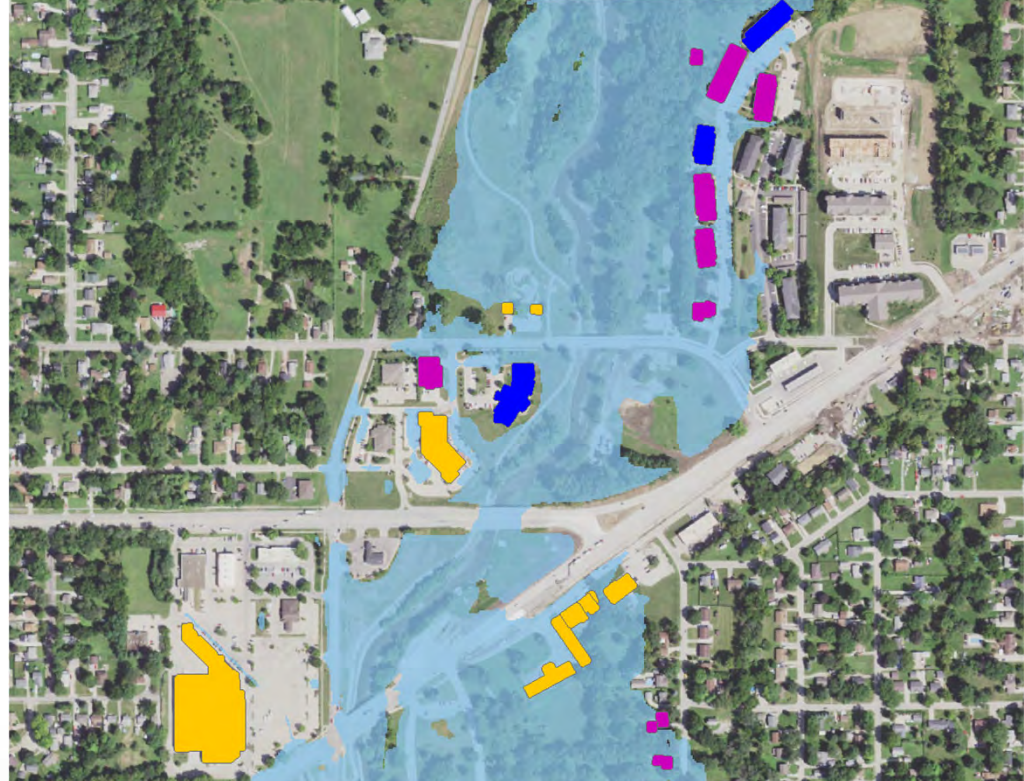
## Crop and Pasture Damages (FYRA Economics Tool Output)



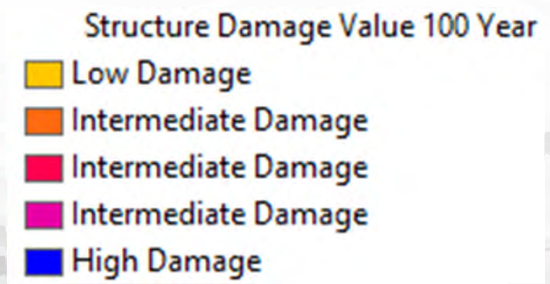
Wahoo Creek Watershed Crop and Pasture Damages

# Economics Approach

## Structural Damages (FYRA Economics Tool Output)



Polk County (Iowa) Structural Damages



# Economics Results

## East of North Bend Drainage Ditch - updated 11/11/2021

Combined Return Interval	Crop and Pasture			Urban			Bridges			Town/County Roads		
	Pre-Project Damages	Post-Project Damages	Benefits	Pre-Project Damages	Post-Project Damages	Benefits	Pre-Project Damages	Post-Project Damages	Benefits	Pre-Project Damages	Post-Project Damages	Benefits
1-yr	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4	\$ 4	\$ -
2-yr	\$ 7	\$ -	\$ 7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8	\$ 8	\$ -
5-yr	\$ 6,664	\$ -	\$ 6,664	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,796	\$ 12	\$ 8,784
10-yr	\$ 23,626	\$ -	\$ 23,626	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 21,181	\$ 16	\$ 21,165
25-yr	\$ 68,812	\$ -	\$ 68,812	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 52,000	\$ 20	\$ 51,980
50-yr	\$ 165,915	\$ -	\$ 165,915	\$ -	\$ -	\$ -	\$ 10,530	\$ -	\$ 10,530	\$ 99,015	\$ 41	\$ 98,974
100-yr	\$ 718,857	\$ -	\$ 718,857	\$ 11,162	\$ -	\$ 11,162	\$ 50,705	\$ -	\$ 50,705	\$ 718,396	\$ 57	\$ 718,339
250-yr	\$ 1,728,156	\$ -	\$ 1,728,156	\$ 57,367	\$ -	\$ 57,367	\$ 245,931	\$ -	\$ 245,931	\$ 1,897,527	\$ 76	\$ 1,897,451
Total Average Annual Damage	\$ 19,402	\$ -	\$ 19,402	\$ 261	\$ -	\$ 261	\$ 1,301	\$ -	\$ 1,301	\$ 18,463	\$ 10	\$ 18,453

## West of North Bend Drainage Ditch

Shell Creek Recurrence Interval	Crop and Pasture			Urban			Bridges			Town/County Roads		
	Pre-Project Damages	Post-Project Damages	Benefits	Pre-Project Damages	Post-Project Damages	Benefits	Pre-Project Damages	Post-Project Damages	Benefits	Pre-Project Damages	Post-Project Damages	Benefits
1-yr	\$ 589,888	\$ 589,905	\$ (17)	\$ 11,409	\$ 11,409	\$ -	\$ 649,859	\$ 649,859	\$ -	\$ 44,713	\$ 44,713	\$ -
2-yr	\$ 707,992	\$ 708,007	\$ (15)	\$ 16,124	\$ 16,124	\$ -	\$ 696,748	\$ 696,748	\$ -	\$ 58,466	\$ 58,466	\$ -
5-yr	\$ 937,185	\$ 939,207	\$ (2,022)	\$ 18,241	\$ 18,241	\$ -	\$ 783,911	\$ 783,911	\$ -	\$ 100,839	\$ 105,357	\$ (4,518)
10-yr	\$ 1,162,574	\$ 1,168,414	\$ (5,840)	\$ 20,106	\$ 20,106	\$ -	\$ 858,510	\$ 860,742	\$ (2,232)	\$ 146,357	\$ 156,675	\$ (10,318)
25-yr	\$ 1,575,909	\$ 1,588,641	\$ (12,732)	\$ 23,710	\$ 23,711	\$ (1)	\$ 933,475	\$ 952,148	\$ (18,673)	\$ 217,158	\$ 232,625	\$ (15,467)
50-yr	\$ 1,987,745	\$ 2,002,847	\$ (15,102)	\$ 135,799	\$ 135,801	\$ (2)	\$ 1,024,269	\$ 1,069,971	\$ (45,702)	\$ 339,412	\$ 349,768	\$ (10,356)
100-yr	\$ 2,401,268	\$ 2,446,779	\$ (45,511)	\$ 274,680	\$ 278,166	\$ (3,486)	\$ 1,064,464	\$ 1,149,615	\$ (85,151)	\$ 426,533	\$ 436,024	\$ (9,491)
250-yr	\$ 2,920,801	\$ 3,018,656	\$ (97,855)	\$ 391,711	\$ 407,021	\$ (15,310)	\$ 1,105,722	\$ 1,403,241	\$ (297,519)	\$ 527,413	\$ 547,470	\$ (20,057)
Total Average Annual Damage	\$ 831,937	\$ 834,212	\$ (2,275)	\$ 20,916	\$ 20,990	\$ (74)	\$ 731,163	\$ 734,348	\$ (3,185)	\$ 85,213	\$ 87,852	\$ (2,639)

Net Benefit \$ 17,127

Net Benefit \$ 187

Net Benefit \$ (1,884)

Net Benefit \$ 15,814

Total Net Average Annual Benefit \$ 31,244

# Economics Results (FEMA BCA)



FEMA

Benefit-Cost Calculator

V.6.0 (Build 20211021.0641)

## Benefit-Cost Analysis

Project Name: North Bend Drainage District\_North Bend Cutoff Ditch

Home + Add Mitigation Action Delete Mitigation Actions View Report

Select	Map Marker ▲	Mitigation Title	Property Type	Hazard	Benefits (B)	Costs (C)	BCR (B/C)	Copy
<input checked="" type="checkbox"/>	1	Drainage Improvement @ 41.4539260; -96.8405330		DFA - Riverine Flood	\$ 7,273	\$ 1,700,000	0.00	
<input checked="" type="checkbox"/>	2	Drainage Improvement @ 41.4539260; -96.8405330		DFA - Riverine Flood	\$ 183,331	\$ 1	183,331.00	
<input checked="" type="checkbox"/>	3	Drainage Improvement @ 41.4669010; -96.8486660		DFA - Riverine Flood	\$ 31,246	\$ 1	31,246.00	
<input checked="" type="checkbox"/>	4	Drainage Improvement @ 41.4539260; -96.8405330		DFA - Riverine Flood	\$ 156,590	\$ 1	156,590.00	
<input checked="" type="checkbox"/>	5	Drainage Improvement @ 41.4539260; -96.8405330		DFA - Riverine Flood	\$ 23,317	\$ 1	23,317.00	
<input checked="" type="checkbox"/>	6	Drainage Improvement @ 41.4539260; -96.8405330		DFA - Riverine Flood	\$ 715,356	\$ 1	715,356.00	
TOTAL (SELECTED)					\$ 1,117,113	\$ 1,700,005	0.66	
TOTAL					\$ 1,117,113	\$ 1,700,005	0.66	

"Map marker"	Damage/benefit type	Damages \$
1	Fire Station Loss of function Physical damages to structure	10 impact days \$60,000
2	HWY 30 Road closures	7 impact days
3	Wastewater Loss of service	21 impact days
4	HWY 79 Road closures	7 impact days
5	Potable water Loss of service	7 impact days
6	(2019) Direct structural damage to City Agricultural damages Structural damage to North Bend Cutoff Ditch (2008) Direct damages to North Bend Cutoff Ditch (1990) Direct damages to North Bend Cutoff Ditch Direct damages to County Roads	\$2,496,681 \$242,159 \$720,562.69 \$3,920 \$41,679 \$104,109

# Economics Results

## Benefit Cost-NBDD North Bend Cutoff Ditch

2019 (DR-4420) <i>250yr</i>	Project Costs	Source
North Bend Drainage District	\$720,562.69	North Bend Drainage District
City of North Bend	\$3million	City of North Bend
Volunteers	1131-daily	March 13 to April 28, 2019 (47days)
County Roads	\$80,000.00	County Roads
Cotterell Township	\$325,000.00	County Roads
Union Township	\$1,172,536.35	County Roads
State Highway		
Highway 30		
Highway 79		
Agriculture Land		

2008(DR-1779)	Project Costs	Source
North Bend Drainage District	\$3,950	North Bend Drainage District
City of North Bend		City of North Bend
County Roads		County Roads
Cotterell Township		County Roads
Union Township		County Roads
State Highway		
Agriculture Land		

1990 (DR-0873)-100yr	Project Costs	Source
North Bend Drainage District	\$41,679.00	North Bend Drainage District
City of North Bend		City of North Bend
County Roads	\$57,400.75	County Roads
Cotterell Township	\$21,019.90	County Roads
Union Township	\$25,690.00	County Roads
State Highway		
Agriculture Land		

Dodge County-North Bend Drainage District

## APPENDIX E: BCA Documentation

# Economics Results

## North Bend Drainage Ditch Improvements

Raise low spots only?

Create designed overflow areas?

Reinforce overflow areas?

Flatten protected side slope?

Acquire 15' buffer area?

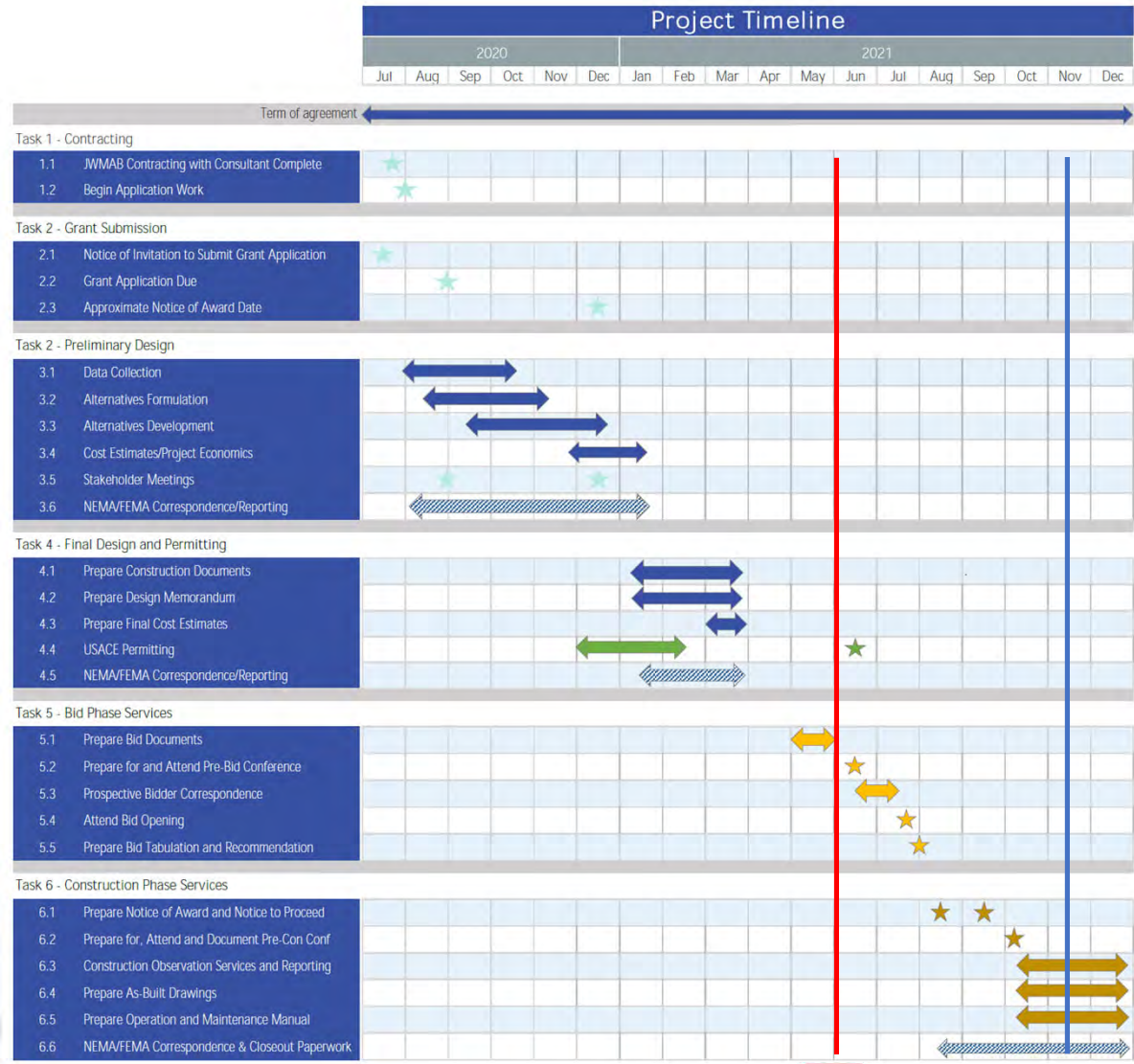
Will meet FEMA BCA requirements for mitigation

## Add on North Bend Levee Improvements?

# Schedule/Contract Progress

Revised: 10/29/2020

Nebraska Emergency Management Agency Hazard Mitigation Assistance Grant Program Subaward Quarterly Report Form			
Subaward Information			Authorized Representative
Subrecipient:	North Bend Drainage District	Name:	Larry Ruzicka
Award #:	4420	Title:	President
Subaward #:	0034	Email:	lrzicka23@hotmail.com
Project Type:	Phased	Phone:	402-720-8828
Project Title:	Phase 1 - North Bend Stormwater System and Drainage Improvements		
Project Costs			
Overall Budget Status:	cost unchanged	Total	Non-Federal Share
Total Amount Awarded:		\$ 150,000.00	\$ 37,500.00
Total Expended to Date:		\$ -	
Total Amount Requested to Date:		\$ -	
Total Amount Received to Date:		\$ -	
Reimbursement Request Amount this Quarter:		\$ -	
Approved Milestones			
Overall Status:	Delayed	Percentage Complete:	7%
Completion Due Date:	1/0/1900	Revised Completion Due Date:	N/A
Milestone Description	Approved Timeframe (Months)	Due Date	Status
1 Phase I - NEMA State Grant Agreement	1	2/12/2021	Completed
2 Phase I - Data Collection process and	2	4/12/2021	Delayed
3 Phase I - BCA/Cost-Effectiveness	2	6/12/2021	Delayed
4 Phase I - Engineering Designs	2	7/12/2021	Delayed
5 Phase I - Public Meetings	1	7/12/2021	Delayed
6 Phase I - State and FEMA Technical	6	1/12/2022	
Total Project Duration:	15		
Will the project need a time extension?			
Provide a brief explanation of project activities to date, include any delays or cost changes that would affect the project			
Comments			
NEMA Kick-off Meeting 2/22/21. Engineering Firm contract was officially signed 3/01/21. Contracted Firm currently reviewing existing information and collecting data from USACE (Missouri River hydraulics and Shell Creek project info (Plans/study/report O&M) and NDOT Highway 30 project over NB cutoff Ditch. USACE finally replied and stated that they did not perform any hydraulic modeling past North Bend as part of the Fremont work, so FYRA will begin modeling from scratch. Estimates on delay times and new milestones will be available by next quarterly report.			
Authorized Representative Signature:	Date:		
By signing, you certify that all information above is true and correct.			



TODAY



# Next Steps/Future Coordination

## **FYRA Next Steps**

Finalize Economics  
Alternatives Formulation

## **JWMAB Coordination Meeting #2**

Economics Review  
Alternatives Review  
Final Steps before Alternative Selection



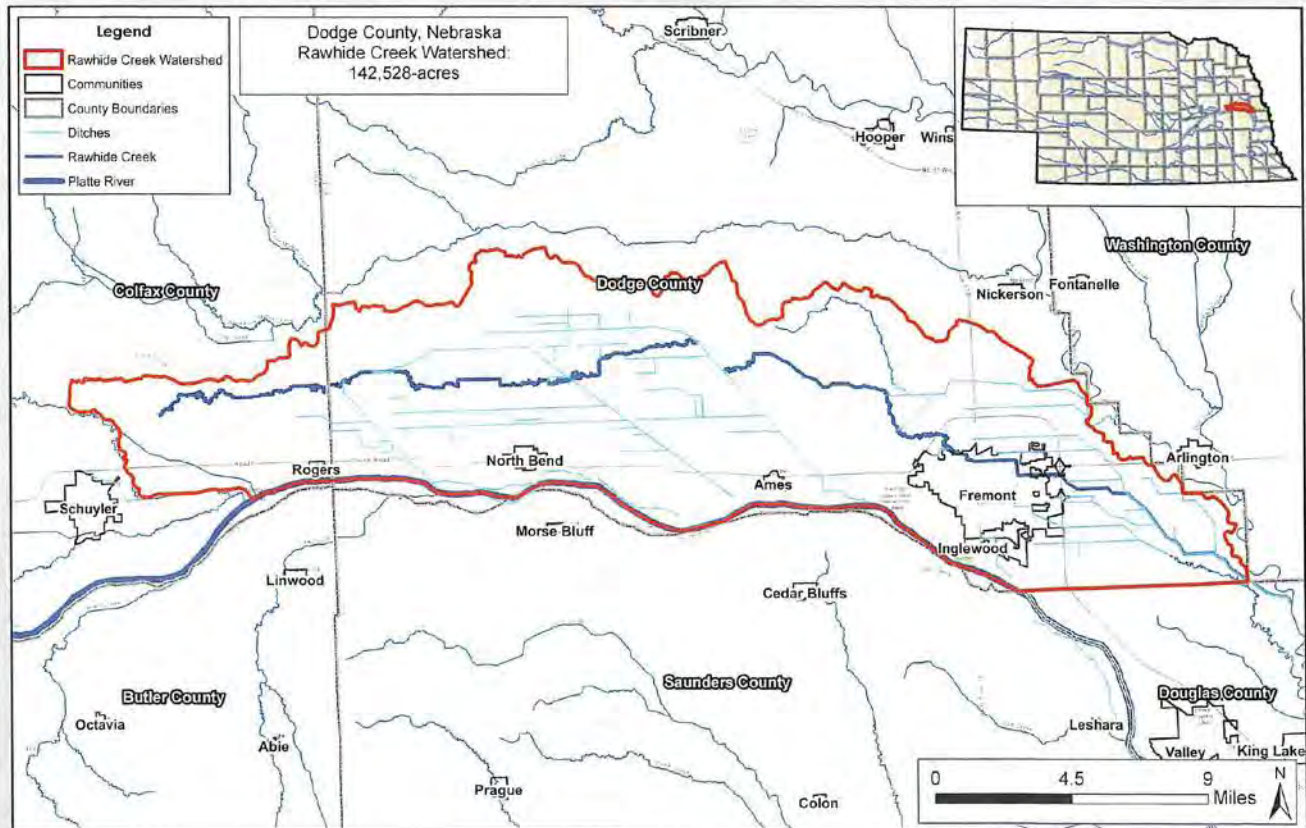
# Rawhide Creek

## WATERSHED FLOOD RISK REDUCTION PLAN

### Project Overview

The Rawhide Creek Watershed is subject to multiple flooding risks – from local storms over the watershed to potential overflows from Shell Creek, the Platte River, and Elkhorn River.

- The Rawhide Creek Watershed covers more than 142,000 acres in eastern Nebraska through Colfax and Dodge Counties, and Rawhide Creek spans approximately from northwest of the Village of Rogers to east of the City of Fremont.
- The March 2019 catastrophic flooding along the Platte and Elkhorn Rivers and their tributaries, including Rawhide Creek, affected the communities of North Bend, Fremont, and Inglewood.
- The Dodge County Joint Water Management Advisory Board (JWMAB) was created following the 2019 floods to support inter-agency collaborative efforts to identify and implement measures to reduce area flood risks.



# RAWHIDE CREEK WATERSHED PLAN - ENVIRONMENTAL ASSESSMENT

Agency Scoping Meeting #1

November 18, 2021, 2:00 to 4:00 p.m.

*Let's check your audio and mic while we wait for others to join, then we'll have everyone muted until introductions or questions.*

**Dodge County Joint  
Water Management  
Advisory Board**

   
United States Department of Agriculture  
Natural Resources Conservation Service



# VIRTUAL MEETING OVERVIEW



**Alyssa Tenorio**

Community Engagement Facilitator  
JEO Consulting Group

- Camera location
- Microphone location
- Settings for testing equipment
- Chat location
- Send questions to [atenorio@jeo.com](mailto:atenorio@jeo.com)

# SIGN IN & WELCOME



## **Please sign-in using the chat window**

Include: First & Last Name, and Organization

Is anyone just on the phone?

Or email us your contact info



**Meeting is recorded**



**Use chat window for questions**

# TODAY'S AGENDA

- 1) Project Team & Introductions
- 2) Project Overview
  - Project Background
  - WFPO Program
  - Watershed Overview
  - Initial Purpose & Need
  - Potential Alternatives
  - Schedule
- 3) Questions, Discussion, and Input

# PROJECT PURPOSE

- 1) This is a study to:
  - A. Understand flood risks within the Rawhide Creek Watershed
  - B. Identify potential solutions to reduce the risk of flooding within the Rawhide Creek Watershed



# MEETING PURPOSE

- 1) Build Awareness and Understanding of Project
- 2) Review Planning Process
- 3) Review Alternatives to Evaluate
- 4) Listen and Obtain Comments/Input
- 5) Encourage Future Participation

# INTRODUCTIONS - PRESENTERS



**John Petersen, PE**

Project Manager

JEO Consulting Group



**Richard Vaughn**

Watershed Coordinator

Nebraska NRCS

# LOCAL PROJECT SPONSOR

- 1) Dodge County JWMAB members will be responsible for operations and maintenance of any projects that are built
- 2) Received grant funding from NRCS for current planning phase
- 3) Hired JEO in September 2021 to assist in plan development

## ***Dodge County Joint Water Management Advisory Board***

Contact: Tom Smith  
[dodgecoema@gmail.com](mailto:dodgecoema@gmail.com)

### **JWMAB Members:**

- Fremont
- Dodge County
- Lower Platte North NRD
- Inglewood
- North Bend
- Ames Dike District
- Cotterell Diking and Drainage District
- North Bend Drainage District
- SID #3 – Ventura
- SID #5 – Timberwood
- Elkhorn Township
- Platte Township



# AGENCY INVOLVEMENT

- 1) Providing 100% funding
- 2) Requirements identified through Title 390: National Watershed Program Manual
- 3) Dedicates staff to coordinate planning, engineering, archeological, economic, and biological resources
- 4) Coordinate review / approval process with National NRCS Water Management Center



Contact: Richard Vaughn  
[Richard.Vaughn@usda.gov](mailto:Richard.Vaughn@usda.gov)



# AGENCY INVOLVEMENT

- 1) Provide early input
- 2) Provide comments on scoping process and alternatives evaluation
- 3) Section 404 (b)(1) compliance
- 4) Support to ensure preferred alternative is permissible



**US Army Corps  
of Engineers**®  
Omaha District

Contact: Matt Wray

[Matt.T.Wray@usace.army.mil](mailto:Matt.T.Wray@usace.army.mil)

(402) 896-0896



# PROJECT BACKGROUND

- Evaluate and reduce flood risk within the Rawhide Creek watershed
- No projects have been selected to move forward at this time
- All potential projects are still in the identification and evaluation



# WFPO PROGRAM OVERVIEW

*Dodge County Joint  
Water Management  
Advisory Board*



# Watershed Flood Prevention and Operations (WFPO)

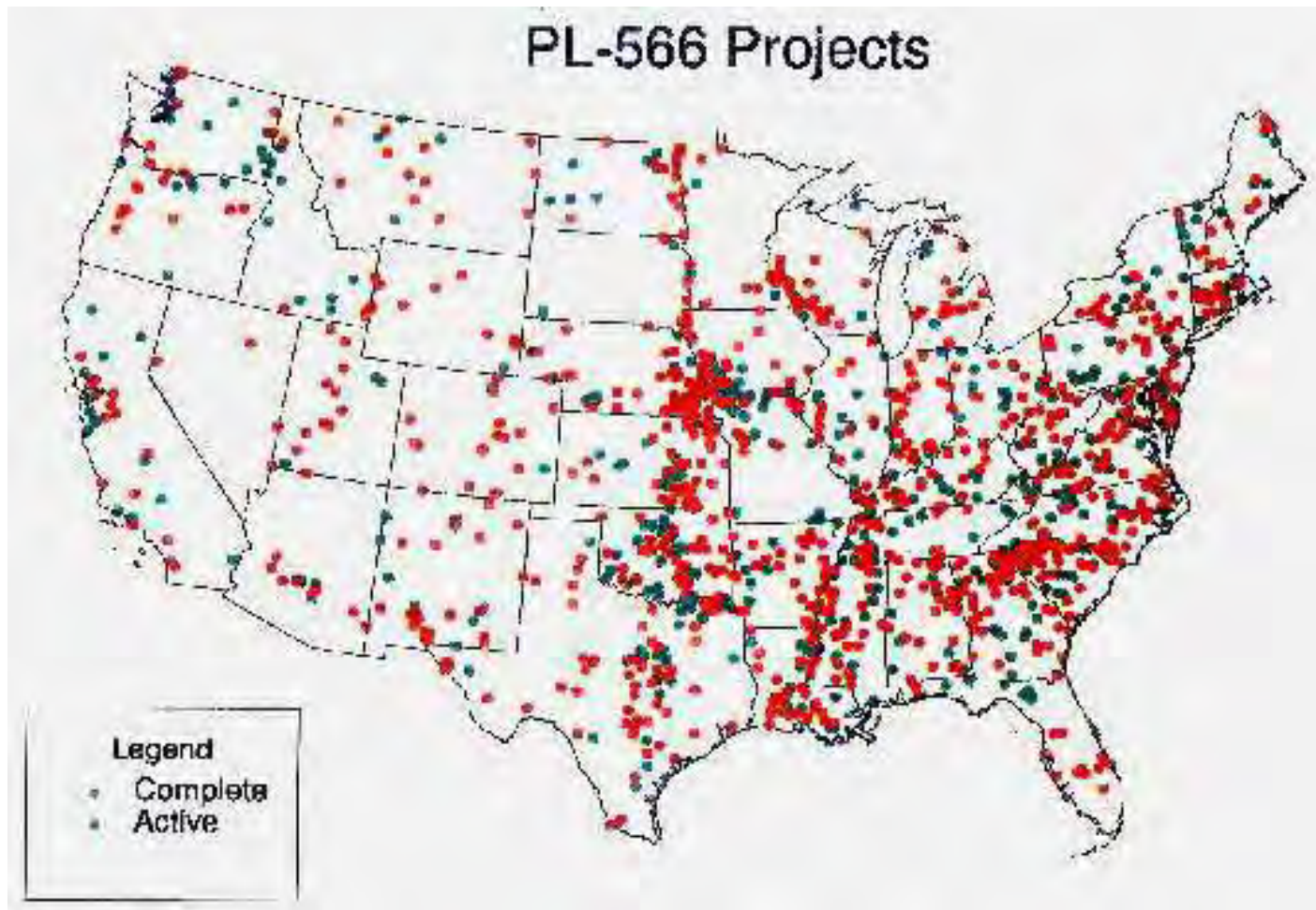
Natural Resources Conservation Service

*Richard Vaughn,  
Watersheds Planning Coordinator  
NRCS, Lincoln NE State Office*

# WFPO Background

- Authorities provided through Public Law 78-534 of 1944, Public Law 83-566 of 1954, and Public Law 156-67.
- Nationwide, NRCS has assisted public sponsors with construction of more than 11,400 dams in 47 states (nearly 900 in Nebraska) for the primary purposes of flood reduction and grade stabilization.
- Nebraska has had over 60 approved WFPO plans providing over \$80 million in average annual benefits.

# PL-566 Projects



# Planning Requirement Drivers

- National Environmental Policy Act (NEPA)
  - NRCS efforts for consistent implementation
- Agency Policy:
  - General planning process: National Planning Procedures Handbook
  - NRCS program: National Watershed Manual
    - under review for updating
- Economic Analysis referred to as “PR&G”
  - Principles and Requirements for Federal Investments in Water Resources
- No action (future without project condition).
- Cooperating Agency, State, Local requirements

# Authorized Project Purposes

- **Flood Prevention (Flood Damage Reduction)**
- **Watershed Protection**
- **Public Recreation**
- **Public Fish and Wildlife**
- **Agricultural Water Management**
- **Municipal and Industrial Water Supply**
- **Water Quality Management**
- **Watershed Structure Rehabilitation**

# Limitations

- **Maximum Watershed Size & Structure Size**
- **At least 20% of benefits are directly related to agriculture, including rural communities.**
- **Economic Analysis**
- **Sponsors**
  - **Power of Eminent Domain**
  - **Permits and Licenses**
  - **Authority to Levy Taxes**
  - **Land Treatment above Reservoirs**
  - **Financial**
  - **Watershed Management (easements, regulations, etc.)**
  - **Operation and Maintenance**

# NRCS WFPO Process



# Legend Page

## Completed Watershed Projects

- Antelope Creek - 1
- Aowa Creek - 2
- Bear, Pierce, and Cedar Creek - 3
- Bellwood Creek - 4
- Big Indian Creek - 5
- Bowman Spring Branch - 7
- Buckley Creek - 10
- Clatonia Creek - 11
- Clear Creek - 12
- Corporation Gulch - 13
- Cottonwood Creek - 14
- Cub Creek - 15
- Cure Creek - 16
- Dorchester - 17
- Jones Creek - 20
- Long Branch - 21
- Lower Medicine Creek - 22
- Middle Big Nemaha - 23
- Mission Creek - 24
- Mud Creek (Gage County) - 25
- Pilger Creek - 28
- Plattsmouth - 29
- Plum Creek - 30
- Rock Creek - 31
- South Branch Little Nemaha - 32
- South Fork - 33
- Spring Creek (Dawson County) - 34
- Spring Creek (Johnson County) - 35
- Stamford - 36
- Swan Creek - 37
- Tekamah Mud Creek - 38
- Thirty Two Mile Creek - 39
- Turtle Creek - 40
- Upper Medicine Creek - 42
- Wilber - 43
- Wildhorse Creek - 44
- Wilson Creek - 45
- Winnebago-Bean Creek - 46
- Wolf - Wildcat Creeks - 47
- Ziegler Creek - 48

## Active Watershed Projects

- Buck and Duck Creeks - 9
- Papillion Creek - 27
- Battle Creek - 100
- Box Butte - 101
- Elm Turkey Creek - 102
- Little Salt - 105
- Long Pine and Bone Creek - 106
- Lower Wood River - 107
- Maple Creek - 108
- Middle Snake River - 109
- Mira Creek - 110
- Mud Creek (Custer County) - 111
- Rat and Beaver Lake - 113
- Rawhide Creek - 114
- Spring and Buffalo Creek - 116
- Thompson Creek - 117
- Turkey Creek - 118
- Upper Snake River - 119
- Wahoo Creek - 120

## Completed Watershed Projects With Specific Site Remediation

- Blackwood Creek - 6
- Brule - 8
- Gering Valley - 19

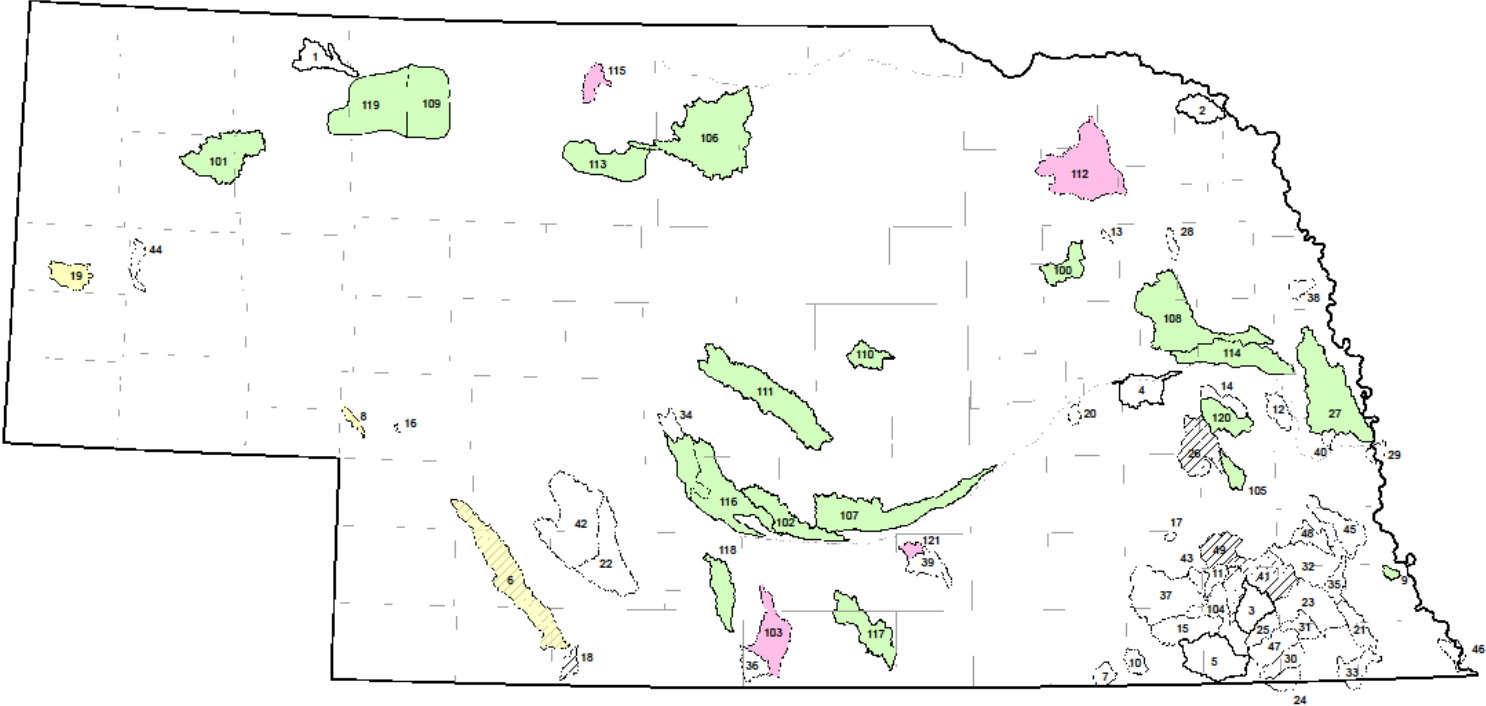
## Completed Watershed Projects With Specific Site Rehabilitation

- Blackwood Creek - 6
- Dry Creek South - 18
- Oak Creek - 26
- Upper Big Nemaha - 41
- Upper Salt - 49
- Indian Creek - 104

## Proposed Watershed Projects (PIFR)

- Flag Creek - 103
- North Fork Elkhorn River - 112
- Schlagel Creek - 115
- West Branch Thirty-Two Mile - 121

# NRCS Watershed Projects in the State of Nebraska



- Allen Gehring
- Rich Vaughn
- Anne Wettstead
- Bob Sullivan
- Ted Huscher
- Marty Norton/Randy Moses
- Parker Map Maker Belgium
- Doug Christensen
- Arlis Plummer
- Pathways
- Elisha Mackling & Missy Baier
- Ritch Nelson
- District Conservationist/FO Staff
- Sponsoring Local Organization(SLO) & Consultant

# **The End of Planning The Beginning of Design The Path to Construction**

Planning ~ 18 months

Design ~ 2 years

Construction ~2-5 years

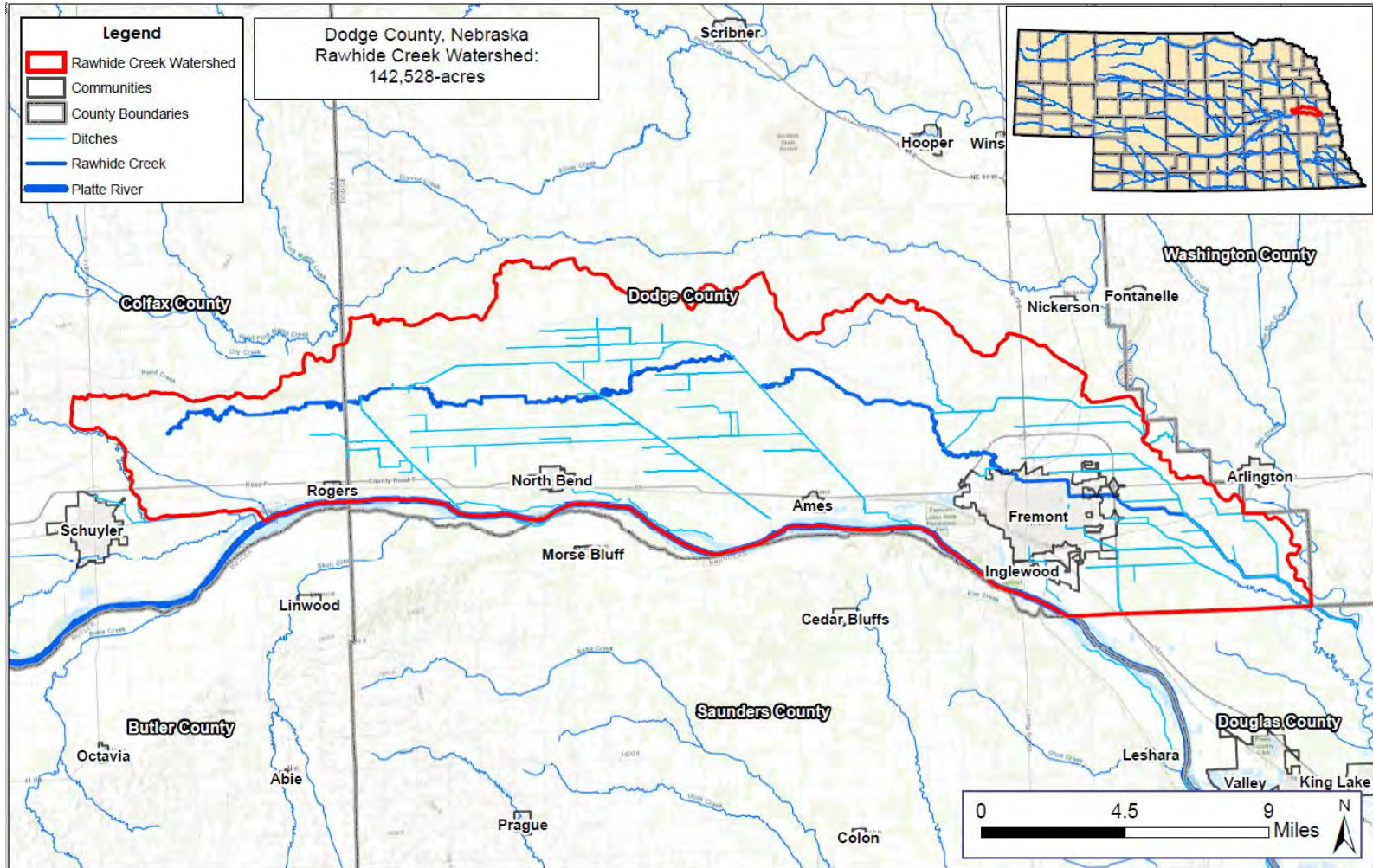


# WATERSHED OVERVIEW

*Dodge County Joint  
Water Management  
Advisory Board*

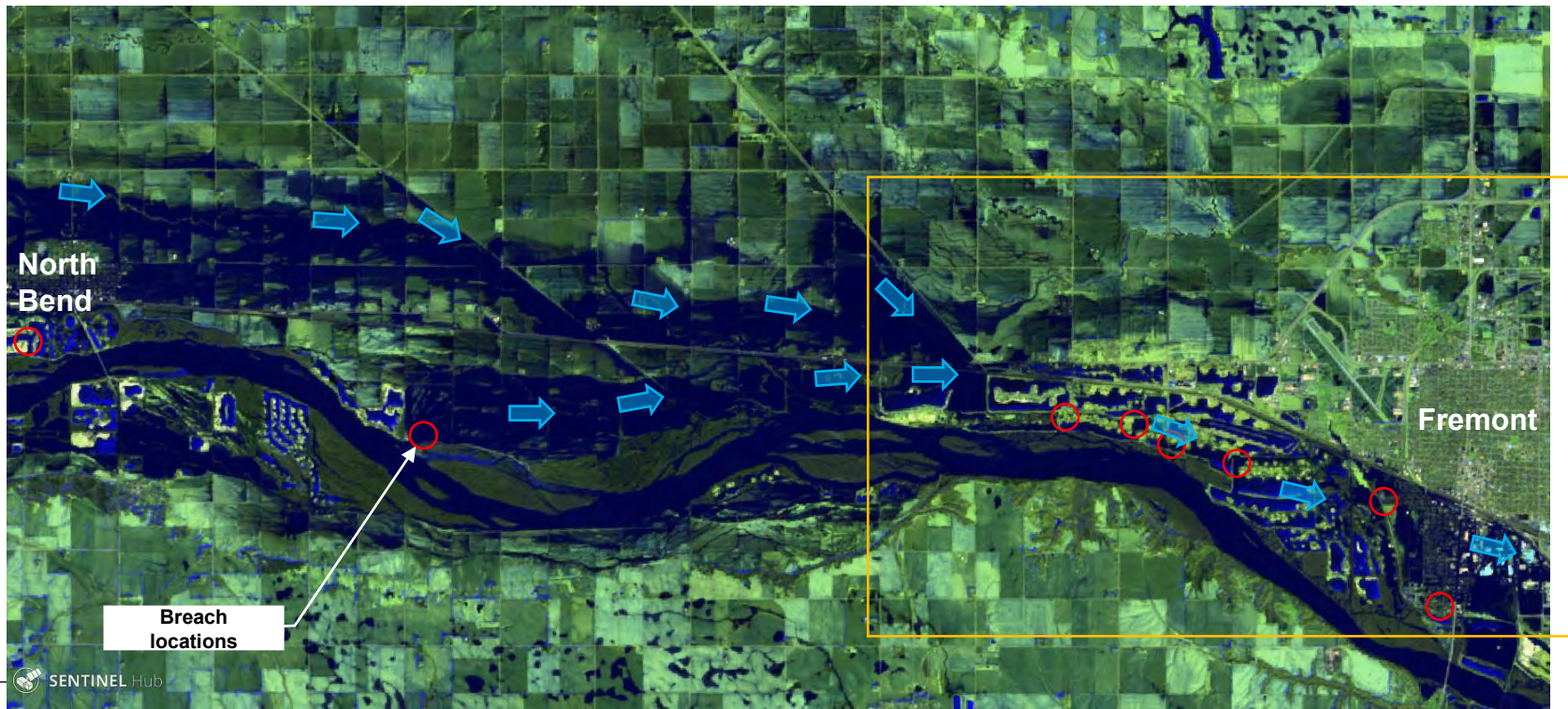


# WATERSHED OVERVIEW



# WATERSHED OVERVIEW

- Flood Risk from Multiple Sources
  - Local / regional heavy rainfall
  - Snowmelt
  - Ice Jams and Overflows



# WATERSHED CHARACTERISTICS

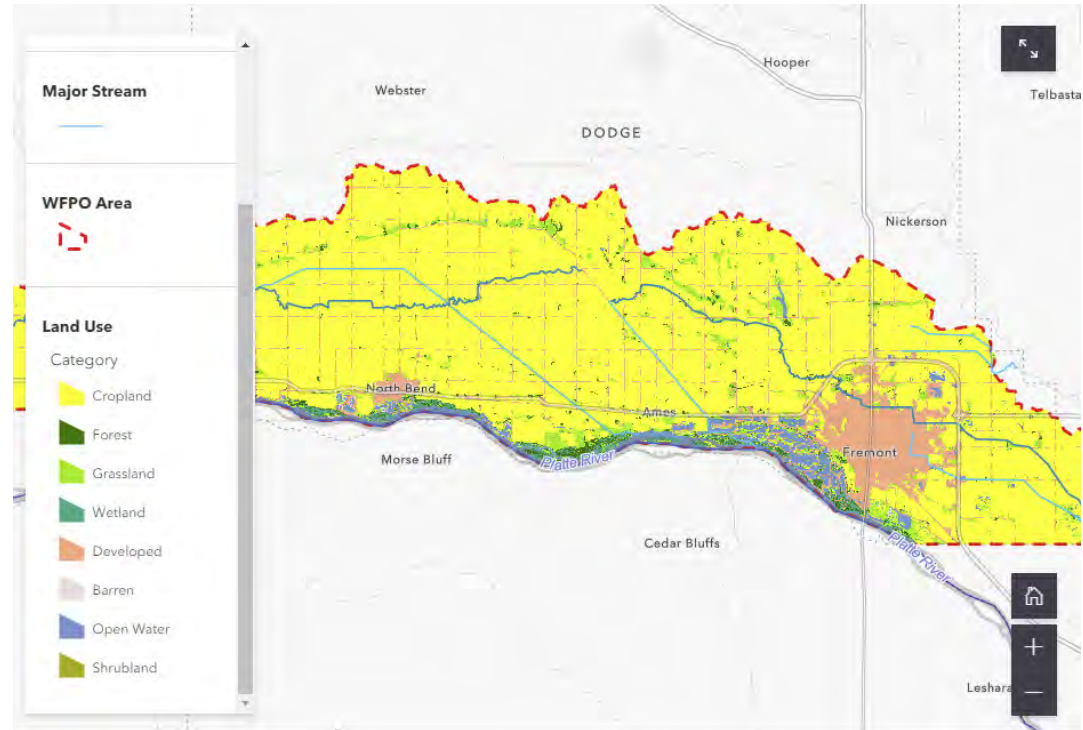
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- Land Use:

- 78% Crop
- 10% Urban

- Soils:

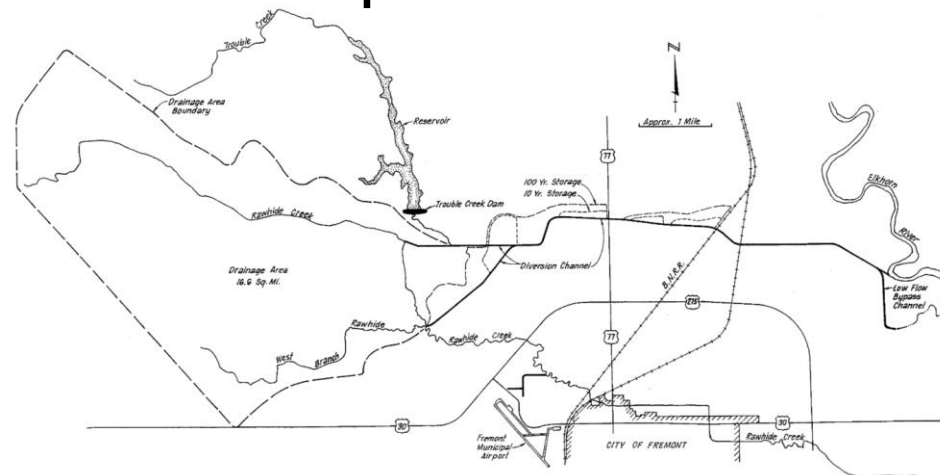
- 80% Type C/D
- 90% Silty, Clay, Loam



# WATERSHED OVERVIEW

## Previous Planning Efforts

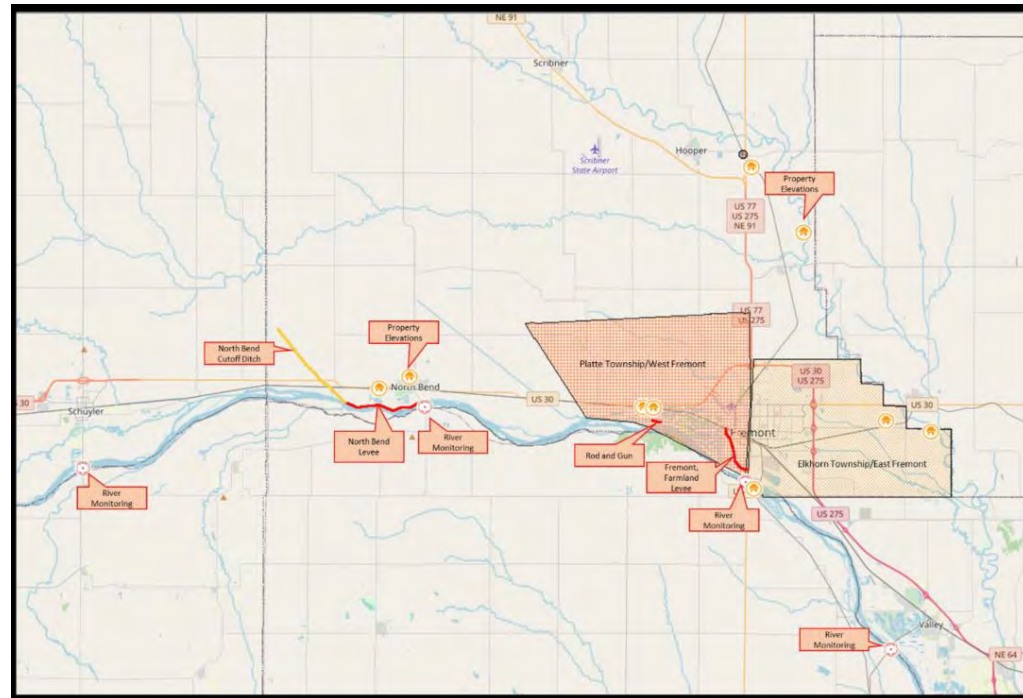
- Ditches
- Merlyn England Project
  - Trouble Creek Dam
  - Seven miles of existing ditch widened
  - Three miles of Rawhide Creek diversion channel
- Railroad bridge widening (Shell Creek)
- Many other various improvements



# WATERSHED OVERVIEW

## Ongoing Planning Efforts

- Elkhorn Township/East Fremont Mitigation
- USACE Section 205 Study
- Structure Elevations
- Various Levee and Ditch Repairs



# WATERSHED OVERVIEW

- New flood model being created by JEO
- Utilizing previous models developed by various agencies
- Used to delineate 'existing conditions'
- Will use model to evaluate alternatives

# WATERSHED STORYMAP

- ArcGIS StoryMap
- Dynamic webpage combining maps, narrative text, images, and multimedia content
- Provides more watershed overview information than today's meeting allows
- Will be updated as the project progresses
- Link: <https://arcg.is/0X9HTn>





# PLANNING PROCESS

*Dodge County Joint  
Water Management  
Advisory Board*



# INTEGRATED PLANNING PROCESS

## NEPA Process

(National Environmental Policy Act)

Proposed Action  
Purpose & Need

Scoping

Issue Refinement

Identify Alternatives

Effects and Analysis

Documentation

Public Comment

Document Decision

## Watershed Planning Process

Step 1 – Identify Problems

Step 2 – Determine Objectives

Step 3 – Inventory Resources

Step 4 – Analyze Resource Data

Step 5 – Formulate Alternatives

Step 6 – Evaluate Alternatives

Step 7 – Make Decisions

Step 8 – Implement Plan

Step 9 – Evaluate Plan

### Current Project

Deliverable is:  
Watershed Plan  
& Environmental  
Assessment

Potential  
Future  
Phases



# PROJECT SCOPING

## Potential Ecosystem Services Impacted by Flood Mitigation Measures

Floodplain management	Crop production	Threatened and endangered species
Future development	Water use / supply	Wildlife habitat
Public health and safety	Water quality	Invasive species
Recreation opportunities	Wetlands	Archeological
Transportation	Erosion and sediment	Others

- Agency and public input about ecosystem services or resources that are of most concern to them
- Feedback will help to shape project analysis

# ECOSYSTEM SERVICES

- Impacts we have on the environment and the impacts the environment has on us
- Consider how those changes will impact our communities socially and economically
  - These impacts can be both positive and negative
- Assigns “value” to environmental resources and impacts, in terms that will be applied to a benefit-cost analysis for projects

# PROJECT PURPOSE & NEED (DRAFT)

- The purpose of the project is to provide flood prevention to agricultural areas, the communities, and other infrastructure within the Rawhide Creek watershed.
- Also looking at the potential for incidental benefits such as: water quality, habitat, etc.
- *Note: As the project evolves the purpose will become more defined and supporting information on the needs (level of flooding, etc.) will be clarified.*

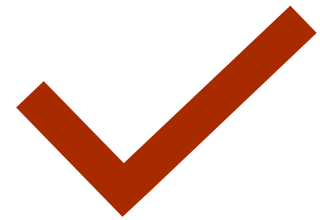
# POTENTIAL ALTERNATIVES



No preferred alternative has been identified



No project locations have been identified



All options are on the table at this point

# POTENTIAL ALTERNATIVES

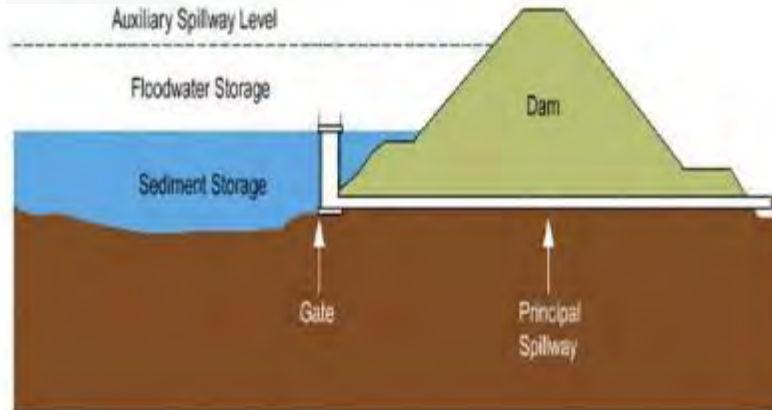
No Action

Dams

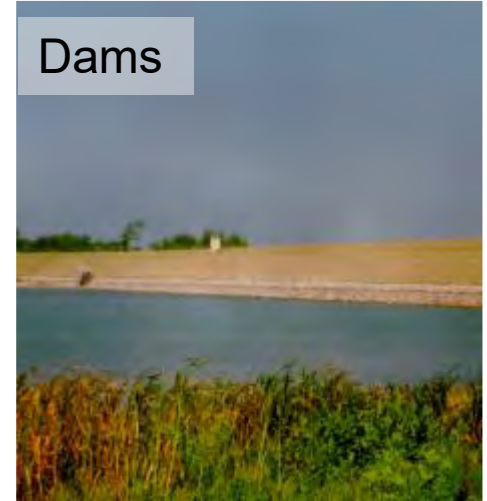
Detention cells

Levees/berms

Dams



Dams



Levees/berms



Levees/berms



# POTENTIAL ALTERNATIVES

Diversion channels

Channel widening,  
removal of channel  
constraints

Bridge/culvert  
improvements

BMPs

Channel improvements



BMPs



BMPs



# POTENTIAL ALTERNATIVES

Property buy-outs  
or flood proofing

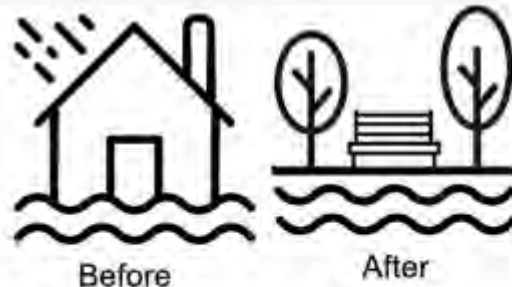
Cropland  
conversion

Wetland or oxbow  
storage/ restoration

Combinations of  
alternatives

Others as  
identified...

Property Buy-out



Cropland Conversion



# ALTERNATIVE SELECTION FACTORS

- Benefits and Costs
- Homes
- Infrastructure
- Agriculture operations
- Flood Reduction
- Resources of concern
- Land rights
- Permitting
- Local input

## **LEDPA Alternative**

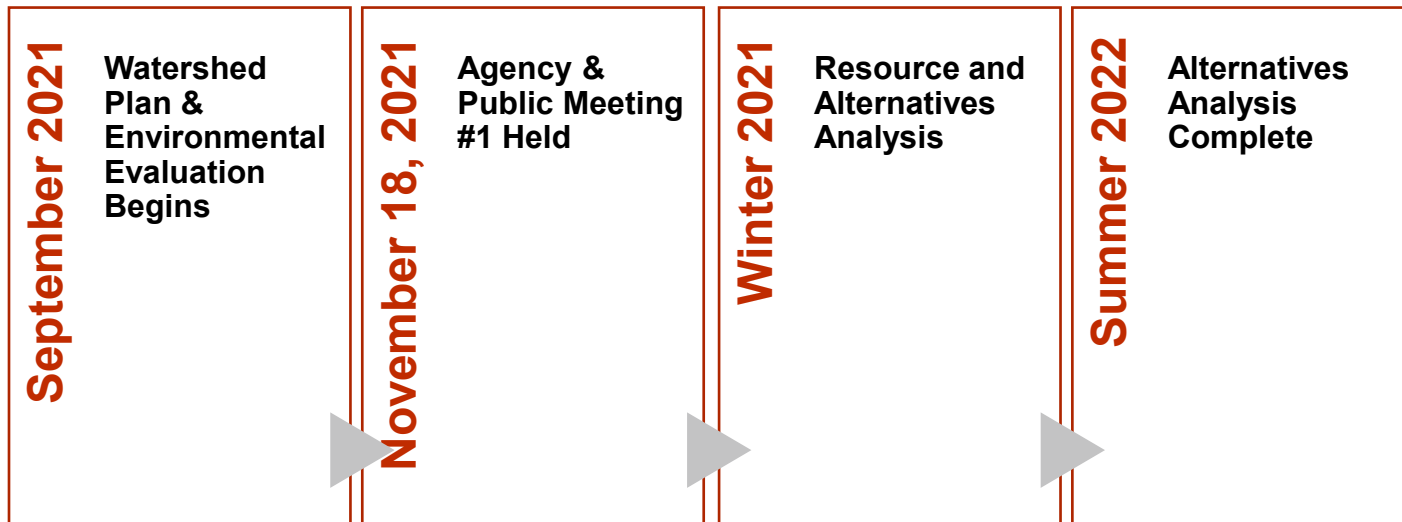
Least Environmentally Damaging Practical Alternative (LEDPA) is the Alternative with the least impacts to the environment.

The USACE can only issue a permit for the LEDPA.

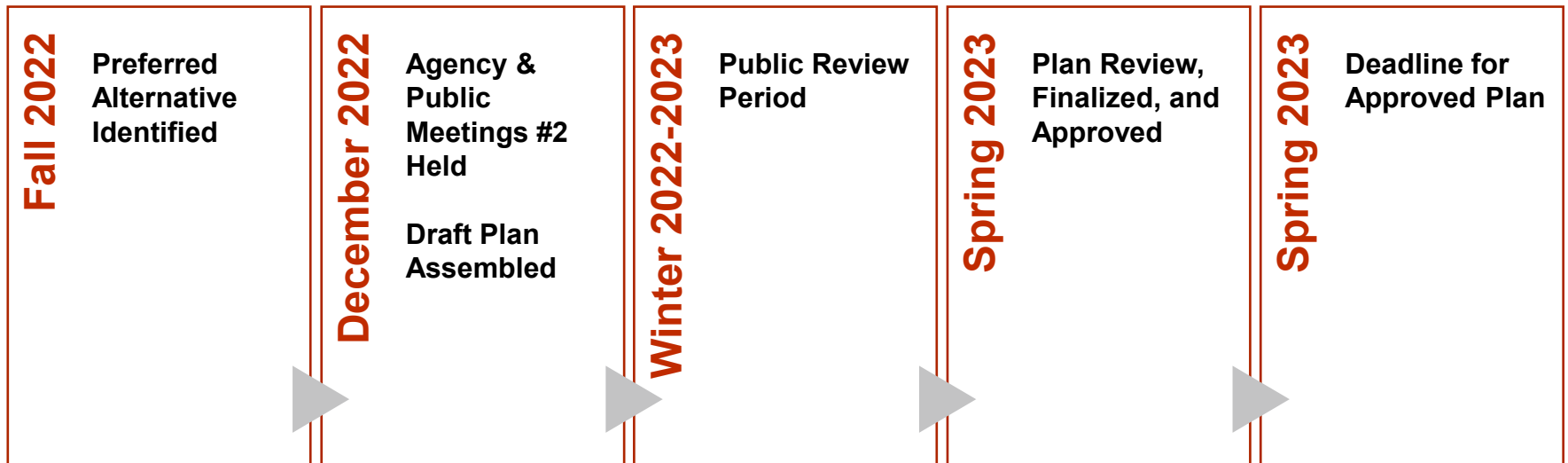
## **Preferred Alternative**

The Preferred Alternative is selected based on a Benefit Cost Analysis and Environmental Effects.

# ANTICIPATED SCHEDULE



# ANTICIPATED SCHEDULE CONT.



*Note: Decision to pursue any project would still need to be made after the plan is approved*

# LOCAL SPONSOR POINT OF CONTACT

**Tom Smith**

Dodge County Joint Water Management  
Advisory Board

402.727.2785

[dodgecoema@gmail.com](mailto:dodgecoema@gmail.com)



# RETURN WRITTEN COMMENTS TO

**John Petersen, PE**

JEO Consulting Group

11213 Davenport Street, Suite 200

Omaha, NE 68154

402.616.5036

[jpetersen@jeo.com](mailto:jpetersen@jeo.com)



Comments can also be made on the project's  
storymap: <https://arcg.is/0X9HTn>





# QUESTIONS, DISCUSSION, AND INPUT

*Dodge County Joint  
Water Management  
Advisory Board*



# DISCUSSION

- 1 Name
- 2 Role/Title
- 3 Organization
- 4 Points of discussion
  - What is your (or your agency's) primary point of interest for this watershed?
  - Do you (or your agency) have photos, studies, or other information that would assist with analysis?
  - Are there any specific alternatives you have concerns with?

# RAWHIDE CREEK WATERSHED PLAN - ENVIRONMENTAL ASSESSMENT

Public Open House Meeting #1

November 18, 2021, 6:00 to 8:00  
p.m.

***Dodge County Joint  
Water Management  
Advisory Board***

   
United States Department of Agriculture  
Natural Resources Conservation Service



# TODAY'S AGENDA

## 1) Short Presentation

A. Project Team & Introductions

B. Project Overview

- Project Background
- WFPO Program
- Watershed Overview
- Initial Purpose & Need
- Potential Alternatives
- Schedule

## 2) Open House

- Questions, Discussion, and Input



# INTRODUCTIONS



**John Petersen, PE**

Project Manager

JEO Consulting Group

# PROJECT PURPOSE

- 1) This is a study to:
  - A. Understand flood risks within the Rawhide Creek Watershed
  - B. Identify potential solutions to reduce the risk of flooding within the Rawhide Creek Watershed



# MEETING PURPOSE

- 1) Build Awareness and Understanding of Project
- 2) Review Planning Process
- 3) Listen and Obtain Comments/Input
- 4) Encourage Future Participation

# LOCAL PROJECT SPONSOR

- 1) Dodge County JWMAB members will be responsible for operations and maintenance of any projects that are built
- 2) Received grant funding from NRCS for current planning phase
- 3) Hired JEO in September 2021 to assist in plan development

## ***Dodge County Joint Water Management Advisory Board***

Contact: Tom Smith  
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- Platte Township



# AGENCY INVOLVEMENT

- 1) Providing 100% funding
- 2) Requirements identified through Title 390: National Watershed Program Manual
- 3) Coordinate review / approval process with National NRCS Water Management Center



Contact: Richard Vaughn  
[Richard.Vaughn@usda.gov](mailto:Richard.Vaughn@usda.gov)



# PROJECT BACKGROUND

- Evaluate and reduce flood risk within the Rawhide Creek watershed
- No projects have been selected to move forward at this time
- All potential projects are still in the identification and evaluation



# WFPO PROGRAM OVERVIEW

*Dodge County Joint  
Water Management  
Advisory Board*



# WFPO PROGRAM OVERVIEW

- Authorities provided through Public Law 78-534 of 1944, Public Law 83-566 Of 1954, and Public Law 156-67.
- Nationwide, NRCS has assisted public sponsors with construction of more than 11,400 dams in 47 states (nearly 900 in Nebraska) for the primary purposes of flood reduction and grade stabilization.
- Nebraska has had over 60 approved WFPO plans providing over \$80 million in average annual benefits.

# WFPO PROGRAM OVERVIEW

## AUTHORIZED PROJECT PURPOSES

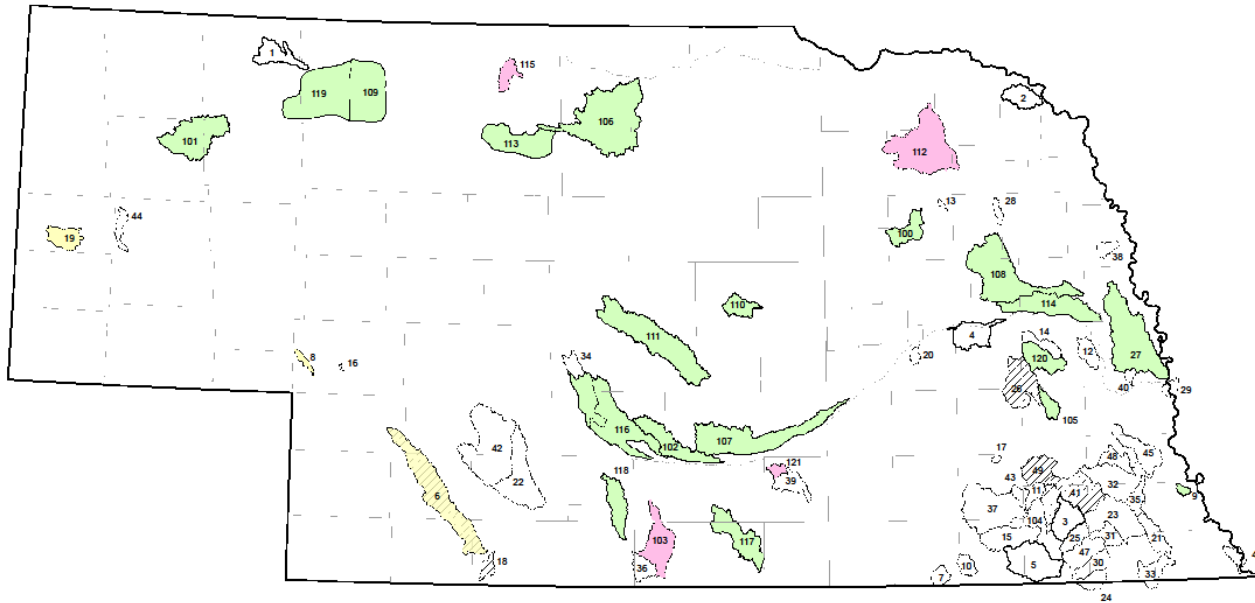
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# WFPO PROGRAM OVERVIEW

- Maximum watershed size
- At least 20% of benefits are directly related to agriculture, including rural communities.
- Economic Analysis
- Sponsors
  - Obtaining Land Rights
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  - Authority to Levy Taxes
  - Land Treatment above Reservoirs
  - Financial
  - Watershed Management (easements, regulations, etc.)
  - Operation and Maintenance

# WFPO PROGRAM OVERVIEW

NRCS Watershed Projects in the State of Nebraska



0 37.5 75 150 Miles

# WFPO PROGRAM OVERVIEW

- Planning Phase ~ complete in March 2023
  - No obligation to move forward
- Final Design Phase ~ 2 years
- Construction Phase ~ 2 to 5 years

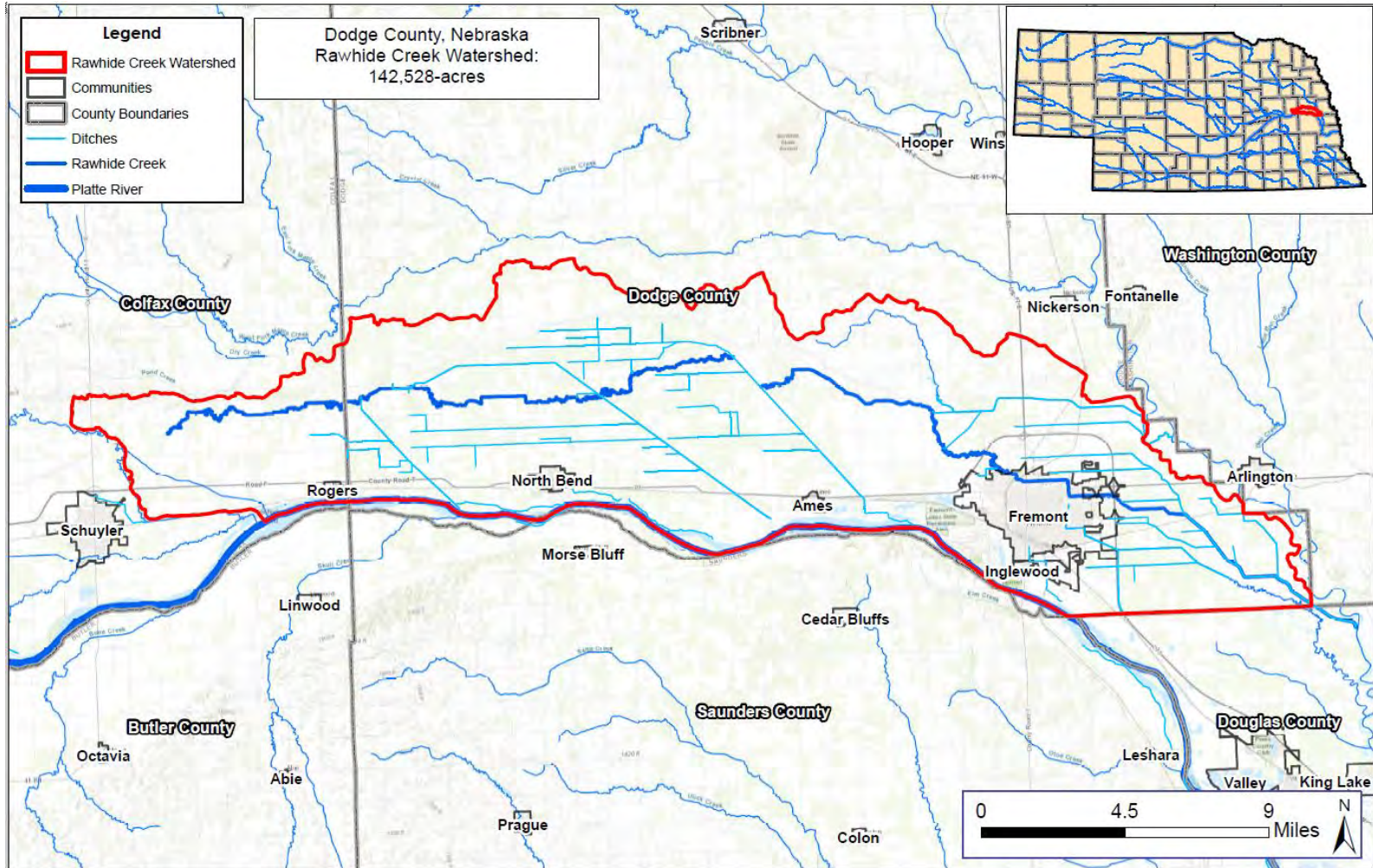


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*Dodge County Joint  
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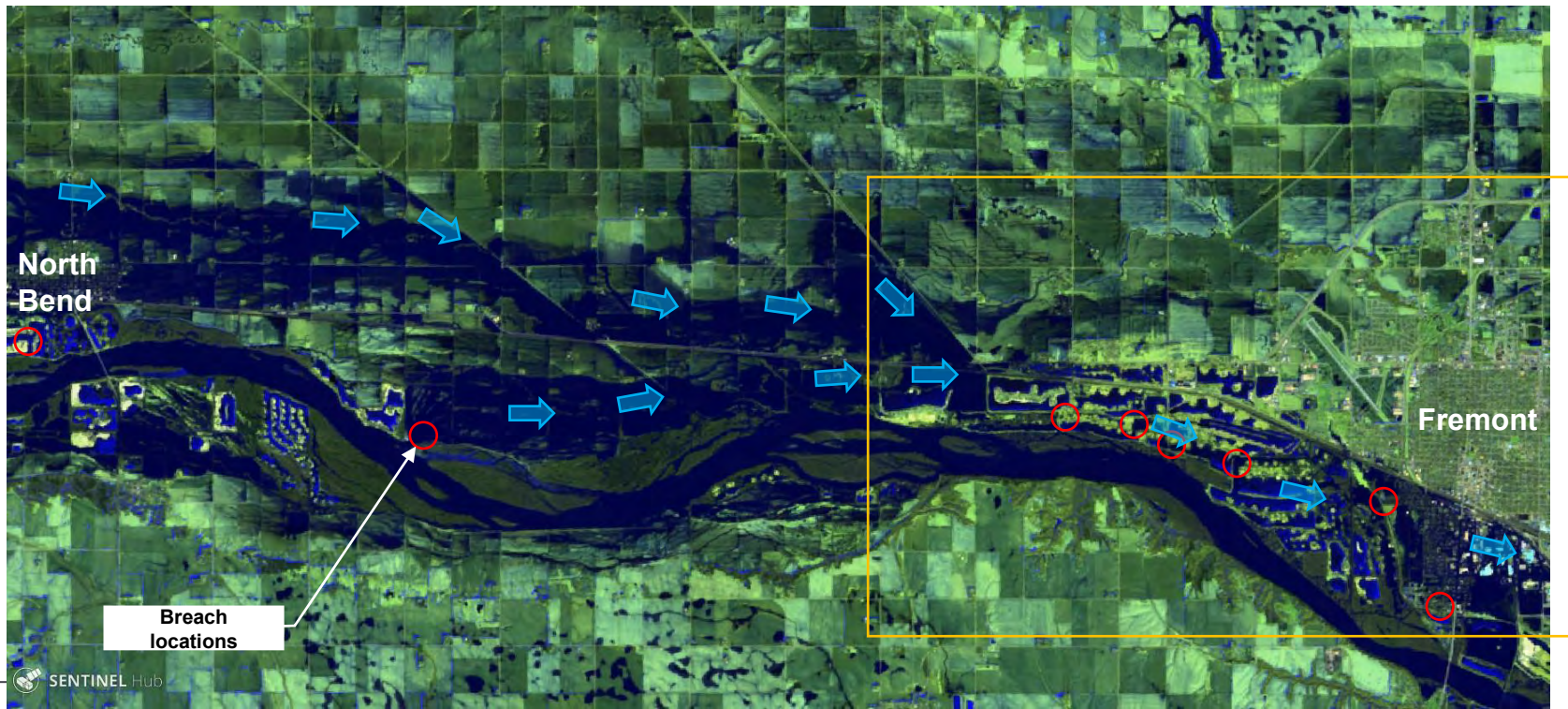


# WATERSHED OVERVIEW



# WATERSHED OVERVIEW

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# WATERSHED CHARACTERISTICS

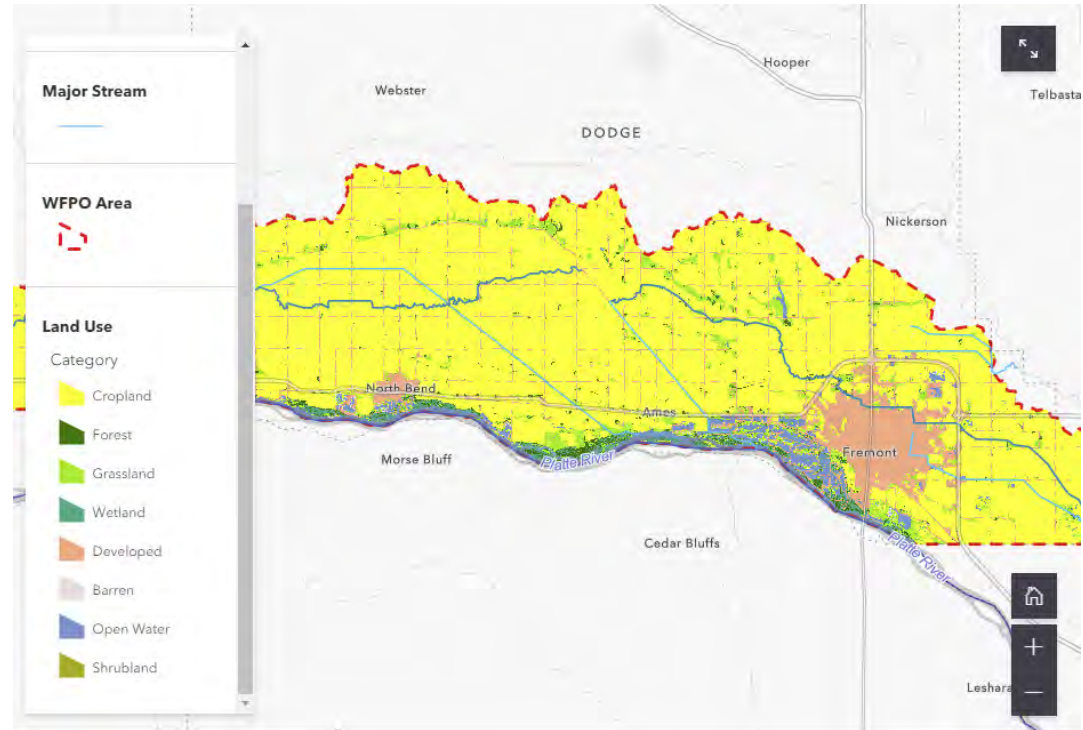
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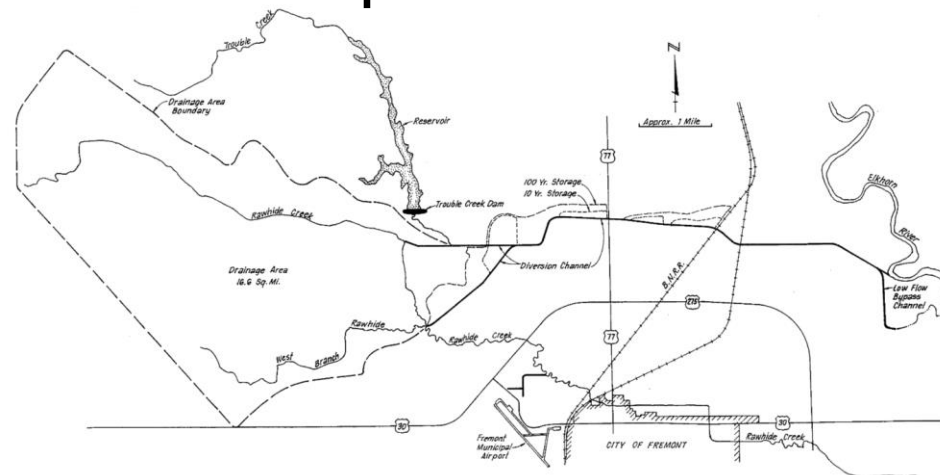
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# WATERSHED OVERVIEW

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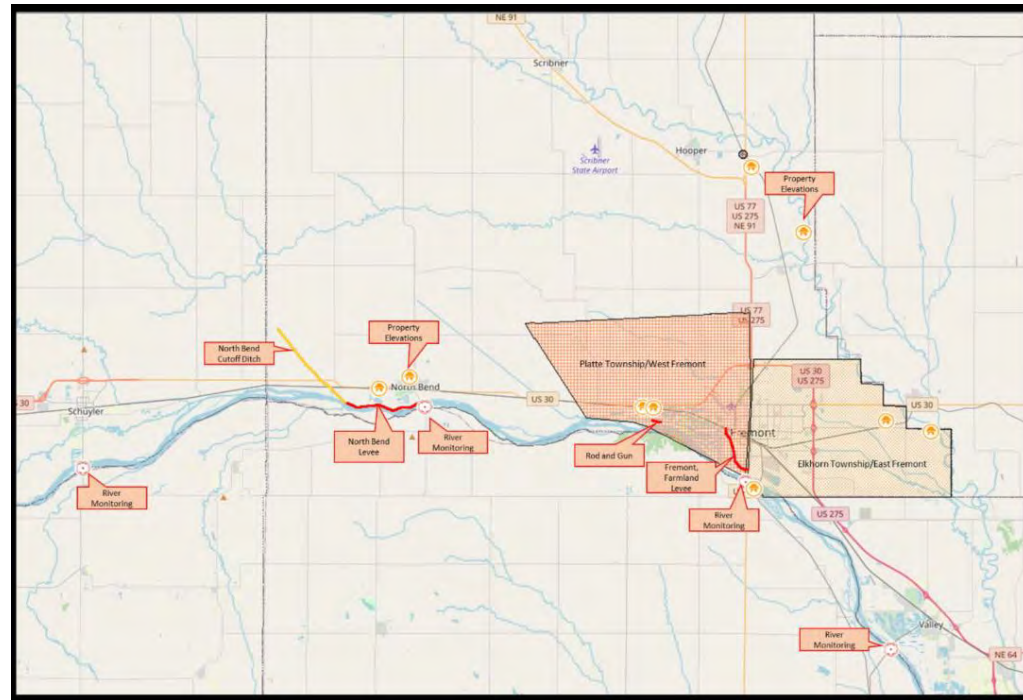
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# PLANNING PROCESS

*Dodge County Joint  
Water Management  
Advisory Board*



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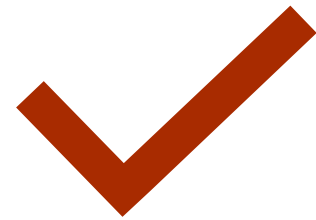
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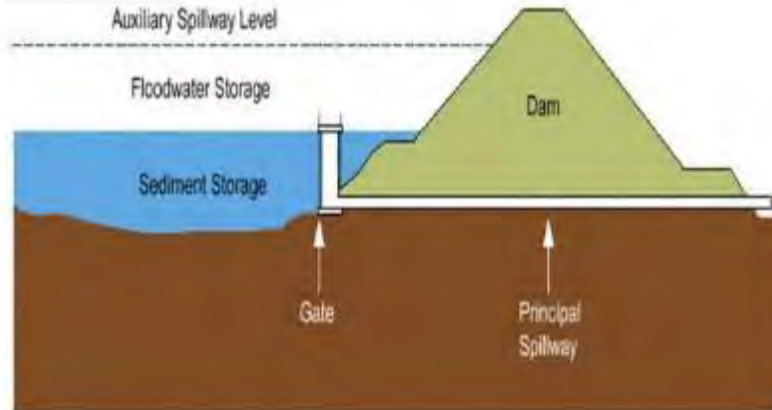
No Action

Dams

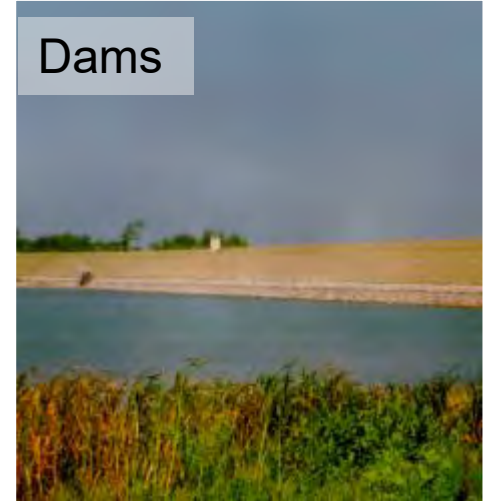
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Levees/berms

Dams



Dams



Levees/berms



Levees/berms



# POTENTIAL ALTERNATIVES

Diversion channels

Channel widening,  
removal of channel  
constraints

Bridge/culvert  
improvements

BMPs

Channel improvements



BMPs



BMPs



# POTENTIAL ALTERNATIVES

Property buy-outs  
or flood proofing

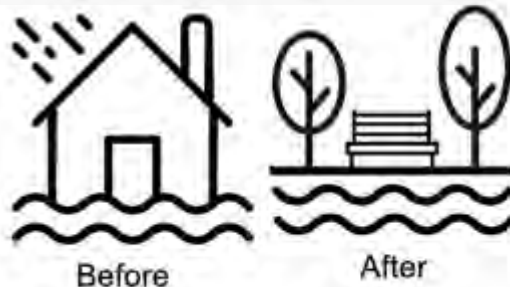
Cropland  
conversion

Wetland or oxbow  
storage/ restoration

Combinations of  
alternatives

Others as  
identified...

Property Buy-out



Cropland Conversion



# CASE STUDY

## Grand Island, Upper Prairie Silver Moores Project

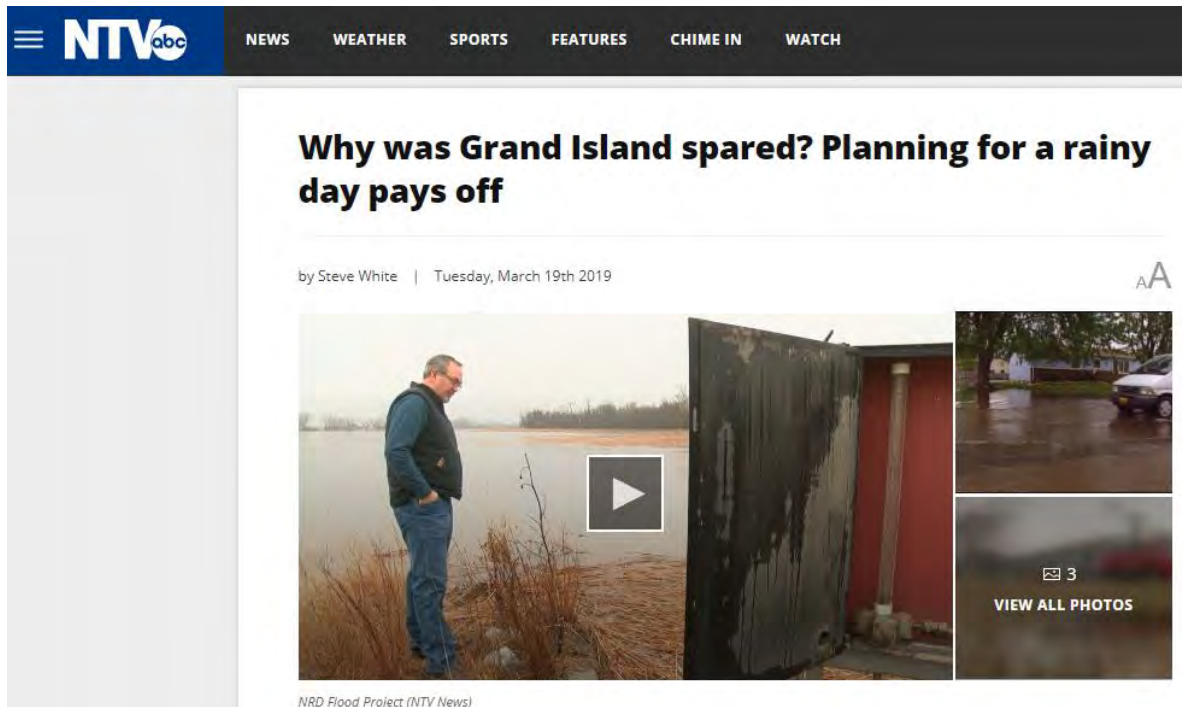
- Similar sized watershed and topography
- Construction completed in 2019
  - Four dams
  - Large detention cell
  - Levee



# CASE STUDY

## Grand Island: Upper Prairie Silver Moores Project

- Total project cost about \$25M
- Saved an estimated \$47M in flood damage from the 2019 Flood.



The screenshot shows a news article on the NTV abc website. The navigation bar includes links for NEWS, WEATHER, SPORTS, FEATURES, CHIME IN, and WATCH. The article title is "Why was Grand Island spared? Planning for a rainy day pays off" by Steve White, dated Tuesday, March 19th 2019. The main image shows a man in a blue jacket and jeans standing on a grassy bank looking out over a large body of water. A play button icon is overlaid on the image. To the right, there is a smaller photo of a flooded residential street with a car partially submerged. Below the photos, there is a "VIEW ALL PHOTOS" link with a "3" icon indicating the number of photos. The caption at the bottom reads "NRD Flood Project (NTV News)".

NTV abc

NEWS WEATHER SPORTS FEATURES CHIME IN WATCH

### Why was Grand Island spared? Planning for a rainy day pays off

by Steve White | Tuesday, March 19th 2019

AA

VIEW ALL PHOTOS 3

NRD Flood Project (NTV News)

# ALTERNATIVE SELECTION FACTORS

- Benefits and Costs
- Homes
- Infrastructure
- Agriculture operations
- Flood Reduction
- Resources of concern
- Land rights
- Permitting
- Local input

## **LEDPA Alternative**

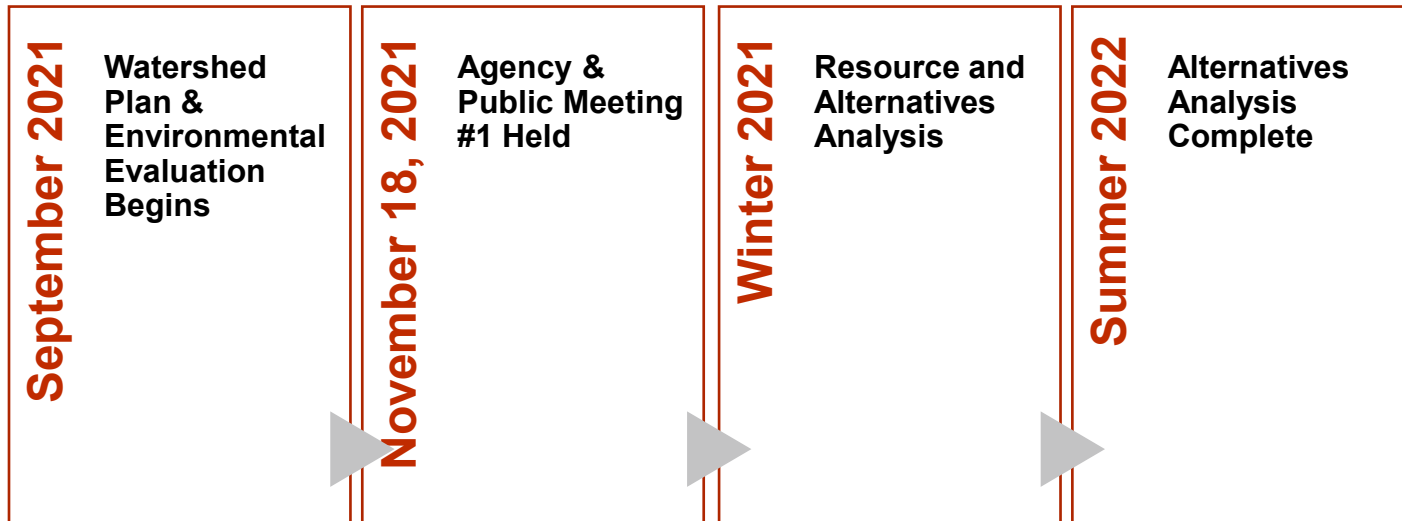
Least Environmentally Damaging Practical Alternative (LEDPA) is the Alternative with the least impacts to the environment.

The USACE can only issue a permit for the LEDPA.

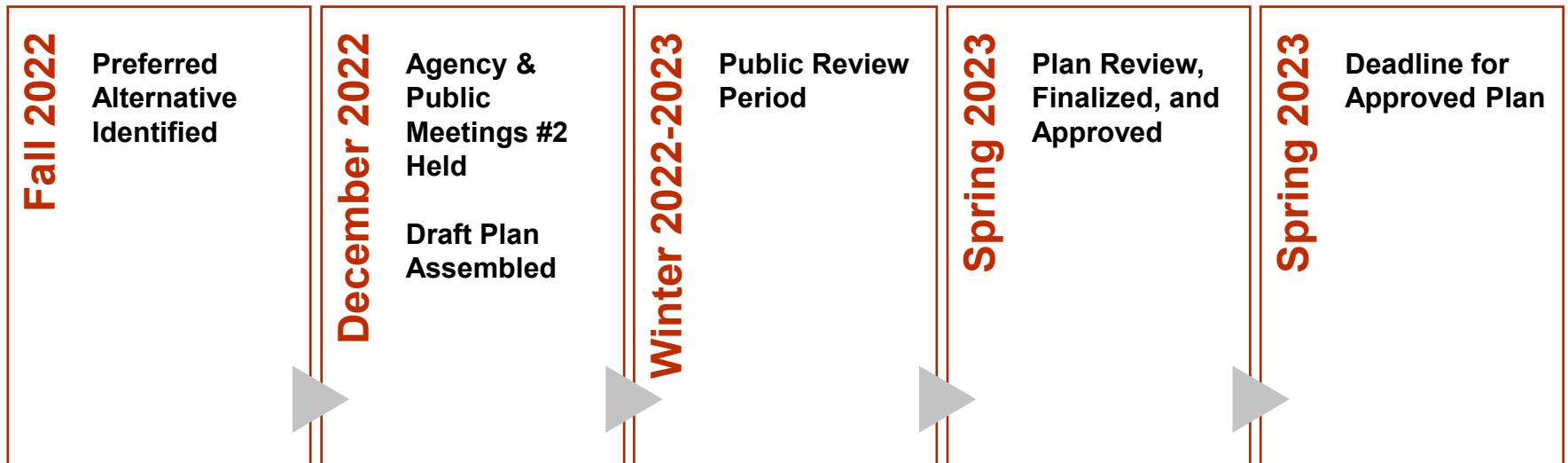
## **Preferred Alternative**

The Preferred Alternative is selected based on a Benefit Cost Analysis and Environmental Effects.

# ANTICIPATED SCHEDULE



# ANTICIPATED SCHEDULE CONT.



*Note: Decision to pursue any project would still need to be made after the plan is approved*

# LOCAL SPONSOR POINT OF CONTACT

**Tom Smith**

Dodge County Joint Water Management  
Advisory Board

402.727.2785

[dodgecoema@gmail.com](mailto:dodgecoema@gmail.com)



# RETURN WRITTEN COMMENTS TO

**John Petersen, PE**

JEO Consulting Group

11213 Davenport Street, Suite 200

Omaha, NE 68154

402.616.5036

[jpetersen@jeo.com](mailto:jpetersen@jeo.com)



Comments can also be made on the project's  
storymap: <https://arcg.is/0X9HTn>





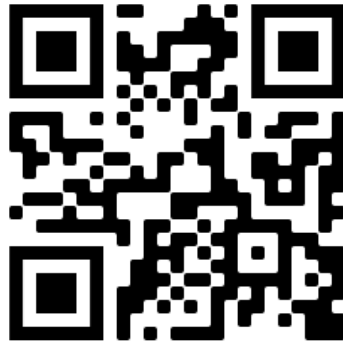
# QUESTIONS, DISCUSSION, AND INPUT

*Dodge County Joint  
Water Management  
Advisory Board*



# OPEN HOUSE DISCUSSION

- Your input is important!
- Stations based on region
- Survey form
- Project website:



**Platte River Cameras/Gauges Meeting**  
**1:00 a.m., November 5, 2021**  
**Minutes**

**Present (Zoom):** USGS: Jason Lambrecht, Ben Dietsch; Dodge County: Tom Smith; PMRNRD: Rich Tesar, Marlin Petermann; City of Fremont: Brian Newton; LPNNRD: Frank Pollard, Bill Saeger, Eric Gottschalk, Bob Heimann, Sean Elliott, Tom Mountford

**1. Purpose:**

The group met to discuss activities, needs and timelines for USGS to establish cameras and additional monitoring gauges along the Lower Platte River for ice/flood observation.

**2. Partner Interlocal and USGS Agreements:**

Dodge County, City of Fremont, Papio-Missouri River NRD and Lower Platte NRD have approved an Interlocal Agreement. On behalf of the partners, LPNNRD has approved a three year Joint Funding Agreement with USGS. Both agreements extend until September 30, 2024.

**3. Update on FEMA Grant Assistance:**

Dodge County Emergency Manager Tom Smith reported that he continues to work with NEMA/FEMA to use approved grant assistance toward USGS equipment costs. Presently FEMA's legal counsel is determining if this is doable.

**4. Locations for Cameras/Gauges:**

LPNNRD & PMRNRD staff met with USGS representatives on October 20<sup>th</sup> to investigate selected camera locations at HW 15, 79, 77, 64 bridges and discuss a possible private property location near Columbus, south of the confluence of the Loup and Platte Rivers. Planned additional gauges will be at HW 15 & 77 bridges. USGS liked the existing bridge brackets LPNNRD placed at HW 64, 77 & 79 and asked for two more. The brackets were made and given to USGS. Jason Lambrecht said that they investigated all sites on October 20<sup>th</sup>, including the possible private property location. The private location would not be easy to access so would like to consider alternatives if possible. Bob Heimann reported that he is looking into another private property location at Bellwood Lakes and the Loup Power Canal property was brought up again as another alternative. LPNNRD will continue to investigate and report back.

**5. Discussion Moving Forward:**

**a. USGS Schedule for establishing equipment.**

Jason said that all equipment has been ordered and depending on the availability, is planned to be placed and accessible on USGS's web site by the end of the year. USGS will first place a camera at the HW 64 bridge location the first week in December, then work upstream on HW 77, and HW79. HW 15 and the selected site near the confluence of Loup and Platte Rivers would likely be the last for equipment establishment.

**b. Written Agreement needed for camera on private property if selected?**

A written agreement will be obtained, particularly if a private site is selected.

**c. Other topics.**

It was suggested that a report of this project effort can be given at the November Ice Meeting scheduled for November 23<sup>rd</sup>. At that meeting, Jason Lambrecht may be ready to give a demonstration on how the established camera viewings and gauge readings can be accessed on the USGS website.

**6. Next Partner Meeting Date:**

It was decided to schedule the next meeting after USGS has established equipment for partner demonstration.

**7. Adjourned – 1:30 p.m.**

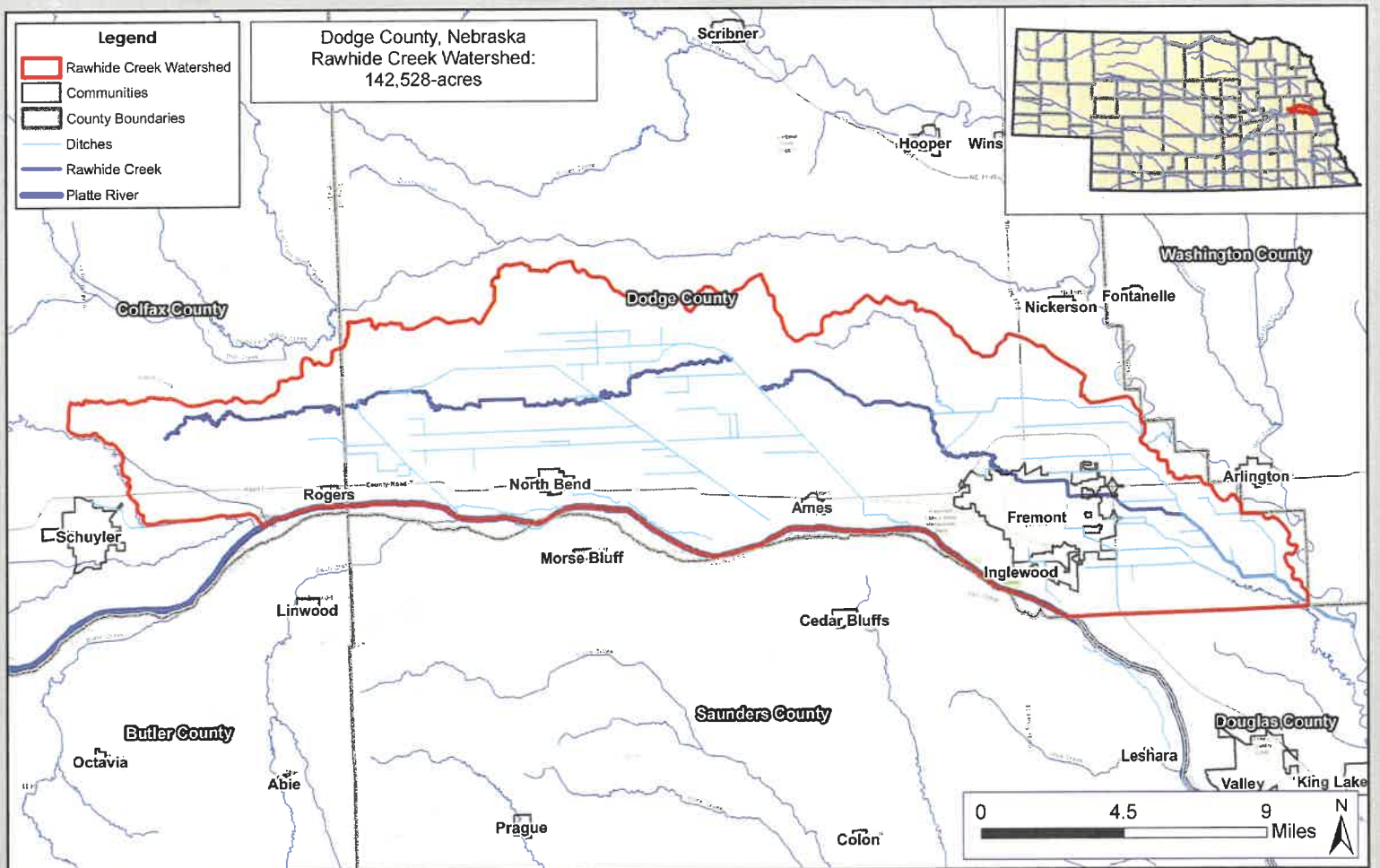
# Rawhide Creek

## WATERSHED FLOOD RISK REDUCTION PLAN

### Project Overview

The Rawhide Creek Watershed is subject to multiple flooding risks – from local storms over the watershed to potential overflows from Shell Creek, the Platte River, and Elkhorn River.

- The Rawhide Creek Watershed covers more than 142,000 acres in eastern Nebraska through Colfax and Dodge Counties, and Rawhide Creek spans approximately from northwest of the Village of Rogers to east of the City of Fremont.
- The March 2019 catastrophic flooding along the Platte and Elkhorn Rivers and their tributaries, including Rawhide Creek, affected the communities of North Bend, Fremont, and Ingleswood.
- The Dodge County Joint Water Management Advisory Board (JWMAB) was created following the 2019 floods to support inter-agency collaborative efforts to identify and implement measures to reduce area flood risks.



## Project Purpose

The Plan-EA will be used to help document existing flooding problems, evaluate new strategies for flood reduction and watershed protection, and propose cost-effective ways to reduce flooding impacts.

## Planning Process

Dodge County is partnering with the Natural Resources Conservation Service (NRCS) to develop the Rawhide Creek Watershed Work Plan – Environmental Assessment (Plan-EA).

- Current planning efforts started in the summer 2021 and are scheduled to be complete in spring 2023. JEO Consulting Group has been retained to complete the planning process.
- Public input is extremely important to the project, and the project team is looking for comments on flooding problems within the Rawhide Creek Watershed with a focus on agricultural and rural areas between Schuyler and Fremont.

## Anticipated Schedule



To provide comment on flooding events in the Rawhide Creek Watershed and to learn more about the project, scan this code with the camera on your smart phone to view the latest project information and updates.



## Contact Information

For more information, contact:

### Tom Smith

Dodge County Emergency  
Management Director

402-727-2785  
dodgecoema@gmail.com

### John Petersen, PE

JEO Consulting Group

402-392-9923  
jpetersen@jeo.com



PROJECT WEBSITE: <https://arcg.is/0X9HTn>

**DODGE COUNTY FLOOD PREVENTION PROJECT**  
NOVEMBER 18, 2021  
OPEN HOUSE COMMENT FORM



**1. Do you live in, own, operate a farm or business, or work in an area that experiences regular flooding within the Rawhide Creek Watershed?**

- Yes       No       Not Sure

**2. Mark all flood impacts that you have experienced.**

- Caused property or business damage
- Flooded or closed roads or intersections
- Observed flooding on your land
- Required to temporarily evacuate your home
- Required to temporarily close your business
- Flooded your agricultural property, impacting existing crops or preventing planting
- Other – please describe

**3. If you experienced flooding as indicated above, please describe the flooding and associated impacts:**

- a. **Flooding location (address or approximate intersection).**
  
  
  
  
  
  
  
  
  
  
- b. **Flooding observed (be as specific as possible, for example – depth of water on land/in buildings).**
  
  
  
  
  
  
  
  
  
  
- c. **Approximate damages (describe in terms of both what was damaged and dollar amount, if available).**
  
  
  
  
  
  
  
  
  
  
- d. **How frequently have you experienced these flooding impacts (describe in terms of time, for example – once in my lifetime vs. every few years. Be as specific as possible).**

*(continued on back page)*



# DODGE COUNTY FLOOD PREVENTION PROJECT

## COMMENT FORM CONTINUED

e. Based on your experience, what is the source of typical flooding impacts you described above. Choose your top two applicable responses:

- Local intense rainfall causing flooding in the ditches and channels including Rawhide Creek
- Shell Creek overflow near Schuyler
- Platte River.
- Elkhorn River.

Please add any explanatory details, as needed.

4. Do you have flooding photos or other detailed flooding impact information you are willing to share? If so, please provide them through the story map (QR code below) or provide your contact details so we can follow up with you.

5. Do you have suggestions regarding what you would like to see done to reduce the impacts of flooding in the watershed?

6. Please provide any further comments you would like to share regarding flooding and flood risk reduction in the watershed.

### Contact Information (optional)

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_





14747 California Street, Ste. 2  
Omaha, NE 68154  
(402) 991-8919  
(402) 991-8191 fax

November 11, 2021



Mr. Shawn C. Elliott  
Projects and Rural Water Manager  
Lower Platte North Natural Resources District  
P.O. Box 126  
511 Commercial Park Road  
Wahoo, NE 68066

RE: Kaspar / Prochaska

Dear Mr. Elliott:

As you may recall, this firm represents Mike Kaspar who owns property in 25-16-5 adjacent to property owned by Leona Placek and farmed by Ed Prochaska. In October of 2019, you inspected that property and forwarded to me your opinion of the circumstances of the adjacent farms, as it related to the erosion where the farms join.

Our efforts to negotiate a resolution with Mrs. Prochaska have been unsuccessful and it was necessary to file litigation in the District Court in Saunders County, Nebraska. The Court has set this matter for trial on January 7<sup>th</sup> beginning at 9:00 in Wahoo. As part of the presentation of our case, I would like to have you present to testify as to what you observed and what is contained in your letter of October 7, 2019. I anticipate your testimony would be short but important in getting this matter resolved. We had proposed jointly working on the project and asked if there was any way to collaborate work on that drainage way with the NRD, but our efforts have been unsuccessful.

Please advise if you can be present for your testimony on that date. I would forward to you a Subpoena, along with the appropriate witness fee and travel expense. I look forward to your response.

Very truly yours,

FOR THE FIRM

A handwritten signature in blue ink, appearing to read "Robert F. Peterson".

Robert F. Peterson

cc: Mike Kaspar

RFP/js

IN THE DISTRICT COURT OF SAUNDERS COUNTY, NEBRASKA

MICHAEL KASPAR,	)	CASE NO. CI 20-19
Plaintiff,	)	
	)	
vs.	)	ANSWER AND
	)	CROSS-COMPLAINT
CLIFFORD PROCHASKA and	)	
LEONA PLACEK,	)	
Defendants.	)	

ANSWER

COME NOW Defendants, Clifford Prochaska and Leona Placek, by and through counsel, John H. Sohl, and for their Answer to Plaintiff's Petition for Mandatory Injunction do hereby state as follows:

- 1) Defendants admit Paragraph 1 of Plaintiff's Petition for Mandatory Injunction.
- 2) Defendants admit Paragraph 2 of Plaintiff's Petition for Mandatory Injunction.
- 3) Defendants admit Paragraph 3 of Plaintiff's Petition for Mandatory Injunction.
- 4) Defendants admit Paragraph 4 of Plaintiff's Petition for Mandatory Injunction.
- 5) Defendants deny Paragraph 5 of Plaintiff's Petition for Mandatory Injunction.
- 6) Defendants admit that portion of Paragraph 6 of Plaintiff's Petition that alleges that Plaintiff has requested Defendant, Prochaska, to cease his current farming practices, but denies the remainder of said paragraph.

7) Defendants admit that portion of Paragraph 7 of Plaintiff's Petition for Mandatory Injunction that alleges Plaintiff is seeking an injunction but denies the remainder of said paragraph.

8) Defendants deny each and every allegation of Plaintiff's Petition for Mandatory Injunction not heretofore specifically admitted except those which are admissions against Plaintiff's interests.

9) Defendants further affirmatively allege that any erosion is due to an act of God.

WHEREFORE, Defendants pray that Plaintiff's Petition be dismissed with costs taxed to the Plaintiff.

CLIFFORD PROCHASKA and  
LEONA PLACEK,  
Defendants/Cross-Plaintiffs.

By:                   /s/ John H. Sohl                    
Defendants/Cross Plaintiff's Attorney  
John H. Sohl  
Attorney at Law  
559 North Linden  
Wahoo, NE 68066  
Ph. (402) 443-4110  
Fax (402) 443-4120  
Email: [johnsohl@me.com](mailto:johnsohl@me.com)  
Bar No. 16663



# Certificate of Service

I hereby certify that on Wednesday, March 11, 2020 I provided a true and correct copy of the Answer & Counterclaim to the following:

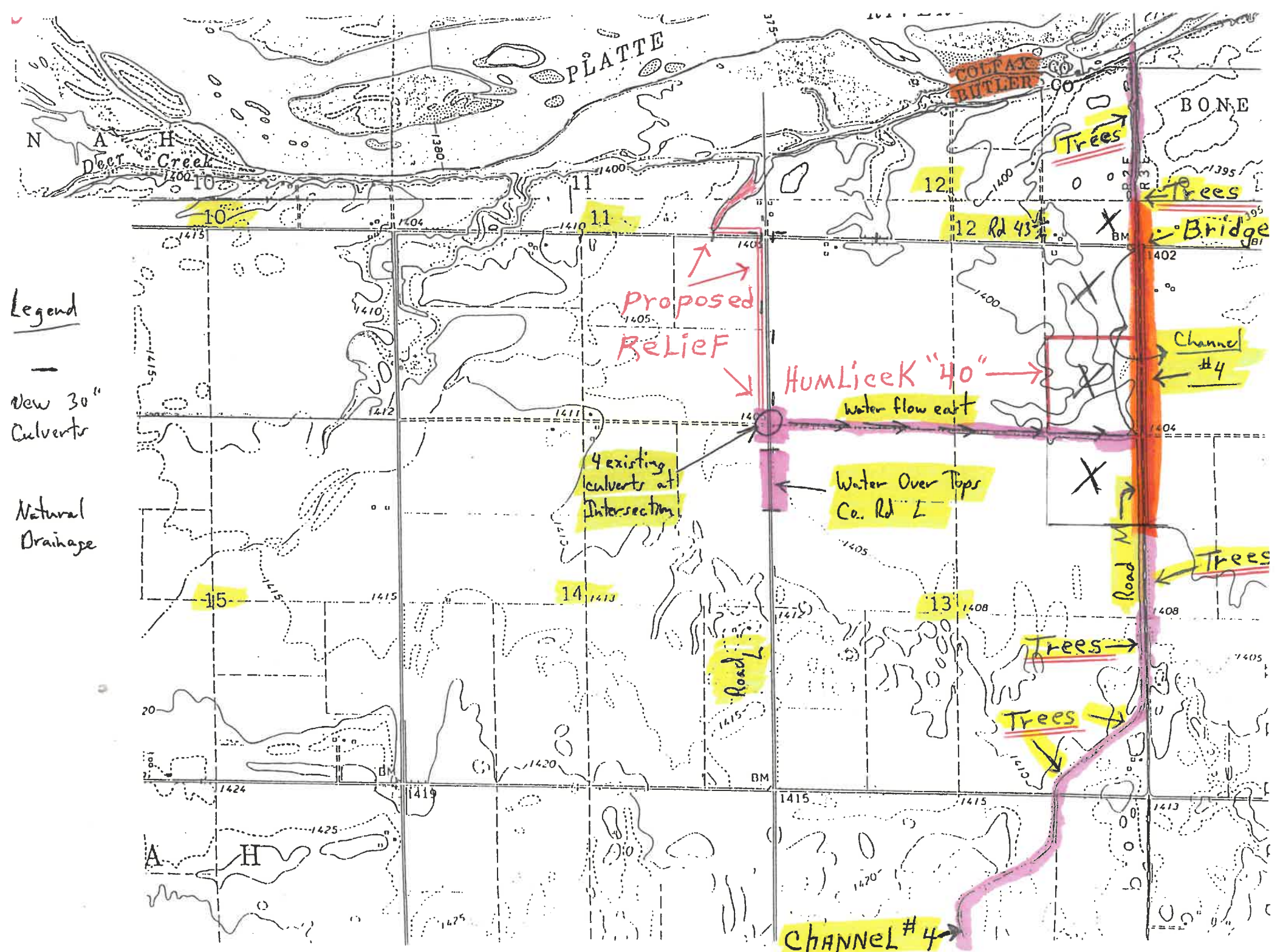
Kaspar,Michael, represented by Kathleen M. Foster (Bar Number: 23259) service method: Electronic Service to kfoster@petersonfosterlaw.com

Prochaska,Clifford, service method: No Service

Placek,Leona, service method: No Service

Signature: /s/ John H. Sohl (Bar Number: 16663)





PLATTE

COLRAC BUTLER

BONE

N A H Deer Creek

12 Rd 43

Trees

Trees

Bridge

Legend

New 30" Culverts

Natural Drainage

Proposed Relief

HUMLICEK "40" water flow east

Water Over Tops Co. Rd L

4 existing culverts at Intersection

Channel #4

Road M

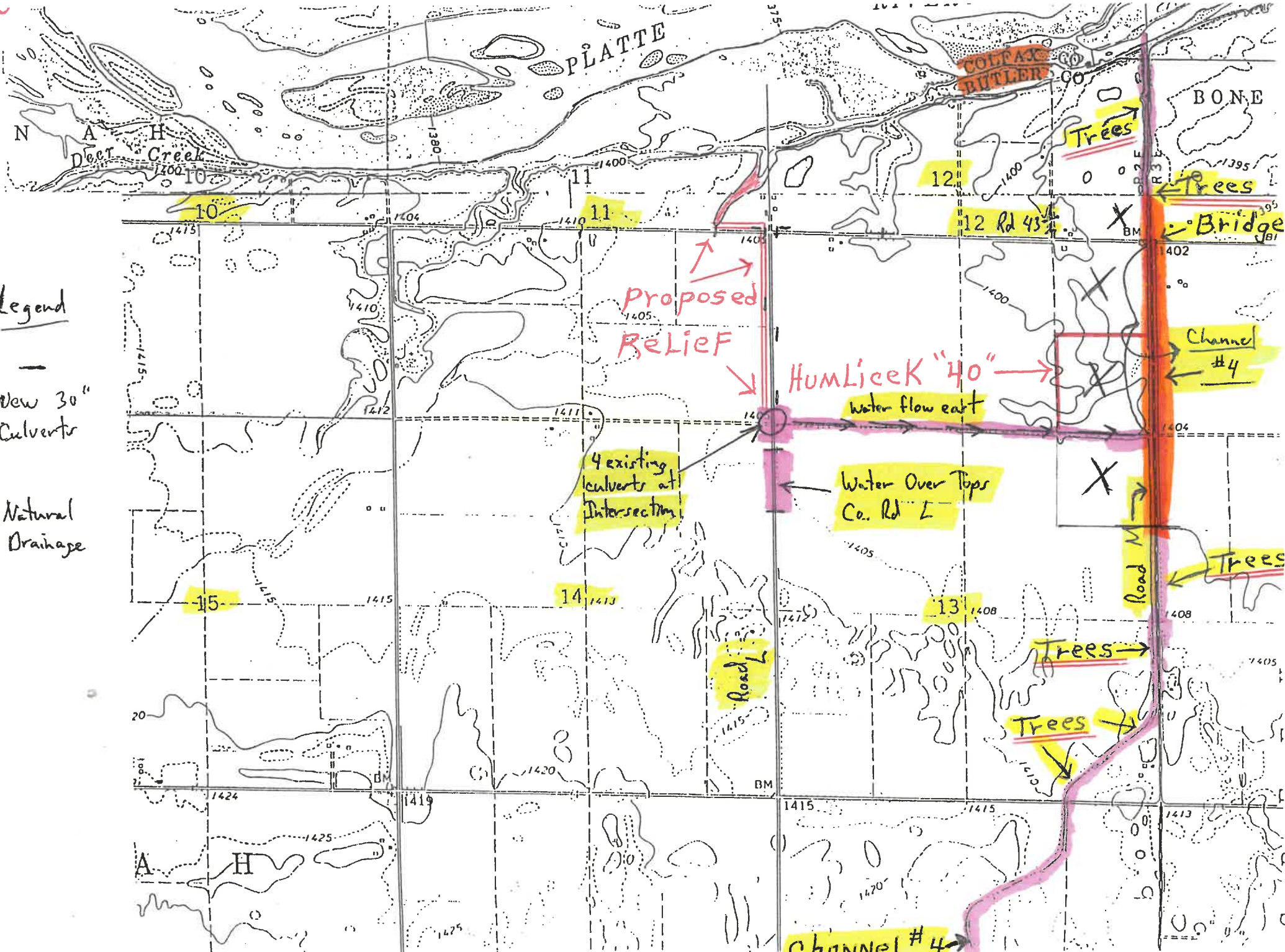
Trees

Road L

Trees

Trees

CHANNEL #4





Channel 4, Northern Butler Co., Nebr., August 4-5-1996  
One of many floods witnessed personally since 1954.  
Dennis L. Kucera



April 20, 2021

Following the drought years of 1954, 1955 and 1956, I witnessed a tremendous amount of farmland development that carried on into the 1960s, 1970s and 1980s, when I was on the Savanna Township Board. Land was leveled for irrigation purposes, roads were graded up increasing flood water capacity - necessitating the need for larger culverts - resulting in flash flooding of farmland downstream.

The following pictures show evidence of what now occurs downstream to numerous land owners.

I respectfully request the serious attention of the Lower Platte North officials,

Respectfully  
Dennis L. Kucera  
1268, 43 1/2 Road  
Bellwood, Neb. 68624  
Ph. 1-402-538-4235



This picture was taken Aug. 8, 1996 after a 6 inch rain on Aug. 4 and 5. This historic flooding takes place one mile west of M road and one-half mile south of 43½ road, river road, northern Butler county, Nebr. Flooding will occur with any rain in excess of 2" and up to 3 hundred feet wide and up to a depth of about 2 feet. all this water flows one mile east into channel 4.



Relative to the previous page, four large culverts can't sustain the volume of water that inundates this area for days, even weeks. Road repair of course follows.



We are now one mile east on M road and Channel 4. What we witnessed was unbelievable. The dominating flow of flood water from the west almost stopped the flow of water from the south. Both flows jointly raised the general flow severely compromising the field shoulder of Channel 4 and the west shoulder of M road necessitating months of repair work.



Now, turning and looking north, the flow of water in Channel 4 at times will impede the flow of water from the land delaying timely cultivation of the land.



One-fourth of a mile south on M road,  
Channel 4, looking west. Flood water runs  
for days, sometimes for weeks.



Just south of the bridge on M road  
and 43  $\frac{1}{2}$  road on August 5, 1996.



Later in the day, just south of the  
bridge on M road.



closer look same day.



Had I not moved those bales early  
that morning, they would have been gone.



One-half mile south of the river road  
where the water from the west and from the  
south met. Tremendous damage done.



Looking south of the bridge on 43 $\frac{1}{2}$  road and the west shoulder of M road which is severely damaged requiring costly reconstruction, there's more!!

Now, let's take a look north of the same bridge, same ditch, i.e. Channel 4.

But first, let's examine reconstruction.



The August 4 and 5 flood of 1996 caused severe damage to Channel 4, northern Butler County, Nebr., requiring extensive reconstruction of the west shoulder of Road M and the field shoulder of the channel.



Dirt stock-piled on M road as reconstruction work of the west shoulder of M road progresses.



M road shoulder reconstruction in progress, facing north toward 43½ road-river road.



One-half mile of M road west shoulder reconstruction. It was a rational attempt to stabilize the road shoulder. However, eight to ten feet of flood water causes the road shoulder above the white rock to slide into the ditch greatly compromising the safety of the road conducive to a very serious accident. Flood water relief is imperative one mile west.



Three drop tubes were installed in the west bank of channel 4 directly south of 43½ road. Unfortunately, flood water from thousands of acres upstream continue to spill over the bank continuing to damage the integrity of the ditch bank. Enough emphasis can't be placed on the need to provide flood relief one mile west of channel 4.



This is an example of a rational approach in stabilizing channel 4. The NRD and The Butler Co. Board of Supervisors are to be commended for doing an awesome job. Every ditch or channel has its limits of capacity. Flood waters far exceeding its capacity are constantly causing serious damage to the road and the field. Flood relief is imperative one mile west.



Installing a drop tube to alleviate flood water from washing out the bank on the field side of Channel 4. It serves the purpose during moderate rains but not during heavy rains on thousands of acres up-stream.



a job well done. Now, let's build a channel one mile west to maintain the integrity of Channel 4. Common sense!

Dec, 2020



the following pictures taken Dec, 2020 of Channel No. 4 alongside M Rd., northern Butler Co. Nebr., and beginning 1/2 mile south of 43 1/2 Rd., river road.



and proceeding north. Note the ditch bank sliding. The trees are coming back and so are the beavers.

2A  
Dec. 2020



For decades prior to the historic flood of 1996, channel 4 was choked with trees and beaver.



The flood of '96, supported by relevant maps, shows thousands of acres of land drain into channel 4. The on-going damage is obvious.

Dec, 2020



the beaver came back to find their previous home in ruin, I drove across it months earlier



with a tractor and shredder. Tractor had no cab. Numerous other old dens have collapsed.

Dec, 2020



as the channel deepens, huge chunks of bank break away. Flood relief one mile west must be a priority. The road shoulder has the



some negative effects. Note the tree in front of the drop tube. No one at NRD cares,

Dec. 2020



The same appears on the shoulder of M road. a serious accident and a multi-million dollar suit is imminent!



Looking south standing on the bridge on 43 $\frac{1}{2}$  road, M road is to the left. New growth of trees since 1996. When they were seedlings, they

6K  
Dec. 2020



could have been sprayed in 20-30 minutes  
avoiding costly clean-up with heavy equipment.



Same bridge, same ditch, "channel 4," total  
neglect since 1950, we have proof!

March 2021

Over 24 years have expired since reconstruction of Channel 4 and M road following the 1996 flood. NRD did an awesome job but get a failing grade on continued maintenance. The beaver are very ecstatic. 10-12 years ago, I brought the need to spray the young trees to NRD's attention. An official told me it was on their "to do list," I called again the 2nd, 3rd and 4<sup>th</sup> year. Same B.S.

Two years later, I stopped at the Wahoo office and visited with John Miyoshi. We went next door to this same official's office and again told it was on their "to do list." Those seedlings are now young trees which will require heavy equipment for removal. So much for government efficiency. Every government official's pay check should be on a "to do list." Maybe then they'd get their ass in gear.

Dennis L. Kucera

Dec, 2020



Looking north over the bridge railing.



Standing east of the bridge looking north at the trees along the neighbor's property.

8x  
Dec, 2020



a short distance east of the bridge showing trees in channel 4 along the neighbor's property.



a massive clean-up of branches in the field is an annual chore on both sides of the ditch.



The following 9 pictures taken by Mark Kobza of his property along channel 4, north of the bridge, 43½ Rd.





Kobya property, channel 4. Siberian Elm according to the platte Co, Extention agent,





more of the same, Kobza property Channel 4.  
Ext. agent said they have lived their life.





*Continuing along Kobza property and Channel 4.*





The preceding pictures show gross negligence of Channel 4 north of the bridge on 43 $\frac{1}{2}$  Rd., which has carried flood water from thousands of acres to the south and southwest as supported by relevant maps attached.

It was during the August 1996 flood that I personally witnessed dead trees and tree limbs from up to 2 $\frac{1}{2}$  miles upstream, flow north to the bridge blocking and raising the general flow of water about four feet which compromised the shoulder of M road

and the field shoulder. all of a sudden, tree debris began flowing under the bridge but minutes later, the flow almost stopped and raised to a level I had not seen since 1954.

I walked north of the bridge a short distance to find a huge pile of trees and debris the size of a large hay stack sandwiched in the standing trees almost stopping the flow. all of a sudden there was a burst of water along the east bank where the water had washed the sand out from under a five foot layer of soil and subsoil.

By now, the height of the flow and or depth of the flow south of 43½ road was unprecedented according to long time residents. we have proof the tree issue north of 43½ Rd. has not been addressed since about 1950.

I attest the foregoing to be the truth.

Dennis L. Kucera



Channel 4 north of bridge on 43 $\frac{1}{2}$  road,  
west side.





Channel 4 north of bridge on 43½ road,  
west side,



March 2021



The beaver appreciate negligence of channel 4 by the NRD.



Small dams grow to dam big dams which contribute to dam big problems.

March 2021



Nothing like fresh food and lumber.



Compliments of The NRD.

March 2021



How sweet it is! Raw lumber to build  
a dam dam!



March 2021



a small dam dam already compromising  
the west shoulder of M road.



would a stick of dynamite get their attention?

March 2021



Channel 4. We need flood relief one mile west. Same spot, just got worse on M road shoulder. One of many.



If a member of my family or anyone gets hurt or killed, there will be hell to pay! Dennis L. Kucera

3  
March 2021



Channel 4. We need flood relief one mile west.



M road shoulder compromised, dangerous!

March 2021



This project will grow of course, already compromising the M road shoulder.



what's going on? Is the family residence in need of support?

March 2021



I'll be dam! It sure was! Too bad!  
The engineers will build a new one for them.



Crap! Just thought of something, I drove  
across it with a tractor and shredder last  
summer, no cab,

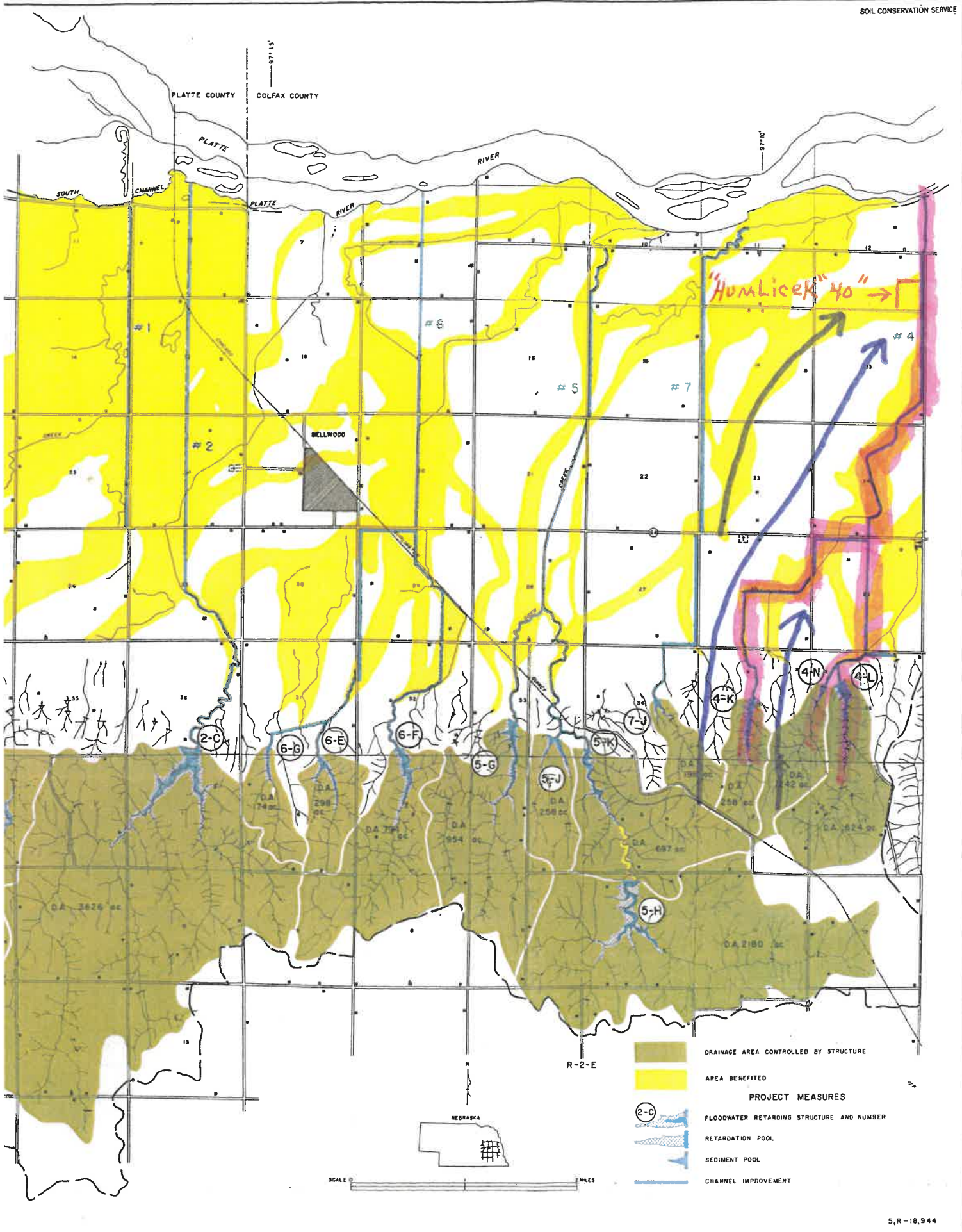
March 2021



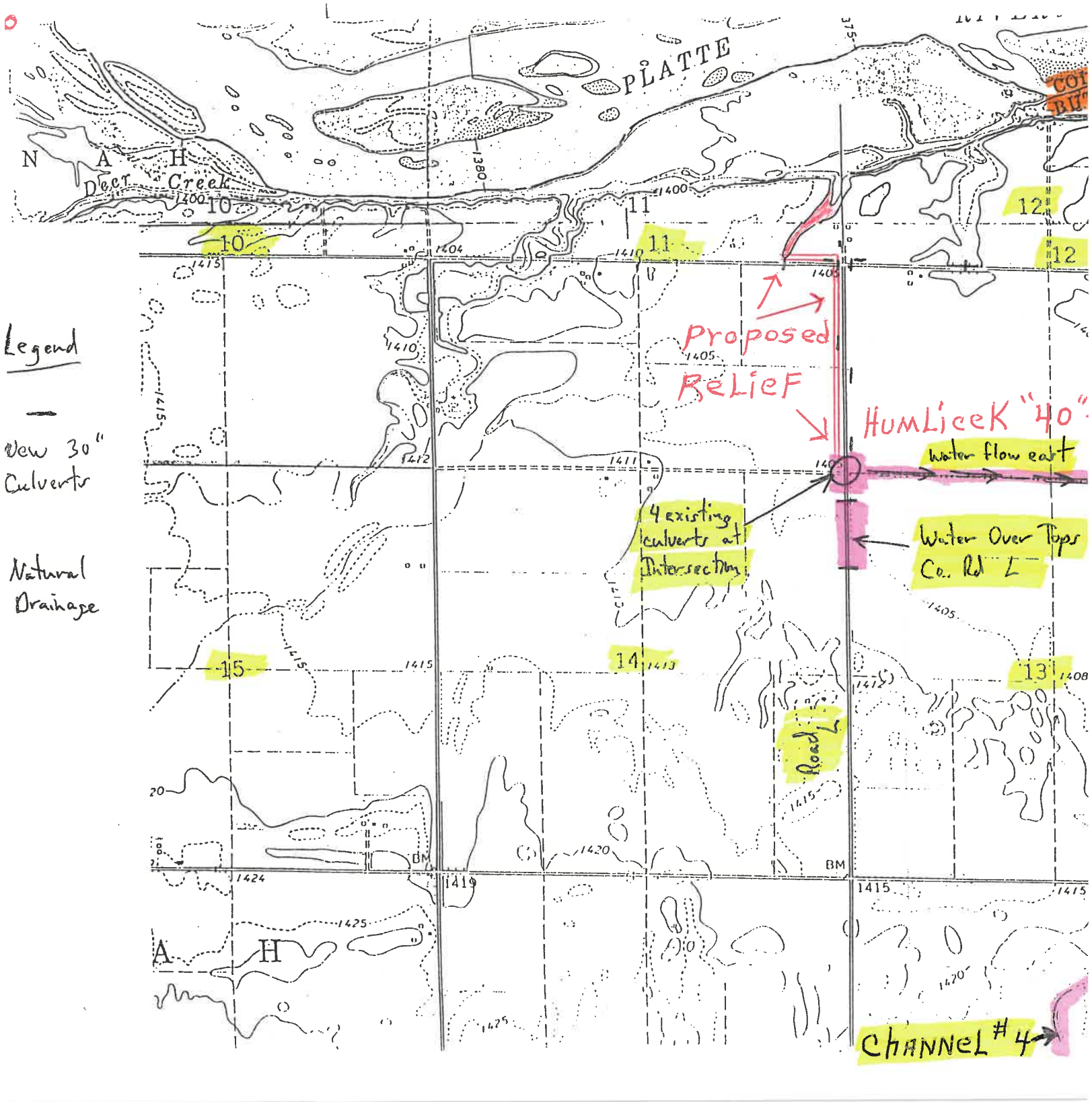
Previous to this, three other cave-ins  
have occurred. Is gross negligence



by a governmental entity grounds for  
a lawsuit? Just asking. Dennis L. Kucera



- DRAINAGE AREA CONTROLLED BY STRUCTURE
- AREA BENEFITED
- PROJECT MEASURES**
- 2-C FLOODWATER RETARDING STRUCTURE AND NUMBER
- RETARDATION POOL
- SEDIMENT POOL
- CHANNEL IMPROVEMENT



Legend

— New 30" Culverts

--- Natural Drainage

Proposed Relief

Humlicek "40"  
Water flow east

4 existing culverts at Intersection

Water Over Tops Co. Rd L

CHANNEL # 4









## Tom Mountford

---

**From:** Mary Baker <mbaker@jeo.com> on behalf of Mary Baker  
**Sent:** Tuesday, November 9, 2021 1:07 PM  
**To:** Tim Hofbauer; egottschalk@lpnnrd.org  
**Cc:** tmountford@lpnnrd.org  
**Subject:** RE: Property on Shell Creek.  
**Attachments:** MOHRMAN sub-division.pdf; Parcel Interested in Aquisitions v.4.pdf

Good afternoon gentlemen,

Here is some additional information on the Mohrman parcel in question. (Map shows parcel #9 as Mohrman's) For the grant we had to note the area of the parcel that has buildings/structures located on it- which is 3.12 acres per the attached survey document.

Technically all of those structures will need to be removed/demolished during the administration of this FEMA funded project. That area of the parcel cannot have another "walled" building erected on it, per the FEMA open space guidelines.

But shelters, gazebos, "wall-less" buildings can be added for recreational and educational purposes.

Hopefully this additional information helps.

If you guys would like to chat with Tim and I about the project and/or the parcel- let us know and we can set up a zoom call.

Thanks so much.

Mary

### Mary Baker

o: 402.474.8748 | m: 402.440.3050

JEO Consulting Group

**From:** Tim Hofbauer <thofbauer@plattecounty.ne.gov>

**Sent:** Tuesday, November 9, 2021 11:34 AM

**To:** egottschalk@lpnnrd.org

**Cc:** Mary Baker <mbaker@jeo.com>

**Subject:** Property on Shell Creek.

Eric,  
Platte County, City of Columbus, and the Lower Loup NRD have been approved for a FEMA Hazard Mitigation Property Acquisition grant for a number of parcels in Platte County. Most of the properties are just south of Columbus with the exception of one that is along Shell creek Northwest of Platte Center. Shell Creek passes through the North and East of the property. There are 160 acres in the parcel along with a house and a few outbuildings. The grant would pay for 75% of the purchase and for the removal of the house and outbuildings. The other 25% would be the responsibility of a government entity and would be deeded to not allow development on the property. The property suffered extensive flooding in 2019 and is the reason the property is on the acquisition list. The Parcel ID is 710056119 in Platte County.

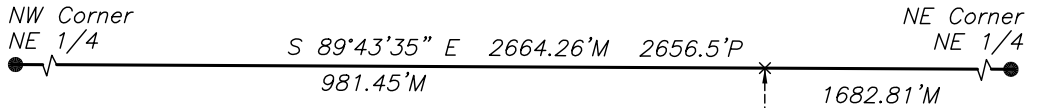
Would Lower Platte North NRD have any interest in the property? With Shell Creek within the property maybe there would be some interest in a environmental education area or creek bed protection /habitat restoration project. There may be other uses that fit within the guidelines of the grant as well.

I would be happy to visit with you on this if you have any questions. I am copying Mary Baker with JEO as she is coordinating the project.

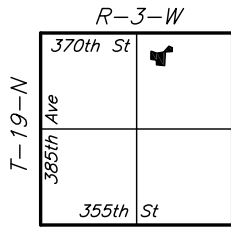
Thanks,

Tim Hofbauer – Director  
Columbus/Platte County Emergency Management  
2610 14<sup>th</sup> St  
Columbus NE 68601  
Office – 402-564-1206  
Fax – 402-564-8330

This survey was done at the request of Mary Baker, Lincoln, Nebraska.



**Platte County  
Nebraska**



Section 25  
**Vicinity Sketch**

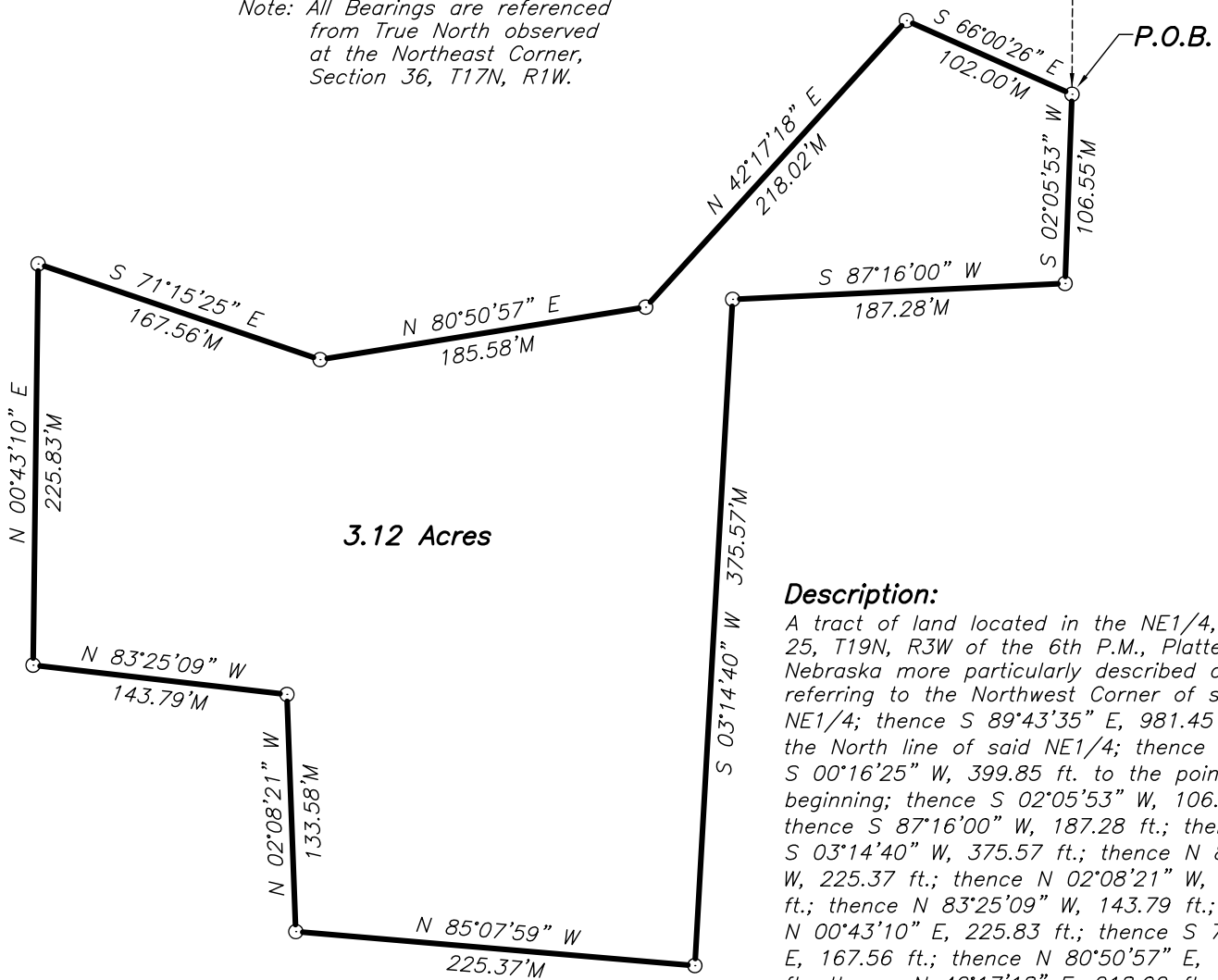
1" = 100'



**-Legend-**

- Found Monument
- Set 5/8" x 24" Rebar w/ Plastic Survey Cap
- × Computed Location
- M Measured this Survey
- P Plat Measurement General Land Office
- P.O.B. Point of Beginning

Note: All Bearings are referenced from True North observed at the Northeast Corner, Section 36, T17N, R1W.



**Description:**

A tract of land located in the NE1/4, Section 25, T19N, R3W of the 6th P.M., Platte County, Nebraska more particularly described as follows: referring to the Northwest Corner of said NE1/4; thence S 89°43'35" E, 981.45 ft. on the North line of said NE1/4; thence S 00°16'25" W, 399.85 ft. to the point of beginning; thence S 02°05'53" W, 106.55 ft.; thence S 87°16'00" W, 187.28 ft.; thence S 03°14'40" W, 375.57 ft.; thence N 85°07'59" W, 225.37 ft.; thence N 02°08'21" W, 133.58 ft.; thence N 83°25'09" W, 143.79 ft.; thence N 00°43'10" E, 225.83 ft.; thence S 71°15'25" E, 167.56 ft.; thence N 80°50'57" E, 185.58 ft.; thence N 42°17'18" E, 218.02 ft.; thence S 66°00'26" E, 102.00 ft. to the point of beginning, containing 3.12 acres more or less.

**Field Notes:**

Northwest Corner NE1/4, Section 25, T19N, R3W – found 1" iron pipe with aluminum cap 3" deep as recorded by T.A. Tremel, L.S. #455, on July 9, 2009.

Ties: 51.46' NW to "X" nails in fence post  
71.99' NE to "X" nails in power pole  
78.40' SW to East face of pivot stop  
1' North to centerline of 370th Street E&W

Northeast Corner NE1/4, Section 25, T19N, R3W – found 1" iron pipe 18" deep as recorded by J.A. McMeekin, L.S. #165, on November 23, 1976. I perpetuated it with a 5/8"x 24" rebar with aluminum cap to 2" below grade.

Ties: 42.80' NE to "X" nails in power pole  
82.56' North to South edge of wood bridge  
30.44' SW to 5/8"x 24" rebar with plastic cap  
36.78' SE to 5/8"x 24" rebar with plastic cap  
On centerline of 370th Street E&W

**Surveyor's Statement:**

I, Thomas A. Tremel, a Registered Land Surveyor in the State of Nebraska, hereby state that this survey was conducted under my direct supervision and is correct to the best of my knowledge and belief.

*Thomas A. Tremel*

Thomas A. Tremel, L.S. #455  
September 16, 2020



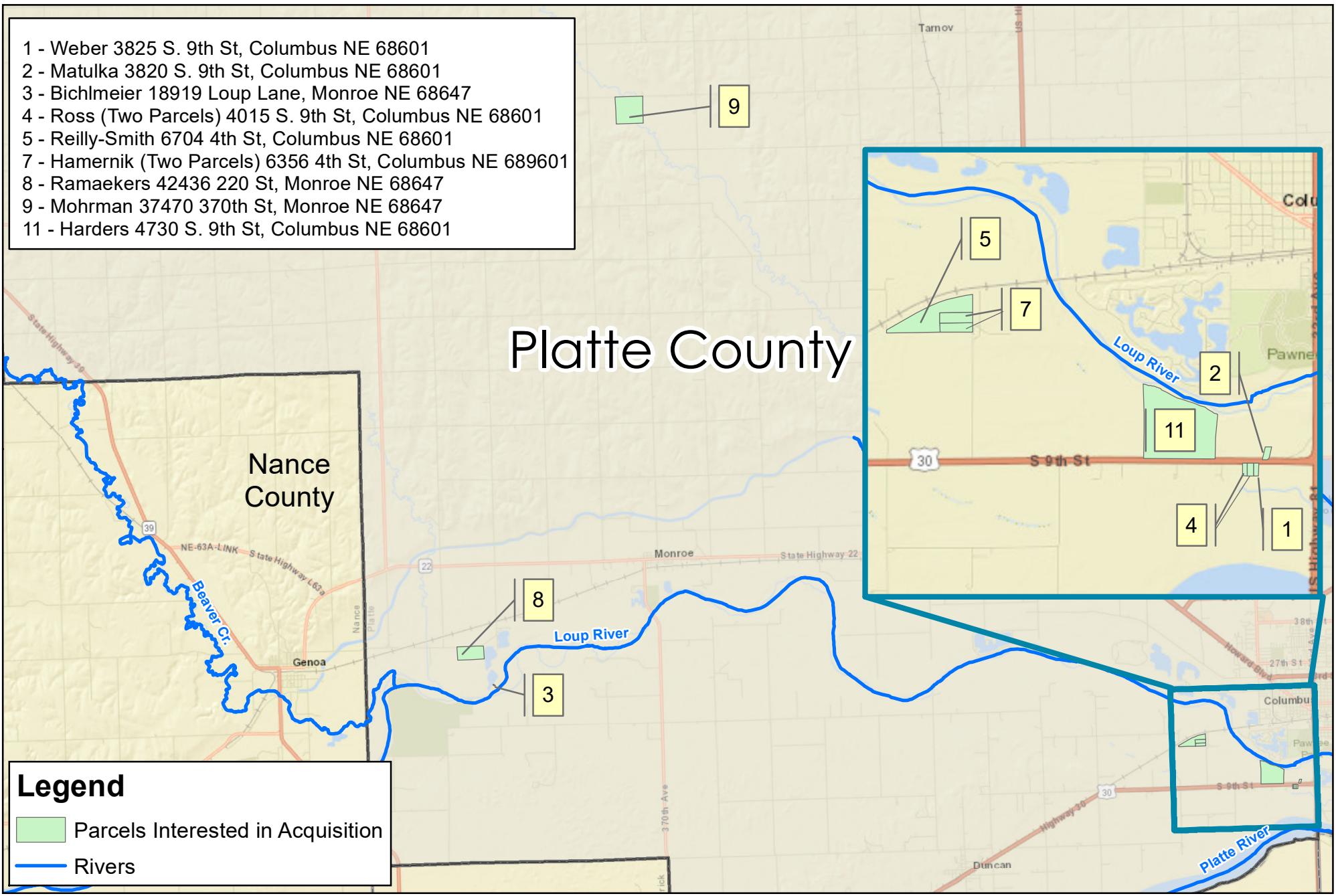
- 1 - Weber 3825 S. 9th St, Columbus NE 68601
- 2 - Matulka 3820 S. 9th St, Columbus NE 68601
- 3 - Bichlmeier 18919 Loup Lane, Monroe NE 68647
- 4 - Ross (Two Parcels) 4015 S. 9th St, Columbus NE 68601
- 5 - Reilly-Smith 6704 4th St, Columbus NE 68601
- 7 - Hamernik (Two Parcels) 6356 4th St, Columbus NE 689601
- 8 - Ramaekers 42436 220 St, Monroe NE 68647
- 9 - Mohrman 37470 370th St, Monroe NE 68647
- 11 - Harders 4730 S. 9th St, Columbus NE 68601

# Platte County

## Nance County

**Legend**

- Parcels Interested in Acquisition
- Rivers



# Parcels Interested in Acquisition

Platte County, NE

Created By: MB  
 Date: 6/15/2020  
 Software: ArcGIS 10.7.1  
 File: Parcel Interested in Acquisitions.mxd  
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