



July 31, 2017

Mr. Jeff Fassett, P.E.

Director, Nebraska Department of Natural Resources

via Electronic Submission

Re: LPNNRD Wahoo Creek Watershed Sites 26 & 27
Application for Water Sustainability Fund Grant

Director Fassett and members of the Natural Resources Commission:

In accordance with the rules, regulations and guidelines for Nebraska's Water Sustainability Fund Grant Program, please accept this grant application on behalf of the Lower Platte North Natural Resources District (LPNNRD) for the above-referenced project.

This project is unique in that it includes two of ten remaining dams to complete a watershed project originally formulated by NRCS which was last updated in 1998. This watershed is unique in that it has recently received some notable attention with the award of \$1.5M in federal money through NRCS' Regional Conservation Partnership Program (RCPP). After receiving the RCPP award, the LPNNRD was contacted and urged to apply for an additional \$150M in funds available through the NRCS PL-566 program. The current administration is looking for ways to get projects on the ground quickly and with Nebraska's NRD experience in implementing projects, this momentum is likely to continue to bringing federal dollars to Nebraska. Since LPNNRD's success in the RCPP program, other NRDs are now following the same path and trying to increase the influx of federal funds into our watershed programs, which ultimately helps us to work towards water sustainability as a State.

Through this application and within the supporting materials, the benefits of the two dams working as a system are detailed. As is often the case in flood control projects, the value of the system is greater than the sum of the individual components. For that reason, this project is looked at as a system of ten dams in the Wahoo Creek Watershed of which these two dams represent the beginning of the last push to complete the larger watershed project. The costs and benefits of this system are assessed together, but funding assistance is only requested for the two sites and their appropriate apportionment of the benefits.

In addition to the application form posted on the NDNR website, which has been copied verbatim into this grant application, there are also attached references as Appendices. Contained within the Appendices is a bibliography of technical documents related to the project that contain additional

information which can be reviewed if desired. An electronic copy of each of the documents referenced in the bibliography has been uploaded as a supporting document to this application. The goal of this application structure was to first provide reviewers with the information required to directly answer the questions in the official application form at a concise level, second to provide additional maps, tables and supporting documents to address the required information within the Appendices, and then finally to provide the overall documents that any information provided originates from (assuming it is from another document). We trust that this allows you to quickly review the information you desire and gather additional data as each individual reviewer sees fit.

"Water Sustainability" is defined in Nebraska Title 264 as when water use is sustainable when current use promotes healthy watersheds, improves water quality, and protects the ability of future generations to meet their needs.

Recognizably, sustainability has varied meanings across the State. In Eastern Nebraska, watershed health is related to reducing the threat of flood damage first and foremost. Nearly every watershed plan in this region addresses flood control first. And as argued above, finding any project that would more protect the ability of future generations to meet their needs would be difficult, given the protection this project provides to one of Nebraska's thriving communities and contributors to the State economy.

We thank you for your acceptance of this application and stand ready to provide any clarification on any information provided during your review.

Sincerely,



Tom Mountford

Assistant General Manager, LPNNRD

Water Sustainability Fund Application

Wahoo Creek Detention Sites 26 and 27

31 July 2017



NEBRASKA NATURAL RESOURCES COMMISSION

Water Sustainability Fund

Application for Funding

Section A.

ADMINISTRATIVE

PROJECT NAME: Wahoo Creek Detention Sites 26 and 27

PRIMARY CONTACT INFORMATION

Entity Name: Lower Platte North Natural Resources District (LPNNRD)

Contact Name: Tom Mountford

Address: 511 Commercial Park Road Wahoo, Nebraska 68066

Phone: 402.443.4675

Email: tmountford@lpnnrd.org

Partners / Co-sponsors, if any: None

1. Dollar amounts requested: (Grant, Loan, or Combination)

Grant amount requested. \$ 2,269,194 (See Appendix A – Table A.1 for breakdown)

Loan amount requested. \$ 0

If Loan, how many years repayment period?

If Loan, supply a complete year-by-year repayment schedule.

2. Permits Needed - Attach copy for each obtained (N/A = not applicable)

Sites 26 and 27 are currently in the phase of supplementing/updating the existing *Wahoo Creek Watershed Plan and Environmental Impact Statement* (hereafter referred to as the *Plan/EIS*) (LPNNRD 1998). Preliminary, final design and permitting phases will occur in 2018 and 2019. At that time, the required permits

for these sites will be obtained. Any coordination required for Threatened and Endangered Species and Cultural Resources will be performed under the National Environmental Policy Act (NEPA) process with the Natural Resources Conservation Service (NRCS) as the lead federal agency. A 404 permit will be obtained through the US Army Corps of Engineers (USACE)

| | | | |
|--|------------------------------|--|--|
| Nebraska Game & Parks Commission (G&P) consultation on Threatened and Endangered Species and their Habitat | N/A <input type="checkbox"/> | Obtained: YES <input type="checkbox"/> | NO <input checked="" type="checkbox"/> |
| Surface Water Right | N/A <input type="checkbox"/> | Obtained: YES <input type="checkbox"/> | NO <input checked="" type="checkbox"/> |
| USACE (e.g., 404 Permit) | N/A <input type="checkbox"/> | Obtained: YES <input type="checkbox"/> | NO <input checked="" type="checkbox"/> |
| Cultural Resources Evaluation | N/A <input type="checkbox"/> | Obtained: YES <input type="checkbox"/> | NO <input checked="" type="checkbox"/> |
| Other (provide explanation below) | N/A <input type="checkbox"/> | Obtained: YES <input type="checkbox"/> | NO <input checked="" type="checkbox"/> |

Other permits not listed above that will be obtained for Site 26 and Site 27 include Approval of Plans for Dams from the Nebraska Department of Natural Resources (NDNR), a National Pollution Discharge Elimination System (NPDES) Permit from the Nebraska Department of Environmental Quality (NDEQ), and a floodplain development permit from Saunders County, Nebraska.

3. Are you applying for funding for a combined sewer over-flow project?

YES NO

If yes, do you have a Long Term Control Plan that is currently approved by the Nebraska Department of Environmental Quality?

YES NO

If yes attach a copy to your application. [Click here to enter text.](#)

If yes what is the population served by your project? [Click here to enter text.](#)

If yes provide a demonstration of need. [Click here to enter text.](#)

If yes and you were approved for funding in the most recent funding cycle, then resubmit the above information updated annually but you need not complete the remainder of the application.

4. If you are or are representing an NRD, do you have an Integrated Management Plan in place, or have you initiated one?

N/A YES NO

5. Has this application previously been submitted for funding assistance from the Water Sustainability Fund and not been funded?

YES NO

If yes, have any changes been made to the application in comparison to the previously submitted application?

If yes, describe the changes that have been made since the last application.

No, I certify the application is a true and exact copy of the previously submitted and scored application. (Signature required)

6. Complete the following if your project has or will commence prior to next July 1st.

Supplementation of the existing *Plan/EIS* (LPNNRD 1998) for Sites 26 and 27 is currently underway. This supplementation, as well as the additional engineering, planning, legal work, land rights and construction of these sites, makes up the grant amount being requested.

As of the date of submittal of this application, what is the Total Net Local Share of Expenses incurred for which you are asking cost share assistance from this fund? \$ 23,382

To date, \$23,382 (0.6% of the Net Total Local Project Cost) of expenses have been incurred. These expenses include tasks relating to supplementation of the existing *Plan/EIS* (LPNNRD 1998) for Sites 26 and 27, including coordination and planning meetings with NRCS, preliminary sizing of the structures, indexing benefits to current dollars, and agency coordination.

Attach all substantiating documentation such as invoices, cancelled checks etc. along with an itemized statement for these expenses.

Please see Appendix B, Table B.1 for an itemized statement, the incurred expenses invoice, and a copy of the cancelled check.

Estimate the Total Net Local Share of Expenses and a description of each you will incur between the date of submittal of this application and next July 1st for which you are asking cost share assistance from this fund.
\$ 89,648

Expenses that will be incurred between the date of submittal of this application and prior to July 1, 2018 include the tasks necessary to complete the *Supplemental*

Wahoo Creek Watershed Plan and Environmental Assessment (hereafter referred to as the *Supplemental Plan/EA*) for Sites 26 and 27 and are 2.4% of the Net Total Local Project Cost. An outline of the necessary tasks and an itemized estimate of expenses are detailed below.

Table 1a. Tasks Between August 1, 2017 and July 1, 2018

| Supplemental Watershed Plan / EA | Estimate of Expenses |
|--|-----------------------------|
| Project Management | |
| Coordination Meetings and Project Scoping | \$6,750 |
| Public Meetings | \$3,729 |
| Monthly Invoicing and Project/Schedule Updates | \$2,461 |
| Project Management Task Total | \$12,940 |
| Supplemental Plan/EA Development | |
| Develop, Write, and Summarize Plan and Maintain Administrative Record | \$8,396 |
| Develop and Describe Purpose and Need | \$3,024 |
| Formulate, Describe, and Compare Alternatives | \$8,324 |
| Collect and Analyze Social/Demographic Data | \$708 |
| Collect and Analyze data on Historic and Cultural Resources/Properties | \$555 |
| Identify Wetlands (Includes Wetland Delineation) and other Water Bodies | \$9,973 |
| Collect Soils Data and Identify and Analyze Soil Erosion | \$1,608 |
| Collect and Analyze data on Floodplains and Critical Areas | \$2,447 |
| Identify Land Use and Crop Inventory Data | \$201 |
| Collect and Analyze data on T&E Species and Migratory Birds | \$1,609 |
| Collect and Analyze Consumptive Use Data | \$201 |
| Identify and Analyze Effects on Public Health and Safety | \$1,319 |
| Identify Effects to Homes/Businesses/Agricultural Operations | \$1,319 |
| Analyze and Describe Direct, Indirect, and Cumulative Impacts | \$4,134 |
| Research, List, and Describe required Federal, State, and Local Permits | \$402 |
| Identify Relationship/ Possible Conflicts to Other Plans, Policies, Controls | \$1,987 |
| List and Discuss Interagency and Public Involvement | \$804 |
| Risk and Uncertainty Analysis | \$3,056 |
| Develop and Describe Preferred Alternative, including structural details | \$6,756 |
| Develop and Discuss Mitigation Features | \$1,609 |
| Hydrologic Investigation | \$4,440 |
| Collection of Economic Data, Economic Investigation and Discussion | \$4,054 |
| Installation, Financing O&M, and Replacement Discussion | \$2,026 |
| Development of Required Project Maps | \$4,987 |
| Supplemental Plan/EA Development Task Total | \$73,939 |
| Agency Coordination | |
| Agency Coordination | \$2,769 |
| Agency Coordination Task Total | \$2,769 |
| Total Expenses | \$89,648 |

It is estimated that the total costs incurred will be spread evenly throughout the August 1, 2017 and July 1, 2018 timeframe. An outline of the necessary tasks and an itemized estimate of expenses between August 1, 2017 and December 1, 2017 are detailed below.

Table 1b. Tasks Between August 1, 2017 and December 1, 2017

| Supplemental Watershed Plan / EA | Estimate of Expenses |
|--|-----------------------------|
| Project Management | |
| Coordination Meetings and Project Scoping | \$2,700 |
| Public Meetings | \$1,490 |
| Monthly Invoicing and Project/Schedule Updates | \$985 |
| Project Management Task Total | \$5,175 |
| Supplemental Plan/EA Development | |
| Develop, Write, and Summarize Plan and Maintain Administrative Record | \$4,750 |
| Develop and Describe Purpose and Need | \$2,420 |
| Formulate, Describe, and Compare Alternatives | \$5,120 |
| Collect and Analyze Social/Demographic Data | \$708 |
| Collect and Analyze data on Historic and Cultural Resources/Properties | \$555 |
| Identify Wetlands (Includes Wetland Delineation) and other Water Bodies | \$8,225 |
| Collect Soils Data and Identify and Analyze Soil Erosion | \$825 |
| Collect and Analyze data on Floodplains and Critical Areas | \$805 |
| Identify Land Use and Crop Inventory Data | \$201 |
| Collect and Analyze data on T&E Species and Migratory Birds | \$200 |
| Collect and Analyze Consumptive Use Data | \$200 |
| Identify and Analyze Effects on Public Health and Safety | \$250 |
| Identify Effects to Homes/Businesses/Agricultural Operations | \$250 |
| Analyze and Describe Direct, Indirect, and Cumulative Impacts | \$0 |
| Research, List, and Describe required Federal, State, and Local Permits | \$402 |
| Identify Relationship/ Possible Conflicts to Other Plans, Policies, Controls | \$325 |
| List and Discuss Interagency and Public Involvement | \$804 |
| Risk and Uncertainty Analysis | \$0 |
| Develop and Describe Preferred Alternative, including structural details | \$1,050 |
| Develop and Discuss Mitigation Features | \$400 |
| Hydrologic Investigation | \$825 |
| Collection of Economic Data, Economic Investigation and Discussion | \$0 |
| Installation, Financing O&M, and Replacement Discussion | \$0 |
| Development of Required Project Maps | \$270 |
| Supplemental Plan/EA Development Task Total | \$29,585 |
| Agency Coordination | |
| Agency Coordination | \$1,100 |
| Agency Coordination Task Total | \$1,100 |
| Total Expenses | \$35,860 |

Section B.

DNR DIRECTOR'S FINDINGS

Does your project include physical construction (defined as moving dirt, directing water, physically constructing something, or installing equipment)?

YES NO

- 1(a). If yes (structural), submit a feasibility report (to comply with Title 261, CH 2) including engineering and technical data and the following information:

This project will include structural components (dams) at Site 26 and Site 27. A feasibility analysis was completed as part of the *Plan/EIS* (LPNNRD 1998) and is in the process of being updated as part of the *Supplemental Plan/EA*. Results of these analyses are detailed within this submittal.

A discussion of the plan of development (004.01 A);

Sites 26 and 27 were originally identified in the *Plan/EIS* to provide regional detention of storm water and water quality benefits. The *Plan/EIS* was last updated in 1998 by the Lower Platte North Natural Resources District (LPNNRD) and the Natural Resources Conservation Service (NRCS) under the authority of the Watershed Protection and Flood Prevention Act (Public Law 83-566). The watershed plan identified seventeen (17) floodwater retention structures within the basin to reduce rural and urban flooding, reduce sedimentation and scour, stabilize stream channels, enhance fish and wildlife habitat, enhance water quality, improve economic conditions, and provide recreational opportunities. The plan identified 170 buildings damaged by 100-year frequency flooding in the communities of Wahoo, Weston, Ithaca and Memphis. In addition, it was cited that the proposed floodwater retention structures would protect numerous agricultural producers from erosion/sediment damage and flooding, while also providing improved water quality.

A portion of the *Plan/EIS* was completed with the U.S. Army Corps of Engineers (USACE) through the USACE Section 206 Program as the Sand Creek Environmental Restoration Project in 2008 through 2014. This effort constructed all seven dams identified for Sand and Duck Creeks.

The proposed projects in this submittal are two of the ten uncompleted Wahoo Creek structures (Site 26 and Site 27) identified in the *Plan/EIS*. Construction of these sites will be a major step in beginning the implementation of this over-reaching plan, which will reduce flood damage within the Wahoo Creek Watershed.

A description of all field investigations made to substantiate the feasibility report (004.01 B);

On-site field investigations at Sites 26 and 27 were conducted by LPNNRD and FYRA Engineering to collect visual observations and gain an understanding of the proposed dam locations, including existing roadways and environmental resources. Vehicle counts were provided by Saunders County to determine the average daily traffic (ADT) of the downstream county roads to assist in the vertical curve design of Site 26.

Wetland delineations will be required for Site 26 and Site 27 to determine the location of any jurisdictional Waters of the United States (WOUS) located within the project sites. This information will be used to determine project impacts and develop design alternatives and/or modifications to reduce potential impacts to WOUS. Stream assessments will also be required to identify and assess current and future channel conditions potentially impacted by the project.

Sub-surface geotechnical investigations will be required for Site 26 and Site 27. A geophysical investigation consisting of five Cone Penetrometer Tests (CPTs) along each dam centerline will be conducted and used to refine the proposed soil boring sub-surface. This investigation will commence at the start of the final design phase.

Maps, drawings, charts, tables, etc., used as a basis for the feasibility report (004.01 C);

A location map is included in Appendix C as Figure 1. There are numerous maps, charts, and tables that help to define the project, show design intent and label site features. They are included throughout this application and in the Appendices. Appendices included in this application are as follows:

- Appendix A – Cost Breakdown
- Appendix B – Previous Expenses
- Appendix C – Location Map
- Appendix D – Land Rights and Easements
- Appendix E – Opinion of Costs
- Appendix F – Benefit:Cost Ratio
- Appendix G – LPNNRD Draft IMP Goals
- Appendix H – Letter of Support from Saunders County
- Appendix I – Draft RCPP Agreement
- Appendix J – Bibliography

A description of any necessary water and land rights and pertinent water supply and water quality information, if appropriate (004.01 D);
As per State statute, a Permit to Impound Water application will be

submitted to Nebraska Department of Natural Resources (NDNR) upon completion of the final design of Site 26 and Site 27. Said water right is to permanently store water in the dam's reservoirs. Water rights in the Wahoo Creek Watershed are within the Platte River drainage basin and therefore, depletions to the Platte River will have to be assessed and mitigated as part of the permitting process. The dams will be retrofitted with valves to pass flows through the reservoirs and they will have the ability to augment flows with additional releases.

Land rights and easements will include land to the top of dam elevation and associated embankments. Downstream, Saunders County Zoning Regulations will require the adoption of a conservation easement within the breach path area to protect the hazard classification of the dams. Land rights information can be found in Appendix D and in Tables 9 and 10 of this application.

A discussion of each component of the final plan including, when applicable [\(004.01 E\)](#);

Required geologic investigation [\(004.01 E 1\)](#);

Data collected in the sub-surface investigation (described above in section [004.01 B](#)) will be analyzed and used to perform a complete geotechnical analysis required for the dam design. A series of models will be developed to assess settlement/stability and determine the specific embankment and foundation design requirements, design the downstream seepage berm, identify viable borrow site locations, and to develop a construction instrumentation and monitoring plan.

Required hydrologic data [\(004.01 E 2\)](#);

A hydrologic analysis of the contributing area to Sites 26 and 27 was completed during the preliminary investigations to prepare the *Supplemental Plan/EA*. United States Department of Agriculture's (USDA) document *TR-55 Urban Hydrology for Small Watersheds* was used to calculate the curve numbers, times of concentration, and lag times for the sites' subbasins. Table 2 below summarizes the design storms that were modeled and used to hydraulically size Site 26 and Site 27 in accordance with *TR-60 Earth Dams and Reservoirs* (NRCS 2005) guidance and NDNR dam design criteria for low hazard dams.

National Oceanic and Atmospheric Administration (NOAA) *Atlas 14 Volume 8: Version 2* (NOAA 2013) precipitation values for Sites 26 and Site 27 were used for the rainfall depths. *Atlas 14 Volume 8 Midwestern States Region 3* temporal distributions were used to determine the most conservative Atlas 14 temporal distribution within the watershed by running eight different hydrologic models with the 6-hour and 24-hour Atlas 14 temporal distributions and precipitation values. Given that the

10th-percentile and 90th-percentile distributions are the most conservative, these were run with each of the four quartile distributions to determine the most conservative design for each basin. For Site 26 and Site 27, the 90th-percentile 4th quartile temporal distribution was the most conservative.

Table 2. PSH Design Storm Information

| Frequency | Duration | Rainfall (in) | Source | Distribution |
|-----------|--------------|---------------|---------------|--|
| 25-yr | 24 hours | 5.36 | NOAA Atlas 14 | Atlas 14 24-hr Temporal- 90%, 4th Quartile |
| 25-yr | 1 day/10 day | 5.2 / 8.6 | TP-40 / TP-49 | NRCS TR-60 |
| 25-yr | 10-day | 8.58 | NOAA Atlas 14 | NRCS TR-60 |

Table 3. FBH Design Storm Information

| Frequency | Duration | Rainfall (in) | Source | Distribution |
|---|----------|---------------|-------------------------|--|
| P100+.12(PMP-P100) | 6 hour | 6.91 | TP-40 / NE PMP Study | NRCS TR-60 |
| P100+.12(PMP-P100) | 6 hour | 7.63 | Atlas 14 / NE PMP Study | Atlas 14 6-hr Temporal- 90%, 4th Quartile |
| P100+.12(PMP-P100) | 24 hour | 9.05 | Atlas 14 / NE PMP Study | Atlas 14 24-hr Temporal- 90%, 4th Quartile |
| P100+.12(PMP-P100) | 24 hour | 8.55 | TP-40 / NE PMP Study | NRCS 5-Point Distribution |
| Storage x Height > 30,000 (Site 26) | | | | |
| P100+.26(PMP-P100) | 24 hour | 11.37 | Atlas 14 / NE PMP Study | Atlas 14 24-hr Temporal- 90%, 4th Quartile |

Design criteria for final design including, but not limited to, soil mechanics, hydraulic, hydrologic, structural, embankments and foundation criteria (004.01 E 3).

As reported in the tables above, different precipitation models were used for the design storms. For the hydraulic analysis during preliminary design, the most conservative result from the analyzed precipitation models was applied to set the auxiliary spillway and top of dam elevations. This will be revisited during final design and final hydrology will be set in coordination with NDNR Dam Safety. As a minimum, the dam design will adhere to the requirements in the *TR-60 Earth Dam and Reservoirs* (NRCS 2005) guidance for low hazard dams. The permanent pool elevations were selected as a function of 50-year sediment storage volume and existing contours. Sedimentation rates for each site were extracted from the *Plan/EIS* and determined for the proposed conditions using a ratio based on drainage areas.

To combine costs and benefits with Saunders County, Site 26 is a proposed road dam at County Road 28 due to the existing bridge being impassable and in need of replacement. Vertical curve design guidance from the Nebraska Department of Transportation (NDOT) *Nebraska Minimum Design Standards* was used to tie into the existing County Road 28. Roadway design guidelines and geometrics and site constraints suggest that Site 26 should be constructed without an auxiliary spillway. This increases the storage times height value and increases the FBH frequency based on *TR-60 Earth Dam and Reservoirs* (NRCS 2005) guidance for low hazard dams (see Table 3).

An existing NuStar Energy anhydrous ammonia pipeline is buried near the original planned location for Site 27 that is shown in the *Plan/EIS*. Consideration was given to moving the site upstream to avoid the pipeline and moving the site downstream to allow for additional flood control and water quality benefits. The location downstream was chosen as the preferred alternative due to the location of existing tributaries, the pipeline location, and the additional flood control and water quality benefits. Berms with 48-inch reinforced concrete outflow pipes will be constructed over the existing pipeline to ensure maintenance access for NuStar Energy (see Appendix C, Figure 1). The construction of these berms creates two water quality basins upstream of the main dam embankment and provides additional water quality benefits. Auxiliary spillway elevations were selected based on PSH frequency storms as listed in Table 2 above. A stability analysis will be completed once geotechnical information has been collected.

1(b). If no (non-structural), submit data necessary to establish technical feasibility including, but not limited to the following (004.02):

A discussion of the plan of development (004.02 A);
Click here to enter text.

A description of field or research investigations utilized to substantiate the project conception (004.02 B); Click here to enter text.

A description of the necessary water and/or land rights, if applicable (004.02 C);

A discussion of the anticipated effects, if any, of the project upon the development and/or operation of existing or envisioned structural measures including a brief description of any such measure (004.02 D).
Click here to enter text.

2. Provide evidence that there are no known means of accomplishing the same purpose or purposes more economically, by describing the next best alternative.

Flood reduction in the Wahoo Creek Watershed has been studied in the *Plan/EIS*. Various non-dam alternatives were identified and evaluated in the *Plan/EIS* and no viable non-dam measure were found that would reduce flood damages and produce benefits in excess of costs. Alternatives considered included a system of levees to protect prime farmland, planting grass on cropland that floods more frequently than once a year, wetland restoration as a means of flood control, and relocating main roads and buildings to an elevation above the 100-year floodplain (LPNNRD 1998). Each of these alternatives were considered either not economically feasible and/or would not provide adequate flood storage.

3. Document all sources and report all costs and benefit data using current data, (commodity prices, recreation benefit prices, and wildlife prices as prescribed by the Director) using both dollar values and other units of measurement when appropriate (environmental, social, cultural, data improvement, etc.). The period of analysis for economic feasibility studies shall be fifty (50) years or with prior approval of the Director, up to one hundred (100) years [T261 CH 2 (005)].

- Describe any relevant cost information including, but not limited to the engineering and inspection costs, capital construction costs, annual operation and maintenance costs, and replacement costs. Cost information shall also include the estimated construction period as well as the estimated project life (005.01).
- Only primary tangible benefits may be counted in providing the monetary benefit information and shall be displayed by year for the project life. In a multi-purpose project, estimate benefits for each purpose, by year, for the life of the project. Describe any intangible or secondary benefits separately. In a case where there is no generally accepted method for calculation of primary tangible benefits describe how the project will increase water sustainability, such that the economic feasibility of the project can be approved by the Director and the Commission (005.02).
- All benefit and cost data shall be presented in a table form to indicate the annual cash flow for the life of the proposal, not to exceed 100 years (005.03).
- In the case of projects for which there is no generally accepted method for calculation of primary tangible benefits and if the project will increase water sustainability, the economic feasibility of such proposal shall be demonstrated by such method as the Director and the Commission deem appropriate (005.04).

Costs

Summary tables of all initial costs are shown in below and reflect the items listed in the first bullet (005.01) above. More detailed information is provided in Appendix E.

Table 4. Professional Services Cost Breakdown

| Service | Site 26 | Site 27 | Total |
|---------------------------------------|-----------|-----------|------------------|
| Planning, Engineering, and Permitting | \$344,015 | \$344,015 | \$688,030 |
| Legal | \$7,500 | \$7,500 | \$15,000 |
| Total | \$351,515 | \$351,515 | \$703,030 |

Table 5. Land Purchase Summary

| | Site 26 | Site 27 | Total |
|-----------------------|-----------|-----------|-------------|
| Fee Title Acquisition | \$705,000 | \$652,500 | \$1,357,500 |

Table 6. Construction Cost Estimate Summary

| | Site 26 | Site 27 | Total |
|-----|-------------|-------------|-------------|
| Dam | \$1,827,300 | \$1,394,160 | \$3,221,460 |

Benefits

The costs are weighted against the primary tangible benefits as described in the *Title 264 – Rules Governing the Administration of the Water Sustainability Fund* (NDNR 2015). For this project, benefits calculated in the *Plan/EIS* have been indexed to current dollar values using NRCS economic guidelines and proportioned to Site 26 and Site 27 based on total floodwater retarding capacity and includes flood reduction benefits to agriculture, roads and bridges, and urban lands. A discussion of the quantified benefits and the associated computation tables are located in Appendix F. The costs and benefits have been assessed over a 50-year lifetime as shown in the cash flow stream below.

Table 7. Cash Flow Stream

| Project Year(s) | Calendar Year(s) | Cash Flow Categories | Costs | Benefits | Details (Site 26 & Site 27) |
|-----------------|------------------|---------------------------------------|--------------------|------------|-----------------------------|
| 0 | 2017 | | | | |
| | | Planning, Engineering, & Permitting | \$113,030 | | Supplemental Plan/EA |
| | | Legal Services | \$0 | | |
| | | Land Rights | \$0 | | |
| | | Capital Improvement Costs | \$0 | | |
| | | OMR&R | \$0 | | |
| | | Total Costs: | \$113,030 | | |
| | | Flood Damage Reduction Benefits | | \$0 | |
| | | Total Benefits: | | \$0 | |
| 1 | 2018 | | | | |
| | | Planning, Engineering, and Permitting | \$200,000 | | Preliminary Design |
| | | Legal Services | \$7,500 | | Land Rights Assistance |
| | | Land Rights | \$678,750 | | |
| | | Capital Improvement Costs | \$0 | | |
| | | OMR&R | \$0 | | |
| | | Total Costs: | \$886,250 | | |
| | | Flood Damage Reduction Benefits | | \$0 | |
| | | Total Benefits: | | \$0 | |
| 2 | 2019 | | | | |
| | | Planning, Engineering, and Permitting | \$200,000 | | Final design/permitting |
| | | Legal Services | \$7,500 | | Land Rights Assistance |
| | | Land Rights | \$678,750 | | |
| | | Capital Improvement Costs | \$0 | | |
| | | OMR&R | \$0 | | |
| | | Total Costs: | \$886,250 | | |
| | | Flood Damage Reduction Benefits | | \$0 | |
| | | Total Benefits: | | \$0 | |
| 3 | 2020 | | | | |
| | | Planning, Engineering, and Permitting | \$87,500 | | Construction observation |
| | | Legal Services | \$0 | | |
| | | Land Rights | \$0 | | |
| | | Capital Improvement Costs | \$1,610,730 | | Construction of dams |
| | | OMR&R | \$0 | | Construction of dams @0.75% |
| | | Total Costs: | \$1,698,230 | | |
| | | Flood Damage Reduction Benefits | | | |
| | | Total Benefits: | | \$0 | |

| Project Year(s) | Calendar Year(s) | Cash Flow Categories | Costs | Benefits | Details (Site 26 & Site 27) |
|-----------------|------------------|---------------------------------------|--------------------|--------------------|--------------------------------------|
| 4 | 2021 | | | | |
| | | Planning, Engineering, and Permitting | \$87,500 | | Construction observation |
| | | Legal Services | \$0 | | |
| | | Land Rights | \$0 | | |
| | | Capital Improvement Costs | \$1,610,730 | | Construction of dams |
| | | OMR&R | \$24,161 | | Construction of dams @0.75% |
| | | Total Costs: | \$1,722,391 | | |
| | | Flood Damage Reduction Benefits | | \$194,321 | Site 26 & Site 27 |
| | | Total Benefits: | | \$194,321 | |
| 5 - 50 | 2022 - 2067 | | | | |
| | | Planning, Engineering, and Permitting | \$0 | | |
| | | Legal Services | \$0 | | |
| | | Land Rights | \$0 | | |
| | | Capital Improvement Costs | \$0 | | |
| | | OMR&R | \$1,111,403.70 | | Construction of dams @0.75% per year |
| | | Total Costs: | \$1,111,404 | | |
| | | Flood Damage Reduction Benefits | | \$8,938,766 | Site 26 & Site 27 |
| | | Total Benefits: | | \$8,938,766 | |

Benefit:Cost

The benefit to cost ratio computed from the total annual costs and benefits reported above for the project is 1.42 for the 50-year project life. **Under direction from the NDNR staff, an internal rate of return (IRR), also known as a “discount rate” to calculate present day values for all future benefits was not required.**

Table 8. Benefit to Cost Calculation Table

| Benefit Category | Calculated Benefit | # of Occurrences Over Lifetime | Lifetime Benefits |
|---------------------------------------|--------------------|--------------------------------|--------------------|
| Flood Damage Reduction | | | |
| Site 26 & Site 27 | \$194,321 | 47 | \$9,133,087 |
| Total Benefits | | | \$9,133,087 |
| | | | |
| Cost Category | Calculated Costs | # of Occurrences Over Lifetime | Total Costs |
| Planning, Engineering, and Permitting | \$688,030 | 1 | \$688,030 |
| Legal Services | \$15,000 | 1 | \$15,000 |
| Land Rights | \$1,357,500 | 1 | \$1,357,500 |
| Capital Improvement Costs | \$3,221,460 | 1 | \$3,221,460 |
| OMR&R | \$24,161 | 47 | \$1,135,565 |
| Total Costs: | | | \$6,417,555 |
| | | | |
| Benefit:Cost Ratio = 1.42:1 | | | |

In addition to the tangible benefits, there are multiple intangible benefits which enhance water and environmental sustainability. These intangible benefits cannot be expressed in monetary terms, but collectively help promote healthy watersheds and protect the ability of future generations to meet their needs. Many intangible benefits are directly related to quality of life as a society. Although difficult or impossible to measure, these are fundamental to human well-being, making them invaluable in many regards. Creating opportunities to interact with the natural world in sustainable ways near population bases, elevates the quality of life in the region. This project will result in the establishment and protection of natural areas for future generations and will create opportunities for natural world discovery, wildlife viewing, enjoyment of scenic beauty, environmental education and environmental appreciation. In addition, these intangible benefits include the creation and preservation of valuable habitat to ensure the enjoyment of wildlife and the natural world for generations to come.

4. Provide evidence that sufficient funds are available to complete the proposal.

The LPNNRD has planned for and budgeted the cost of the planning, permitting, design, construction, and land rights acquisition over the next five years. The LPNNRD has been the local project sponsor on several large watershed implementation projects that involved the construction of large multi-benefit flood control structures since their beginning in 1972 and has a proven track record of planning their budgets on an annual basis to

account for the costs required for upcoming projects. In addition, the LPNNRD will receive federal funds through the NRCS Regional Conservation Partnership Program (RCPP) in the amount of \$1,500,000 to assist with the planning, permitting, design, and construction costs.

5. Provide evidence that sufficient annual revenue is available to repay the reimbursable costs and to cover OM&R (operate, maintain, and replace).

The LPNNRD includes operations and maintenance costs in annual budgets for 47 watershed dams. The amount included annually is 0.75% of total construction costs. This amount has shown to be more than adequate for normal dam operation and maintenance.

6. If a loan is involved, provide sufficient documentation to prove that the loan can be repaid during the repayment life of the proposal.

A loan is not involved.

7. Describe how the plan of development minimizes impacts on the natural environment.

Many alternatives were considered during the development of the *Plan/EIS* to avoid and minimize environmental impacts and there were no viable non-dam measures that would reduce flood damages and produce benefits in excess of costs. The *Plan/EIS* concluded that the project will provide improved fish and wildlife habitat and enhanced water quality and that the project will not have detrimental effects on natural resources. Per the Biological Assessment completed as part of the *Plan/EIS*, there will be a net gain in palustrine and lacustrine wetland areas.

The *Plan/EIS* will be updated with the *Supplemental Plan/EA* and a USACE Section 404 permit will be required as part of this project. Refining the design to minimize environmental impacts will continue to be a top priority. Stream assessments of waterways within the project area will be conducted following the USACE *Nebraska Stream Condition Assessment Procedure* to fully understand the existing conditions. The baseline conditions found during this assessment will be used to help create a final design that ensures a functional lift to the waterways. To quantify this functional lift, the same methodologies will be used to assess future (post project) conditions to determine stream and riparian function impacts related to the project. Wetland delineations will also be conducted early in the preliminary design phase to identify any jurisdictional wetlands or other waters of the United States within the project area and to ensure the final design minimizes impacts. In addition to minimizing impacts to the existing environment through thoughtful design, the reservoirs will also create additional wetland

areas and improve habitat diversity and stability within the watershed (LPNNRD 1998).

8. Explain how you are qualified, responsible and legally capable of carrying out the project for which you are seeking funds.

The LPNNRD is a regional government agency founded in 1972 that focuses on protecting soil, water, and related natural resources. The LPNNRD has held the responsibility of obtaining land rights, engineering, permitting, project construction, and conducting operation, maintenance, and repair on forty-seven large watershed structures within their District. Sites 26 and 27 directly align with the types of projects that the District continually manages. Land rights will be acquired so that the project will not occur on private lands and all permits will be acquired to ensure all legal facets of the project have been considered.

9. Explain how your project considers plans and programs of the state and resources development plans of the political subdivisions of the state.

In NDNR's *Annual Report and Plan of Work for the Nebraska State Water Planning and Review Process* (hereafter referred to as the *Annual Report*) (NDNR 2016), the Statewide activities describe Water Sustainability Fund goals. This project fulfills multiple goals stated below:

d.) Contribute to multiple water supply management goals including flood control, reducing threats to property damage, agricultural uses, municipal and industrial uses, recreational benefits, wildlife habitat, conservation and preservation of water resources. (NDNR 2016)

The benefits of this project and how it achieves these goals are described in detail below:

Flood Control

The primary purpose of these dam sites is flood control as identified in the *Plan/EIS* (LPNNRD 1998). The reservoirs will attenuate flood flows through a 48" diameter principal spillway pipe, storing flood flows in the reservoir to maximize flood reduction benefit. The dams will provide significant flood reduction within the sub-watershed and contribute to flood reduction in North Fork Wahoo Creek. Tables quantifying the overall flood reduction benefits are included in Appendix A and Appendix F.

Agricultural Use

Most of the area within the watershed that is impacted by flooding is prime farmland (LPNNRD 1998). Sites 26 and 27 will provide flood protection to this prime farmland and other downstream agriculture lands. In addition, LPNNRD, in partnership with NRCS, the Nebraska Department of

Environmental Quality, and the Environmental Protection Agency, designated four Wahoo Creek sub-watersheds as Water Quality Initiative (WQI) areas to receive special Environmental Quality Incentives Program (EQIP) and EPA 319 funding for landowners to complete conservation practices (i.e. terraces, grass waterways, small basins, buffer strips, and wildlife habitat). These systems have proven not only to bring efficient results, but they are also readily accepted by producers in the watershed. Completion of conservation practices in the watershed is readily pursued by landowners on a voluntary basis. The watersheds above Sites 26 and 27 have been designated by the LPNDRD as special priority areas to receive targeted landowner cost-share assistance funding to help accomplish conservation practices to protect the proposed structures. LPNDRD's requirement is to achieve a minimum of seventy-five percent of land considered treated by conservation practices above Sites 26 and 27. This benefits producers on agricultural land by conserving their land and decreasing damages caused by soil erosion.

Water Quality

The water quality and aquatic habitat benefits of this project are substantial. Pollution from agricultural non-point sources is currently a concern within the Wahoo Creek Watershed as Wahoo Creek has been designated as an impaired stream due to E. coli. Sediment is a major contributor to these non-point sources. Sites 26 and 27 have a sediment storage capacity of 238 acre-feet and 222 acre-feet respectively over the 50-year life expectancy. Per the *Plan/EIS*, the anticipated effects on water quality include decreased stream sediment concentrations, less sedimentation in aquatic habitats, decreased concentrations of phosphorus and certain pesticides in receiving waters, decreased organic loading, and decreased turbidity. EPA/NDEQ 319 funding has been targeted for this watershed with sediment being used as the surrogate for targeting E. coli reduction.

Wildlife Habitat

The reservoirs at Sites 26 and 27 will create diverse deep and shallow water habitats for a variety of aquatic organisms and birds. The reservoirs will also impact water quality in a positive way by further reducing sediment, nutrient, and bacteria transport downstream. In addition, downstream habitat is improved and protected. As the watershed develops, land is covered with impervious surfaces such as roads, parking lots, roofs, driveways and sidewalks that prevent rainfall from infiltrating into the ground. The reservoirs cause a decrease in stormwater runoff flow rate, volume and velocity, which decreases erosion and sediment deposition. Altering the magnitude, frequency and duration of stormwater runoff and sediment loads to streams reduces impacts to water quality and loss of aquatic life and habitat through a variety of geomorphic mechanisms. These mechanisms include less changes in channel bed material, decreased suspended sediment loads, gains of riparian habitat due to decreases in streambank

erosion and decreases in the variability of flow and sediment transport characteristics relative to aquatic life cycles.

10. Are land rights necessary to complete your project?

YES NO

If yes, provide a complete listing of all lands involved in the project.

Land rights will be required to the top of dam elevation for both Sites 26 and 27. Site 26 will encompass approximately 94 acres and Site 27 will encompass approximately 87 acres. Appendix D contains the associated figures for the tables below. The LPNDRD does not currently own this land, but communication with land owners has begun. Land owners in the area have been supportive of the project and there is no foreseen controversy in acquiring the property.

Table 9. Site 26 Land Rights

| Tract Number | Parcel ID | Total Project Area (Ac) |
|-----------------------|-----------|-------------------------|
| 1 | 380000 | 20.6 |
| 2 | 380500 | 6.8 |
| 3 | 378501 | 34.9 |
| 4 | 378500 | 8.9 |
| 5 | 378503 | 10.8 |
| 6 | 357500 | 7.7 |
| 7 | 374002 | 0.3 |
| 8 | 374006 | 1.5 |
| 9 | 377502 | 2.3 |
| 10 | 379500 | 0.1 |
| Total Purchase | | 94 |

Table 10. Site 27 Land Rights

| Tract Number | Parcel ID | Total Project Area (Ac) |
|-----------------------|-----------|-------------------------|
| 1 | 370000 | 23.0 |
| 2 | 371001 | 32.6 |
| 3 | 371502 | 30.6 |
| Total Purchase | | 87 |

If yes, attach proof of ownership for each easements, rights-of-way and fee title currently held.

The land will be acquired as part of this project and there is no foreseen controversy in acquiring the property.

If yes, provide assurance that you can hold or can acquire title to all lands not currently held.

Land owners are aware of the project and have been supportive. Land owners will be involved in planning throughout the NEPA process and there is no anticipated controversy with acquiring the properties. The LPNNRD has the power of eminent domain that could be applied, if necessary.

11. Identify how you possess all necessary authority to undertake or participate in the project.

Sites 26 and 27 fall directly in line with LPNNRD responsibilities as a regional government agency focused on protecting soil, water, and related natural resources. The LPNNRD will obtain all necessary permits and land rights necessary to complete the project.

12. Identify the probable environmental and ecological consequences that may result as the result of the project.

Many environmental and ecological benefits are anticipated as a result of the completion of Sites 26 and 27. A complete environmental impact assessment and biological assessment were completed as part of the *Plan/EIS* (LPNNRD 1998). This *Plan/EIS* will be updated with the *Supplemental Plan/EA* as part of this project.

Installation of Sites 26 and 27 is anticipated to improve water quality. Pollution from agricultural non-point sources is currently a concern within the Wahoo Creek Watershed. Sediment is a major contributor to these non-point sources. Sites 26 and 27 have a sediment storage capacity of 238 acre-feet and 222 acre-feet respectively over the 50-year life expectancy. Per the *Plan/EIS*, the anticipated effects on water quality include decreased stream sediment concentrations, less sedimentation in aquatic habitats, decreased concentrations of phosphorus and certain pesticides in receiving waters, decreased organic loading, and decreased turbidity. This project will also assist in reaching the LPNNRD, NDEQ and EPA goal of removing Wahoo Creek from the impaired waters list.

In addition to water quality improvements, ecological benefits are anticipated as enhanced fish habitat by creating shallow and deep water features, wildlife wetland habitat due to a net increase of wetlands, enhanced wildlife upland habitat due to diversification of resources, and enhanced quality of streams due to reduced sediment concentrations (LPNNRD 1998). The reservoirs themselves will also create diverse deep and shallow water habitats for a variety of aquatic organisms and birds.

Section C.

NRC SCORING

In the NRC's scoring process, points will be given to each project in ranking the projects, with the total number of points determining the final project ranking list.

The following 15 criteria constitute the items for which points will be assigned. Point assignments will be 0, 2, 4, or 6 for items 1 through 8; and 0, 1, 2, or 3 for items 9 through 15. Two additional points will be awarded to projects which address issues determined by the NRC to be the result of a federal mandate.

Notes:

- The responses to one criterion will not be considered in the scoring of other criteria. Repeat references as needed to support documentation in each criterion as appropriate. The 15 categories are specified by statute and will be used to create scoring matrixes which will ultimately determine which projects receive funding.
- There is a total of 69 possible points, plus two bonus points. The potential number of points awarded for each criteria are noted in parenthesis. Once points are assigned, they will be added to determine a final score. The scores will determine ranking.
- The Commission recommends providing the requested information and the requests are not intended to limit the information an applicant may provide. An applicant should include additional information that is believed will assist the Commission in understanding a proposal so that it can be awarded the points to which it is entitled.

Complete any of the following (15) criteria which apply to your project. Your response will be reviewed and scored by the NRC. Place an N/A (not applicable) in any that do not apply, an N/A will automatically be placed in any response fields left blank.

1. Remediates or mitigates threats to drinking water;
 - Describe the specific threats to drinking water the project will address.
 - Identify whose drinking water, how many people are affected, how will project remediate or mitigate.
 - Provide a history of issues and tried solutions.
 - Provide detail regarding long range impacts if issues are not resolved.

Threats to drinking water in the watershed include E. coli, nutrients, and other agricultural chemicals that can seep into aquifers with normal surface water runoff. By virtue of trapping sediments, nutrients, and bacteria in the watershed that the

Plan/EIS (LPNNRD 1998) identified as having nearly 3.3 million tons of soil erode annually, these reservoirs will improve water quality of raw water drawn for potable use. The communities of Weston, Wahoo, Ithaca and Memphis draw their municipal water from the Wahoo Creek alluvial aquifer. Salt and Wahoo Creeks empty into the Platte River immediately upstream of Lincoln Water System's radial wells. In 2001, the LPNNRD implemented a wellhead protection program with the goal of minimizing potential polluting activities on the land surrounding a community's public water supply wells (LPNNRD 2017). In 2006, the LPNNRD has worked with communities who have had difficulties with water quality and quantity by forming two rural water systems that linked smaller communities who were experiencing water quality concerns larger communities. The LPNNRD purchases water from the larger communities and delivers it to the smaller communities (LPNNRD 2017). This is an example of a temporary solution to water quality issues sought out by the LPNNRD. Completion of Sites 26 and Site 27, as well as the additional eight Sites detailed in the *Plan/EIS* (LPNNRD 1998) will help to provide a system of long-lasting water quality and flood control solutions to the watershed. Without these or other long-term water quality solutions, drinking water quality will continue to degrade.

2. Meets the goals and objectives of an approved integrated management plan or ground water management plan;
 - Identify the specific plan that is being referenced including date, who issued it and whether it is an IMP or GW management plan.
 - Provide the history of work completed to achieve the goals of this plan.
 - List which goals and objectives of the management plan the project provides benefits for and how the project provides those benefits.

The LPNNRD and the Nebraska Department of Natural Resources (NDNR) are currently in the process of developing a voluntary Integrated Management Plan (IMP). The IMP is currently in a working phase and draft goals from the working document can be found in Appendix G. An involved stakeholder participation process and long-term studies have been conducted to refine the goals and objectives of the IMP and work to complete the goals will commence upon completion and implementation of the IMP. At the suggestion of NDNR the voluntary IMP will not be completed until the Lower Platte Basin Water Study is finished so that similar water banking methods can appear in both plans. The remainder of the LPNNRD volunteer IMP is complete.

Goal 3 of the IMP is to develop and implement water use policies and practices with the purpose of achieving and sustaining a balance between water uses and supplies. Objective 3.1 is to update policies, practices, and programs to maintain and improve water supply and water quality as it affects supply. The proposed project helps to achieve Goal 3, Objective 3.1 of the IMP. Regional detention structures strive to maintain or restore natural watershed hydrology and reduce peak discharge. The effects of regional detention not only help curb flooding, but

help restore more natural base flows to receiving streams and rivers by increasing groundwater infiltration and subsequent seepage, storing and slowly releasing surface water runoff, and removing pollutants and contaminants not naturally found in the surface or ground water. Reservoirs trap pollutants by holding runoff and releasing at reduced rates, which allows settling of particles. The reservoirs have a permanent pool of water that fluctuates in response to precipitation and runoff from the contributing areas. Maintaining a pool reduces re-suspension and assists in keeping deposited sediments at the bottom of the holding area. Natural attenuation of pollutants occurs through breakdown of contaminants by soil microorganisms or other biological processes, especially nutrients and bacteria. The surface area of the reservoir also allows UV contact to assist in reducing bacteria counts. Sites 26 and 27 provide benefits to both water supply and water quality, a main goal and objective of the IMP.

3. Contributes to water sustainability goals by increasing aquifer recharge, reducing aquifer depletion, or increasing streamflow;

List the following information that is applicable:

- The location, area and amount of recharge;
- The location, area and amount that aquifer depletion will be reduced;
- The reach, amount and timing of increased streamflow. Describe how the project will meet these objectives and what the source of the water is;
- Provide a detailed listing of cross basin benefits, if any.

The two predominant types of aquifers within the LPNNRD consist of bedrock and alluvial aquifers. Alluvial aquifers are broadly defined as buried paleo valley aquifers in ancient stream valleys, aquifers created by modern streams, and aquifers of other origins. The majority of the registered wells in the LPNNRD are completed in undifferentiated sand and gravel alluvial aquifers of multiple origins (LPNNRD 2017). Wahoo Creek flows directly over and recharges the Central Butler Aquifer (paleo aquifer) that begins west of David City and joins the Todd Valley Aquifer southeast of Wahoo. The reservoirs at Sites 26 and 27 will increase infiltration and aquifer recharge by artificially increasing the available head in the pool area. Additionally, with the development of the reservoirs, a groundwater mound will form below them to help recharge the upper alluvial aquifer. This groundwater mound will first form directly below the reservoir and then expand along the periphery and feed neighboring aquifers. While the actual recharge rates are a function of dynamic water levels, soil types, and other factors, groundwater recharge can be estimated as 206 acre-feet per year by using an estimated soil permeability factor of 1×10^{-7} feet per second. Aquifer depletion would be reduced due to the increased duration of streamflow after precipitation events caused by reservoir attenuation and the elongated discharge hydrograph that will help recharge the previously mentioned Central Butler Aquifer. These regional detention structures help restore more natural and steadier base flows to the receiving tributaries of North Fork Wahoo Creek and downstream channels by

increasing groundwater infiltration and subsequent seepage and by storing and slowly releasing surface water runoff from precipitation events. This can increase biodiversity and improve water quality by reducing stagnate water during periods of drought or low aquifer levels that are due to increased groundwater pumping. Cross-basin benefits are not anticipated.

4. Contributes to multiple water supply goals, including, but not limited to, flood control, agricultural use, municipal and industrial uses, recreational benefits, wildlife habitat, conservation of water resources, and preservation of water resources;
 - List the goals the project provides benefits.
 - Describe how the project will provide these benefits
 - Provide a long range forecast of the expected benefits this project could have versus continuing on current path.

Flood Control

The primary purpose of Sites 26 and 27 is flood control as identified in the *Plan/EIS* (LPNNRD 1998). The structures will attenuate flood flows through a 48-inch diameter principal spillway pipe, storing flows in the reservoir. They are designed as low hazard structures in a watershed dominated by agriculture use. The dams will provide significant flood reduction in the sub-watersheds and contribute to a flood reduction in North Fork Wahoo Creek. Flood reduction benefits were analyzed in extensive detail during the development of the *Plan/EIS* (LPNNRD 1998) and have been indexed to current dollar values based on the flood retarding capacity of each structure. Flood control benefits are provided in tabular form in Appendix F.

Agricultural Use

Most of the area within the watershed that is impacted by flooding is prime farmland (LPNNRD 1998). Sites 26 and 27 will provide flood protection to this prime farmland and other downstream agriculture lands. In addition, LPNNRD, in partnership with NRCS, the Nebraska Department of Environmental Quality, and the Environmental Protection Agency, designated four Wahoo Creek sub-watersheds as Water Quality Initiative (WQI) areas to receive special Environmental Quality Incentives Program (EQIP) and EPA 319 funding for landowners to complete conservation practices (i.e. terraces, grass waterways, small basins, buffer strips, and wildlife habitat). These systems have proven not only to bring efficient results, but they are also readily accepted by producers in the watershed. Completion of conservation practices in the watershed is readily pursued by landowners on a voluntary basis. The watersheds above Sites 26 and 27 have been designated by the LPNNRD as special priority areas to receive targeted landowner assistance funding to help accomplish conservation practices on their land to protect the eventual structures. LPNNRD's requirement is to achieve a minimum of seventy-five percent of land considered treated by

conservation practices above Sites 26 and 27. This benefits producers on agricultural land by conserving their land and decreasing damages caused by soil erosion.

Wildlife Habitat

The reservoirs at Sites 26 and 27 will create diverse deep and shallow water habitats for a variety of aquatic organisms and birds. The reservoirs will also impact water quality in a positive way by further reducing sediment, nutrient, and bacteria transport downstream. In addition, downstream habitat is improved and protected. As the watershed develops, land is covered with impervious surfaces such as roads, parking lots, roofs, driveways and sidewalks that prevent rainfall from infiltrating into the ground. The reservoirs cause a decrease in stormwater runoff flow rate, volume and velocity, which decreases erosion and sediment deposition. Altering the magnitude, frequency and duration of stormwater runoff and sediment loads to streams reduces impacts to water quality and loss of aquatic life and habitat through a variety of geomorphic mechanisms. These mechanisms include less changes in channel bed material, decreased suspended sediment loads, gains of riparian habitat due to decreases in streambank erosion and decreases in the variability of flow and sediment transport characteristics relative to aquatic life cycles.

Long-Range Forecast

These Sites, along with the other eight remaining Sites identified in the *Plan/EIS*, provide lasting benefits to the watershed that work as a system. This watershed project is a leader in the state of Nebraska by bringing federal funds to the state through NRCS Regional Conservation Partnership Program (RCPP) to help fund the water sustainability needs of Nebraska. Long-range benefits of the completion of the all the Sites identified in the *Plan/EIS* include significant monetary savings due to flood damage reduction, reduced threat of loss of life, reduced sedimentation, erosion, and scour, lasting improvements to wildlife and stream habitat, and a continued increase in water quality within the watershed (LPNNRD 1998). Continuing the current path of no-action will lead to continued flood-related damages and continued water quality and habitat degradation.

5. Maximizes the beneficial use of Nebraska's water resources for the benefit of the state's residents;
 - Describe how the project will maximize the increased beneficial use of Nebraska's water resources.
 - Describe the beneficial uses that will be reduced, if any.
 - Describe how the project provides a beneficial impact to the state's residents.

Flood control and soil erosion reduction are top focus areas of Nebraskans within agricultural communities. This project addresses that need directly as part of a well-developed plan. While providing flood control and soil erosion reduction benefits, this project offers secondary beneficial uses to Nebraskans including

habitat improvement, water quality improvements, increased wildlife habitat, and opportunities for education regarding all of the above. The project also helps to meet a federal, state and local goal of removing Wahoo Creek from the impaired waters list.

There will be few reduced beneficial uses. Impacts to existing resources will be detailed throughout the environmental permitting NEPA processes and mitigation measures will be planned to more than offset any impacts which may occur. Some prime farmland will be impacted due to the limits of the permanent pools, but this impact is far less than the flood risk reduction benefits offered to downstream prime farmland by the construction of Sites 26 and 27. This project provides a beneficial impact to Nebraskans by reducing the threat of flooding and decreasing sediment erosion throughout the watershed.

6. Is cost-effective;

- List the estimated construction costs, O/M costs, land and water acquisition costs, alternative options, value of benefits gained.
- Compare these costs to other methods of achieving the same benefits.
- List the costs of the project.
- Describe how it is a cost effective project or alternative.

A cost summary table detailing all of the costs for the proposed project is provided in a summary table in Appendix A. All detailed costs, as well as benefits, cash flow stream and economic comparison are shown in Appendix E and Appendix F.

Sites 26 and 27 were identified in the *Plan/EIS* (LPNNRD 1998) to provide a reduction in flood damages, reduce the threat of loss of life, reduce sedimentation, erosion, and scour, and to improve wildlife and stream habitat quality within the watershed. This was developed to address a long history of flooding within the watershed, which consists of approximately 430 square miles in Saunders County, NE. The *Plan/EIS* (LPNNRD 1998) includes sixteen (16) storm water detention basins and one multi-purpose dam. The *Plan/EIS* provides detailed information on the alternatives studied and their feasibility. Flood reduction in the Wahoo Creek watershed has been studied extensively through efforts undertaken by the LPNNRD. The *Plan/EIS* (LPNNRD 1998) evaluated numerous non-dam alternatives and concluded that there were no viable non-dam measures found that would reduce flood damages and produce benefits in excess of costs. The economic comparison for Sites 26 and 27, given in Appendix F, shows the cost effectiveness of the plan with an overall Benefit:Cost ratio of 1.42:1.

7. Helps the state meet its obligations under interstate compacts, decrees, or other state contracts or agreements or federal law;

- Identify the interstate compact, decree, state contract or agreement or federal law.

- Describe how the project will help the state meet its obligations under compacts, decrees, state contracts or agreements or federal law.
- Describe current deficiencies and document how the project will reduce deficiencies.

Section 303(d) of the Environmental Protection Agency's Clean Water Act is required to maintain the integrity of the Nation's waters, and requires states to establish a list of impaired waters that do not meet water quality standards. Once on the 303(d) list of impaired waters, it is required that a Total Maximum Daily Load (TMDL) report is developed to set goals and pollutant load reductions required for the water body to meet water quality standards.

Wahoo Creek is on the EPA Section 303(d) list of impaired water bodies. To address the impaired status of Wahoo Creek, LPNNRD in partnership with the EPA and the Nebraska Department of Environmental Quality (NDEQ), developed the Wahoo Creek Watershed Water Quality Management Plan (LPNNRD 2013). This plan identifies goals to reduce excess phosphorous, nitrogen, soil sediments, and E. coli bacteria in the Wahoo Creek Watershed. This plan meets the EPA requirement of containing "Nine Elements" of an effective watershed plan and incorporates many previous water quality planning efforts. The plan identifies water quality goals to protect and enhance the quality of all water resources within the Wahoo Creek.

Sub-watersheds within the Wahoo Creek Watershed were prioritized for future water quality projects, which includes Sites 26 and 27. In 2012, LPNNRD in partnership with NRCS, NDEQ and EPA, identified four Wahoo Creek sub-watersheds as Water Quality Initiative (WQI) areas to receive special Environmental Quality Incentives Program (EQIP) and EPA 319 funding for landowners to complete conservation practices to help achieve the numerous identified water quality goals. The conservation work being completed will complement and be very beneficial to the completion of the larger proposed Sites 26 and 27. The water quality benefit improvements from Sites 26 and 27 will help contribute to reductions in the E. coli, excess phosphorous, nitrogen, and soil sediment loads, specifically in North Fork Wahoo Creek.

A TMDL was established for E. coli bacteria for the unlisted but impaired Wahoo Creek in 2007 and was listed as impaired for E. coli bacteria on the EPA Section 303(d) list of impaired waterbodies beginning in the reporting year 2008. Completion of Sites 26 and 27 will contribute on a greater scale to the reduction of E. coli bacteria within the watershed than would be realized with small-scale and non-dam alternatives typically employed by producers and the LPNNRD. In addition, with the introduction of federal funds through the NRCS Regional Conservation Partnership Program (RCPP), Sites 26 and 27 can act as a catalyst to the completion of the remaining eight watershed project Sites listed in the *Plan/EIS* (LPNNRD 1998). Completion of these ten Sites will lead to large-scale and lasting water quality deficiency improvements throughout the watershed.

8. Reduces threats to property damage or protects critical infrastructure that consists of the physical assets, systems, and networks vital to the state or the United States such that their incapacitation would have a debilitating effect on public security or public health and safety;

- Identify the property that the project is intended to reduce threats to.
- Describe and quantify reductions in threats to critical infrastructure provided by the project and how the infrastructure is vital to Nebraska or the United States.
- Identify the potential value of cost savings resulting from completion of the project.
- Describe the benefits for public security, public health and safety.

This project reduces the potential for flood damage along the North Fork Wahoo Creek, as well as essentially eliminating the flood threat to the lands along the tributary streams downstream of the dams. The project contributes much needed flood reduction within the North Fork Wahoo Creek and the transportation corridors, utilities, agriculture, and other infrastructure that runs along or through the Wahoo Creek system. Saunders County has more bridges than any other County in Nebraska with higher than normal maintenance requirements on the Wahoo Creek and tributaries bridges. The majority of the area within the watershed that is impacted by flooding and will therefore benefit from Sites 26 and 27 is prime farmland (LPNDRD 1998).

The primary purpose of these dam sites is flood control as identified in the *Plan/EIS* (LPNDRD 1998). The reservoirs will attenuate flood flows through a 48" diameter principal spillway pipe, storing flood flows in the reservoir for maximum flood reduction benefits. The dams will provide significant flood reduction within the sub-watershed and contribute to flood reduction in North Fork Wahoo Creek, providing flood reduction benefits to vital prime farmland in Nebraska. Tables quantifying the overall flood reduction benefits are included in Appendix A and Appendix F.

In addition to the tangible flood control benefits to property and infrastructure, there are multiple intangible benefits which enhance water and environmental sustainability. These intangible benefits cannot be expressed in monetary terms, but collectively help promote healthy watersheds and protect the ability of future generations to meet their needs. Many intangible benefits are directly related to quality of life as a society. Although difficult or impossible to measure, these are fundamental to human well-being, making them invaluable in many regards. Creating opportunities to interact with the natural world in sustainable ways near population bases, elevates the quality of life in the region. This project will result in the establishment and protection of natural areas for future generations and will create opportunities for natural world discovery, wildlife viewing, enjoyment of scenic beauty, environmental education and environmental appreciation. In addition, these intangible benefits include the creation and preservation of valuable

habitat to ensure the enjoyment of wildlife and the natural world for generations to come. These nonquantifiable benefits are vital to all Nebraskans and the United States as a whole.

Recent studies have shown the socioeconomic impact of flooding on communities is extensive. Projects such as these reduce the threats to the general security, health and safety of the public by reducing the threat of flooding. This benefit can be seen in a reduced need for emergency operations and rescue services during flooding and with a reduction in the potential for loss of life and health hazards such as odor, insects and other negative impacts of flooding.

9. Improves water quality;

- Describe what quality issue(s) is/are to be improved.
- Describe and quantify how the project improves water quality, what is the target area, what is the population or acreage receiving benefits, what is the usage of the water: residential, industrial, agriculture or recreational.
- Describe other possible solutions to remedy this issue.
- Describe the history of the water quality issue including previous attempts to remedy the problem and the results obtained.

Wahoo Creek resides on the Environmental Protection Agency's (EPA) Section 303(d) list of impaired water bodies. To address the impaired status of Wahoo Creek, LPNNRD in partnership with the U.S. Environmental Protection Agency (EPA) and the Nebraska Department of Environmental Quality (NDEQ), developed the Wahoo Creek Watershed Water Quality Management Plan in 2013 (LPNNRD 2013). This plan identifies goals to reduce excess phosphorous, nitrogen, soil sediments and E. coli bacteria in the Wahoo Creek Watershed. This plan meets the EPA requirement of containing "Nine Elements" of an effective watershed plan and incorporates many previous water quality planning efforts. The plan identifies water quality goals to protect and enhance the quality of all water resources within the Wahoo Creek.

In 2012, LPNNRD in partnership with NRCS, NDEQ and EPA, identified four Wahoo Creek sub-watersheds as Water Quality Initiative (WQI) areas to receive special Environmental Quality Incentives Program (EQIP) and EPA 319 funding for landowners to complete conservation practices (i.e. terraces, grass waterways, small basins, buffer strips, wildlife habitat etc.) to help achieve water quality goals, which includes Sites 26 and 27. Sites 26 and 27 will be constructed to detain storm water runoff for approximately 5.5 square miles of predominantly agricultural land; thereby slowing the water velocity and allowing sediment and nutrients to settle out of the water flowing to the receiving stream. Altering the magnitude, frequency and duration of stormwater runoff and sediment loads to streams reduces impacts to water quality and loss of aquatic life and habitat through a variety of geomorphic mechanisms. These mechanisms include less changes in channel bed material, decreased suspended sediment loads, gains of riparian habitat due to decreases

in streambank erosion and decreases in the variability of flow and sediment transport characteristics relative to aquatic life cycles.

Reservoirs trap pollutants by holding runoff and releasing at reduced rates, which allows settling of particles. The reservoirs have a permanent pool of water that fluctuates in response to precipitation and runoff from the contributing areas. Maintaining a pool reduces re-suspension and assists in keeping deposited sediments at the bottom of the holding area. Natural attenuation of pollutants occurs through breakdown of contaminants by soil microorganisms or other biological processes, especially nutrients and bacteria. The surface area of the reservoir also allows UV contact to assist in reducing bacteria counts.

Other possible solutions to water quality issues within the watershed include livestock manure management, pasture management such as prescribed grazing, cropland conservation practices, and increasing riparian buffers. LPNNRD's requirement is to achieve a minimum of seventy-five percent of land considered treated to soil replacement levels above Sites 26 and 27, which will combine the water quality benefits of the reservoirs with cropland conservation practices.

In 2006, the LPNNRD has worked with communities who have had difficulties with water quality and quantity by forming two rural water systems that linked smaller communities who were experiencing water quality concerns larger communities. The LPNNRD purchases water from the larger communities and delivers it to the smaller communities (LPNNRD 2017). This is an example of a temporary solution to water quality issues sought out by the LPNNRD. Completion of Sites 26 and Site 27, as well as the additional eight Sites detailed in the *Plan/EIS* (LPNNRD 1998) will help to provide a system of long-lasting water quality and flood control solutions to the watershed.

10. Has utilized all available funding resources of the local jurisdiction to support the program, project, or activity;

- Identify the local jurisdiction that supports the project.
- List current property tax levy, valuations, or other sources of revenue for the sponsoring entity.
- List other funding sources for the project.

Saunders County has been an avid supporter of this project. They have been an active participant in the preliminary planning process of Sites 26 and 27 and stand prepared to discuss financial participation during the final design process. Saunders County has also been participating in discussions regarding potential downstream land rights zoning to protect the dam hazard classifications. A letter of support from Saunders County can be found in Appendix H.

To extend the life of the reservoirs via conservation practices upstream, funding has been received from EPA/NDEQ (319), USDA (targeted EQUIP) and the Nebraska Environmental Trust.

The LPNNRD currently taxes at a levy rate of 3.8278 cents per \$100 of valuation and had a fiscal year 2017 operating budget of over \$6.6 million dollars. In addition, this watershed project is a leader in the state of Nebraska by bringing federal funds to the state through NRCS Regional Conservation Partnership Program (RCPP) to help fund the water sustainability needs of our state and to help leverage local funding resources. The NRCS RCPP has approved funding in the amount of \$1,500,000 to assist with the planning, engineering, and construction costs as shown in Appendix A.

11. Has a local jurisdiction with plans in place that support sustainable water use;

- List the local jurisdiction and identify specific plans being referenced that are in place to support sustainable water use.
- Provide the history of work completed to achieve the goals of these plans.
- List which goals and objectives this project will provide benefits for and how this project supports or contributes to those plans.
- Describe and quantify how the project supports sustainable water use, what is the target area, what is the population or acreage receiving benefits, what is the usage of the water: residential, industrial, agriculture or recreational.
- List all stakeholders involved in project.
- Identify who benefits from this project.

“Water Sustainability” is defined in Nebraska Title 261 as current water use that promotes healthy watersheds, improves water quality, and protects the ability of future generations to meet their needs. Recognizably, sustainability has varied meanings across the State. In Eastern Nebraska, watershed health is related to reducing the threat of flood damage first and foremost. Nearly every watershed plan in the eastern region addresses flood control first. The primary sustainable practices for this project are flood control, water quality improvements, reducing soil erosion and sedimentation, and habitat improvement, which all contribute to healthy watersheds. This project will not only benefit downstream landowners, but will also result in the establishment and protection of natural areas for future generations.

The local jurisdiction that manages and enforces these practices is the LPNNRD. The LPNNRD and Nebraska Department of Natural Resources (NDNR) are jointly developing a voluntary Integrated Management Plan (IMP). An involved stakeholder participation process and long-term studies have been conducted to refine the goals and objectives of the IMP and work to complete the goals will commence upon completion and implementation of the IMP. Draft Goal 3 is to develop and implement water use policies and practices with the purpose of achieving and sustaining a balance between water uses and supplies. Objective

3.1 is to update policies, practices, and programs to maintain and improve water supply and water quality as it affects supply. The proposed project helps to achieve Goal 3, Objective 3.1 of the IMP. Regional detention structures strive to maintain or restore natural watershed hydrology and reduce peak discharge. The effects of regional detention not only help curb flooding, but help restore more natural base flows to receiving streams and rivers by increasing groundwater infiltration and subsequent seepage, store and slowly release surface water runoff, and remove some pollutants and contaminants not naturally found in the surface or ground water.

LPNNRD's Groundwater Management Plan is the tool that currently manages water resources. The district is divided into 23 aquifers with each having their own monitoring wells. By Rule and Regulation, Quantity Sub-Areas are put into place if aquifer level fall below a predetermined level (10%-15%) at three consecutive spring readings. LPNNRD currently has two Special Quantity Sub-Areas with irrigation limited to 27 inches over three years (average of 9 inches per year).

Wahoo Creek resides on the Environmental Protection Agency's (EPA) Section 319 list of impaired water bodies. To address the impaired status of Wahoo Creek, LPNNRD in partnership with the U.S. Environmental Protection Agency (EPA) and the Nebraska Department of Environmental Quality (NDEQ) developed the Wahoo Creek Watershed Water Quality Management Plan in 2013 (LPNNRD 2013). This plan identifies goals to reduce excess phosphorous, nitrogen, soil sediments and E. coli bacteria in the Wahoo Creek Watershed. This plan meets the EPA requirement of containing "Nine Elements" of an effective watershed plan and incorporates many previous water quality planning efforts. The plan identifies water quality goals to protect and enhance the quality of all water resources within the Wahoo Creek.

In 2012, LPNNRD in partnership with NRCS, NDEQ and EPA, identified four Wahoo Creek sub-watersheds as Water Quality Initiative (WQI) areas to receive special Environmental Quality Incentives Program (EQIP) and EPA 319 funding for landowners to complete conservation practices (i.e. terraces, grass waterways, small basins, buffer strips, wildlife habitat etc.) to help achieve water quality goals, which includes Sites 26 and 27. Sites 26 and 27 will be constructed to detain storm water runoff for approximately 5.5 square miles of predominantly agricultural land; thereby slowing the water velocity and allowing sediment and nutrients to settle out of the water flowing to the receiving stream. Altering the magnitude, frequency and duration of stormwater runoff and sediment loads to streams reduces impacts to water quality and loss of aquatic life and habitat through a variety of geomorphic mechanisms. These mechanisms include less changes in channel bed material, decreased suspended sediment loads, gains of riparian habitat due to decreases in streambank erosion and decreases in the variability of flow and sediment transport characteristics relative to aquatic life cycles.

Stakeholders for this project include a wide range of local and federal partners, interested individuals, and those that have interests within the watershed. Some of these stakeholders include LPNNRD, Saunders County, residents above and below the projects, and current and future visitors and residents of Saunders County. Stakeholders also include many federal agencies, including NRCS, USACE, NDEQ, EPA, DNR, USFWS, SHPO, and NGPC.

In addition to these tangible flood control benefits to property and infrastructure to Nebraskans within the watershed, there are multiple intangible ways in which the project enhances water and environmental sustainability. These intangible benefits cannot be expressed in monetary terms, but collectively help promote healthy watersheds and protects the ability of future generations to meet their needs. Many intangible benefits are directly related to our quality of life as a society. Although difficult or impossible to measure, they are fundamental to human well-being, making them invaluable in many regards. Creating opportunities to interact with the natural world in sustainable ways near population bases elevates the quality of life of the region. This project will result in the establishment and protection of much needed natural areas for future generations and will create opportunities for natural world discovery, wildlife viewing, enjoyment of scenic beauty, environmental education and environmental appreciation. In addition, these intangible benefits include our responsibility to create and preserve valuable habitat to ensure the enjoyment of wildlife and the natural world for generations to come. This project will provide benefits to current residents and visitors throughout Nebraska as well as future residents and visitors of our state.

12. Addresses a statewide problem or issue;

- List the issues or problems addressed by the project and why they should be considered statewide.
- Describe how the project will address each issue and/or problem.
- Describe the total number of people and/or total number of acres that would receive benefits.
- Identify the benefit, to the state, this project would provide.

Flooding, water quality degradation, and decreased wildlife habitat are a continual threat in the Wahoo Creek Watershed and to Nebraskans statewide. The real threat of flooding in the Wahoo Creek Watershed is well documented in the *Plan/EIS* (LPNNRD 1998). This project will address that issue by providing flood control in North Fork Wahoo Creek. The quantifiable flood control benefits have been documented in Appendix F.

Flood Control

The primary purpose of these dam sites is flood control as identified in the *Plan/EIS* (LPNNRD 1998). The reservoirs will attenuate flood flows for approximately 5.5 square miles of land through a 48" diameter principal spillway pipe, storing flood

flows in the reservoir, to maximize flood reduction benefit. The dams will provide significant flood reduction within the sub-watershed and contribute to flood reduction in North Fork Wahoo Creek. Tables quantifying the overall flood reduction benefits are included in Appendix A and Appendix F.

Water Quality

The water quality and aquatic habitat benefits of this project are substantial. Pollution from agricultural non-point sources is currently a concern within the Wahoo Creek Watershed. Sediment is a major contributor to these non-point sources. Sites 26 and 27 have a sediment storage capacity of 238 acre-feet and 222 acre-feet respectively over the 50-year life expectancy. Per the *Plan/EIS*, the anticipated effects on water quality include decreased stream sediment concentrations, less sedimentation in aquatic habitats, decreased concentrations of phosphorus and certain pesticides in receiving waters, decreased organic loading, and decreased turbidity.

Wildlife Habitat

The reservoirs at Sites 26 and 27 will create diverse deep and shallow water habitats for a variety of aquatic organisms and birds. The reservoirs will also impact water quality in a positive way by further reducing sediment, nutrient, and bacteria transport downstream. In addition, downstream habitat is improved and protected. As the watershed develops, land is covered with impervious surfaces such as roads, parking lots, roofs, driveways and sidewalks that prevent rainfall from infiltrating into the ground. The reservoirs cause a decrease in stormwater runoff flow rate, volume and velocity, which decreases erosion and sediment deposition. Altering the magnitude, frequency and duration of stormwater runoff and sediment loads to streams reduces impacts to water quality and loss of aquatic life and habitat through a variety of geomorphic mechanisms. These mechanisms include less changes in channel bed material, decreased suspended sediment loads, gains of riparian habitat due to decreases in streambank erosion and decreases in the variability of flow and sediment transport characteristics relative to aquatic life cycles.

This watershed project is a leader in the state of Nebraska by bringing Federal funds to the state through NRCS Regional Conservation Partnership Program (RCPP) to help fund the water sustainability needs of our state and to leverage local financial resources.

13. Contributes to the state's ability to leverage state dollars with local or federal government partners or other partners to maximize the use of its resources;
 - List other funding sources or other partners, and the amount each will contribute, in a funding matrix.
 - Describe how each source of funding is made available if the project is funded.

- Provide a copy or evidence of each commitment, for each separate source, of match dollars and funding partners.
- Describe how you will proceed if other funding sources do not come through.

This project contributes to the state's ability to leverage state dollars with a Federal funding source. Sites 26 and 27 been approved to receive federal funds through the NRCS Regional Conservation Partnership Program in the amount of \$1,500,000 to assist with the planning, engineering, and construction costs (see Appendix I – Draft RCPP Agreement). In addition, Sites 26 and 27 can act as a catalyst to the completion of the remaining eight watershed project Sites listed in the *Plan/EIS* (LPNNRD 1998). The LPNNRD is committed to the project and will seek out all available funding possibilities, but ultimately will finance the project themselves if no additional funding is available.

14. Contributes to watershed health and function;

- Describe how the project will contribute to watershed health and function in detail and list all of the watersheds affected.

The *Plan/EIS* (LPNNRD 1998) extensively studied the potential impacts and contributions to the Wahoo Creek Watershed resulting from Sites 26 and 27 and the 14 other flood reduction sites and one multi-purpose site. The conclusions of the Plan indicated that there would be an overall benefit to the watershed, including reduced erosion, reduced sedimentation, enhanced fish, wetland wildlife, and upland wildlife habitat, and enhanced stream and water quality. These benefits contribute to the function and health of the overall watershed.

15. Uses objectives described in the annual report and plan of work for the state water planning and review process issued by the department.

- Identify the date of the Annual Report utilized.
- List any and all objectives of the Annual Report intended to be met by the project
- Explain how the project meets each objective.

The *Annual Report* (NDNR 2016), lists the following objectives as related to the Water Sustainability Fund:

Water Sustainability Fund

The Legislature created the new Water Sustainability Fund in LB906 (2014) and defined governance and appropriation in LB1098 and LB1098A. In July 2014, \$21 million was transferred to the fund. In 2015, LB657 re-appropriated the unexpended cash balance of about \$21 million and appropriated \$8 million for both the 2016 and 2017 fiscal years. LB661 provided and stated the intent that \$11 million be transferred to the fund for a minimum of 10 years. In 2016, LB957 authorized the Commission to approve one additional partial allocation, up to eleven million dollars, contingent upon the availability of unallocated funds. The goals of the Water Sustainability Fund are to:

- a) Provide financial assistance to programs, projects, or activities that increase aquifer recharge, reduce aquifer depletion, and increase stream flow;
- b) Remediate or mitigate threats to drinking water;
- c) Promote the goals and objectives of approved integrated management plans or ground water management plans;
- d) Contribute to multiple water supply management goals including flood control, reducing threats to property damage, agricultural uses, municipal and industrial uses, recreational benefits, wildlife habitat, conservation, and preservation of water resources;
- e) Assist municipalities with the cost of constructing, upgrading, developing, and replacing sewer infrastructure facilities as part of a combined sewer overflow project;
- f) Provide increased water productivity and enhance water quality;
- g) Use the most cost effective solutions available; and
- h) Comply with interstate compacts, decrees, other state contracts and agreements and federal law.

The objectives of goals d) and f) are met as follows;

Flood Control

The primary purpose of these dam sites is flood control as identified in the *Plan/EIS* (LPNNRD 1998). The reservoirs will attenuate flood flows through a 48" diameter principal spillway pipe, storing flood flows in the reservoir. They are designed to maximize flood reduction benefit. The dams will provide significant flood reduction within the sub-watershed and contribute to flood reduction in North Fork Wahoo Creek. Tables quantifying the overall flood reduction benefits are included in Appendix A and Appendix F.

Agricultural Use

Most of the area within the watershed that is impacted by flooding is prime farmland (LPNNRD 1998). Sites 26 and 27 will provide flood protection to this prime farmland and other downstream agriculture lands. In addition, LPNNRD, in partnership with NRCS, the Nebraska Department of Environmental Quality, and the Environmental Protection Agency, designated four Wahoo Creek sub-watersheds as Water Quality Initiative (WQI) areas to receive special

Environmental Quality Incentives Program (EQIP) and EPA 319 funding for landowners to complete conservation practices (i.e. terraces, grass waterways, small basins, buffer strips, and wildlife habitat). These systems have proven not only to bring efficient results, but they are also readily accepted by producers in the watershed. Completion of conservation practices in the watershed is readily pursued by landowners on a voluntary basis. The watersheds above Sites 26 and 27 have been designated by the LPNNRD as special priority areas to receive targeted landowner assistance funding to help accomplish conservation practices to protect the proposed structures. LPNNRD's requirement is to achieve a minimum of seventy-five percent of land considered treated with soil conservation practices above Sites 26 and 27. This benefits producers on agricultural land by conserving their land and decreasing damages caused by soil erosion.

Water Quality

The water quality and aquatic habitat benefits of this project are substantial. Pollution from agricultural non-point sources is currently a concern within the Wahoo Creek Watershed. Sediment is a major contributor to these non-point sources. Sites 26 and 27 have a sediment storage capacity of 238 acre-feet and 222 acre-feet respectively over the 50-year life expectancy. Per the *Plan/EIS*, the anticipated effects on water quality include decreased stream sediment concentrations, less sedimentation in aquatic habitats, decreased concentrations of phosphorus and certain pesticides in receiving waters, decreased organic loading, and decreased turbidity.

Wildlife Habitat

The reservoirs at Sites 26 and 27 will create diverse deep and shallow water habitats for a variety of aquatic organisms and birds. The reservoirs will also impact water quality in a positive way by further reducing sediment, nutrient, and bacteria transport downstream. In addition, downstream habitat is improved and protected. As the watershed develops, land is covered with impervious surfaces such as roads, parking lots, roofs, driveways and sidewalks that prevent rainfall from infiltrating into the ground. The reservoirs cause a decrease in stormwater runoff flow rate, volume and velocity, which decreases erosion and sediment deposition. Altering the magnitude, frequency and duration of stormwater runoff and sediment loads to streams reduces impacts to water quality and loss of aquatic life and habitat through a variety of geomorphic mechanisms. These mechanisms include less changes in channel bed material, decreased suspended sediment loads, gains of riparian habitat due to decreases in streambank erosion and decreases in the variability of flow and sediment transport characteristics relative to aquatic life cycles.

16. Federal Mandate Bonus. If you believe that your project is designed to meet the requirements of a federal mandate which furthers the goals of the WSF, then:

- Describe the federal mandate.
- Provide documentary evidence of the federal mandate.

- Describe how the project meets the requirements of the federal mandate.
- Describe the relationship between the federal mandate and how the project furthers the goals of water sustainability.

Section 303(d) of the Environmental Protection Agency's Clean Water Act is required to maintain the integrity of the Nation's waters, and requires states to establish a list of impaired waters that do not meet water quality standards. Once on the 303(d) list of impaired waters, it is required that a Total Maximum Daily Load (TMDL) report is developed to set goals and pollutant load reductions required for the water body to meet water quality standards.

The LPNNRD has a responsibility to meet Total Maximum Daily Loads (TMDLs) in the Wahoo Creek Watershed for bacteria in the streams. These reservoirs trap pollutants by holding runoff and releasing at reduced rates, which allows settling of particles. The reservoirs have a permanent pool of water that fluctuates in response to precipitation and runoff from the contributing areas. Maintaining a pool reduces re-suspension and assists in keeping deposited sediments at the bottom of the holding area. Natural attenuation of pollutants occurs through breakdown of contaminants by soil microorganisms or other biological processes, especially nutrients and bacteria. The surface area of the reservoir also allows UV contact that also help reduce bacteria counts.

"Water Sustainability" is defined in Nebraska Title 261 as current water use that promotes healthy watersheds, improves water quality, and protects the ability of future generations to meet their needs. As has been extensively studied in the *Plan/EIS* (LPNNRD 1998), this project provides improvements to the watershed, improves water quality, and protects the ability of future generations to meet their needs.

Section D.

PROJECT DESCRIPTION

1. Overview

In 1,000 characters or less, provide a brief description of your project including the nature and purpose of the project and objectives of the project.

The LPNNRD is proposing construction of two regional detention basins within the Wahoo Creek Watershed that were identified in the *Plan/EIS* (LPNNRD 1998) as shown in Figure 1 in Appendix A. Sites 26 and 27 were identified in the *Plan/EIS* (LPNNRD 1998) to provide a reduction in flood damages, reduce the threat of loss of life, reduce sedimentation, erosion, and scour, and to improve wildlife and stream habitat quality within the watershed. This was developed to address a long history of flooding within the watershed, which consists of approximately 430 square miles in Saunders County, NE. The *Plan/EIS* (LPNNRD 1998) includes sixteen (16) storm water detention basins and one multi-purpose dam and provides detailed information on the alternatives studied and their feasibility. Sites 26 and 27 will attenuate flood flows and help to restore more natural and steadier base flows to the receiving downstream channels. This project will also provide extensive benefits in the form of reduced erosion, reduced sedimentation, enhanced fish habitat, wetland and upland wildlife habitat, and enhanced stream and water quality.

2. Project Tasks and Timeline

Identify what activities will be conducted by the project. For multiyear projects please list what activities are to be completed each year.

The tasks for each site have been broken down into the following:

Planning, Engineering, and Permitting

Includes completing the Supplemental Plan/EA. Also includes all of the data collection, testing, modeling/analysis, design, engineering, coordination and permitting of the dam and all associated features. Site 26 has roadway design/considerations included as part of the project. Site 27 has pipeline infrastructure considerations. Also included are professional services required to perform construction observation.

Legal Services

Included are legal services required to facilitate land purchase.

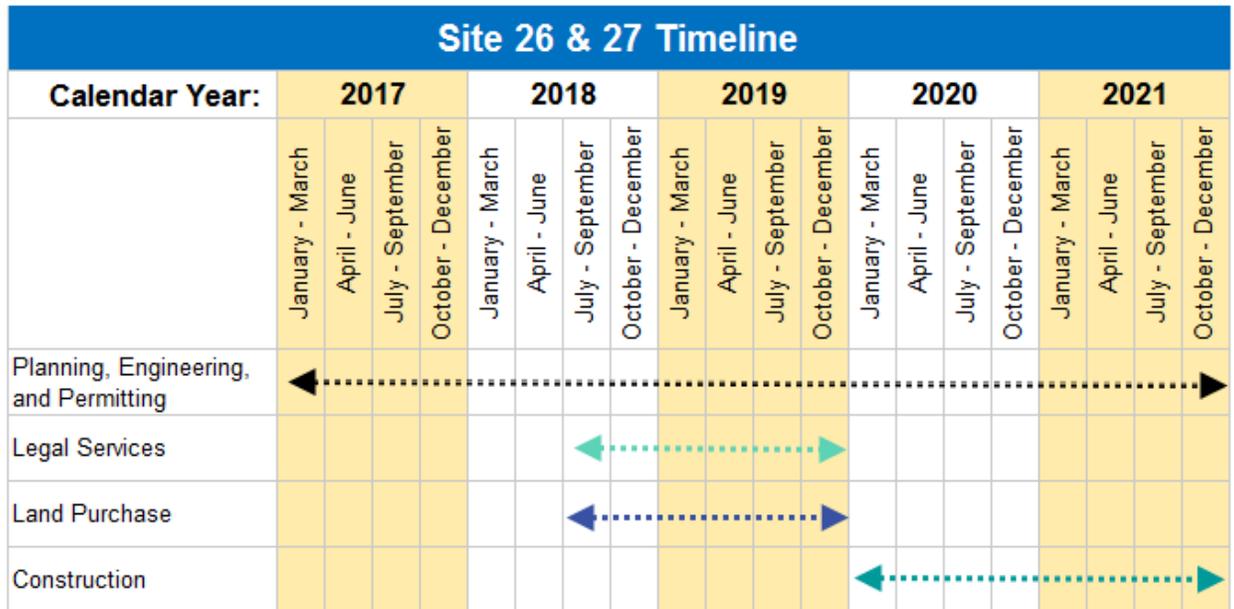
Land Purchase

Includes performing appraisals and negotiations with land owners, and obtaining the property required for the project.

Construction

Includes construction of the dam and all associated features.

Below is the timeline associated with these tasks.



3. Partnerships

Identify the roles and responsibilities of agencies and groups involved in the proposed project regardless of whether each is an additional funding source. List any other sources of funding that have been approached for project support and that have officially turned you down. Attach the rejection letter.

Saunders County – Saunders County will have an important role in the project partnership regarding road/bridge coordination, public participation, and downstream land rights and easements, but the details are yet to be determined.

Natural Resources Conservation Service (NRCS) – NRCS is a funding partner through the Regional Conservation Partnership Program and is the federal entity responsible for NEPA compliance with the Supplemental Plan/EA. NRCS will also provide technical assistance throughout the project.

Nebraska Game and Parks Commission (NGPC) – This partnership will be established to ensure fisheries enhancement.

4. Other Sources of Funding

Identify the costs of the entire project, what costs each other source of funding will be applied to, and whether each of these other sources of funding is confirmed. If not, please identify those entities and list the date when confirmation is expected. Explain how you will implement the project if these sources are not obtained.

A complete summary of the capital costs detailed out for the project during the economic analysis is provided in the following table. Federal funding through the Regional Conservation Partnership Program will go towards this project, which is summarized in the table in Appendix A. Local project partners, such as Saunders County, will also be sought after for financial contributions.

Table 11. Capital Cost Summary Table

| Service | Site 26 | Site 27 | Total |
|---------------------------------------|--------------------|--------------------|--------------------|
| Planning, Engineering, and Permitting | \$344,015 | \$344,015 | \$688,030 |
| Legal | \$7,500 | \$7,500 | \$15,000 |
| Land Acquisition | \$705,000 | \$652,500 | \$1,357,500 |
| Construction | \$1,827,300 | \$1,394,160 | \$3,221,460 |
| Total | \$2,883,815 | \$2,398,175 | \$5,281,990 |

NRCS Regional Conservation Partnership Program (RCPP) – An NRCS RCPP Application was accepted and the project will be awarded \$1,500,000. The official Agreement between NRCS and LPNNRD is in the final stages of completion. A draft Agreement can be found in Appendix I.

5. Support/Opposition

Discuss both support and opposition to the project, including the group or interest each represents.

Saunders County has been an avid supporter of this project. They have been an active participant in the preliminary planning process of Sites 26 and 27 and stand prepared to discuss financial participation during the final design process.

Appendix A Cost Breakdown

Appendix A

Appendix B

Appendix C

Appendix D

Appendix E

Appendix F

Appendix G

Appendix H

Appendix I

Appendix J

Table A.1 - Project Cost and Funding Breakdown

| | Total Costs | Federal | Remaining Costs (Net Total Local Project Cost) | Costs Prior to 7/31/2017 ¹ | Costs Between 8/1/2017 and 7/1/2018 ² | WSF Grant Request | Total Local Cost Share (LPNDR) |
|--|--------------------|---------------------|--|--|--|----------------------|--------------------------------------|
| | | NRCS RCPP PL-566 | | | | | |
| Site 26 | | | | | | | |
| Engineering, Planning, and Permitting | \$344,015 | \$63,750 | \$280,265 | \$11,691 | \$44,824 | \$168,159 | \$112,106 |
| Legal Services | \$7,500 | | \$7,500 | | | \$4,500 | \$3,000 |
| Land Rights | \$705,000 | | \$705,000 | | | \$423,000 | \$282,000 |
| Capital Improvement Costs (Dam and Spillway) | \$1,827,300 | \$686,250 | \$1,141,050 | | | \$684,630 | \$456,420 |
| Site 27 | | | | | | | |
| Engineering, Planning, and Permitting | \$344,015 | \$63,750 | \$280,265 | \$11,691 | \$44,824 | \$168,159 | \$112,106 |
| Legal Services | \$7,500 | | \$7,500 | | | \$4,500 | \$3,000 |
| Land Rights | \$652,500 | | \$652,500 | | | \$391,500 | \$261,000 |
| Capital Improvement Costs (Dam and Spillway) | \$1,394,160 | \$686,250 | \$707,910 | | | \$424,746 | \$283,164 |
| Totals | \$5,281,990 | \$1,500,000 | \$3,781,990 | \$23,382 | \$89,648 | \$2,269,194 | \$1,512,796 |

¹See Appendix B - Previous Expenses

²See Table 1a (Section A, Question 6 of Application) for itemized estimate of expenses

Appendix B

Previous Expenses

Appendix B

Appendix C

Appendix D

Appendix E

Appendix F

Appendix G

Appendix H

Appendix I

Appendix J

Table B.1 - Previous Expenses Invoice Number 022-004 Itemized Statement
Invoice Date: 05/18/2017

| Supplemental Watershed Plan / EA | Estimate of Expenses |
|---|----------------------|
| Project Management | |
| Coordination Meetings and Project Scoping | \$845 |
| Public Meetings | |
| Monthly Invoicing and Project/Schedule Updates | \$95 |
| Project Management Task Total | \$940 |
| Supplemental Plan/EA Development | |
| Develop, Write, and Summarize Plan | \$2,250 |
| Maintain Administrative Record | \$250 |
| Develop and Describe Purpose and Need | |
| Formulate, Describe, and Compare Alternatives | |
| Collect and Analyze Social/Demographic Data | \$325 |
| Collect and Analyze data on Historic and Cultural Resources/Properties | |
| Identify Wetlands (Includes Wetland Delineation) and other Water Bodies | |
| Collect Soils Data | |
| Identify and Analyze Soil Erosion | |
| Collect and Analyze data on Floodplains | |
| Collect and Analyze data on Critical Areas | |
| Identify Land Use and Crop Inventory Data | |
| Collect and Analyze data on T&E Species and Migratory Birds | |
| Collect and Analyze Consumptive Use Data | |
| Identify and Analyze Effects on Public Health and Safety | |
| Identify Effects to Homes/Businesses/Agricultural Operations | |
| Analyze and Describe Direct, Indirect, and Cumulative Impacts | |
| Research, List, and Describe required Federal, State, and Local Permits | |
| Identify Relationship and Possible Conflicts to Other Plans, Policies, and Controls | |
| List and Discuss Interagency and Public Involvement | |
| Risk and Uncertainty Analysis | |
| Develop and Describe Preferred Alternative, including structural details | \$3,800 |
| Develop and Discuss Mitigation Features | |
| Hydrologic Investigation | \$5,800 |
| Collection of Economic Data, Economic Investigation and Discussion | \$4,250 |
| Installation and Financing Discussion | |
| Operations, Maintenance, and Replacement Discussion | |
| Development of Required Project Maps | \$1,316 |
| Supplemental Plan/EA Development Task Total | \$17,991 |
| Agency Coordination | |
| Agency Coordination | \$4,451 |
| Agency Coordination Task Total | \$4,451 |
| Total Expenses | \$23,382 |



FYRA Engineering, LLC
 12702 Westport Parkway, Suite 300
 Omaha, NE 68138
 Phone: 402.502.7131
 Fax: 402.932.6940

INVOICE FOR SERVICES

Lower Platte North NRD
Mr. Tom Mountford
511 Commercial Park Road
Wahoo, NE 68056

DATE: 18 May 2017
PROJECT NO.: 022-16-01
PERIOD COVERED: Thru 12 May 2017
INVOICE NO.: 022-004
FED ID: 45-5611118

Project Name: Wahoo Creek Watershed Plan/EA & WSF Application
Contract Amount: \$135,790.00
Contract Date: 3 March 2017

Task 1-Project Management

| Description | Employee | Billing Rate | Hours | Current Due |
|----------------------------------|----------------|--------------|---------|------------------|
| Principal | Sotak, Mike | \$ 190.00 | 1.00 \$ | 190.00 |
| Engineer | Kaufman, Janel | \$ 125.00 | 6.00 \$ | 750.00 |
| Task 1-Project Management | | | | \$ 940.00 |

Task 2-Supplemental Plan/EA Development

| Description | Employee | Billing Rate | Hours | Current Due |
|--|----------------|--------------|----------|---------------------|
| Principal | Sotak, Mike | \$ 190.00 | 32.25 \$ | 6,127.50 |
| Engineer | Kaufman, Janel | \$ 125.00 | 94.50 \$ | 11,812.50 |
| Expenses | | \$ - | - \$ | 50.76 |
| Task 2-Supplemental Plan/EA Development | | | | \$ 17,990.76 |

Task 3-Agency Coordination

| Description | Employee | Billing Rate | Hours | Current Due |
|-----------------------------------|-----------------|--------------|----------|--------------------|
| Principal | Sotak, Mike | \$ 190.00 | 9.00 \$ | 1,710.00 |
| Engineer | Gregalunas, Bob | \$ 135.00 | 2.25 \$ | 303.75 |
| Engineer | Kaufman, Janel | \$ 125.00 | 19.50 \$ | 2,437.50 |
| Task 3-Agency Coordination | | | | \$ 4,451.25 |

Task 4-WSF Application

| Description | Employee | Billing Rate | Hours | Current Due |
|-------------------------------|----------------|--------------|---------|------------------|
| Engineer | Kaufman, Janel | \$ 125.00 | 2.00 \$ | 250.00 |
| Task 4-WSF Application | | | | \$ 250.00 |

TOTAL DUE CURRENT INVOICE: \$ 23,632.01

CONTRACT AMOUNT: \$ 135,790.00
PREVIOUS BILLING: \$ -
CURRENT INVOICE: \$ 23,632.01
TOTAL INV'D. TO DATE: \$ 23,632.01
CONTRACT REMAINING: \$ 112,157.99

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



Check Image

Remittance Info: Multiple Inv. (details on stub)

Lower Platte North Natural Resources
Box 126
Wahoo, NE 68066
402-443-4675

SILICON VALLEY BANK
Verify: 888-237-9615
90-4039/1211

0018321726

6/15/2017

PAY TO THE ORDER OF FYRA Engineering, LLC

\$ 38622.65

Thirty-Eight Thousand Six Hundred Twenty-Two and 65/100

DOLLARS

0018910 01 MB 0.420 **AUTO T8 0 5117 68138-401275 -C01-P18928-1

VOID AFTER 90 DAYS



FYRA Engineering, LLC
12702 WESTPORT PKWY, STE 300
OMAHA, NE 68138-4012

⑈0018321726⑈ ⑆12140399⑆ 3301587849⑈

ENDORSE HERE

X
PAY TO THE ORDER OF
FIRST NATIONAL BANK OF OMAHA
FOR DEPOSIT ONLY
FYRA ENGINEERING, LLC
110807194

DO NOT WRITE, STAMP OR SIGN BELOW THIS LINE
RESERVED FOR FINANCIAL INSTITUTION USE

THE SECURITY FEATURES ON THIS DOCUMENT ARE LOCATED THROUGHOUT THE DOCUMENT. PRINTED SECURITY FEATURES MAY INDICATE ALTERATION.

⑈110807194⑈ ⑆12140399⑆ 3301587849⑈

FIRST NATIONAL BANK OF OMAHA
01 3861 20170621 0157 0241
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Appendix C Location Map

Appendix C

Appendix D

Appendix E

Appendix F

Appendix G

Appendix H

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Appendix J

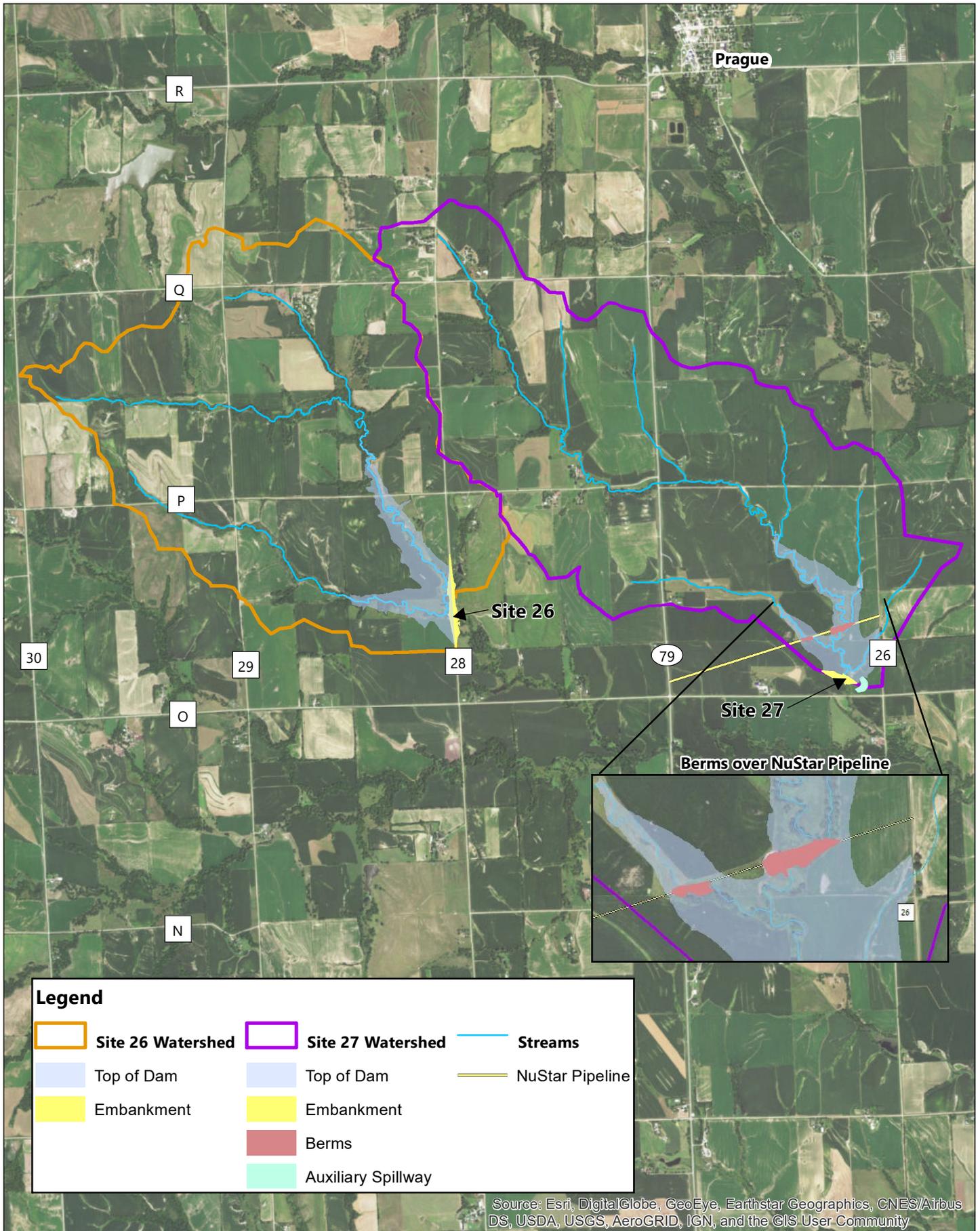
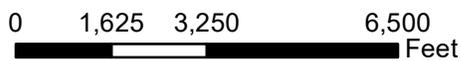


Figure 1 - Project Location Map
 WSF Application - July 2017
 Lower Platte North NRD



Appendix D

Land Rights and Easements

Appendix D

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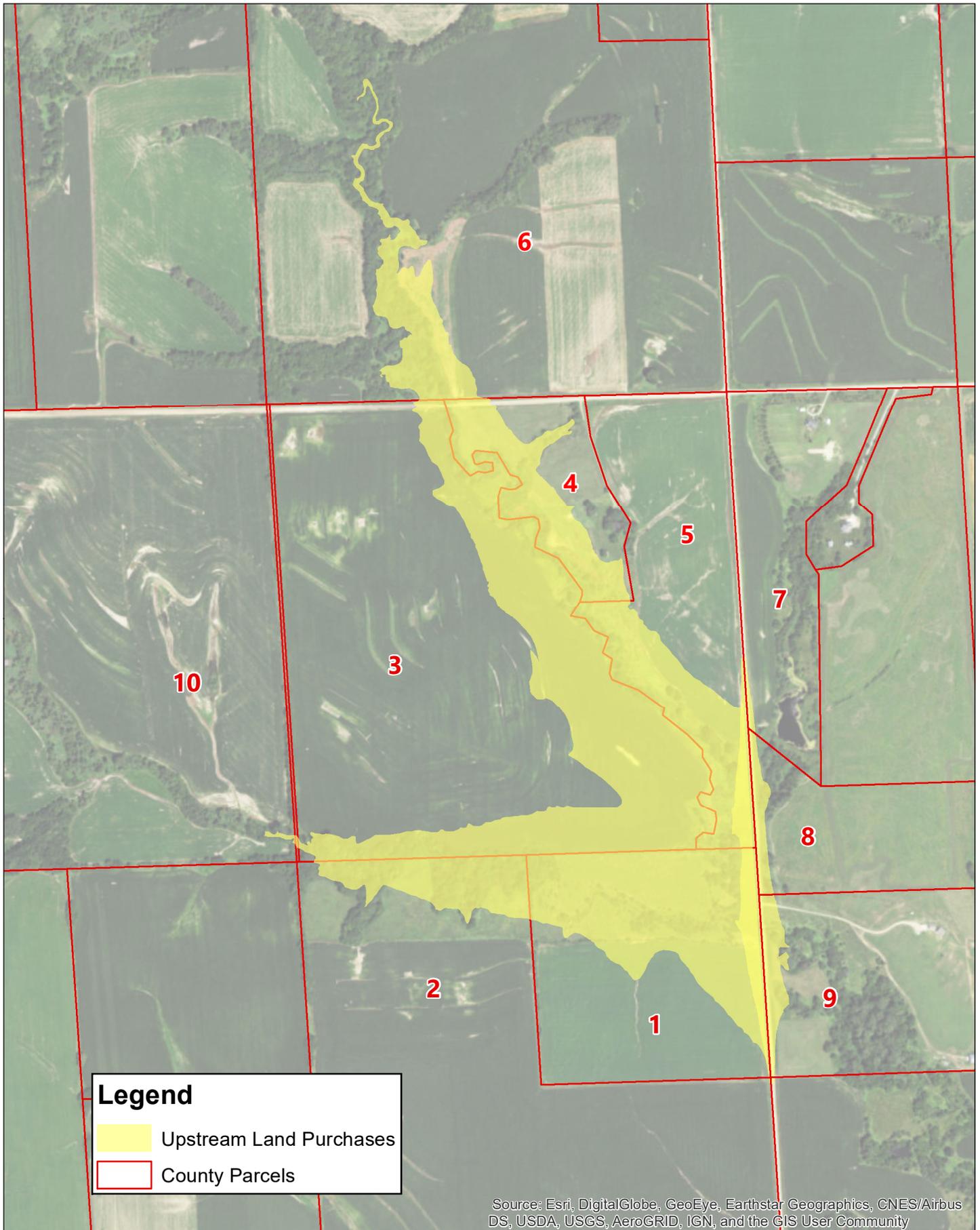


Figure 2. Site 26 Upstream Land Rights

WSF Application - July 2017
 Lower Platte North NRD



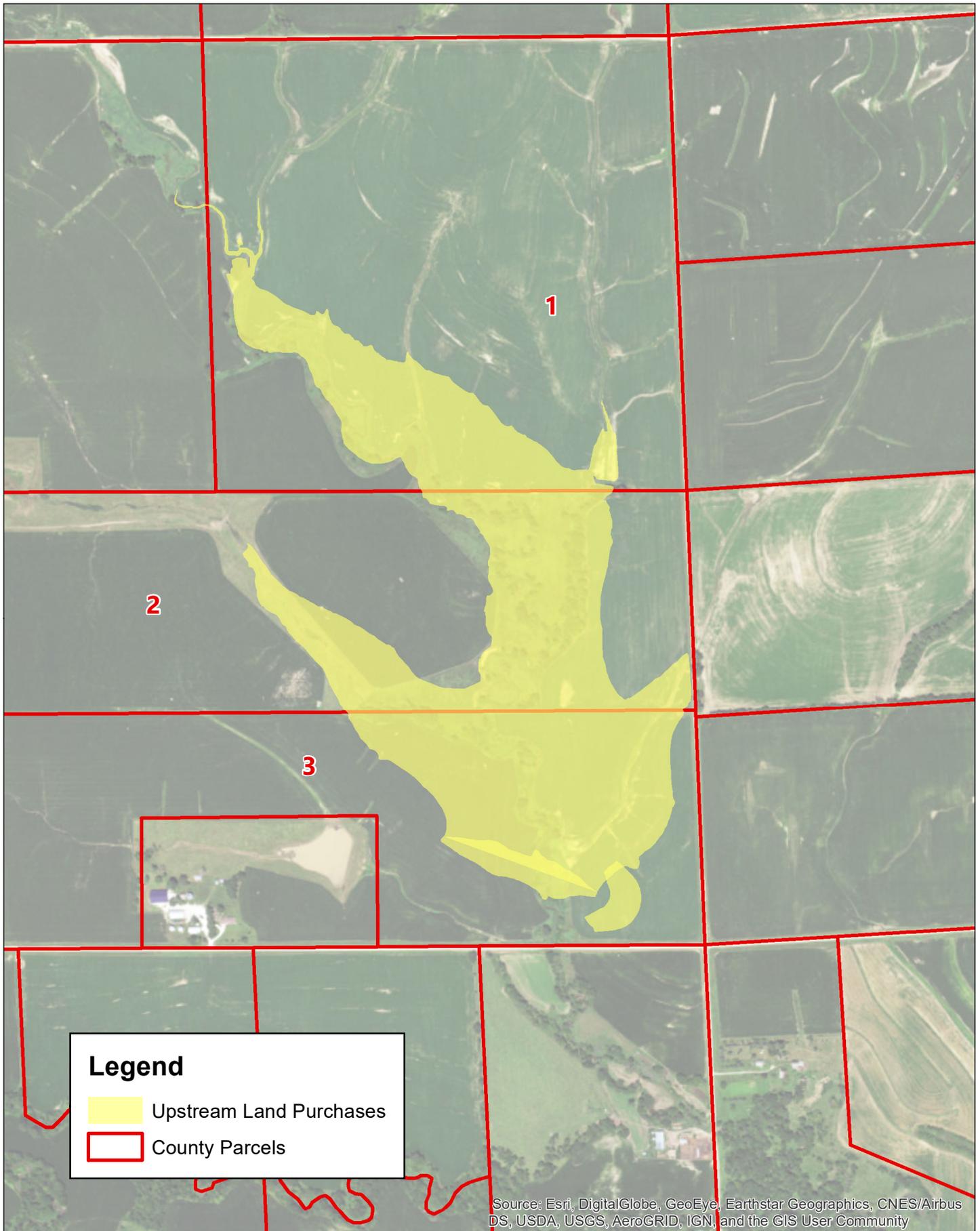
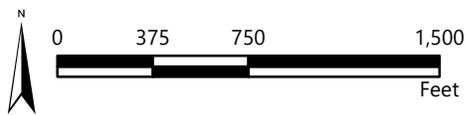


Figure 3. Site 27 Upstream Land Rights

WSF Application - July 2017
 Lower Platte North NRD



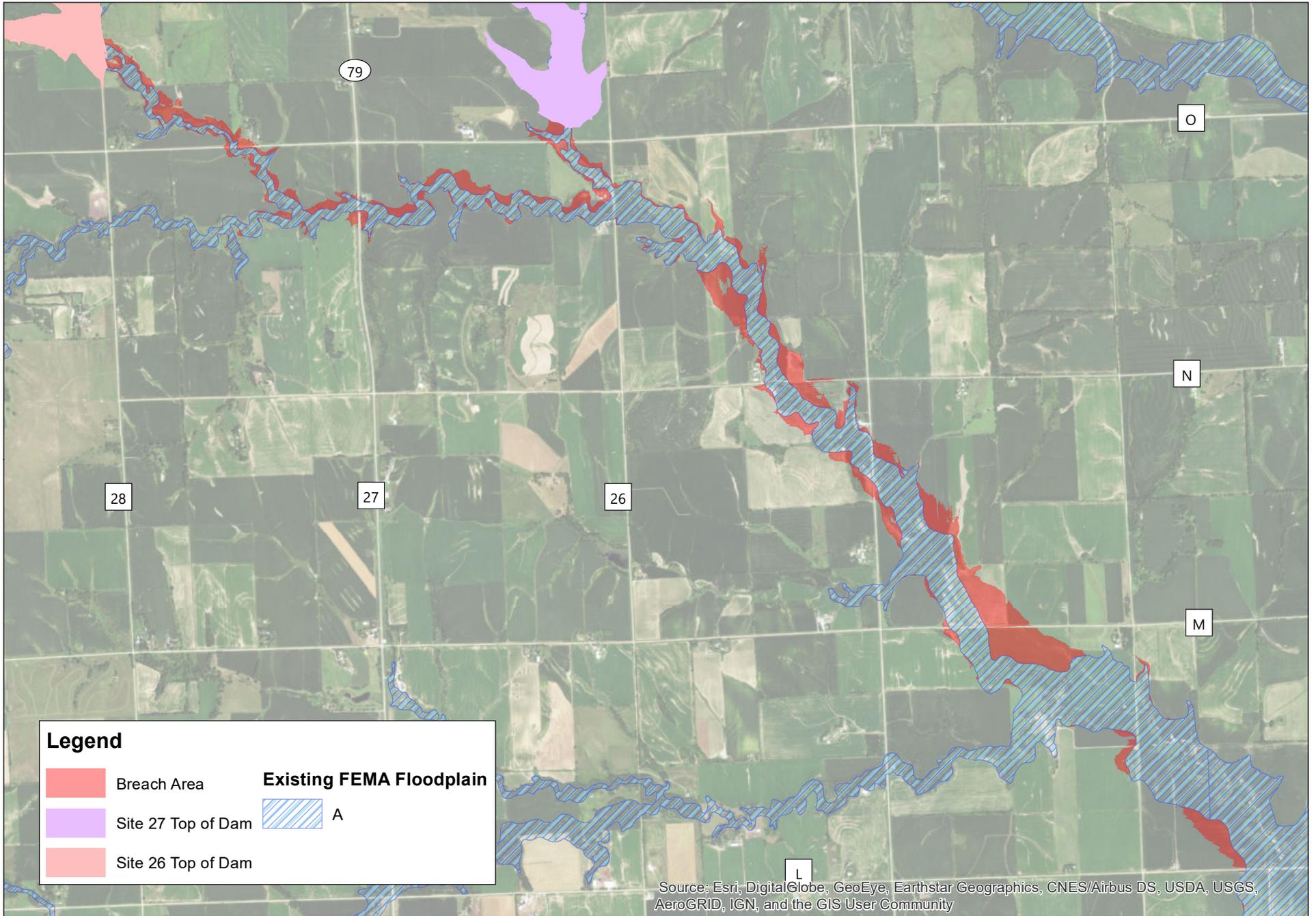
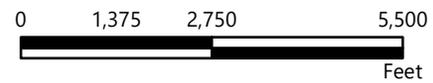


Figure 4. FEMA Flood Zone and Dam Breach Map

Wahoo Creek Watershed - Sites 26 & 27
 WSF Application - July 2017
 Lower Platte North NRD



Appendix E

Opinion of Costs

Appendix E

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Table E.1 - Opinion of Construction Costs - Site 26

| Item | Quantity | Unit | Unit Cost | Cost |
|-----------------------------------|----------|------|-----------------|--------------------|
| Mobilization | 1 | LS | \$134,400.00 | \$134,400 |
| Tree Clearing | 1 | LS | \$15,000.00 | \$15,000 |
| Instrumentation | 1 | LS | \$15,000.00 | \$15,000 |
| Handling of Water | 1 | LS | \$5,000.00 | \$5,000 |
| SWPPP | 1 | LS | \$10,000.00 | \$10,000 |
| Dam Embankment and Driveway Fill | 247,000 | CY | \$2.50 | \$617,500 |
| Existing Pipe Removal | 70 | LF | \$30.00 | \$2,100 |
| Common Excavation | 28,400 | CY | \$3.75 | \$106,500 |
| Principal Spillway Pipe- 48" RCCP | 200 | FT | \$300.00 | \$60,000 |
| Pipe under driveway - 48" RCCP | 45 | FT | \$300.00 | \$13,500 |
| Drawdown Pipe - 24" | 35 | FT | \$150.00 | \$5,250 |
| Valve | 1 | EA | \$9,500.00 | \$9,500 |
| Aggregate Fill | 3,600 | TN | \$35.00 | \$126,000 |
| Rock Riprap | 3,600 | TN | \$50.00 | \$180,000 |
| Seeding | 62 | AC | \$1,000.00 | \$62,000 |
| Fence | 21,200 | FT | \$5.00 | \$106,000 |
| Structural Concrete | 80 | CY | \$500.00 | \$40,000 |
| Non-Structural Concrete | 60 | CY | \$250.00 | \$15,000 |
| | | | Subtotal | \$1,522,750 |
| | | | 20% Contingency | \$304,550 |
| | | | TOTAL | \$1,827,300 |

Table E.2 - Land Rights Costs - Site 26

| Item | Area | Unit | Unit Cost | Cost |
|----------------------------|-------------|------|-----------|------------------|
| Dam, Spillway and TOD Area | 94.0 | AC | \$7,500 | \$705,000 |
| TOTAL | 94.0 | | | \$705,000 |

Table E.3 - Opinion of Construction Costs - Site 27

| Item | Quantity | Unit | Unit Cost | Cost |
|-----------------------------------|----------|------|-----------------|--------------------|
| Mobilization | 1 | LS | \$100,700 | \$100,700 |
| Tree Clearing | 1 | LS | \$15,000.00 | \$15,000 |
| Instrumentation | 1 | LS | \$15,000.00 | \$15,000 |
| Handling of Water | 1 | LS | \$15,000.00 | \$15,000 |
| SWPPP | 1 | LS | \$10,000.00 | \$10,000 |
| Dam Embankment | 142,600 | CY | \$2.50 | \$356,500 |
| Principal Spillway Pipe- 48" RCCP | 295 | FT | \$300.00 | \$88,500 |
| Berm Pipes - 48" RCCP | 232 | FT | \$300.00 | \$69,600 |
| Drawdown Pipe - 24" | 55 | FT | \$150.00 | \$8,250 |
| Valve | 1 | EA | \$9,500.00 | \$9,500 |
| Common Excavation | 15,400 | CY | \$3.75 | \$57,750 |
| Aggregate Fill | 3,000 | TN | \$35.00 | \$105,000 |
| Rock Riprap | 2,200 | TN | \$50.00 | \$110,000 |
| Seeding | 54 | AC | \$1,000.00 | \$54,000 |
| Fence | 18,400 | FT | \$5.00 | \$92,000 |
| Structural Concrete | 80 | CY | \$500.00 | \$40,000 |
| Non-Structural Concrete | 60 | CY | \$250.00 | \$15,000 |
| | | | Subtotal | \$1,161,800 |
| | | | 20% Contingency | \$232,360 |
| | | | TOTAL | \$1,394,160 |

Table E.4 - Land Rights Costs - Site 27

| Item | Area | Unit | Unit Cost | Cost |
|----------------------------|-------------|------|-----------|------------------|
| Dam, Spillway and TOD Area | 87.0 | AC | \$7,500 | \$652,500 |
| TOTAL | 87.0 | | | \$652,500 |

Appendix F

Benefit:Cost Ratio

Appendix F

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Appendix F. Benefit:Cost Ratio

The project costs have been documented in Appendix E for this project. Dam construction costs were calculated using updated hydrology, available LiDAR mapping, and sedimentation rates provided in the most recently updated *Plan/EIS* (LPNNRD 1998). Land rights costs were calculated using current values for the land areas extending to the updated top of dam design. Project benefits were calculated by computing the total storage volume provided by Sites 26 and 27 and dividing that by the total storage volume in the system of seventeen dams studied in the *Plan/EIS* to provide a percentage of flood reduction benefits attributable to these two sites. The total benefits for the project (attributable to flood reduction benefits only) were computed by indexing the 1998 benefits to present day values using the Consumer Price Index (CPI) as used by NRCS. A conversation with Kent Zimmerman indicated that this was an acceptable method to include with a WSF application.

Even though not required by WSF requirements, the project exhibits a strong positive benefit:cost ratio for a 50-year project life. This project does include construction of materials that would qualify for a 100-year project life (LCCP principal spillway, reinforced concrete riser, etc.), but to date, land rights have only been laid out to the 50-year sedimentation rate, as originally provided in the *Plan/EIS*. With local encouragement from NRCS to looking at a 100-year project life for the remaining eight dams that will apply for PL-566 funds, the LPNNRD will be working with Saunders County and landowners to see if there is interest in 100-year project life sediment pools. This would further strengthen the economics of the project. This has not been extensively discussed with landowners and project stakeholders, and therefore, the economics in this application reference a 50-year project design life.

As shown in the table below, the benefit:cost ratio for this project is 1.42:1. Past conversation with Kent Zimmerman and Kris Reed of NDNR have indicated that no discount rate shall be considered for WSF (0% IRR), and as such, this benefit:cost ratio considers total lifetime benefits against total lifetime costs.

Table F.1 - Average Annual Equivalents of Costs and Benefits of Site 26 and Site 27

| YEAR | PROJECT YEAR | ENGINEERING, PLANNING, AND PERMITTING | LAND RIGHTS AND CONSTRUCTION | OM & R | LEGAL FEES | GROSS COSTS | TOTAL VALUE OF PROJECT (GROSS BENEFITS) | INCREMENTAL BENEFITS |
|---------------|--------------|---------------------------------------|------------------------------|---------------------|------------------|---------------------|---|----------------------|
| 2017 | 0 | \$ 113,030 | \$ - | \$ - | \$ - | \$ 113,030 | \$ - | \$ (113,030) |
| 2018 | 1 | \$ 200,000 | \$ 678,750 | \$ - | \$ 7,500 | \$ 886,250 | \$ - | \$ (886,250) |
| 2019 | 2 | \$ 200,000 | \$ 678,750 | \$ - | \$ 7,500 | \$ 886,250 | \$ - | \$ (886,250) |
| 2020 | 3 | \$ 87,500 | \$ 1,610,730 | \$ - | \$ - | \$ 1,698,230 | \$ - | \$ (1,698,230) |
| 2021 | 4 | \$ 87,500 | \$ 1,610,730 | \$ 24,161 | \$ - | \$ 1,722,391 | \$ 194,321 | \$ (1,528,070) |
| 2022 | 5 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2023 | 6 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2024 | 7 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2025 | 8 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2026 | 9 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2027 | 10 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2028 | 11 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2029 | 12 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2030 | 13 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2031 | 14 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2032 | 15 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2033 | 16 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2034 | 17 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2035 | 18 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2036 | 19 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2037 | 20 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2038 | 21 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2039 | 22 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2040 | 23 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2041 | 24 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2042 | 25 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2043 | 26 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2044 | 27 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2045 | 28 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2046 | 29 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2047 | 30 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2048 | 31 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2049 | 32 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2050 | 33 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2051 | 34 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2052 | 35 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2053 | 36 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2054 | 37 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2055 | 38 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2056 | 39 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2057 | 40 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2058 | 41 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2059 | 42 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2060 | 43 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2061 | 44 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2062 | 45 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2063 | 46 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2064 | 47 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2065 | 48 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2066 | 49 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| 2067 | 50 | \$ - | \$ - | \$ 24,161 | \$ - | \$ 24,161 | \$ 194,321 | \$ 170,160 |
| TOTALS | | \$ 688,030 | \$ 4,578,960 | \$ 1,135,565 | \$ 15,000 | \$ 6,417,555 | \$ 9,133,087 | \$ 2,715,532 |

Benefit:Cost Ratio: 1.42:1

Table F.2 - Cash Flow Stream for Sites 26 and 27

| Project Year(s) | Calendar Year(s) | Cash Flow Categories | Costs | Benefits | Details |
|-----------------|------------------|---------------------------------------|--------------------|--------------------|---|
| 0 | 2017 | Planning, Engineering, and Permitting | \$113,030 | | Complete Supplemental Plan/EA |
| | | Legal Services | \$0 | | |
| | | Land Rights | \$0 | | |
| | | Capital Improvement Costs | \$0 | | |
| | | OMR&R | \$0 | | |
| | | Total Costs: | \$113,030 | | |
| | | Flood Damage Reduction Benefits | | \$0 | |
| | | Total Benefits: | | \$0 | |
| 1 | 2018 | Planning, Engineering, and Permitting | \$200,000 | | Preliminary Design for Sites 26 & 27 |
| | | Legal Services | \$7,500 | | Land Rights Assistance - Sites 26 & 27 |
| | | Land Rights | \$678,750 | | |
| | | Capital Improvement Costs | \$0 | | |
| | | OMR&R | \$0 | | |
| | | Total Costs: | \$886,250 | | |
| | | Flood Damage Reduction Benefits | | \$0 | |
| | | Total Benefits: | | \$0 | |
| 2 | 2019 | Planning, Engineering, and Permitting | \$200,000 | | Final design/permitting for Sites 26 & 27 |
| | | Legal Services | \$7,500 | | Land Rights Assistance - Sites 26 & 27 |
| | | Land Rights | \$678,750 | | |
| | | Capital Improvement Costs | \$0 | | |
| | | OMR&R | \$0 | | |
| | | Total Costs: | \$886,250 | | |
| | | Flood Damage Reduction Benefits | | \$0 | |
| | | Total Benefits: | | \$0 | |
| 3 | 2020 | Planning, Engineering, and Permitting | \$87,500 | | Construction observation |
| | | Legal Services | \$0 | | |
| | | Land Rights | \$0 | | |
| | | Capital Improvement Costs | \$1,610,730 | | Construction of dams |
| | | OMR&R | \$0 | | Construction of dams @0.75% |
| | | Total Costs: | \$1,698,230 | | |
| | | Flood Damage Reduction Benefits | | \$0 | |
| | | Total Benefits: | | \$0 | |
| 3 | 2020 | Planning, Engineering, and Permitting | \$87,500 | | Construction observation |
| | | Legal Services | \$0 | | |
| | | Land Rights | \$0 | | |
| | | Capital Improvement Costs | \$1,610,730 | | Construction of dams |
| | | OMR&R | \$24,161 | | Construction of dams @0.75% |
| | | Total Costs: | \$1,722,391 | | |
| | | Flood Damage Reduction Benefits | | \$194,321 | Site 26 & Site 27 |
| | | Total Benefits: | | \$194,321 | |
| 5 - 50 | 2022 - 2067 | Planning, Engineering, and Permitting | \$0 | | |
| | | Legal Services | \$0 | | |
| | | Land Rights | \$0 | | |
| | | Capital Improvement Costs | \$0 | | |
| | | OMR&R | \$1,111,403.70 | | Construction of dams @0.75% per year |
| | | Total Costs: | \$1,111,404 | | |
| | | Flood Damage Reduction Benefits | | \$8,938,766 | Site 26 & Site 27 |
| | | Total Benefits: | | \$8,938,766 | |

Appendix G

Lower Platte North NRD - Draft IMP

Goals

Draft Lower Platte North Natural Resources District Voluntary Integrated Management Plan Goals*

Goal 1: Develop and maintain a District-wide water supply inventory

Objective 1.1: Conduct data collection and analyses of current and potential water supplies using best available information, data, science, and considering future technological advances.

Objective 1.2: Determine the District's inflows and outflows, both surface water and groundwater and changes in storage

Goal 2: Develop and maintain a District-wide water demand inventory

Objective 2.1: Evaluate current and future water demands that may be influenced by municipal, agricultural, industrial, hydropower, and instream flow requirements

Objective 2.2: Evaluate current water demands and estimate future impacts concerning surface or groundwater quality

Goal 3: Develop and implement water use policies and practices with the purpose of achieving and sustaining a balance between water uses and supplies

Objective 3.1: Update policies, practices, and programs to maintain and improve water supply and water quality as it affects supply

Objective 3.2: Develop programs and guidelines to conserve water within municipalities, the agricultural sector, and industrial applications

Goal 4: Communicate to the public that Nebraska has a great supply of water, and we need to continue to manage it well

Objective 4.1: Maintain existing public outreach activities and programs

Objective 4.2: Incorporate new data, technologies, and programs to enhance public outreach

Goal 5: Coordinate with Lower Platte River Basin NRDs, and appropriate groups and agencies to develop a water management plan for the Lower Platte River Basin that maintains a balance between current and future water supplies and demands

Objective 5.1: Continue active participation in Lower Platte River Basin Coalition water management planning activities

Objective 5.2: Coordinate to expand conjunctive management opportunities to mitigate new uses

Objective 5.3: Coordinate with Eastern Nebraska Water Resources Assessment (ENWRA) to increase knowledge about existing groundwater supplies and connection to surface water

Objective 5.4: Strengthen coordination with other agencies on efforts to sustain or increase Lower Platte River flows

**The IMP is in a working phase as of July 2017*

Appendix H

Letter of Support from Saunders County

SAUNDERS COUNTY HIGHWAY
SUPERINTENDENT

STEVE MIKA

STEVE ZECH, ASST. HIGHWAY SUPT
426 North Broadway
Wahoo, Nebraska 68066-1964
Phone (402) 443 - 8124 Fax (402) 986-7057

September 30, 2016

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

RE: Support for construction of Wahoo Creek structures 26 and 27

Dear LPNNRD Board of Directors,

Saunders County is in full support of Lower Platte North NRD's pursuit of federal assistance through the Regional Conservation Partnership Program (RCPP) for construction of floodwater structure sites 26 and 27. Completion of these multi-benefit projects will be a major step toward providing much needed floodwater damage reduction and environmental enhancement in the lower portion of the Wahoo Creek Watershed.

We appreciate our long history of working together and we look forward to working with you on future Wahoo Creek flood reduction and environmental enhancement projects.

Sincerely,



Steve Mika
Saunders County Highway Dept.

SM:ln

Appendix I

Draft RCPP Agreement

MEMORANDUM OF UNDERSTANDING

Between the

USDA Natural Resources Conservation Service (NRCS)

And

Lower Platte North Natural Resources District

Introduction:

This Memorandum of Understanding (MOU) is entered into between the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service, henceforth named "NRCS", and the Lower Platte North Natural Resources District, henceforth named LPNNRD. NRCS and LPNNRD are engaged in complementary and compatible activities related to providing financial and technical assistance to agricultural and forest producers through provisions of the Regional Conservation Partnership Program (RCPP). Partnership activities include efforts to encourage conservation of natural resources through technical and financial assistance which may be provided by both parties to the MOU.

I. Authority

This MOU is entered into in accordance with rules and statutes listed below:

Subtitle I of Title XII of the Food Security Act of 1985 as amended by section 2401 of the Agricultural Act of 2014, and 16 USC 590a(3).

II. Background

RCPP is a voluntary conservation program that establishes specific parameters for working with eligible partner entities to provide financial and technical assistance to producers and landowners of eligible land. The assistance provided through this MOU enables producers and landowners to install and maintain conservation activities to address priority natural resource concerns. The Secretary of Agriculture has delegated the authority for administration of RCPP to the Chief of NRCS who is Vice President of the Commodity Credit Corporation (CCC). LPNNRD has submitted a request for NRCS program assistance to address priority natural resource concerns in Wahoo Creek Watershed. LPNNRD is an eligible partner entity and meets statutory requirements of RCPP to carry out activities specified in this MOU and work with eligible program participants to help implement conservation activities on eligible lands as defined in this MOU.

NRCS is the lead Federal agency for conservation on private land. In carrying out this role, NRCS provides voluntary conservation planning, technical and financial assistance to farmers,

ranchers, and other landowners to address the natural resource concerns on the Nation's private and nonfederal land.

NRCS delivers RCPP assistance through the authorities and rules of the following programs, referred to throughout this partnership agreement as “covered programs”: the Environmental Quality Incentives Program (EQIP), Conservation Stewardship Program (CSP), Agricultural Conservation Easement Program (ACEP), and Healthy Forest Reserve Program (HFRP) to eligible program participants within a defined project area. If the project area identified under this partnership agreement is within a Critical Conservation Areas (CCA) designated by the Secretary of Agriculture, then RCPP assistance within this project area may also be delivered through the authorities and rules of the Watershed Protection and Flood Prevention Act, hereafter “Watershed Authorities.”

The MOU incorporates by reference the 2017 RCPP Announcement of Program Funding (APF), principally to provide definitions and program overview items not repeated herein. Where conflicts between the APF and this MOU, or this MOU and the Partner proposal, occur this MOU shall supersede the APF and the proposal.

III. Purpose

The purpose of this MOU is to establish a partnership framework for cooperation between NRCS and LPNNRD on activities that involve implementation of conservation activities on eligible lands for public and private benefits within the approved project area.

More specifically, partners agree that the principal purpose of this MOU is to address the following resource concerns in the project area:

- Excess Water
 - Runoff and Flooding
- Water Quality Degradation
 - Excessive Sediment in Surface Water
 - Nutrients in Surface Water
 - Pesticides in Surface Water
- Fish and Wildlife – Inadequate Habitat
 - Inadequate Habitat

IV. Responsibilities of Parties

A. NRCS will:

1. Provide on an annual basis, technical and financial assistance through the covered programs as available to eligible producers and landowners located within the approved project area. Note: NRCS reserves the right and authority to reduce or discontinue program benefits to

support this partner agreement based upon funds availability, changes in agency priorities, or inability of LPNNRD to deliver resources or provisions of this MOU. ACEP, EQIP, and HFRP program contracts and agreements obligated with entities or producers as a result of this partnership agreement are assured of funding for the entire length of the approved contract or agreement and not subject to provisions of this partnership agreement regarding fund availability. On CSP program contracts, NRCS agrees to provide payment annually, subject to the availability of funds.

2. Funding: NRCS funding allocated to this project is described in the “Table of Deliverables.” Amounts there are the maximum NRCS commitments. No NRCS Technical Assistance for Partner Use” (Partner TA) should be included in the MOU, as the MOU does not obligate funds for partner use.

Financial Assistance (FA) will be set aside (as “commitments”) for potential obligation via individual contracts or agreements in accordance with applicable covered program rules and any project specific RCPP adjustments of terms. “NRCS TA for NRCS use” (NRCS TA) will be set aside for NRCS use in support of this project.

3. Implement and administer the covered programs to the extent possible to address identified RCPP project natural resource concerns:

NRCS covered program application processes are conducted on an annual basis, and NRCS funding may not be available throughout the calendar year to fund new individual land owner or entity contracts. Typically new obligations are only possible for a portion of any given fiscal year, commonly after annual adjustments in covered program(s) are made and fund allocations are processed.

NRCS shall consider recommendations from LPNNRD for evaluation and ranking of program applications and expeditious obligation of approved contracts and agreements for eligible producers and landowners to facilitate timely implementation of activities within the project area.

4. Provide annual review and recommendations to LPNNRD regarding the project to ensure success and implementation of conservation activities related to program contracts and agreements.

B. LPNNRD will:

1. Complete items in the Plan of Work and the Table of Deliverables. The Plan of Work is updated from the proposal based on the negotiation phase, but is included primarily to inform approach and anticipated actions. The Table of Deliverables provides the agreement record of commitment amounts.

2. In the case of specific work projects or activities that may involve funds, services, or property, partner name and/or third party or parties will provide a “Partner Contribution” as described in the Plan of Work and the Table of Deliverables.
3. Comply with the project "Budget" which identifies other funding sources which support technical or financial resources identified in Plan of Work, and the Table of Deliverables.
4. Provide NRCS with updated estimates of the annual amount of program funding specifically needed to address identified priority natural resource concerns within the project area.
5. Provide NRCS with a list of suggested "ranking criteria" that could be used by the agency for evaluation and ranking of eligible producer program applications. The suggested criteria shall relate to the RCPP project area objectives to address priority natural resource concerns.
6. The lead partner shall provide two RCPP specific progress reports annually. The RCPP specific reporting requirements are outlined in the document entitled “Additional RCPP Reporting Requirements.”

Progress reporting periods are as follows: one covering progress during the first half of the federal fiscal year (October 1 thru March 31) is due April 30; and a second report covering the entire fiscal year (October 1 thru September 30, due October 30 of each year). Note: Even if little or no activity occurs in the first fiscal year, both “progress” and “financial reports” are due October 30 of that calendar year. The final progress report shall be due 90 days after the end of the performance period (to align with final financial reporting requirements).

7. Provide NRCS an assessment of the project’s effects and at the conclusion of the project, report to NRCS on the results of the project and the funds leveraged. Such report will also include a summary for the entire project period of the information provided in the annual reports.
8. Acknowledge NRCS cost-share assistance in any public outreach materials or events related to activities accomplished pursuant to or in direct support of this MOU and to provide draft copies of such information to the NRCS State office for review and comment before public release.

C. It is mutually agreed upon by both parties:

1. To cooperate in developing and implementing conservation plans that address priority natural resource concerns in the defined project area.
2. That the designated representative of LPNNRD and the designated representative of NRCS will cooperate to develop procedures to ensure good communication and coordination at the various levels of each organization.

3. NRCS and LPNNRD and their respective agencies and offices will manage their own activities and utilize their own resources, including the expenditure of their own funds, in pursuing the objectives of this MOU. Each party will carry out its own separate activities in a coordinated and mutually beneficial manner. Each party therefore agrees that it will assume all risk and liability to itself, its agents or employees, for any injury to person or property resulting in any manner from the conduct of its own operations, and the operations of its agency or employees under this MOU, and for any loss, cost, damage or expense resulting at any time from failure to exercise proper precautions, of itself, its own agency or its own employees, while occupying or visiting the projects under and pursuant to this MOU. The Government's liability shall be governed by the provisions of the Federal Tort Claims Act (28 U.S.C. 2671-80).
4. That nothing in this MOU shall commit either NRCS or LPNNRD to obligate or transfer any funds or financial assistance that NRCS may provide to eligible program participants. Specific work projects or activities that may involve the transfer of funds, services, or property among LPNNRD and offices of NRCS will require execution of separate agreements and be contingent upon the availability of appropriated funds or technical services. Such activities must be independently authorized by appropriate statutory authority. This MOU does not provide such authority. Negotiation, execution, and administration of each such MOU must comply with all applicable statutes and regulations.
5. That LPNNRD is responsible, without recourse to NRCS or USDA, for the settlement and satisfaction of all contractual and legal issues arising out of arrangements entered into between the LPNNRD and third parties to carry out project activities.
6. This MOU does not restrict either party from participating in similar activities with other public or private agencies, or organizations, and individuals.
7. NRCS selected this project through a competitive process, based in part on the contribution of resources that the lead partner and other agencies or organizations committed to the project. While RCPP requires a significant contribution of partner resources, there is no specific proportionate share required under RCPP. Therefore, in the event the lead partner or other agencies or organizations cannot deliver the contributions of resources outlined in the Memorandum of Understanding, NRCS may reduce or discontinue its own program benefits to support this partner agreement. Alternatively, upon timely notice of the lead partner that there may be a reduction in partner contribution to the project, NRCS may determine that NRCS would have funded the project at the time of project selection with the lower level of partner contribution because of the overall project benefits, and determine that a reduction or discontinuation of NRCS program benefits is not necessary. Throughout, NRCS and the lead partner will work diligently with other agencies and organizations to explore alternative approaches to completion of the project objectives.

8. CONFIDENTIALITY

In some instances, implementation of this MOU may require disclosure of information provided for the purpose of participating in a USDA program by an applicant or participant. The following requirements apply to such information.

- a. Activities performed under this MOU may involve access to confidential and potentially sensitive information about governmental and landowner issues. The term “confidential information” means proprietary information or data of a personal nature about an individual, or information or data submitted by or pertaining to an organization. This information must not be disclosed without the prior written consent of NRCS.
- b. The recipient and NRCS personnel will follow rules and procedures of disclosure set forth in the Privacy Act of 1974, 5 U.S.C. Section 552a, and implementing regulations and policies with respect to in a system of records NRCS maintains. The recipient’s personnel must also comply with privacy of personal information relating to natural resources conservation programs in accordance with section 1244 of Title II of the Farm Security and Rural Investment Act of 2002 (Public Law 107-171).
- c. The recipient and NRCS agree to comply with NRCS guidelines and requirements regarding the disclosure of information protected under Section 1619 of the Food, Conservation, and Energy Act of 2008 (PL 110-246), 7 U.S.C. 8791.

V. Expected Accomplishments and Deliverables

Deliverables are listed in the Plan of Work and Table of Deliverables.

Physical and management measures (activities and/or easements) implemented under covered programs with NRCS assistance shall be consistent with agency policy, unless an “Adjustment of Terms” is requested and approved. Specific activities are expected to include, but not necessarily be limited to those specific deliverable items called out in the “Table of Deliverables.”

VI. Technical and Administrative Contacts

A. NRCS State Office Technical and Administrative Contacts:

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B. LPNNRD Technical and Administrative Contacts:

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John Miyoshi
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jmiyoshi@lpnnrd.org

VII. Duration

This MOU takes effect upon the signature of NRCS and LPNNRD and shall remain in effect until June 30, 2022. This partnership agreement shall be for a period not to exceed 5 years, except that the Secretary (or appropriate designee) may extend the MOU one time for up to 12 months when an extension is necessary to meet the objectives of the program. Either NRCS or LPNNRD may terminate this MOU with a 60 day written notice to the other party. Note: Although partnership agreements are limited to a maximum of 5 years, NRCS program contracts and agreements with producers and landowners may extend beyond this period of time.

VIII. List of Documents

RCPP Partnership Agreement Specific Forms:

- ATTACHMENT A – Plan of Work
- ATTACHMENT B – Table of Deliverables
- ATTACHMENT C – Annual Reporting Requirements

IX. Signatures

FOR THE NATURAL RESOURCES CONSERVATION SERVICE

BY:

CRAIG DERICKSON

State Conservationist, Nebraska

DATE:

FOR THE LOWER PLATTE NORTH NATURAL RESOURCES DISTRICT

BY:

JOHN MIYOSHI

General Manager, Lower Platte North Natural Resources District

DATE:

ATTACHMENT A – Plan of Work

Project Name: Wahoo Creek Water Quality Sites 26 & 27

As part of this RCPP, the Lower Platte North Natural Resources District (LPNNRD) will update the Wahoo Creek Watershed Plan and Environmental Impact Statement and design, permit, and construct two floodwater retention structures (Site 26 and Site 27) identified in the original NRCS watershed plan. Site 26 and Site 27 will provide flood risk reduction, enhanced water quality, and improved fish and wildlife habitat. Construction of these projects assist individual producers by allowing for fewer regional projects rather than numerous projects throughout the watershed on private lands. They also allow for more complete projects, easier monitoring, less maintenance, and improved opportunities for evaluations of success.

The following tasks will be completed as part of this RCPP in order to meet the main project goals of flood risk reduction and enhanced water quality. The LPNNRD will have the overall responsibility for all project tasks and will consult NRCS throughout the process. Specifically, NRCS will be providing technical assistance with the Supplemental Watershed Plan/EA, Design, and Permitting to take advantage of their expertise in these matters.

| Task | Timeline (FY) | | | | |
|--------------------------------|---------------|---------|---------|---------|------|
| | 2017 | 2018 | 2019 | 2020 | 2021 |
| Supplemental Watershed Plan/EA | ←-----→ | | | | |
| Preliminary Design | | ←-----→ | | | |
| Project Permitting | | ←-----→ | | | |
| Final Design | | | ←-----→ | | |
| Water Quality Monitoring | | ←-----→ | | | |
| Site 26 & Site 27 Construction | | | | ←-----→ | |

ATTACHMENT C – Annual Reporting Requirements

RCPP is an evolving partnership program. Reporting requirements are determined in part based on information requested by internal and external customers. We anticipated the following items will be required, though some items may be added or removed:

ANNUAL REPORTING

Education and Outreach:

1. Number of events: farm days, workshops, fairs or shows, and presentations;
2. Outreach materials created: brochures or pamphlets, fliers, handbooks, and Web site development;
3. Number of media outlets reached: radio, social media, blogs, Web sites, and television;
4. The success of those selected media outlets;
5. Number of people reached by demographic: beginning farmers and ranchers, historically underserved farmers and ranchers, veteran farmers and ranchers, and new clients that have not worked with NRCS in the past;
6. Success stories; and
7. Lessons learned: How can education and outreach be improved? What could be done differently to engage participants?

Partnerships:

1. Overall success of partner relationship during the planning process;
2. Overall success of partner relations during the implementation process; and
3. Engagement of new partners.

Implementation:

1. If Adjustment of Terms were granted, provide explanation of those adjustments;
2. The effects of the Adjustment of Terms;
3. Number of Contracts and Easements, reported in ProTracts and NEST, respectively;
4. Easements: Number of long-term agreements and conservation restoration being completed;
5. Number of conservation practices implemented;
6. List of the conservation practices by resource concern;
7. Acres impacted; and
8. If new practice standards resulted from the project.

Financial and Technical Assistance:

1. Was the project successful in expenditure;
2. What was accomplished with the financial and technical assistance, broken down; and
3. How technical assistance was used in relation to:
 - Conservation Planning;
 - Engineering; and
 - Other uses.

Details about the following:

1. How funds are being administered under Alternative Funding Arrangement, if applicable;
2. Oversight mechanisms implemented;
3. Monitoring results;
4. Description of the overall environmental impact of RCPP to the immediate and surrounding project area;
5. Partners' suggestions to NRCS, and if and how the suggestions were utilized; and
6. Lessons learned from the Innovation criteria.

Appendix J Bibliography

BIBLIOGRAPHY

- Lower Platte North Natural Resources District (LPNNRD). Draft Voluntary Integrated Management Plan. *Not Available for Dissemination*.
Referenced in Application:
Section C-2, C-11
- Lower Platte North Natural Resources District (LPNNRD). 1998. Wahoo Creek Watershed Plan and Environmental Impact Statement.
Referenced in Application:
Section A-2, A-6, B-1a, B-2, B-3, B-7, B-9, B-12, C-1, C-4, C-6, C-7, C-8, C-9, C-12, C-13, C-14, C-15, C-16,
- Lower Platte North Natural Resources District (LPNNRD). 2013. Wahoo Creek Watershed Water Quality Management Plan.
Referenced in Application:
Section C-7, C-9, C-11
- Lower Platte North Natural Resources District (LPNNRD). 2017. Long Range Implementation Plan Fiscal Year 2017.
Referenced in Application:
Section C-1, C-9
- Nebraska Department of Natural Resources (NDNR). 2015. Title 264 – Rules Governing the Administration of the Water Sustainability Fund.
Referenced in Application:
Section B-3
- Nebraska Department of Natural Resources (NDNR). 2016. Annual Report and Plan of Work for the Nebraska State Water Planning and Review Process.
Referenced in Application:
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Referenced in Application:
Section B-1a
- United States Department of Agriculture – Natural Resources Conservation Services (NRCS). 2005. TR-60 Earth Dams and Reservoirs.
Referenced in Application:
Section B-1a
- U.S. Department of Commerce – National Oceanic and Atmospheric Administration (NOAA). 2013. Atlas 14 Volume 8: Version 2 Precipitation Frequency Atlas of the United States.
Referenced in Application:
Section B-1a

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Atlas 14 Volume 8: Midwestern States Region 3. Retrieved from
https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_temporal.html.
Referenced in Application:
Section B-1a