

NEBRASKA NATURAL RESOURCES COMMISSION
Water Sustainability Fund
Application for Funding

Section A.

ADMINISTRATIVE

PROJECT NAME: The Repurposing of Pokorny Dam

PRIMARY CONTACT INFORMATION:

Entity Name: Village of Howells

Contact Name: Dawn Gall

Address: 128 North 3rd Street, Howells, NE 68641-3093

Phone: (402) 986-1666

Email: hockl@megavision.com

Partners / Co-sponsors, if any: Village of Howells (Primary), Lower Elkhorn Natural Resources District, and Ducks Unlimited.

1. **Dollar amounts requested:** Grant
- Grant amount requested:** \$164,400
- Loan amount requested:** N/A
- If Loan, how many years' repayment period?** N/A
- If Loan, supply a complete year-by-year repayment schedule: N/A

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

Nebraska Game & Parks Commission (G&P) consultation on Threatened and Endangered Species and their Habitat
N/A Obtained: YES NO

Surface Water Right N/A Obtained: YES **NO**

USACE (e.g., 404 Permit) N/A Obtained: YES NO

Cultural Resources Evaluation N/A Obtained: YES NO

Other (provide explanation below) N/A Obtained: YES NO

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. N/A

If yes, what is the population served by your project? N/A

If yes provide a demonstration of need. N/A

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?

N/A

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

N/A

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

N/A

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

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?

\$29,815.00

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

See Appendix Q. Howells Pokorny Dam Design Invoices.

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.

\$0.00

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:

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

By expanding the purposes of Pokorny Dam, multiple benefits will be derived ensuring that the valuable and limited resources of the Nebraska Natural Resources Commission Water Sustainability Fund are effectively used. This project will provide improved flood protection. This shovel ready project will utilize funding from several sources including the Village of Howells, LENRD, State of Nebraska, and the non-profit/Ducks Unlimited, thereby leveraging valuable and limited funding. This repurposing project could be used as a template for other projects on a Statewide basis thereby demonstrating how single use structures can be converted to multi-use structures that provide many benefits. See Appendix V. for the Site Map.

This structural proposal was designed by professional engineers licensed in the State of Nebraska and other qualified professionals. It will be constructed, and operated to accomplish the purpose for which it was planned utilizing accepted engineering, geohydrologic, and other technical principles and concepts.

PROJECT OVERVIEW

The proposed project will repurpose Pokorny Dam from a single-purpose flood control structure to a multi-purpose structure that provides many benefits. Upgrading and retrofitting this high hazard earthen dam and adding innovative changes to the operation of the impoundment will expand water habitat for waterfowl and wildlife, while still protecting people and structures downstream. The height of the dam will be raised approximately three feet, and an auxiliary spillway will be added to comply with the regulatory requirements for High Hazard Dams.

Furthermore, the structure will provide additional protection from the peak flood flows and will allow water to pass through once the reservoir is at capacity, thereby preventing catastrophic failure from overtopping. The bed of the existing reservoir will be excavated to store the original surface thereby restoring capacity this coupled with raising the high of the dam will provide greater flood control protection. The excavated bed and raiser pipe will be configured to provide shallow water habitat and wetlands for waterfowl and wildlife. Ducks Unlimited has targeted this area of the state to expand habitat for waterfowl.

Finally, water quality will be improved as a result of the project by implementing Best Management Practices (BMPs) that effectively capture not only agricultural runoff that currently runs through the structure, but also prevent contaminants—such as sediment, nitrogen, phosphorus, and other harmful bacteria—from flowing downstream. By capturing rainfall, runoff, and groundwater seeps that generates baseflow, the impoundment will provide intentional recharge to the aquifer.

BACKGROUND

Pokorny Dam is an earthen embankment structure on an unnamed tributary of the East Fork of Maple Creek. The dam is located approximately one-half mile west of the Village of Howells, Nebraska, see Appendix V. Site Map. The legal description is the Northwest quarter of Section 7, Township 20 North, Range 4, in Colfax County, Nebraska and latitude 41.723679 and longitude and -97.014816. The land use of the immediate area is predominately agricultural. The dam, which is owned by the Village of Howells, provides flood control for the community and other rural residents and structures downstream of the impoundment.

Pokorny Dam (NE02779) is primarily a dry dam that was constructed in 1992 by the former U.S. Department of Agriculture Soil Conservation Service, now the Natural Resources Conservation Service (NRCS), as a water retarding structure. (Figure 2). The dam structure is approximately 24-feet high and 617 feet long and contains 17,100 cubic yard earthen fill. It is a class C compaction structure. The structure is equipped with a 30-inch corrugated metal pipe vertical riser with orifices that conveys water to a 24-inch corrugated metal horizontal pipe that ultimately drains to the downstream side of the dam, see Appendix I. As-Built Plans for Pokorny Dam.

In 2008, the Nebraska Department of Natural Resources (DNR) conducted a Hazard Classification Study and determined that the Pokorny Dam is a High Hazard Dam. It is important to note that the hazard classification study did not assess the dam's condition or its likelihood of failure, rather it evaluated the potential for loss of life and damages to property if the dam failed, see Appendix C. Pokorny Dam Hazard Classification Report.

Due to its importance and hazard ranking, a professional engineering study was conducted on the dam in 2016 to evaluate design improvements that address the potential risk and improve the overall safety of the structure. A copy of the engineering study is attached to this application as Appendix B Pokorny Design Drawings.

BENEFITS OF REPURPOSING POKORNY DAM

The benefits of repurposing Pokorny Dam include:

- High Hazard Risk Reduction
- Habitat Creation
- Water Quality
- Groundwater Recharge

BENEFIT 1: HIGH HAZARD RISK REDUCTION

In accordance with DNR and NRCS requirements, the height of Pokorny dam will be raised approximately three feet, and an auxiliary spillway will be added to comply with the regulatory requirements for High Hazard Dams. The raising of the height of the dam will provide additional protection from peak flood flows, and an emergency spillway will be constructed to prevent catastrophic failure from overtopping. These added measures will allow the structure to comply with the regulatory requirements for High Hazard Dams as specified in NRCS Technical Release 60.

BENEFIT 2: HABITAT CREATION

In collaboration with Ducks Unlimited, the dam will be redesigned and constructed to provide shallow water habitat and wetlands for waterfowl and wildlife. The existing reservoir bed will be excavated by several feet and the spillway riser will be reconfigured to provide additional storage capacity and habitat. Ducks Unlimited has targeted this area of the state to expand habitat for waterfowl.

BENEFIT 3: WATER-QUALITY

The repurposed Pokorny Dam will employ proven BMPs to improve the water quality of Maple Creek and its tributary. The dam will capture agricultural runoff that currently runs through the structure and contaminants such as sediment, nitrogen, phosphorus, and other harmful bacteria will be captured and prevented from flowing downstream.

BENEFIT 4: GROUNDWATER RECHARGE

The redesign and construction of Pokorny Dam will allow the structure to capture rainfall, runoff, and groundwater seeps generated from hydrologically connected groundwater-surface water. Impounded water will ultimately provide intentional recharge to the aquifer, water that would otherwise be lost for beneficial use as it flows out of the watershed.

SUMMARY

By expanding the purposes of Pokorny Dam, multiple benefits will be derived, ensuring that the valuable and limited resources of the Nebraska Natural Resources Commission Water Sustainability Fund are effectively used. This shovel ready project will utilize funding from several participants, including the Village of Howells, LENRD, State of Nebraska, and the non-profit Ducks Unlimited, thereby leveraging valuable and limited funding.

APPENDICES

- A. JEO - Village of Howells Contract for Design 02162016
- B. Pokorny Design Drawings
- C. Pokorny Dam Hazard Classification Report
- D. DNR Letter to Harry Pokorny
- E. Photos
- F. Precipitation Frequency for Pokorny
- G. Soil Survey Classification
- H. Hydrology & Hydraulics

- I. As-built Plans for Pokorny
- J. Stability Analysis
- K. Easements
- L. Opinion of Costs
- M. Commitment Letter Village of Howells
- N. Commitment Letter LENRD
- O. Certified Valuations for Village of Howells
- P. Commitment Letter Ducks Unlimited
- Q. Howells Pokorny Dam Design Invoices
- R. National Wide 404 Permit
- S. Water Quality Data
- T. LENRD DRAFT IMP Goals
- U. Maple Creek Map
- V. Site Map
- W. Inundated Areas of the Village of Howells
- X. Benefit Cost Ratio

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

Due to its importance and hazard ranking, JEO Consulting Group, Inc. prepared engineering designs, plans, and specification in 2016. The purpose was to design improvements that address the potential risks, and improve the overall safety of the structure, see Appendix B. Pokorny Design Drawings.

The first step of the study was to conduct a field investigation to verify, update, and validate the existing hydrology for the site and collect survey data of the existing structure. A topographic survey was completed as a part of this site visit, including an inventory of pipe sizes, limits of the structure, existing buildings and fences, and existing ground elevations. This information was then combined with the boundary survey information used to develop the existing easements on the property and to determine the need for additional easements. Topographic LiDAR data was also utilized to supplement the survey information to evaluate existing pool storage and flood storage capacity.

Following completion of the 30% engineering concept design plans by JEO Consulting Group, Inc., a plan-in-hand meeting was conducted to meet with all the stakeholders effected by the project, including the Howells Village Clerk, members of the Howells Village Board, Harry Pokorny (landowner), and Tim Gokie, the Dam Safety Division Chief from the Nebraska Department of Natural Resources (NDNR).

The concept design layout was discussed in detail to set a clear vision for the 60% plan development. Stakeholders present agreed that the proposed plan was the best option for this site that meets NDNR requirements, addresses landowner concerns, and

innovatively reduces construction costs. Minor adjustments were made to the plan including existing fence tie-ins and site access points.

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

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A description of any necessary water and land rights and pertinent water supply and water quality information, if appropriate (004.01 D):

Additional land rights are needed in the form of easements that include the new auxiliary spillway and exit slope that returns flows to the channel. The proposed layout will require approximately an additional 4 acres of permanent easement and 2 acres of temporary construction easement. Land easements for the existing structure were established by the SCS in 1992 during the original construction of the dam. Per Nebr. Rev. Stat. 46-241-(2) a surface water storage permit is not required since the impoundment will store less than 15 acre-ft. Since no diversion of surface water will be done an appropriation permit is not required. The Village of Howells already has the land rights and easements for the repurposing project, see Appendix K. Easements for water-quality data see Appendix S. Water-Quality Data.

A discussion of each component of the final plan including, when applicable (004.01 E):

Required geologic investigation (004.01 E 1):

The State of Nebraska Dam Safety Division required an evaluation of the soil stresses in the auxiliary spillway in an event where the spillway would see substantial flows. Soils information was extracted from the NRCS Web Soil Survey to better understand erosion factors and land use types. For earthen auxiliary spillways, the stability of the spillway in a storm event is analyzed using export parameters from the SITES modeling software. For this site JEO Consulting Group verified for NDNR that the site meets stability criteria for the Freeboard Hydrograph storm event (FBH). Upon review, NDNR granted approval to move forward with design without the need for a detailed geotechnical evaluation. During construction, samples of the fill and borrow material will be analyzed for optimum moisture, soil makeup, and compaction requirements. This information will certify that the constructed structure meets minimum design standards. For geologic information see Appendix J. Stability Analysis and Appendix G. Soil Survey Classification.

Required hydrologic data (004.01 E 2):

The drainage area of the dam is small and the land use is primarily agricultural, yet it provides important protection for the Village of Howells and other people and structures downstream. The drainage area is 158 acres or 0.25 square miles. New design contains the Freeboard Hydrograph Storm (FBH), which is 6-hr, 20.10 inches of rainfall, pipe discharge is 63.3 cfs, auxiliary discharge is 429.7 cfs. The 100-year frequency 24-hour rainfall event is 6.83 inches. At its maximum water surface elevation of 106.5 feet the dam stores 117.6 acre-feet of runoff covering 10.39 acres. Over 86% of the watershed land use is cropland, 9% is pasture, and 5% is structures and roads. For hydrologic information see Appendix F. Precipitation Frequency for Pokorny and Appendix H. Hydrology & Hydraulics.

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

The completed studies and designs include: updated hydrology and hydraulics, structural integrity and geotechnical analysis, evaluation of the principal and auxiliary spillways, and design of a plunge pool. For design criteria and drawings see Appendix B, Pokorny Design Drawings.

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):

A description of field or research investigations utilized to substantiate the project conception (004.02 B):

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):

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

Since the structure is classified as a high hazard dam in Neb. Rev. Stat. Chapter 46, Article 16: Safety of Dams and Reservoirs, action must be taken and the only other alternative would be to remove the dam. By removing the dam all flood control see Appendix W. Inundated Areas of the Village of Howells, habitat, water-quality, and groundwater recharge benefits will be lost. For evidence that no other means exist to accomplish the purpose, see Appendix C, Pokorny Dam Hazard Classification Report, and Appendix D, DNR Letter to Harry Pokorny.

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).***

The estimate of the project cost for the next 3-years (2016 thru 2018) is \$274,000. Of the total cost \$164,4000 is requested from the Water Sustainability Fund, \$52,300 from the Lower Elkhorn Natural Resources District, \$52,300 from the Village of Howells, and \$5,000 from Ducks Unlimited. For the opinion of cost, see Appendix L, Opinion of Costs.

- ***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).

Benefits of repurposing Pokorny Dam: The dam will be redesigned and then reconstructed to convert the single purpose dam to a multi-purpose dam. Thereby providing major improvements from the original 1992 constructed dams and providing multiple benefits.

The private property valuation in the Village of Howells is approximately \$19,000,000, not including valuation of public or non-profit property, see Appendix O. Certified Valuations for the Village of Howells. The life of the structure is assumed to be 50-years.

BENEFIT 1: HIGH HAZARD RISK REDUCTION

In accordance with the Nebraska Department of Natural Resources and NRCS requirements the dam will be redesigned. The height of the dam will be raised approximately three feet, and an auxiliary spillway will be added to comply with the regulatory requirements for High Hazard Dams. The structure will provide additional protection from the peak flood flows and will allow water to pass through once the reservoir is full thereby preventing catastrophic failure from overtopping. The private property valuation of the Village of Howells is approximately \$19,000,000 not including valuation of public or non-profit property. If Pokorny Dam was breached a flood wave would be released into the Village of Howells which would inundate approximately 25% of the Village causing at a minimum \$4,750,000 of damage. The amortized benefit from prevention of flood damages is \$95,000 per year. The cost of the repurposing of Pokorny Dam is \$274,000. The amortized cost is \$5,480 per year. The Benefit to Cost (BC) Ratio is 17.3, see Appendix X. Benefit to Cost Ratio.

BENEFIT 2: HABITAT CREATION:

In collaboration with Ducks Unlimited the dam will be redesigned and constructed to provide shallow water habitat and wetlands for waterfowl and wildlife. The existing reservoir bed will be excavated by several feet and the existing principal spillway riser will be reconfigured to provide additional storage capacity and habitat. Ducks Unlimited has targeted this area of the State to expand habitat for waterfowl.

BENEFIT 3: WATER-QUALITY

The dam redesign and constructed to implement BMPs to improve the water-quality of Maple Creek and its tributary will be improved. The dam will capture agricultural runoff that currently runs through the structure. Contaminants such as

sediment, nitrogen, phosphorus, and harmful bacteria will be captured and prevented from flowing downstream.

BENEFIT 4: GROUNDWATER RECHARGE.

The redesign and construction of the dam will capture rainfall-runoff and baseflow generated from hydrologically connected groundwater-surface water. The impounded water will provide intentional recharge to the aquifer. Water that would otherwise be lost for beneficial use as it flows out of the watershed.

SUMMARY. By expanding the purposes of Pokorny Dam, multiple benefits will be derived ensuring that the valuable and limited resources of the Nebraska Natural Resources Commission Water Sustainability Fund are effectively used. This shovel ready project will utilize funding from several the Village of Howells, LENRD, State of Nebraska, and the non-profit/Ducks Unlimited, thereby leveraging valuable and limited funding.

- **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).**
See Appendix X. Benefit and Cost Ratio
- **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).**

Benefits of repurposing Pokorny Dam: The dam will be redesigned and then reconstructed to convert the single purpose dam to a multi-purpose dam. Thereby providing major improvements from the original 1992 constructed dams and providing multiple benefits.

The private property valuation in the Village of Howells is approximately \$19,000,000, not including valuation of public or non-profit property, see Appendix O. Certified Valuations for the Village of Howells. The life of the structure is assumed to be 50-years.

BENEFIT 1: HIGH HAZARD REDUCTION

In accordance with the Nebraska Department of Natural Resources and NRCS requirements the dam will be redesigned to lower the hazard ranking. The dam height will be raised and an auxiliary spillway will be added. This will allow the structure to comply with the regulatory requirements for High Hazard Dams. The structure will provide additional protection from the peak flood flows and will allow water to pass through once the reservoir is full thereby preventing catastrophic

failure from overtopping. The private property valuation of the Village of Howells is approximately \$19,000,000 not including valuation of public or non-profit property. If Pokorny Dam was breached a flood wave would be released into the Village of Howells which would inundate approximately 25% of the Village causing at a minimum \$4,750,000 of damage. The amortized benefit from flood damage prevention is \$95,000 per year. The cost of the repurposing of Pokorny Dam is \$274,000. The amortized cost is \$5,480 per year. The Benefit to Cost (BC) Ratio is 17.3, see Appendix X. Benefit to Cost Ratio.

BENEFIT 2: HABITAT CREATION:

In collaboration with Ducks Unlimited, the dam will be redesigned and constructed to provide shallow water habitat and wetlands for waterfowl and wildlife. The existing reservoir bed will be excavated by several feet and the spillway riser will be reconfigured to provide additional storage capacity and habitat. Ducks Unlimited has targeted this area of the state to expand habitat for waterfowl.

BENEFIT 3: WATER-QUALITY

The dam redesign and constructed to implement BMPs to improve the water-quality of Maple Creek and its tributary will be improved. The dam will capture agricultural runoff that currently runs through the structure. Contaminants such as sediment, nitrogen, phosphorus, and harmful bacteria will be captured and prevented from flowing downstream.

BENEFIT 4: GROUNDWATER RECHARGE.

The redesign and construction of the dam will capture rainfall-runoff and baseflow generated from hydrologically connected groundwater-surface water. The impounded water will provide intentional recharge to the aquifer. Water that would otherwise be lost for beneficial use as it flows out of the watershed. SUMMARY. By expanding the purposes of Pokorny Dam, multiple benefits will be derived ensuring that the valuable and limited resources of the Nebraska Natural Resources Commission Water Sustainability Fund are effectively used. This shovel ready project will utilize funding from several the Village of Howells, LENRD, State of Nebraska, and the non-profit/Ducks Unlimited, thereby leveraging valuable and limited funding.

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

The estimate of the project cost for the next 3-years (2016 thru 2018) is \$274,000. Of the total cost \$164,4000 is requested from the Water Sustainability Fund, \$52,300 from the Lower Elkhorn Natural Resources District, \$52,300 from the Village of Howells, and \$5,000 from Ducks Unlimited. For Letter of Commitments and tax valuations, see Appendix M, Commitment Letter Village of Howells; Appendix N, Commitment Letter

LENRD; Appendix O, Certified Valuations for Village of Howells; and Appendix P, Commitment Letter Ducks Unlimited.

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

See Appendix O. Certified Valuations for Village of Howells.

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

N/A

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

The repurposing by redesigning and construction for habitat will provide shallow water habitat and wetlands for waterfowl and wildlife. This will enhance the natural environment and does not negatively impact it. The dam redesign and construction will implement best management practices (BMPs) to improve the water-quality of Maple Creek and its tributary. By implementing the BMP that captures agricultural runoff (that currently runs through the structure) contaminants such as: sediment, nitrogen, phosphorus, and harmful bacteria will be captured and prevented from flowing downstream. The redesign and construction of the dam will capture rainfall-runoff, and also capture baseflow generated from hydrologically connected groundwater-surface water. Finally, the impounded water will provide intentional recharge to the aquifer. Water that would otherwise be lost for beneficial use as it flows out of the watershed, see Appendix U. Maple Creek Map.

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

The Village of Howells is an incorporated community in the State of Nebraska. SIC Code 9111 and NAICS Code 921110. The Village will be the owner and operator of the dam, and is fully responsible and liable for operation, up keep, improvements, monitoring, and financial duties. The Lower Elkhorn Natural Resources District has a wide range of statutory responsibilities and authorities, including but not limited to Nebraska Revised Statutes §2-3,201 through 2-3,243 and the Ground Water Management and Protection Act (Nebraska Rev. Statutes §46-701 through 46-756). As Nebraska's preferred regulator of groundwater, they are clearly both qualified and responsible to carry out the proposed project. Specifically, Nebraska Rev. Statutes §46-707(f) confers to the NRDs the power to "conduct investigations and cooperate or contract with ... public or private corporations, or any association or individual on any matter relevant to the administration of the [Ground Water Management and Protection] act." The NRD have a number of potential funding sources available to use in meeting their share of the project cost.

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

The Department of Natural Resources regulates the construction, operation, and maintenance of dams in Nebraska to protect life and property from dam failures including but not limited to: Neb. Rev. Stat. Chapter 46, Article 16: Safety of Dams and Reservoirs. The Lower Elkhorn Natural Resources District has a wide range of statutory responsibilities and authorities, including but not limited to Nebraska Revised Statutes §2-3,201 through 2-3,243 and the Ground Water Management and Protection Act (Nebraska Rev. Statutes §46-701 through 46-756).

This repurposing project could be used as a template for other projects on a Statewide basis thereby demonstrating how single use structures can be converted to multi-use structures that provide many benefits

10. Are land rights necessary to complete your project?

YES NO

Additional land rights are needed in the form of easements that include the new auxiliary spillway and exit slope that returns flows to the channel. The proposed layout will require approximately an additional 4 acres of permanent easement and 2 acres of temporary construction easement. Land easements for the existing structure were established by the SCS in 1992 during the original construction of the dam. Per Nebr. Rev. Stat. 46-241-(2) a surface water storage permit is not required since the impoundment will store less than 15 acre-ft. Since no diversion of surface water will be done an appropriation permit is not required. The Village of Howells already has the land rights and easements for the repurposing project. The Village will be the owner and operator of the dam, and is fully responsible and liable for operation, up keep, improvements, monitoring, and financial duties. The Nebraska Department of Natural Resources is requiring that the Village proceed with the necessary upgrades to minimize potential loss of life and property damage.

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

See Appendix Y Property Access and Appendix B Pokorny Design Drawings

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

See Appendix Y Property Access and Appendix B Pokorny Design Drawings

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

See Appendix Y Property Access and Appendix B Pokorny Design Drawings

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

The Village of Howells is an incorporated community in the State of Nebraska. SIC Code 9111 and NAICS Code 921110. The Village will be the owner and operator of the dam, and is fully responsible and liable for operation, up keep, improvements, monitoring, and financial duties. The Nebraska Department of Natural Resources is requiring that the Village proceed with the necessary upgrades to minimize potential loss of life and property damage. The Lower Elkhorn Natural Resources District has a wide range of statutory responsibilities and authorities, including but not limited to Nebraska Revised Statutes §2-3,201 through 2-3,243 and the Ground Water Management and Protection Act (Nebraska Rev. Statutes §46-701 through 46-756). As Nebraska's preferred regulator of groundwater they are clearly both qualified and responsible to carry out the proposed project. Specifically, Nebraska Rev. Statutes §46-707(f) confers to the NRDs the power to "conduct investigations and cooperate or contract with ... public or private corporations, or any association or individual on any matter relevant to the administration of the [Ground Water Management and Protection] act." The NRD have a number of potential funding sources available to use in meeting their share of the project cost.

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

The redesign and construction for habitat will provide shallow water habitat and wetlands for waterfowl and wildlife. This will enhance the natural environment and does not negatively impact it. The dam redesign and construction will implement best management practices (BMPs) to improve the water-quality of Maple Creek and its tributary. By implementing the BMP that captures agricultural runoff (that currently runs through the structure) contaminants such as: sediment, nitrogen, phosphorus, herbicides, and harmful bacteria will be captured and prevented from flowing downstream. The redesign and construction of the dam will capture rainfall-runoff, and also capture baseflow generated from hydrologically connected groundwater-surface water. Finally, the impounded water will provide intentional recharge to the aquifer. Water that would otherwise be lost for beneficial use as it flows out of the watershed.

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.*

If Pokorny Dam is not improved, the structure will have to be removed and the primarily water-quality BMP will be lost. As a result, agricultural runoff containing contaminants such as: sediment, nitrogen, phosphorus, herbicides, and harmful bacteria will be transported downstream in the unnamed tributary to East Fork

Maple Creek to Maple Creek and ultimately to the Elkhorn River. As the contaminants flow downstream they will travel past the Howells Wellhead Protection Area. The Village of Howells drinking water system serves 575 people and the population in the East Fork Maple Creek watershed is approximately 1200, see Appendix U, Maple Creek Map. The long range impact of not repurposing Pokorny Dam will be that agricultural runoff will flow off the fields and contaminate the Maple Creek watershed, see Appendix S, Water Quality Data.

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 goals and objectives are documented in the Working Draft Voluntary Integrated Water Management Plan for the Lower Elkhorn Natural Resources District, dated July 26, 2016. For the Draft LENRD Draft Voluntary Integrated Management Plan, see Appendix T, LENRD DRAFT IMP goals.

The specific goals that relate to the repurposing of Pokorny Dam include: VIMP Goal 2 is designed to develop and implement water management policies that provide for additional water resources development opportunities while protecting existing surface water and groundwater uses in the District and Basin. This goal includes objectives and action items to help maintain both water quantity and water quality.

This project would repurpose Pokorny Dam from being a single purpose flood control structure to a multi-purpose structure that provides many benefits. Upgrading and retrofitting this high hazard earthen dam and adding innovative changes to the operation of the impoundment will provide multiple benefits while still protecting people and structures downstream.

The dam height will be raised and an emergency spillway will be added. This will allow the structure to comply with the regulatory requirements for High Hazard Dams. The structure will provide additional protection from the peak flood flows and will allow water to pass through once the reservoir is full thereby preventing catastrophic failure from overtopping.

The existing reservoir bed will be excavated by several feet and the existing principal spillway riser will be reconfigured to provide additional storage capacity and concurrently provide shallow water habitat and wetlands for waterfowl and wildlife. Ducks Unlimited has targeted this area of the State to expand habitat for waterfowl. Water-quality will be improved by implementing Best Management

Practices (BMPs) because the dam will capture agricultural runoff that currently runs through the structure. Contaminants such as sediment, nitrogen, phosphorus, and harmful bacteria will be captured and prevented from flowing downstream. By capturing rainfall runoff and groundwater seeps generating baseflow that flows into the impoundment and thereby provide intentional recharge to the aquifer.

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 recharge area for this repurposing project consists of the reservoir surface area impounded by Pokorny Dam. The surface area is 7.7 acres and the normal pool will be approximately 5.1 acres. The soils in the reservoir bed are generally classified as Alcester silty clay loam with a 2-6% slope (USDA Web Soil Survey, Colfax County), see Appendix G, Soil Survey Classification. When compared to recharge rates of similar soils at artificial recharge sites (Investigation of Artificial Recharge of Aquifers in Nebraska: U.S. Geological Survey Water-Resources Investigations Report 80-93, 112 p) the rate of recharge is estimated to be 0.5 ft./day. Since flow to Pokorny Dam has a baseflow component (along with the rainfall/runoff component) it is assumed that a minimum reservoir pool elevation will be maintained providing constant recharge to the aquifer. Streamflow will not be increased by this project, rather the repurposed Pokorny Dam will provide a consist recharge flow and only when precipitation events cause excess flows will water be discharged to the unnamed tributary.

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.*

The water supply goal of this project is to repurpose Pokorny Dam from a single purpose flood control structure to a multi-purpose structure that provides many benefits. Upgrading and retrofitting this high hazard earthen dam and adding innovative changes to the operation of the impoundment will provide multiple benefits while still protecting people and structures downstream. In accordance

with DNR and NRCS requirements, the height of Pokorny dam will be raised approximately three feet, and an auxiliary spillway will be added to comply with the regulatory requirements for High Hazard Dams. The raising of the height of the dam will provide additional protection from peak flood flows, and an auxiliary spillway will be constructed to prevent catastrophic failure from overtopping. These added measures will allow the structure to comply with the regulatory requirements for High Hazard Dams as specified in NRCS Technical Release 60.

The existing reservoir bed will be excavated by several feet and the existing principal spillway riser will be reconfigured to provide additional storage capacity and concurrently provide shallow water habitat and wetlands for waterfowl and wildlife. Ducks Unlimited has targeted this area of the State to expand habitat for waterfowl. Water-quality will be improved by implementing Best Management Practices (BMPs) because the dam will capture agricultural runoff that currently runs through the structure. Contaminants such as sediment, nitrogen, phosphorus, and harmful bacteria will be captured and prevented from flowing downstream. By capturing rainfall runoff and groundwater seeps generating baseflow that flows into the impoundment and thereby provide intentional recharge to the aquifer. By expanding the purposes of Pokorny Dam, multiple benefits will be derived ensuring that the valuable and limited resources of the Nebraska Natural Resources Commission Water Sustainability Fund are effectively used.

The long range forecast is that the repurposed Pokorny Dam will provide multiple benefits for at least twenty years. At that time, it is anticipated that the sediments deposited in the reservoir will need to be excavated, thereby restoring storage capacity. The expected life of Pokorny Dam is 50 years. If the current path is maintained, then Pokorny Dam will need to be removed because it does not comply with State of Nebraska Dam Safety Regulations, see Appendix C, Pokorny Dam Hazard Class Report.

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.*

The beneficial use Nebraska's water resources will be maximized by this repurposing project by converting a single use dam to a multi-use dam. It will divert unappropriated surface water to the following specific beneficial uses: domestic water supplies, incidental recharge of groundwater supplies, and use of water for fish and wildlife. This project will not reduce beneficial uses. This repurposing project could be used as a template for other projects on a Statewide basis thereby demonstrating how single use structures can be converted to multi-use structures that provide many benefits.

Pokorny Dam will be repurposed from a single purpose flood control structure to a multi-purpose structure that provides many benefits. Upgrading and retrofitting this high hazard earthen dam and adding innovative changes to the operation of the impoundment will provide multiple benefits while still protecting people and structures downstream.

The dam height will be raised and an auxiliary spillway will be added. This will allow the structure to comply with the regulatory requirements for High Hazard Dams. The structure will provide additional protection from the peak flood flows and will allow water to pass through once the reservoir is full thereby preventing catastrophic failure from overtopping.

The existing reservoir bed will be excavated by several feet and the existing principal spillway riser will be reconfigured to provide additional storage capacity and concurrently provide shallow water habitat and wetlands for waterfowl and wildlife. Ducks Unlimited has targeted this area of the State to expand habitat for waterfowl. Water-quality will be improved by implementing Best Management Practices (BMPs) because the dam will capture agricultural runoff that currently runs through the structure. Contaminants such as sediment, nitrogen, phosphorus, and harmful bacteria will be captured and prevented from flowing downstream. By capturing rainfall runoff and groundwater seeps generating baseflow that flows into the impoundment and thereby provide intentional recharge to the aquifer. By expanding the purposes of Pokorny Dam, multiple benefits will be derived ensuring that the valuable and limited resources of the Nebraska Natural Resources Commission Water Sustainability Fund are effectively used.

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.*

For the estimated construction costs see Appendix L. Opinion of Costs. This repurposing project could be used as a template for other projects on a Statewide basis thereby demonstrating how single use structures can be converted to multi-use structures that provide many benefits. The Benefit to Cost Ratio is: 17.3, see Appendix Y, Benefit Cost Ratio.

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.*

This project will help the State of Nebraska comply with the requirements of federal law, the Clean Water Act. **33 U.S.C. §1251 et seq. (1972)**. The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The CWA also regulates nonpoint source pollution that generally results from land runoff, precipitation, drainage, seepage or hydrologic modification. The current deficiency of Pokorny Dam is that it does not prevent nonpoint pollution from reaching the unnamed tributary, East Fork of Maple Creek, Maple Creek, and the Elkhorn River, see Appendix U, Maple Creek Map.

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.*

The threat to property damage will be reduced by the repurposing of Pokorny Dam. The citizens and structures of the Village of Howells and surrounding area will be protected from flooding. For the estimated potential value of cost savings see Appendix O, Certified Valuations for Village of Howells.

Improving Pokorny Dam from being a single-purpose flood control structure to a multi-purpose structure that provides many benefits. Upgrading and retrofitting this high hazard earthen dam and adding innovative changes to the operation of the impoundment will provide multiple benefits while still protecting people and structures downstream.

The dam height will be raised and an auxiliary spillway will be added. This will allow the structure to comply with the regulatory requirements for High Hazard Dams. The structure will provide additional protection from the peak flood flows and will allow water to pass through once the reservoir is full thereby preventing catastrophic failure from overtopping.

The existing reservoir bed will be excavated by several feet and the existing principal spillway riser will be reconfigured to provide additional storage capacity and concurrently provide shallow water habitat and wetlands for waterfowl and

wildlife. Ducks Unlimited has targeted this area of the State to expand habitat for waterfowl.

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.*

The redesign and construction of Pokorny Dam will implement a water quality best management practice (BMP) and thereby reduce nonpoint source pollution to the unnamed tributary, East Fork of Maple Creek, Maple Creek, and the Elkhorn River. The Dam will capture and contain harmful agricultural runoff (that currently runs through the structure) containing contaminants such as: sediment, nitrogen, phosphorus, herbicides, and harmful bacteria. Almost 1200 people in the East Fork Maple Creek watershed will benefit from the improved water quality, varying from a residential, agricultural, and recreational use.

Other possible solutions to improving the water quality could be to restrict agricultural production or education the public on application of fertilizers, pesticides, and harmful bacteria. The Maple Creek watershed has had ongoing water quality studies documenting environmental conditions and it was a focus area for the USGS National Water-Quality Assessment Program as detailed in the USGS Scientific Investigations Report 2006-5037, Environmental Setting of Maple Creek Watershed, Nebraska". Extensive water-quality data can be retrieved from the USGS National Water-Quality Information System (NWIS) database.

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.*

The estimate of the project cost for the next 3-years (2016 thru 2018) is \$274,000. Of the total cost \$164,4000 is requested from the Water Sustainability Fund, \$52,300 from the Lower Elkhorn Natural Resources District, \$52,300 from the Village of Howells, and \$5,000 from Ducks Unlimited. For the opinion of cost see Appendix L. Opinion of Costs and Appendix O, Certified Valuations for Village of Howells. For current property tax levy see Appendix O, Certified Valuations for the Village of Howells.

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.*

The Village of Howells is an incorporated community in the State of Nebraska. SIC Code 9111 and NAICS Code 921110. The Village will be the owner and operator of the dam, and is fully responsible and liable for operation, up keep, improvements, monitoring, and financial duties. The Lower Elkhorn Natural Resources District has a wide range of statutory responsibilities and authorities, including but not limited to Nebraska Revised Statutes §2-3,201 through 2-3,243 and the Ground Water Management and Protection Act (Nebraska Rev. Statutes §46-701 through 46-756). The Village of Howells population is 560 plus an additional 30 people live in the surrounding area and approximately 1200 people live in the East Fork Maple Creek watershed. The stakeholders involved in this project include: Village of Howells and the citizens in the surrounding area, Lower Elkhorn Natural Resources District, Ducks Unlimited. All the stakeholders will benefit from this project.

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.*

The repurposing of Pokorny Dam could be used as a template for other projects on a Statewide basis thereby demonstrating how single use structures can be converted to multi-use structures that provide many benefits.

Dam Safety is a critical issue for the State of Nebraska. There are over 2,800 dams on the Nebraska Dam Inventory maintained by the Nebraska Department of Natural Resources. The vast majority of which are earthen embankment dams such as Pokorny Dam. Approximately, 5% of the dams including Pokorny are classified as high hazard for the loss of life and damages to property if they were to fail. Approximately 1200 people live in the East Fork Maple Creek watershed.

This project would repurpose Pokorny Dam from being a single purpose flood control structure to a multi-purpose structure that provides many benefits. Upgrading and retrofitting this high hazard earthen dam and adding innovative changes to the operation of the impoundment will provide multiple benefits while still protecting people and structures downstream.

The dam height will be raised and an auxiliary spillway will be added. This will allow the structure to comply with the regulatory requirements for High Hazard Dams. The structure will provide additional protection from the peak flood flows and will allow water to pass through once the reservoir is full thereby preventing catastrophic failure from overtopping.

The existing reservoir bed will be excavated by several feet and the existing principal spillway riser will be reconfigured to provide additional storage capacity and concurrently provide shallow water habitat and wetlands for waterfowl and wildlife. Ducks Unlimited has targeted this area of the State to expand habitat for waterfowl. Water-quality will be improved by implementing Best Management Practices (BMPs) because the dam will capture agricultural runoff that currently runs through the structure. Contaminants such as sediment, nitrogen, phosphorus, and harmful bacteria will be captured and prevented from flowing downstream. By capturing rainfall runoff and groundwater seeps generating baseflow that flows into the impoundment and thereby provide intentional recharge to the aquifer. By expanding the purposes of Pokorny Dam, multiple benefits will be derived ensuring that the valuable and limited resources of the Nebraska Natural Resources Commission Water Sustainability Fund are effectively used.

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.*

By expanding the purposes of Pokorny Dam, multiple benefits will be derived ensuring that the valuable and limited resources of the Nebraska Natural Resources Commission Water Sustainability Fund are effectively used. This shovel ready project will utilize funding from several the Village of Howells, LENRD, State of Nebraska, and the non-profit/Ducks Unlimited, thereby leveraging valuable and limited funding. Appendix O. Certified Valuations for Village of Howells, Appendix M. Commitment Letter Village of Howells, Appendix N. Commitment Letter LENRD, Appendix O. Certified Valuations for Village of

Howells, Appendix P. Commitment Letter Ducks Unlimited. The project will not proceed if the funding sources do not come through. All grants monies will be returned to the State of Nebraska.

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 redesign and construction of Pokorny Dam will implement a water quality best management practice (BMP) and thereby reduce nonpoint source pollution to the unnamed tributary, East Fork of Maple Creek, Maple Creek, and the Elkhorn River, see Appendix U, Maple Creek Map. The result will be an improvement in watershed health and function. The Dam will capture and contain harmful agricultural runoff (that currently runs through the structure) containing contaminants such as: sediment, nitrogen, phosphorus, herbicides, and harmful bacteria.

Almost 1200 people in the East Fork Maple Creek watershed will benefit from the improved water quality, varying from a residential, agricultural, and recreational use. Other possible solutions to improving the water quality could be to restrict agricultural production or education the public on application of fertilizers, pesticides, and harmful bacteria.

The Maple Creek watershed has had ongoing water quality studies documenting environmental conditions and it was a focus area for the USGS National Water-Quality Assessment Program as detailed in the USGS Scientific Investigations Report 2006-5037, Environmental Setting of Maple Creek Watershed, Nebraska". Extensive water-quality data can be retrieved from the USGS National Water-Quality Information System (NWIS) database. By excavating the reservoir bed additional storage capacity and shallow water habitat and wetlands for waterfowl and wildlife will be provided. Ducks Unlimited has targeted this area of the State to expand habitat for waterfowl.

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 2015 Annual Report and Plan of Work for the Nebraska State Water Planning and Review Process was utilized in preparation of this application. The following objectives will be met by this repurposing project:

- Support locally developed water management plans for managing hydrologically connected water supplies. The project combines water

- plans from the local level (Village of Howells), regional level (LENRD), state level (State of Nebraska), and a national level (Ducks Unlimited).
- Provide resources to map and identifying areas vulnerable to flood damage. This project would repurpose Pokorny Dam from being a single purpose flood control structure to a multi-purpose structure that provides many benefits. Upgrading and retrofitting this high hazard earthen dam and adding innovative changes to the operation of the impoundment will provide multiple benefits while still protecting people and structures downstream. The dam height will be raised and an auxiliary spillway will be added. This will allow the structure to comply with the regulatory requirements for High Hazard Dams. The structure will provide additional protection from the peak flood flows and will allow water to pass through once the reservoir is full thereby preventing catastrophic failure from overtopping.
 - Provide coordination of federal agencies, state agencies, local natural resources districts (NRDs), and other water interests for the development of water resources programs and projects. The project coordinates efforts from the local level (Village of Howells), regional level (LENRD), State level (State of Nebraska), and a national level (Ducks Unlimited, USEPA, US Army Corps of Engineers).

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.*

This project will help the State of Nebraska comply with the requirements of federal law, the Clean Water Act. **33 U.S.C. §1251 et seq. (1972)**. The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The CWA also regulates nonpoint source pollution that generally results from land runoff, precipitation, drainage, seepage or hydrologic modification. The current deficiency of Pokorny Dam is that it does not prevent nonpoint pollution from reaching the unnamed tributary, East Fork of Maple Creek, Maple Creek, and the Elkhorn River.

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.

By expanding the purposes of Pokorny Dam, multiple benefits will be derived ensuring that the valuable and limited resources of the Nebraska Natural Resources Commission Water Sustainability Fund are effectively used. This shovel ready project will utilize funding from several the Village of Howells, LENRD, State of Nebraska, and the non-profit/Ducks Unlimited, thereby leveraging valuable and limited funding. This repurposing project could be used as a template for other projects on a Statewide basis thereby demonstrating how single use structures can be converted to multi-use structures that provide many benefits.

This structural proposal was designed by professional engineers licensed in the State of Nebraska and other qualified professionals. It will be constructed, and operated to accomplish the purpose for which it was planned utilizing accepted engineering, geohydrologic, and other technical principles and concepts. This project would repurpose Pokorny Dam from being a single purpose flood control structure to a multi-purpose structure that provides many benefits. Upgrading and retrofitting this high hazard earthen dam and adding innovative changes to the operation of the impoundment will provide multiple benefits while still protecting people and structures downstream.

The dam height will be raised and an auxiliary spillway will be added. This will allow the structure to comply with the regulatory requirements for High Hazard Dams. The structure will provide additional protection from the peak flood flows and will allow water to pass through once the reservoir is full thereby preventing catastrophic failure from overtopping.

The bed of the existing reservoir will be excavated to store the original surface thereby restoring capacity this coupled with raising the high of the dam will provide greater flood control protection. The excavated bed and raiser pipe will be configured to provide shallow water habitat and wetlands for waterfowl and wildlife. Ducks Unlimited has targeted this area of the State to expand habitat for waterfowl. Water-quality will be improved by implementing Best Management Practices (BMPs) because the dam will capture agricultural runoff that currently runs through the structure. Contaminants such as sediment, nitrogen, phosphorus, and harmful bacteria will be captured and prevented from flowing downstream. By capturing rainfall runoff and groundwater seeps generating

baseflow that flows into the impoundment and thereby provide intentional recharge to the aquifer. By expanding the purposes of Pokorny Dam, multiple benefits will be derived ensuring that the valuable and limited resources of the Nebraska Natural Resources Commission Water Sustainability Fund are effectively used.

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.

Schedule:

Finalize Design:	February 1 – February 28, 2017
Permits, Nationwide 27 and 31:	March 1 – August 31, 2017
Advertise for Construction Bids:	September 1 – September 30, 2017
Construction:	October 1 – April 30, 2018
Project Closeout & As-Built Drawings:	May 1 – June 30, 2018

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.

The Village of Howells with their consultant JEO Consulting Group, Inc. will provide the overall oversight and guidance and funding for the repurposing of Pokorny Dam. The LENRD will provide technical and regulatory guidance and is a funding partner. Ducks Unlimited will provide technical guidance and is a funding partner. The project NDNR as a source for technical and regulatory guidance and approval of the Dam Hazard reclassification and any required surface-water permits.

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.

The estimate of the project cost for the next 3-years (2016 thru 2018) is \$274,000. Of the total cost \$164,4000 is requested from the Water Sustainability Fund, \$52,300 from the Lower Elkhorn Natural Resources District, \$52,300 from the Village of Howells, and \$5,000 from Ducks Unlimited. For the opinion of cost

see Appendix L, Opinion of Costs. The project will not proceed if the funding sources do not come through. All grants monies will be returned to the State of Nebraska.

5. Support/Opposition

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

This shovel ready project will utilize support from the Village of Howells, LENRD, State of Nebraska, and the non-profit/Ducks Unlimited, thereby leveraging valuable and limited funding. There is no know opposition.