NEBRASKA NATURAL RESOURCES COMMISSION

Water Sustainability Fund

Application for Funding

Section A.

ADMINISTRATIVE

PROJECT NAME: South Platte Supply Canal Restoration and Rehabilitation Project

SPONSOR'S *PRIMARY CONTACT INFORMATION* **(Not Consultant's)**

Sponsor Business Name: Nebraska Public Power District (NPPD)

Sponsor Contact's Name: Randy Zach

Sponsor Contact's Address: PO Box 499, 1414 15th Street, Columbus, NE 68602-0499

Sponsor Contact's Phone: 402-563-5377

Sponsor Contact's Email: rrzach@nppd.com

1. **Funding** amount requested from the Water Sustainability Fund:

   Grant amount requested. $ 2,357,672

   - If requesting less than 60% cost share, what %? N/A

   If a loan is requested amount requested. $ N/A

   - How many years repayment period? N/A
   - Supply a complete year-by-year repayment schedule. N/A

2. **Neb. Rev. Stat. § 2-1507 (2)**

   Are you applying for a **combined sewer overflow 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☐
- Attach a copy to your application. N/A
- What is the population served by your project? N/A
- Provide a demonstration of need. N/A
- **Do not complete the remainder of the application.**

3. **Permits Required/Obtained** Attach a copy of each that has been obtained. For those needed, but not yet obtained (box **"NO"** checked), 1.) State when you will apply for the permit, 2.) When you anticipate receiving the permit, and 3.) Your estimated cost to obtain the permit.

(N/A = Not applicable/not asking for cost share to obtain)
(Yes = See attached)
(No = Might need, don't have & are asking for 60% cost share to obtain)

G&P - T&E consultation (required)	N/A☐ Obtained: YES☒ NO☐
DNR Surface Water Right	N/A☐ Obtained: YES☒ NO☐
USACE (e.g., 404/other Permit)	N/A☐ Obtained: YES☐ NO☒
FEMA (CLOMR)	N/A☒ Obtained: YES☐ NO☐
Local Zoning/Construction	N/A☒ Obtained: YES☐ NO☐
Cultural Resources Evaluation	N/A☐ Obtained: YES☒ NO☐
Other (provide explanation below)	N/A☐ Obtained: YES☒ NO☐

404 Permit: NPPD has applied for a 404 Permit from the USACE. We are expecting to receive it by 12/31/20. The cost to obtain this permit is expected to be $100,000. NPPD is not seeking reimbursement for this cost, nor is it part of the total project cost. |
FERC Approval: NPPD has received a license amendment for the Sutherland Project No. 1835 from the Federal Energy Regulatory Commission (FERC) that permits this project. It is attached as Attachment A. The cost to obtain this license amendment was estimated to be $75,000 including internal labor, consultants, and legal costs. NPPD is not seeking reimbursement for this cost, nor is this part of the total project cost. A cultural resources evaluation was completed as part of that process as noted on Attachment A, page 4, III.11. "On May 20, 2019, the Nebraska State Historic Preservation Office (SHPO) concluded that there are no previously recorded cultural sites in the affected area based

on several past surveys conducted in the area and no further investigations are recommended. By letter dated December 5, 2019, the Nebraska SHPO states that no historic properties would be affected by the proposed undertaking." On September 18, 2019 NPPD held a consultation meeting with the following agencies in Kearney, Nebraska: US Fish & Wildlife, Nebraska Department of Environment & Energy, Nebraska Department of Natural Resources, and Nebraska Game & Parks (See Attachment B for the sign-in sheet). No comments were filed by these agencies. | NPPD already possesses surface water rights for the Korty Diversion and does not need any additional rights for the project.

4. **Partnerships**

List each Partner / Co-sponsor, attach documentation of agreement:
NPPD does not have any partners or co-sponsors for this project, however, NPPD has received a number of letters of support for the project.
See Attachment C for Letters of Support:
-- From Twin Platte Natural Resources District for the potential flood relief benefits, retiming of flows benefits for their Integrated Management Plan, and conjunctive use of South and North Platte rivers' water providing drought resiliency.
-- From The Central Nebraska Public Power & Irrigation District for the potential to reduce the demand for water from the North Platte River and/or Central's C.W. McConaughy Reservoir.
-- From the City of North Platte for the potential flood relief benefits.
-- From Lincoln County Emergency Management for the potential flood relief benefits.
-- From the Central Platte Natural Resources District for retiming of flows benefits for their Integrated Management Plan, and conjunctive use of South and North Platte rivers' water providing drought resiliency for irrigation projects within their district.
-- From the Platte River Recovery Implementation Program by providing important operational flexibility in NPPD's system to assist PRRIP in attaining its objective of managing river flows to benefit threatened and endangered species.

Identify the roles and responsibilities of each Partner / Co-sponsor involved in the proposed project regardless of whether each is an additional funding source.

NPPD is the sole project sponsor and is fully capable of completing the project.

5. **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.

NPPD is requesting funding for $2,357,672 of the total project cost of $3,929,454. There are no other contributors. | If funding is not obtained from the Water Sustainability Fund, NPPD will be required to fund the project through rates it charges its electricity customers.

6. **Overview**

In 1,000 words *or less*, provide a brief description of your project including the nature/purpose of the project and its objectives. Do not exceed one page!

The purpose of this Project is to restore and rehabilitate the South Platte Supply Canal from damages caused by the floods of 2013 and 2015.

| Following the two most recent floods in 2013 and 2015 where NPPD diverted flood flows to alleviate down-river flooding, the South Platte Supply Canal was almost entirely filled with sediment, requiring operation of the canal to be temporarily suspended. The sedimentation and current temporary suspension of operation of the South Platte Supply Canal has prevented NPPD from operating the canal and has eliminated opportunity to provide the benefits listed below for present and future uses.

| The project is a rehabilitation through the construction of a sediment basin in the upper portion of NPPD's South Platte Supply Canal to trap the sediment entering the canal. The sedimentation basin will be located in the existing canal, downstream of the South Platte Supply Diversion structure (also known as Korty Diversion) to prevent sediment from depositing further downstream in the canal and lowering the canal capacity over time. Sediment removal will also reduce sediments that have historically reached Sutherland Reservoir which causes reduced storage capacity of Sutherland Reservoir, reduced water quality in Sutherland Reservoir, and increased maintenance for NPPD's power plant cooling water intake channels and other equipment. Historically the South Platte Supply Canal has required extensive efforts to prevent and mitigate sedimentation and maintain proper operation of the canal. Throughout the years, these efforts have proven to be unsuccessful in permanently solving the sedimentation issues.

| The objective of the project is returning the canal to operation in a sustainable manner to provide those benefits. To accomplish this and eliminate future sedimentation issues from stopping diversions, NPPD is proposing the construction of a sediment basin to trap and prevent it from depositing further downstream in the canal or Sutherland Reservoir. A dredge will then be used to periodically clean the sediment basin, allowing full operation of the South Platte Supply Canal. Dredged material will be disposed of to not cause an environmental impact.

| The restoration and rehabilitation of the South Platte Supply Canal project can contribute to multiple water supply goals by reestablishment of the diversions for: 1. flood protection by diverting flood flows up to the canal capacity of 1200 cubic-feet-per-second (cfs), 2. allowing South Platte River water to be used in NPPD's Sutherland System which can save the North Platte River water in Lake McConaughy for future use and agricultural drought protection (i.e. conjunctive management of water supply), 3. municipal supplies by retiming ~5,000 acre-feet of water through canal seepage to periods when it may not normally be available—providing more consistent flow, 4. endangered species and wildlife habitat by retiming ~5,000 acre-feet of water to help provide water during deficits to wildlife target flows in the central Platte River, 5. water conservation by utilizing the excesses through retiming ~5,000 acre-feet of flows, 6. preservation of water resources by providing downstream drought protection through retiming ~5,000 acre-feet of flows, 7. increased groundwater recharge for the benefit of residents in the area that rely

on groundwater for irrigation, livestock or residential use--all within an overappropriated area, 8. an alternative supply of cooling water and carbon-free hydropower production for NPPD's power plants on its Sutherland Project System, 9. reduction of sediment load to Platte River downstream of the Korty Diversion, and 10. increased water quality benefiting recreation in Sutherland Reservoir.

| In an overappropriated water-scarce area such as this, this project will be beneficial by providing improved water planning options to better manage the water resource. (See Attachment D for a map of the general area.)

7. **Project Tasks and Timeline**

Identify what activities will be conducted to complete the project, and the anticipated completion date.
For multiyear projects please list (using the following example):

Tasks	Year 1$	Year 2$	Year 3$	Remaining	Total $ Amt.
Permits	$18,000				$18,000
Engineering		$96,000			$96,000
Construction		$87,000	$96,000		$183,000
Close-out				$8,000	$8,000
				TOTAL	$305,000

- What activities (Tasks) are to be completed.
- An estimate of each Tasks expenditures/cost per year.
- Activities in years 4 through project completion under a single column.

See Attachment E for tasks and costs. The project consists of expenditures in Year 1 and in Year 5. In Year 1, construction tasks are completed at an expected cost of $2,832,385. In Year 5, a dedicated dredge and pipe is purchased at a cost of $1,097,069. Total cost of $3,929,454. See Section C. 6. below for funding request.

8. **IMP**

Do you have an **Integrated Management Plan** in place, or have you initiated one? YES☐ NO☐ Sponsor is not an NRD☒

Section B.

DNR DIRECTOR'S FINDINGS

Prove Engineering & Technical Feasibility

(Applicant must demonstrate compliance with Title 261, CH 2 - 004)

1. Does your project include physical construction (defined as moving dirt, directing water, physically constructing something, or installing equipment)?
YES☒ NO☐

If you answered "YES" you must answer all questions in section 1.A.
If you answer "NO" you must answer all questions in section 1.B.

If "YES", it is considered mostly structural, so answer the following:

1.A.1 Insert a feasibility report to comply with Title 261, Chapter 2, including engineering and technical data; NPPD hired the engineering consulting firm GEI in 2016-2018 to analyze the sediment in NPPD's South Platte Supply Canal and determine a long-term solution for dealing with the sediment that prevents the use of the canal and partially deposits in Sutherland Reservoir. Their detailed engineering feasibility report is included as Attachment F ("GEI Analysis and Recommendations"). On page 25 of the feasibility report, GEI recommended a sediment basin as the best solution for restoration and rehabilitation of the South Platte Supply Canal to allow for more reliability of operation and better water quality in Sutherland Reservoir.

1.A.2 Describe the plan of development (004.01 A); In 2019, NPPD hired the consulting firm GEI to finalize the design of the sediment project, which it received in March 2020. In May 2020, NPPD developed an RFP from GEI's final design and expects to award a contract for the sediment basin in September 2020 to be completed no later than December 31, 2021 . NPPD plans to use a dredge that NPPD currently owns at another facility while gaining actual operational knowledge about the real sediment removal requirements. NPPD will use that knowledge in purchasing a dedicated dredge in 2025.

1.A.3 Include a description of all field investigations made to substantiate the feasibility report (004.01 B); An analysis of sediment transport and volume is included in the engineering feasibility study on pages 12-22, Attachment F. | Sediment transport data were analyzed from the Korty Diversion. These data document the flow in the South Platte River at Roscoe (a short distance upstream of the diversion), flow in the canal, the total sediment concentration and the rate of sediment diverted into the canal (tons per day). | The field investigation results were used to develop a bedload equation which was then applied to flow data from Roscoe using 2014 as a recent year for comparison. River flows in 2014 are representative of more normal river flow conditions than the 2013 and 2015 high flow years. It was determined that 121,479 tons of sediment diverted into the canal using a repeat of 2014 flows which converts to 89,985 cubic yards (at 100 pounds per cubic foot), or 2,429,600 cubic feet. The cross-sectional area of the upstream reach of South Platte Supply Canal is approximately 700 square feet. This

amount of sediment (if it all deposited immediately) would fill the canal for a distance of approximately 3,500 feet in one year based on this approach. According to the consultant's hydraulic and sediment transport analysis, at the maximum design flow of 1200 cfs, without the addition of a sediment basin, ~90% of the sediment entering the canal is capable of being transported beyond the first mile of the canal, resulting in higher removal costs. | Sediment volume and river flow data was then used in the bedload equation to calculate sediment quantities based on river flows from 1983 to 2015. The quantity of sediment diverted must be considered in sizing a sediment settling basin to develop appropriate hydraulic conditions conducive to settling while storing sediment between times when sediment is removed from the settlement basin. The data from 1983 to 2015 revealed that the average tonnage of sediment diverted is approximately 87,000 tons. Such a deposit typically weighs about 100 pounds per cubic foot yielding a volume of 1.74 million cubic feet or 64,444 yards. For perspective, a space 200 feet wide, 10 feet deep, and 870 feet long would be required to provide a volume of 1.74 million cubic feet. Based on the proposed sediment basin geometry with a 960-foot length, 125-foot bottom width, and 20-foot water depth, a HEC-RAS water flow model was set up and run in sediment transport mode. The model shows a significant decrease in sediment concentration as water flows into and through the basin, with significant sediment deposition in the upper portion of the basin. This demonstrates the basin is adequately sized to effectively settle and trap the incoming sediment load. | The canal where the sediment basin will be constructed currently has a top width (bank to bank) of approximately 86 feet, a bottom width of 50 feet and a maximum operating water depth of 6 feet. The dimensions of the sediment basin will be a top width of 278 feet, a bottom width of 125 feet, a maximum operating water depth of 20 feet, and a length of 960 feet.

1.A.4 Provide maps, drawings, charts, tables, etc., used as a basis for the feasibility report (004.01 C); Attachment D is a map overview of the project including many of the affected surrounding facilities such as Korty Diversion, Lake McConaughy, Sutherland Reservoir, Gerald Gentleman Station(electric generation using canal water for cooling), and the North Platte Hydro. See the feasibility report Attachment F, Appendix A for feasibility-level construction drawings and Attachment F, Appendix B for dredge manufacturers' information.

1.A.5 Describe any necessary water and/or land rights including pertinent water supply and water quality information (004.01 D); There are no additional water or land rights needed for this project. It is completely on NPPD property and NPPD has the water rights for the diversion into the canal. Water right A-3601 provides 500cfs for hydro generation use; A-12745 and A-14666 each provide 860 cfs for Gerald Gentleman Station electric generation cooling use.

1.A.6 Discuss each component of the final plan (004.01 E); Our plan for tasks to be completed for the project are as follows: 1. Mobilization / Demobilization. 2. Remove trees east of the canal. 3. Excavate the upper portion of the sediment basin. 4. Build new access roads on both sides of the basin. 5. Construct the south berm of the dredge cuttings disposal area. 6. Construct the wetland protection berm. 7. Install the dredge cuttings disposal area water return structure. 8. Excavate the remaining

lower portion of the sediment basin. 9. Install rip-rap at the entrance transition of the sediment basin. 10. Install the geocell grid and gravel on the sediment basin boat ramp. 11. Finish grading and surface work of new access roads. 12. Install new gates, signs, fencing and guardrails. 13. Reseed all disturbed areas and install erosion protection. 14. Purchase dredge/pipe.

1.A.7 When applicable include the geologic investigation required for the project (004.01 E 1); A geotechnical investigation was completed and is included in the feasibility study, Attachment F, Section 5.3. on pages 26-27. Slope stability of the side slopes are assumed stable based on the maintenance record of the existing canal slopes. Slope failure of the settling basin sides would not result in an uncontrolled release of water from the South Platte Supply Canal or damage to significant structures. No analysis of the basin slopes is expected to be required. The cutting disposal area dike is expected to be a maximum of 10 feet high, with 3H:1V slopes and a 24-foot crest width to allow vehicle access. Dikes will be constructed with finer grained materials segregated from the settling basin excavation. No filter is expected due to the low hydraulic head. Slope stability of the dikes is assumed stable using a 3H:1V side slope and 24-foot minimum top width. | NPPD also had 6 boreholes drilled to determine subsurface soil types to be encountered during construction, which are listed in the final design drawings on Attachment G.

1.A.8 When applicable include the hydrologic data investigation required for the project (004.01 E 2); A hydrologic investigation was completed and is included in the feasibility study, Attachment F, pages 12-22. The South Platte is predominantly a sand-bed, alluvial river and as such it transports a considerable sediment load. Over the years, sediment that is diverted along with water has been taken into the canal through the diversion headworks requiring sediment elimination to maintain the diversion and conveyance capacity of the canal. | Sediment transport data were analyzed from the Korty Diversion. These data document the flow in the South Platte River at Roscoe (a short distance upstream of the diversion), flow in the canal, the total sediment concentration and the rate of sediment diverted into the canal (tons per day). | The field investigation results were that 121,479 tons of sediment diverted into the canal using a repeat of 2014 flows which converts to 89,985 cubic yards (at 100 pounds per cubic foot), or 2,429,600 cubic feet. The cross-sectional area of the upstream reach of South Platte Supply Canal is approximately 700 square feet. This amount of sediment (if it all deposited immediately) would fill the canal for a distance of approximately 3,500 feet in one year based on this approach. According to the consultant's hydraulic and sediment transport analysis, at the maximum design flow of 1200 cfs, without the addition of a sediment basin, ~90% of the sediment entering the canal is capable of being transported beyond the first mile of the canal, resulting in higher removal costs. | Sediment volumes were also analyzed based on river flows from 1983 to 2015. The quantity of sediment diverted must be considered in sizing a sediment settling basin to develop appropriate hydraulic conditions conducive to settling while storing sediment between times when sediment is removed from the settlement basin. The average tonnage of sediment diverted is approximately 87,000 tons. In this sand sized range, such a deposit typically weighs about 100 pounds per cubic foot yielding a volume of 1.74 million cubic

feet or 64,444 yards. For perspective, a space 200 feet wide, 10 feet deep, and 870 feet long would be required to provide a volume of 1.74 million cubic feet. Based on the proposed sediment basin geometry with a 960-foot length, 125-foot bottom width, and 20-foot water depth, a HEC-RAS water flow model was set up and run in sediment transport mode. The model shows that a basin constructed at these dimensions is adequately sized to effectively settle and trap the incoming sediment load.

1.A.9 When applicable include the criteria for final design including, but not limited to, soil mechanics, hydraulic, hydrologic, structural, embankments and foundation criteria (004.01 E 3). The final design was completed by GEI engineers and is included in Attachment G, "Final For Bid-Korty Basin Drawings". The criteria consisted of information from the feasibility report and further studies. Flow velocities, sediment load, and soil type results from 2019 boreholes were considered in the final design. Also, the HEC-RAS water flow modeling was used to ensure the basin is sized to effectively settle and trap the sediment diverted into the canal.

If "NO", it is considered mostly non-structural, so answer the following:

1.B.1 Insert data necessary to establish technical feasibility (004.02); N/A

1.B.2 Discuss the plan of development (004.02 A); N/A

1.B.3 Describe field or research investigations utilized to substantiate the project conception (004.02 B); N/A

1.B.4 Describe any necessary water and/or land rights (004.02 C); N/A

1.B.5 Discuss 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). N/A

Prove Economic Feasibility

(Applicant must demonstrate compliance with Title 261, CH 2 - 005)

2. Provide evidence that there are no known means of accomplishing the same purpose or purposes more economically, by describing the next best alternative. Over the years, NPPD pursued many options for solving the sediment issue in the South Platte Supply Canal. Draglines in the canal were used until the early 2000's when the operation of draglines was deemed both unsafe and uneconomical. Removal of sediment directly from the South Platte River upstream of Korty Diversion was attempted, however, the sediment load in the river is so great that sediment would be redeposited in a very short period of time and these efforts were discontinued. Removal of sediment from the South Platte River, downstream of Korty Dam was attempted to channelize and increase the velocity of the water traveling through the sluice gates. This allowed larger

amounts of bedload to be carried past the diversion rather than into the canal. These efforts experienced the same rapid re-sedimentation as cleaning upstream of Korty Dam and were also discontinued. | The next best alternative is what has been used most recently, which includes shutting down the canal for physical removal of sediment using excavators and piling sand next to the canal. This alternative was partially pursued in 2015-16 and over 50 years is estimated to cost approximately $430,000 annually to remove sediment including labor, maintenance, and equipment use; escalated at 3%. This results in a 50-year cost of $48,502,653. This next best alternative is $32,951,865 more than NPPD's proposed project 50-year cost ($15,550,788). See Attachment H for comparison of the next best alternative to the proposed project.

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 is the project life, up to fifty (50) years; *or*, with prior approval of the Director up to one hundred (100) years, (Title 261, CH 2 - 005). The total 50-year cost of the restoration and rehabilitation of the South Platte Supply Canal project is expected to be $15,550,788. The cost/benefit Table shows that the net benefit is $53,635,999 over 50 years. See Attachment E "Cost Summary" for the detail by Task. | The benefit of the project can also be shown by comparing the project to the next best alternative. This alternative was partially pursued in 2015-16 and over 50 years is estimated to cost approximately $430,000 annually to remove sediment including labor, maintenance, and equipment use; escalated at 3%. This results in a 50-year cost of $48,502,653. This next best alternative is $32,951,865 more than NPPD's proposed project 50-year cost ($15,550,788). See Attachment H for comparison of the next best alternative to proposed project. | There are measurable benefits from groundwater recharge and return flows to the South Platte River if the South Platte Supply Canal is restored. Reestablishment of diverting flows will increase recharge along the South Platte River overappropriated area. We calculate the acres that could benefit from this recharge as those acres between the South Platte Supply Canal and the South Platte River that are either certified irrigated (210 acres) or dryland and likely sub-irrigated (over 1,000 acres). Return flows can be economically quantified by calculating the cost of obtaining these return flows if they had to be obtained from traditional excess flow arrangements that the Platte River Recovery Implementation Program (PRRIP) has with various irrigation canals in Nebraska. The average net recharge is conservatively 17 AF/day from the South Platte Supply Canal based on a NPPD study. PRRIP will be paying $34.88/acre-foot recharged in 2022 to irrigation canals escalated at 3% annually. The resulting calculation is: 17 AF/day * $34.88/AF * 292 avg days of diversion = $173,144 recharge benefit in 2022 (~5,000 AF/year). This amount is included in the cost/benefit analysis, although NPPD will not seek revenue for this value. | Carbon-free hydropower at the North Platte Hydro will be increased by the amount of flow diverted if the South Platte Supply Canal is restored and rehabilitated. In an average year (30-year average 1972-2001 is hydrologically representative), 214,000 acre-feet could be diverted and produce $582,080, escalated at the US Energy Information Administration 2.2% annual electricity

increase estimate. | Other benefits stemming from restoration and rehabilitation of the South Platte Supply Canal that are not easily quantified include the following. 1) Flood protection for diverting 1200 cfs of flood flows. For example, if a typical flood flow is 16,000 cfs, then this would be 7.5% reduction in flow. If temporary storage permits could be obtained, this flood reduction benefit could extend far downstream of the city of North Platte due to releasing the water after flooding has passed. These flood control aspects would also benefit the United States by reducing FEMA expenditures. 2) Benefits to NPPD's Gerald Gentleman Station power plant due to less dredging needed to remove sediment at the Sutherland Reservoir and reduction in cooling system maintenance due to sediment clogging the condenser tubes that needs to be cleaned. 3.) Benefits to Lake McConaughy when South Platte River water can offset the need for water from the North Platte River. Higher Lake McConaughy levels benefit recreation not only at the lake, but also in the Ogallala area. Higher lake levels reduce the threat of irrigation allocations that rely on the stored water, which has occurred in the 2000's drought. This will reduce the reliance on groundwater pumping to supplement surface water which reduces costs to the irrigation customers. Both The Central Nebraska Public Power & Irrigation District and NPPD have irrigation customers relying on stored water for irrigation. The PRRIP benefits slightly due to their Environmental Account (EA) in Lake McConaughy shares in the lake's losses and a higher lake reduces the loss amount allocated to the EA. The quantity of water that provides these benefits is not easily calculated due the complexity of modeling releases from Lake McConaughy, therefore no quantitative values have been determined. | See Attachment I for Cost/Benefit calculations over 50 years.

3.A 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 total 50-year cost of the restoration and rehabilitation of the South Platte Supply Canal project is expected to be $15,550,788. See Attachment E “Cost Summary” for cost by task for initial construction and dredge/pipe costs. Engineering and inspection costs have already been incurred by NPPD and are not included in reimbursable cost. The initial dredge will be purchased in Year 5. NPPD will use its Sutherland Reservoir dredge for the first 3 years of operations of the project. This will allow NPPD to gather operational experience regarding the size and volume of the sediment. This will allow NPPD to be prudent in purchasing a properly sized dredge. Based on the technical field analysis, an Eddy Pump dredge is expected to be needed as shown in the feasibility study (Attachment F, in Appendix B). Attachment J is a June 2020 price quote for the dredge and pipe. | The O&M cost is expected to be, on average, $117,333 annually to dredge the sediment basin, including labor and dredge maintenance and removal of sediment from the dredging disposal every 10 years. Replacement costs include new dredge pipe and dredge seals every 10 years and a new dredge every 20 years—an average of $119,837 annually.

3.B 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 intangible or secondary benefits (if any) 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, in a way that justifies economic feasibility of the project such that the finding can be approved by the Director and the Commission (005.02). The restoration and rehabilitation of the South Platte Supply Canal project will provide intangible benefits to other water interests. Benefits that are not easily quantified include the following. 1) Flood protection for diverting 1200 cfs of flood flows. For example, if a typical flood flow is 16,000 cfs, then this would be 7.5% reduction in flow. If temporary storage permits could be obtained, this flood reduction benefit could extend far downstream of the city of North Platte due to releasing the water after flooding has passed. These flood control aspects would also benefit the United States by reducing FEMA expenditures. 2) Benefits to NPPD's Gerald Gentleman Station power plant due to less dredging needed to remove sediment at the Sutherland Reservoir and reduction in cooling system maintenance due to sediment clogging the condenser tubes that need to be cleaned. 3.) Benefits to Lake McConaughy when South Platte River water can offset the need for water from the North Platte River, providing drought resiliency, increased hydropower, and better recreation due to higher Lake McConaughy levels. Due the complexity of modeling releases from Lake McConaughy, no quantitative values have been determined.

3.C Present all cost and benefit data in a table to indicate the annual cash flow for the life of the project (005.03). See Attachment I "Cost/Benefit Table".

3.D 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, demonstrate the economic feasibility of such proposal by such method as the Director and the Commission deem appropriate (005.04). (For example, show costs of and describe the next best alternative.) The benefits of the restoration and rehabilitation of the South Platte Supply Canal project include flood alleviation, increased carbon-free hydropower generation, recreation, fish and wildlife, powerplant cooling, integrated management plans, conjunctive management of South and North Platte rivers' water, and alternative sustainable water supply for various present and future uses. | The benefit of the project can be shown by comparing the project to the next best alternative. This alternative was partially pursued in 2015-16 and over 50 years is estimated to cost approximately $430,000 annually to remove sediment including labor, maintenance, and equipment use; escalated at 3%. This results in a 50-year cost of $48,502,653. This next best alternative is $32,951,865 more than NPPD's proposed project 50-year cost ($15,550,788). See Attachment H for comparison of the next best alternative to proposed project.

Prove Financial Feasibility

(Applicant must demonstrate compliance with Title 261, CH 2 - 006)

4. Provide evidence that sufficient funds are available to complete the proposal. NPPD has sufficient funds to pay for its 40% of costs. NPPD is a public corporation and political subdivision of the state of Nebraska with 2019 operating revenues of approximately $1,075,000,000. NPPD has the authority under Nebraska Statutes Chapter 70 to develop rates to its customers to recover its share of the project costs. NPPD's chartered territory includes all or parts of 86 of the State's 93 counties and more than 400 municipalities in the State. | Neb. Rev. Stat. 70-655 states in part: (1) Except as otherwise provided in this section, the board of directors of any district organized under or subject to Chapter 70, article 6, shall have the power and be required to fix, establish, and collect adequate rates, tolls, rents, and other charges for electrical energy, water service, water storage, and for any and all other commodities, including ethanol and hydrogen, services, or facilities sold, furnished, or supplied by the district, which rates, tolls, rents, and charges shall be fair, reasonable, nondiscriminatory, and so adjusted as in a fair and equitable manner to confer upon and distribute among the users and consumers of commodities and services furnished or sold by the district the benefits of a successful and profitable operation and conduct of the business of the district.

5. Provide evidence that sufficient annual revenue is available to repay the reimbursable costs and to cover OM&R (operate, maintain, and replace). NPPD has sufficient funds to pay for its 40% of costs. NPPD is a public corporation and political subdivision of the state of Nebraska with 2019 operating revenues of approximately $1,075,000,000. NPPD has the authority under Nebraska Statutes Chapter 70 to develop rates to its customers to recover its share of the project costs. NPPD's chartered territory includes all or parts of 86 of the State's 93 counties and more than 400 municipalities in the State. The construction portion of the project has been approved through NPPD budgets, but the dredge will be approved in a future budget after final specifications are determined. | Neb. Rev. Stat. 70-655 states in part: (1) Except as otherwise provided in this section, the board of directors of any district organized under or subject to Chapter 70, article 6, shall have the power and be required to fix, establish, and collect adequate rates, tolls, rents, and other charges for electrical energy, water service, water storage, and for any and all other commodities, including ethanol and hydrogen, services, or facilities sold, furnished, or supplied by the district, which rates, tolls, rents, and charges shall be fair, reasonable, nondiscriminatory, and so adjusted as in a fair and equitable manner to confer upon and distribute among the users and consumers of commodities and services furnished or sold by the district the benefits of a successful and profitable operation and conduct of the business of the district.

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 (i.e. timing vs nesting/migration, etc.). The restoration and rehabilitation of the South Platte Supply Canal project will minimize impacts to the natural environment. A wetland delineation was completed along the project reach to determine the extent of existing wetlands. The location of the existing wetlands was considered during final design and is being protected as is required in the 404 permit.

Erosion control measures and proposed grading were designed to avoid affecting the existing wetlands. A U.S. Army Corps of Engineers (USACE) Clean Water Act (CWA) Section 404 permit has been applied for in June 2020 and is expected to be obtained by December 31, 2020. The Section 404 permit program regulates the construction activities that take place in waters of the U.S. including wetlands. The dredged material will not cause environmental impact and will be disposed of in accordance with state and federal regulations . | The project provides for the opportunity to generate more carbon-free power from the hydropower plant at North Platte (through additional water), as well as Kingsley Hydro (through increased "head pressure").

8. Explain how you are qualified, responsible and legally capable of carrying out the project for which you are seeking funds. NPPD is a public power and irrigation district that operates under statutes of the State of Nebraska. NPPD's Korty Diversion and the South Platte Supply Canal have been operated since November 1946. NPPD and its predecessor have provided for operation, maintenance, construction and monitoring of the diversion. As such, NPPD is qualified, responsible and legally capable of carrying out this project.

9. Explain how your project considers plans and programs of the state and resources development plans of the political subdivisions of the state. NPPD's project not only could have benefits to NPPD, but to other stakeholders in the basin. NPPD anticipates benefits to include: by providing important operational flexibility in NPPD's system to assist the Platte River Recovery Implementation Program (PRRIP) in attaining its objective of managing river flows to benefit threatened and endangered species--the State of Nebraska is a party to the PRRIP. One of the PRRIP's objectives is to decrease shortages of Platte River flows for endangered species target flows. It can also help retime ~5,000 acre-feet of water through canal seepage for the Twin Platte, Central Platte, or the Tri-Basin Natural Resources Districts' Platte River Integrated Management Plans and Upper Platte River Basinwide Plan. We estimate the amount of net recharge to be ~5,000AF/year.

10. Are land rights necessary to complete your project? YES☐ NO☒

If yes:

10.A Provide a complete listing of all lands involved in the project. N/A

10.B Attach proof of ownership for each easements, rights-of-way and fee title currently held. N/A

10.C Provide assurance that you can hold or can acquire title to all lands not currently held. N/A

11. Identify how you possess all necessary authority to undertake or participate in the project. NPPD owns the property and has authority to make modifications to continue its operation. NPPD has also obtained a Federal Energy Regulatory Commission

non-capacity license amendment as shown in Attachment A. | NPPD has the authority under Nebraska Statutes Chapter 70 to develop rates to its customers to recover its share of the project costs.

12. Identify the probable consequences (environmental and ecological) that may result if the project is or is not completed. The environmental and ecological consequences of not completing this project is severe reduction, if not complete elimination, of diversions from the South Platte River into NPPD's Sutherland system for the beneficial uses including: carbon-free energy through hydropower, Lake McConaughy drought protection (reducing demand for water from the North Platte River may allow it to be stored for irrigation), and increased management opportunities for threatened and endangered species habitat.

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 above. 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.

   The restoration and rehabilitation of the South Platte Supply Canal project would provide retiming of ~5,000 acre-feet of flows through canal seepage to the Platte River that benefit municipal wellfields especially during drought conditions. | Large

downstream municipalities that utilize water that is hydrologically connected to the Platte River are North Platte, Kearney, and Grand Island. The combined population of those cities is approximately 110,000. | Historically cities have been relying on Platte River water more and more each year to replace groundwater wellfields. | Shortages of water to wellfields is a long-term issue for growing populations downstream. (See Attachment D for map of area .)

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 restoration and rehabilitation of the South Platte Supply Canal project is important to Integrated Management Plans downstream of the Korty Diversion because this project can retime ~5,000 acre-feet of flows through canal seepage to periods when shortages occur , which is a goal of NRDs below the Korty Diversion. The retimed water will benefit the following plans: 1) the Twin Platte Natural Resources District (TPNRD) Integrated Management Plan issued August 13, 2009 by the TPNRD and the Nebraska Department of Natural Resources (NDNR); the Central Platte Natural Resources District (CPNRD) Integrated Management Plan (IMP) issued September 15, 2009 by the CPNRD and the NDNR; and the Tri-Basin Natural Resources District (TPNRD) Platte Basin Integrated Management Plan issued August 11, 2009 by the TPNRD and the NDNR. | Historically, these NRDs and NDNR have worked with various river diverters to retime flows. For example, the TPNRD has agreements with canals between Lake McConaughy and North Platte to divert excess flows for retiming and the CPNRD also has agreements with canals in Dawson County to do the same. | The following goals and objectives of the IMPs could benefit from the project: 1) to provide offset water for groundwater well impacts, 2) to minimize conflicts between water users. The Korty Diversion can assist in these by reestablishing retiming of flows to times when water may be needed, potentially in times of drought and will increase recharge along South Platte River during times of diversion; especially under circumstances where the water is allowed to be stored in Sutherland Reservoir. The project will allow water to begin to be diverted again, which will provide retimed river flows reducing the NRDs need to provide offsets. (See Attachment D for map of area .)

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 project contributes to water sustainability goals for present and future needs because it will allow reestablishment of diversion of South Platte River water into the South Platte Supply Canal system. Reestablishment of the canal diversions to its fullest extent will increase aquifer recharge and increase streamflow by retiming ~5,000 acre-feet of water that would otherwise remain in the river. The location of aquifer recharge is downstream of the Korty Diversion between the South Platte River and the seven (7) miles of the South Platte Supply Canal. We estimate this area to be over 1200 acres—all within an overappropriated area. | The South Platte River between the Korty diversion and Paxton, Nebraska (7 miles) could see increased streamflow at an average of 2% of amount diverted at Korty, approximately evenly throughout the year or ~5,000 AF/year based on an average annual diversion of 214,000 AF. | This project has cross-basin benefits in that it can be used to conjunctively manage water for long-term sustainability and drought protection. When water is abundant in the South Platte River it can be used instead of using water from the North Platte River where water could be stored in Lake McConaughy or not require its storage water to be released. Higher Lake McConaughy levels benefit recreation not only at the lake, but also in the Ogallala area. Higher lake levels reduce the threat of irrigation allocations that rely on the stored water, which has occurred in the 2000s drought. This will reduce the reliance on groundwater pumping to supplement surface water which reduces costs to the irrigation customers. Both Central Public Power & Irrigation District and NPPD have irrigation customers relying on stored water for irrigation. The PRRIP benefits slightly due to their Environmental Account (EA) in Lake McConaughy shares in the lake's losses and a higher lake reduces the loss amount allocated to the EA. The quantity of water that provides these benefits is not easily calculated due the complexity of modeling releases from Lake McConaughy, therefore no quantitative values have been determined. (See Attachment C for The Central Nebraska Public Power & Irrigation District letter supporting this conjunctive use of North and South Platte river water.) | There is not a storage facility in Nebraska that is allowed to store South Platte river water. Additionally, carbon-free hydropower can benefit by use of this South Platte River water that otherwise would pass by. This project will help NPPD better manage water for Nebraska water sustainability.

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 restoration and rehabilitation of the South Platte Supply Canal project can contribute to multiple water supply goals by reestablishment of the diversions for: 1. flood protection by diverting flood flows up to the canal capacity, 2. allowing South Platte River water to be used in NPPD's Sutherland System while saving the North Platte River water in Lake McConaughy for future use and agricultural drought protection (i.e. conjunctive management of water supply), 3. municipal supplies by retiming water to periods when it may not normally be available—providing more consistent flow, 4. endangered species and wildlife habitat by retiming the water to help provide water during deficits to wildlife target flows in the central Platte River, 5. water conservation by utilizing the excesses through retiming flows, 6. preservation of water resources by providing downstream drought protection through retiming of flows, 7. increased groundwater recharge for the benefit of residents in the area that rely on groundwater for irrigation, livestock or residential use--all within an overappropriated area, 8. an alternative supply of cooling water and carbon-free hydropower production for NPPD's power plants on its Sutherland Project System, 9. reduction of sediment load to Platte River downstream of the Korty Diversion, and 10. increased water quality benefiting recreation in Sutherland Reservoir. | The long-range forecasted benefits are greater than continuing the current path of being able to divert very little, if any water for these benefits. Attachment I "Cost/Benefit Table" shows the net benefits of completing this water sustainability project as $53,635,999 over 50 years.

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 restoration and rehabilitation of the South Platte Supply Canal project maximizes the beneficial use of Nebraska's water resources through reestablishment of diversions for: 1. flood protection by diverting flows from the South Platte River up to the canal capacity, 2. allowing South Platte River water to be used in NPPD's Sutherland System while saving the North Platte River water in Lake McConaughy for future use and agricultural drought protection, 3. municipal supplies by retiming water to periods when it may not normally be available—providing steadier flow, 4. endangered species and wildlife habitat by retiming the water to help provide water during deficits to wildlife target flows in the central Platte River, 5. water conservation by utilizing the excesses through retiming flows, and 6. preservation of water resources by providing downstream drought protection through retiming of flows, 7. increased groundwater recharge for the benefit of residents in the area that rely on groundwater for irrigation, livestock or residential use, 8. an supply of cooling water and carbon-free hydropower production for NPPD's power plants on its Sutherland Project System, 9. reduction of sediment load to Platte River downstream of the Korty Diversion, and 10. increased water quality benefiting recreation in Sutherland Reservoir. | Also, if temporary storage permits can be obtained, storing more of the state's water that would normally pass by NPPD's storage system will

retime it to even more beneficial times, especially important in times of drought or flooding because NPPD's water rights do not allow for storage-only flow through of flows. | Use of water is important to Nebraska's residents. The 2013 Nebraska Rural Poll (http://ruralpoll.unl.edu/priorities) shows that most rural Nebraskans consider water use for residential use, irrigation, and preserving habitat as medium or high priority. (This is the most recent Rural Poll that addresses water in Nebraska.) The project provides all these beneficial impacts to the state's residents.

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.

NPPD is requesting funding for $2,357,672 of the total grant-reimbursable project cost of $3,929,454. | When considering NPPD's non-reimbursable internal costs and non-reimbursable costs that will be incurred prior to any potential grant award, the total cost is $ 4,842,069 ($3,570,000 engineering, studies, internal labor, and construction of sediment basin + $1,097,069 for initial dredge/pipe + $75,000 FERC License Amendment + $100,000 USACE 404 Permit). This includes costs for engineering, studies and obtaining permits that have been paid for by NPPD and are not reimbursable. NPPD is requesting funding for the construction and dredge/pipe portions of this project which cost $3,929,454. | Ongoing O/M costs are expected to be, on average, $117,333/year; replacements costs are expected to be, on average, $119,837 annually. | Benefits of increased carbon-free hydropower revenue is estimated to be, on average, $ 1,028,441 annually; the value of groundwater recharge is estimated to be, on average, $383,535. There are no land and water acquisition costs. The next best alternative is what has been used most recently, which includes shutting down the canal for physical removal of sediment using excavators and piling sand next to the canal. This alternative was partially pursued in 2015-16 and over 50 years is estimated to cost approximately $430,000 annually to remove sediment including labor, maintenance, and equipment use; escalated at 3%. This results in a 50-year cost of $48,502,653. This next best alternative is $32,951,865 more than NPPD's proposed project 50-year cost ($15,550,788). See Attachment H for comparison of the next best alternative to proposed project. | The Cost/Benefit Table in Attachment I shows the net benefit after 50 years to be $53,635,999.)

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.

Colorado, Wyoming, Nebraska and the Department of Interior formed a unique partnership with the goal of developing a shared approach for managing the Platte River for endangered and threatened species. Water users from the three states, U.S. Bureau of Reclamation, U.S. Fish & Wildlife Service, and local and national conservation groups joined the effort. Together, these stakeholders developed an innovative approach for improving the management of the Platte — for the health of the ecosystem and the people that depend on it. The Platte River Recovery Implementation Program (PRRIP) is the result of that planning effort. The PRRIP is focused on implementing this shared vision for creating and maintaining habitats on the Platte, including river flows. This includes reducing shortages to target flow in the Platte River from Lexington to Chapman, Nebraska. | The restoration and rehabilitation of the South Platte Supply Canal project will help the state and PRRIP meet its obligations for endangered species and wildlife habitat by retiming ~5,000 acre-feet of the water through canal seepage to help provide water during deficits to wildlife target flows in the central Platte River. | The current deficiency is that the PRRIP is short of its first increment goal of 120,000 acre-feet of water per year and retiming water to times of shortage. Also, NPPD is currently obtaining engineering data on the possibility of increasing the capacity of Sutherland Reservoir. This project could provide water for that increased capacity which, although NPPD has not made any decisions, there is a possibility it could be used for PRRIP purposes.

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 restoration and rehabilitation of the South Platte Supply Canal project could reduce flood threats to property downstream of the Korty Diversion to North Platte (approximately 35 miles), such as bridges, homes, agricultural land, highways, roads, and Interstate 80. | Reductions to threats can be up to 1200 cfs. For example, if a typical flood flow is 16,000 cfs, then this would be 7.5% reduction in flow. | The benefits to public security and safety are the flood reductions of up to 1200 cfs that could be diverted. These flood control aspects would also benefit the United States by reducing FEMA expenditures. | NPPD's Sutherland System, including the powerplant and canal are critical infrastructure. Reduced sediment in Sutherland

Reservoir helps maintain the storage capacity. Reduced sediment at NPPD's Gerald Gentleman Station reduces the maintenance required at the electric generation plant to deal with the sediment, including the potential to have to reduce the power output to address issues. Reduced sedimentation reduces wear and tear on other structures down-canal in the Sutherland System. Lastly, reestablishment of diverting flows will increase hydropower generation both at NPPD's North Platte Hydro through 214,000 AF of additional flow, as well as The Central Nebraska Public Power & Irrigation District's Kingsley Hydro through increased "head pressure" from higher lake level.

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 water quality issues that will be improved include less sediment down-canal. 1) Reduced sediment in Sutherland Reservoir benefits the fishery and recreation (a State Recreation Area). 2) Reduced sediment in Sutherland Reservoir helps maintain the storage capacity. 3) Reduced sediment at NPPD's Gerald Gentleman Station reduces the maintenance required at the electric generation plant to deal with the sediment, including the potential to have to reduce the power output to address issues. 4) Reduced sedimentation reduces wear and tear on other structures down-canal in the Sutherland System. | The sediment has been an issue at Sutherland Reservoir historically and NPPD has attempted to remedy this by dredging part of the reservoir.

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.

There are no local funding resources available for this project. NPPD has obtained letters of support from the Platte River Recovery Implementation Program, The Central Nebraska Public Power & Irrigation District, the City of North Platte, Lincoln County Emergency Management, Twin Platte Natural Resources District, and Central Platte Natural Resources District (see Attachment C). | NPPD will use its budgeted funds for its portion of the project.

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 Korty Diversion and South Platte Supply Canal is located within the Twin Platte Natural Resources District (TPNRD). The TPNRD has an Integrated Management Plan (IMP) and is involved with the Basin-Wide Plan for Joint Integrated Water Resources Management of Overappropriated Portions of the Platte River Basin, Nebraska, and the Platte Basin Coalition. | The history of work completed to achieve the goals of the plans include, but not limited to: a moratorium on new or expanded water well construction, certification of irrigated acres, provisions for groundwater transfers, tracking of municipal, industrial, and commercial uses, contractual arrangements with irrigation canals to divert excess flows for groundwater recharge. | NPPD's restoration and rehabilitation of the South Platte Supply Canal project can support the following goals and objectives of the IMPs: 1) to provide offset water for IMPs, and 2) to minimize conflicts between water users by increasing recharge along South Platte River overappropriated area. The amount of recharge from the project is expected to be 5,000 AF annually. Conjunctive management of North and South Platte river water can help minimize conflicts by being able to use South Platte River water and save water on the North Platte River, including The Central Nebraska Public Power & Irrigation District's Lake McConaughy. Doing so lowers the risk that Lake McConaughy runs low. Higher lake levels reduce the threat of irrigation allocations that rely on the stored water, which has occurred in the 2000s drought. This will reduce the reliance on groundwater pumping to supplement surface water which reduces costs to the irrigation customers. Both Central Public Power & Irrigation District and NPPD have irrigation customers relying on stored water for irrigation. The PRRIP benefits slightly due to their Environmental Account(EA) in Lake McConaughy shares in the lake's losses and a higher lake reduces the loss amount allocated to the EA. | The primary stakeholders are Upper Platte Basin NRDs; the PRRIP; NPPD power generation; NPPD irrigation customers (protect/enhance their water supply); and Central Public Power & Irrigation District irrigation customers (protect/enhance their water supply). | Others who could benefit in the future are those that benefit from downstream flow by default or contract.

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.

All entities possessing diversions statewide potentially have issues with sediment into their canals, which prevents them from being used as frequently or efficiently. | The first issue addressed by the project is flood protection through the reduction of flows during times of flooding . The project will provide increased volume and frequency of diversion of flood flows that otherwise contribute to flooding downstream of the Korty Diversion to the east side of the city of North Platte where the water would re-enter the river from NPPD's canal return. The number of people or acres that could benefit from removing 1200 cfs of flood flows is difficult to determine. For example, if a typical flood flow is 16,000 cfs, then this would be 7.5% reduction in flow. If temporary storage permits could be obtained, this flood reduction benefit could extend far downstream of the city of North Platte also. These flood control aspects would also benefit the United States by reducing FEMA expenditures. | The second state-wide issue addressed by the project is groundwater recharge. Reestablishment of diverting flows will increase recharge along South Platte River overappropriated area. We calculate the acres that could benefit from this recharge as those acres between the South Platte Supply Canal and the South Platte River that are either certified irrigated (210 acres) or dryland and likely sub-irrigated (over 1,000 acres) | This type of project should be considered on other canal diversions statewide because most of the state is either overappropriated or fully appropriated. In water-scarce areas, diverting water into canals that would otherwise flow by will prove beneficial and help cope with the uncertain future conditions. | The benefit, to the state, this project would provide is that NPPD is willing to share the results of this project with others in the state.

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 restoration and rehabilitation of the South Platte Supply Canal project will utilize funds be provided by NPPD. NPPD does however have letters of support from the Platte River Recovery Implementation Program, The Central Nebraska Public Power & Irrigation District, City of North Platte, the Lincoln County Emergency Management, Twin Platte Natural Resources District, and Central Platte Natural Resources District, (see Attachment C). | If funding is not be obtained from the Water Sustainability Fund, NPPD will be required to fund the project through rates it charges its electricity customers.

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.

Watershed health and function could be improved by reestablishing South Platte Supply Canal diversion through: 1) reducing shortages to target flows for wildlife by retiming ~5,000 acre-feet of flows, 2) lessening damaging flood effects to the watershed by diverting a portion of flood flows, and 3) reducing sediment in Sutherland Reservoir.

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 NDNR 2019 Annual Report includes the following objectives that the project helps to meet. Objective "3. Support locally developed water management plans for conjunctively managing hydrologically connected water supplies" and Objective "5. Participate in interagency collaboration with federal agencies, state agencies, local natural resources districts (NRD's), and other water interest entities on various water resources programs and projects" could be met. The restoration and rehabilitation of the South Platte Supply Canal project could provide for 1) reducing shortages to target flows for wildlife by reestablishing retiming ~5,000 acre-feet of flows, 2) lessening damaging flood effects by reestablishing diverting a portion of flood flows, and 3) conjunctively managing the South and North Platte rivers' water supply.

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.

NPPD's project is not designed to meet the requirements of a federal mandate which furthers the goals of the WSF.