


PROGRAM TASK & ID: WPRT-1. Retiming Projects: Canal Recharge

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2024	\$185,000		

Task Description

The Program's Water Action Plan projects include retiming of excess flows through intentional groundwater recharge in CNPPID, NPPD and CPNRD canal systems. Recharge operations will occur during the non-irrigation season as conditions allow. Estimated WPRT-1 recharge costs are summarized by district/canal below.

Item	Cost
CNPPID Phelps Canal	\$0
NPPD Canals	\$185,000
CPNRD Canals	\$0
TOTAL	\$185,000

Notes on Cost
Phelps County Canal Groundwater Recharge

As it has done since 2011, the Program intends to continue groundwater recharge in the Phelps County Canal in 2024 and each successive year through the end of the First Increment Extension in 2032. Recharge operations can occur during the non-irrigation season as conditions allow, subject to the availability of excess flows, groundwater elevations below designated thresholds, and ice-free operating conditions. To facilitate recharge, a check structure at Mile Post (MP) 13.3 allows water to pool in the canal and seep into the aquifer. The CNPPID will obtain the necessary permits from Nebraska DNR to divert unappropriated excess flows for groundwater recharge.

The Program and CNPPID completed a Water Service Agreement (WSA) in December 2022 extending Phelps County Canal groundwater recharge at least through December 31, 2032. The WSA reserves at least 75% of Phelps County Canal excess flow diversions to MP 13.3 for the Program and included Program pre-payment for 50,000 AF of excess flow diversions at a unit cost of \$35.92/AF.

No additional funds are required for Phelps County Canal groundwater recharge in 2024.

NPPD Gothenburg and Dawson County Canal Ground Water Recharge

The Program has a WSA with the NPPD through December 31, 2025, for diversion of excess flows into the Gothenburg and Dawson County Canals for groundwater recharge operations during the non-irrigation season. Per the terms of the WSA, the Program will pay NPPD for a Net Amount Diverted, which is defined as "the flow measured by NPPD using the Gothenburg Canal and Dawson County Canal measuring flumes located near the river head gates...and subtracting each canal's river returns as measured by NPPD." To facilitate the project, NPPD will obtain the necessary permits from Nebraska DNR to divert unappropriated excess flows for groundwater recharge. Details of anticipated 2024 CPNRD canals groundwater recharge are shown in the table below. Actual expenditures by the Program will be based on measured diversions into the Gothenburg and Dawson County Canals for groundwater recharge in 2024.



Item	Value
Water Service Agreement	Expires December 31, 2025
Unit Cost	\$36.99 per acre-foot
Estimated Volume ¹	5,000 acre-feet
Budget²	\$185,000

¹ WSA does not specify annual volumetric limit; 5,000 AF assumed for consistency with other canal recharge agreements.

² Unit Cost × Estimated Volume, rounded to the next \$1,000.

CPNRD Orchard-Alfalfa, Thirty Mile and Cozad Canal Groundwater Recharge

The CPNRD can divert excess flows for non-irrigation season recharge through the Orchard-Alfalfa, Thirty Mile, and Cozad canals. Appropriations for recharge diversions (100 cfs each at Thirty Mile and Cozad, 75 cfs at Orchard-Alfalfa) were approved by the Nebraska DNR in 2015.

The CPNRD canals have not diverted for Program recharge since May 2020. CPNRD canal recharge is not anticipated in 2024 and no funds are to be allocated for this project.

Item	Value
Water Service Agreement	Expires December 31, 2024
Unit Cost	\$36.99 per acre-foot
Estimated Volume ¹	0 acre-feet
Budget²	\$0

¹ Diversions were limited in 2018-2019 and none were made from 2021-2023. The most recent net recharge diversion was 2,950 acre-feet in April-May 2020.

² Unit Cost × Estimated Volume, rounded to the next \$1,000.

**PROGRAM TASK & ID: WPRT-2. Retiming Projects: Elwood Reservoir Recharge**

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2024	\$0		

Task Description

The Program's Water Action Plan projects include retiming of excess flows through intentional groundwater recharge in CNPPID's Elwood Reservoir. Recharge operations can occur throughout the year as conditions allow, subject to the availability of excess flows, storage capacity in the reservoir, and ice-free operating conditions.

Notes on Cost

As it has done since 2015, the Program intends to continue groundwater recharge in Elwood Reservoir in 2024 and each successive year through the end of the First Increment Extension in 2032. Elwood Reservoir is an unlined reservoir that acts as a holding basin to allow excess flows to seep and recharge the alluvial aquifer. Excess flows are delivered through the E-65 Canal to the Carl T. Curtis Pump Station, which pumps the water into Elwood Reservoir. The CNPPID will obtain the necessary permits from Nebraska DNR to divert unappropriated excess flows for recharge.

The Program and CNPPID completed a Water Service Agreement (WSA) in December 2022 extending Elwood Reservoir groundwater recharge at least through December 31, 2032. The WSA reserves at least 50% of Elwood Reservoir excess flow diversions for the Program and included Program pre-payment for 134,927.7 AF of excess flow diversions at a unit cost of \$54.54/AF.

No additional funds are required for Elwood Reservoir groundwater recharge in 2024.


PROGRAM TASK & ID: WPRT-3. Retiming Projects: Broad-Scale Recharge

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2024	\$208,000		

Task Description

The Program constructed a broad-scale recharge project at the Cottonwood Ranch Complex, which includes earthen berms and water control structures to allow for the ponding of water in eight individual cells and subsequent recharge of the alluvial aquifer. Divertible excess flows are delivered to the property through a pipeline from the Phelps County Canal, and the infiltrated water returns to the Platte River over time. Estimated WPRT-3 recharge costs are summarized by item below.

Item	Cost
Rubicon Gate/SCADA Service & Maintenance	\$5,000
Electricity	\$400
Berm maintenance	\$62,500
Groundwater monitoring	\$20,000
Pipeline Cavitation Fix	\$120,000
TOTAL	\$207,900 Rounded to \$208,000

Notes on Cost

Nearly 2,300 AF of excess flow water was delivered to the project between May and October 2023. Recharge operations are expected to continue at any time of year, subject to the availability of divertible excess flows and ice-free operating conditions. The CNPPID will charge the Program \$28.72 per acre-foot (based on a 2% annual escalator) for water diverted to the delivery pipeline in 2024. However, the Program will not be responsible for a cash payment to the CNPPID until the cost of water deliveries exceeds the cost of the design and construction of the delivery pipeline. Following deliveries made from 2020-2023, the remaining balance of the pipeline cost is about \$893,000. At 2024 rates, the estimated pipeline costs are equivalent to more than 31,000 acre-feet of water deliveries. This far exceeds anticipated deliveries to Cottonwood Ranch in 2024, so no additional budget is included for water deliveries.

Seven of the eight water control structures at the Cottonwood Ranch project are solar powered, self-regulating gates manufactured by Rubicon. Gates are linked to a cellular SCADA system allowing EDO staff to remotely operate the gates and monitor their performance. Annual Rubicon gate maintenance will cost \$1,386 (\$198 per gate). The annual cost of the subscription to the remote-control software is \$3,500 (\$500 per gate). The annual maintenance and subscription will be budgeted at \$5,000 total for each year.

Electrical power service from Southern Power to power pipeline valves and other equipment is estimated to be approximately \$400 (~\$33.00 per month).



Some amount of annual maintenance will be necessary at the project site. This could include fixing berms or spillways that are damaged from high flows or precipitation events, re-seeding berms, replacing riprap, or other things of this nature. The Nebraska Resources Development Fund Guidelines recommends budgeting 1.25% of the constructions costs per year for maintenance for projects similar to the broad-scale recharge project. Given the capital cost of the project (\$5,000,000), \$62,500 has been budgeted for general site and berm maintenance. In 2024, it is estimated that a portion (\$5,000-\$10,000) of this maintenance budget will be used to remove accumulated silt and vegetation debris from the Rubicon gate flumes.

It is estimated that about \$20,000 will be needed to install and instrument (i.e., data loggers and cables, telemetry units, etc.) two new groundwater monitoring wells on the east side of recharge Cell 8 to observe water table elevations at the project boundary.

During test fill operations in 2020 and again at project startup in March 2022, observations were made of the north and south pipeline outlet flows across the full range of valve opening settings. Unexpected cavitation—which can be damaging to the valves over time—was experienced for valve openings in the range of about 25% to 60%, limiting the ability to make water deliveries at mid-range levels. To date, the project has been operated with the outlet valves either 100% open or 20% or less. The proposed project budget for 2024 includes \$20,000 for engineering and \$100,000 for construction to resolve the cavitation issue and allow for the full range of delivery pipeline operations.


PROGRAM TASK & ID: WPRT-4. Retiming Projects: Recapture Wells

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2024	\$124,000		

Task Description

Groundwater recapture projects are retiming projects utilizing the water from existing recharge operations, including those utilizing the Phelps County Canal, Elwood Reservoir, and Cottonwood Ranch. Recharge accretions are not controllable and may return to the river during excesses to target flows. Groundwater recapture allows the Program to pump intentionally recharged water to the river during shortage periods to maximize the deficit reduction provided by the previously recharged water.

Notes on Cost

The Program entered into a Water Augmentation Agreement with the Tri-Basin Natural Resources District (TBNRD) to construct and operate a network of wells to recapture water recharged through the Phelps County Canal, Elwood Reservoir, and the Cottonwood Ranch broad-scale recharge project. Construction of seven recapture wells and associated transmission pipelines was completed in 2023. Per the Program's water service agreement with Tri-Basin NRD, all project operations costs will be reimbursed by the Program with no markup. The seven new wells have been operational since May 2022 and some of the annual project costs are now known, but annual electricity and maintenance costs remain highly uncertain.

Additionally, an Amendment to the Water Augmentation Agreement was approved by the Program's Governance Committee in March 2022 to incorporate the Program's existing Cook recapture well (constructed in 2016) into the new recapture network. Responsibility for operation and maintenance of the well was transferred to TBNRD, and all associated costs are to be reimbursed by the Program. Cost estimates in the table below reflect inclusion of all 8 Program recapture wells.

Item	Cost
Electricity	\$75,000
Well/Pipeline Maintenance	\$10,000
Tri-basin NRD Staff Time, Expenses, and Indirect Costs	\$25,000
Property Easements	\$12,000
SCADA system software subscription	\$2,000
TOTAL	\$124,000

No funds are proposed for extension of the Expanded Recapture Reconnaissance Study that is currently underway. The study is scheduled for completion by the end of August 2024 but it is not anticipated that the GC would take immediate action on any recommendations that would require 2024 funding.


PROGRAM TASK & ID: WPST-1. Storage Leases: Lake McConaughy Sources

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2024	\$1,648,000		

Task Description

The Program has leased surface water from CPNRD (since 2018) and NPPD (since 2019) under a succession of one-year agreements. The leased surface water is credited to the Lake McConaughy EA in October each year. Negotiations to secure long-term leases with CPNRD, NPPD, and (potentially) CNPPID at least through the end of the First Increment Extension in 2032 remain in progress. One-year agreements with CPNRD and NPPD are assumed again for 2024. Estimated WPST-1 leasing costs are summarized by source below.

Item	Cost
CPNRD Surface Water Lease	\$1,350,000
NPPD Surface Water Lease	\$298,000
CNPPID Storage Lease	\$0
TOTAL	\$1,648,000

Notes on Cost

The long-term lease agreements with CPNRD, NPPD, and CNPPID that were anticipated in the 2023 budget remain in progress and uncertain. While those negotiations continue, the Program assumes that another round of one-year agreements with CPNRD and NPPD will be pursued in 2024. Volume and unit cost terms are expected to remain the same as in the 2023 agreements. A one-year lease agreement with CNPPID for storage water is not expected.

Details of the anticipated 2024 CPNRD surface water lease are shown in the table below.

Item	Value
Unit Cost	\$90.00 per acre-foot
Assumed Volume	15,000 acre-feet
Budget¹	\$1,350,000

¹ Unit Cost × Estimated Volume, rounded to the next \$1,000

Details of the anticipated 2024 NPPD surface water lease are shown in the table below.

Item	Value
Unit Cost	\$90.00 per acre-foot
Assumed Volume	3,306 acre-feet
Budget¹	\$298,000

¹ Unit Cost × Estimated Volume, rounded to the next \$1,000.

**PROGRAM TASK & ID: WPST-2. Storage Leases: Upstream Sources**

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2024	\$624,000		

Task Description

This line item includes leasing of surface water from sources upstream of Lake McConaughy, which presently consists of water leased from Wyoming's Pathfinder Municipal Account. Estimated WPST-2 leasing costs are summarized below.

Item	Cost
Pathfinder Municipal Account Lease	\$624,000
TOTAL	\$624,000

Notes on Cost

The Program has a contract with the Wyoming Water Development Office (WWDO) for water from the Municipal Account in Pathfinder Reservoir. The contract term extends until December 31, 2032. For 2024, the maximum water available from the Pathfinder Municipal Account is 9,600 acre-feet at a unit cost of \$65 per acre-foot, resulting in a budget of \$624,000.

**PROGRAM TASK & ID: WPIR-1. Irrigator Leases**

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2024	\$310,000		

Task Description

The Program can temporarily lease surface water from individual irrigators under the CNPPID system. Irrigators then dryland farm or fallow the enrolled parcels, which are generally odd-shaped or hard-to-irrigate lands, during the term of the lease agreement. The consumptive use portion of the surface water—9 inches per acre during a full-allocation year—is available in Lake McConaughy and transferred into the EA for the Program. The CNPPID serves as the administrator, managing the individual lease agreements, processes, and operations.

The Program and the CNPPID had a 5-year water leasing agreement for the 2019–2023 irrigation seasons. In September 2023, the GC approved a one-year extension of the lease agreement with the same unit cost and maximum enrollment terms. The table below provides details of the CNPPID irrigator lease for 2024.

Item	Value
Water Leasing Agreement (One-Year Extension)	Expires December 31, 2024
Unit Cost	\$100 per enrolled acre
Maximum Enrollment	3,000 acres
CNPPID Administration Fee	\$10,000
Budget¹	\$310,000

¹ Unit Cost × Estimated Enrollment, plus CNPPID Administration Fee.

With full enrollment, the CNPPID irrigator lease would result in 2,250 acre-feet credited to the Lake McConaughy EA in October 2024. Actual cost and project yield will be based on irrigator lease enrollment for the 2024 irrigation season.

**PROGRAM TASK & ID: WPLW-1. General Maintenance of Land-for-Water Properties**

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2024	\$21,000		

Task Description

This line item includes the funds necessary for general land management and maintenance activities at Program properties acquired for developing Water Action Plan projects, including the Lindstrom, Edlund, Lakeside, and Jensen tracts.

Notes on Cost

Associated tasks and individual budgets are shown in the table below. See **Appendix A** of the full work plan document for more detail.

Item	Cost
Fence & Road Maintenance	\$1,000
Noxious Weed Control	\$8,000
Mowing	\$1,000
Tracts W2016002 and W2017001 Electricity	\$100
Taxes	\$10,500
BUDGET	\$ 20,600 Round to \$21,000


PROGRAM TASK & ID: WPWM-1. Water Monitoring Activities

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2024	\$42,000		

Task Description

The Program maintains a network of surface and groundwater monitoring locations equipped with manual and automated data loggers. Data from this network provides information on regional groundwater levels, river and wetland stage, and surface/groundwater interactions. In addition, the Program leases two weather stations and shares in the expense of maintaining three stream gages in the upper portion of the AHR. Estimated WPWM-1 costs are summarized by item below.

Item	Cost
Groundwater Monitoring	\$10,295
Cottonwood Ranch Stream Gages	\$20,000
Overton Stream Gage	\$5,000
Weather Station Maintenance	\$6,000
BUDGET	\$41,295 Round to \$42,000

Notes on Cost

The Program maintains two monitoring wells that provide essential data for the Phelps County Canal groundwater recharge project. These wells are equipped with telemetry units requiring a subscription to In-Situ's HydroVu data management service. Data loggers and other equipment require ongoing maintenance and replacement, as shown in the following table.

Item	Unit cost	Units	Quantity	Total
Hydro Vu subscription	\$240	ea.	2	\$480
Desiccant: Interra sSORB blue indicating silica gel	\$30	lbs.	5	\$150
Additional large desiccant containers	\$200	ea.	5	\$1,000
Staff gage replacements	\$35	ea.	4	\$140
Channel posts, 6'	\$10	ea.	10	\$100
PVC pipe for data logger installations, 2" dia.	\$25	ea.	5	\$125
In-Situ Level Troll maintenance/replacement	\$2,250	ea.	2	\$4,500
In-Situ Tube telemetry maintenance/replacement	\$1,500	ea.	2	\$3,000
In-Situ Troll Com	\$800	ea.	1	\$800
BUDGET				\$10,295

In addition to the items in this table, weather stations and stream gages have been installed at the request of the Program. Weather stations on the Program's Binfield South and Morse properties are maintained by Nebraska Mesonet at an annual cost of \$3,000 each. The U.S. Geological Survey (USGS) installed and maintains two gages located on the Cottonwood Ranch Complex. These gages are used primarily in



conjunction with geomorphology and sediment augmentation related research. Annual maintenance costs include physical maintenance of the gage, checking and adjusting the rating curve through field measurements, QC/QA of the data, and making data available real-time. The USGS gages were established in a service agreement negotiated and still held by NPPD, but with the costs passed through to the Program. Costs are set at \$20,000 but vary slightly annually if significant equipment components, such as probes or cables, need replacing.

The Program will also cost-share with CNPPID for the continued operation of the USGS gage at Overton, NE. The Overton gage is essential to Program decision-making through the availability of real-time data provided by the USGS equipment. Costs for this arrangement are anticipated to be about \$5,000 based on past experience.

There are two entities in Nebraska that can establish official stream gaging stations, the USGS and the NDNR, and these stations must be official gaging stations to establish scientific rigor and credibility. Because there are no other options for establishing an official stream record through a competitive selection process, and because each entity is a government agency bound by their rules and regulations for providing their services and the associated costs, and because the USGS costs are comparable to the NDNR costs; therefore, these rates (total \$25,000) are considered fair and reasonable.

**PROGRAM TASK & ID: WPCP-1. North Platte Chokepoint**

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2024	\$10,000		

Task Description

The objective of this task is to achieve and maintain an active river channel capacity of 3,000 cfs on the North Platte River at North Platte. Channel capacity improvements will provide the Program with more flexibility in implementing flow tests made under the Program Science Plan and in delivery of Program water to meet shortage reduction to target flow goals under the Water Plan. WPCP-1 costs are summarized below.

Item	Cost
State Channel Berm Maintenance	\$10,000
TOTAL	\$10,000

Notes on Cost

Routine maintenance and repair of the state channel berm and the Albrecht property will include tasks such as mowing, minor earthwork repair, culvert cleanout, and channel debris maintenance, as needed to maintain project function.

No funds are proposed for additional property acquisitions at or near the North Platte Chokepoint or for extension of the North Platte Chokepoint study that is currently underway. The study is scheduled for completion by the end of June 2024 but it is not anticipated that the GC would take immediate action on any recommendations that would require 2024 funding.

**PROGRAM TASK & ID: WPSA-1. EDO Special Advisors – Water Plan**

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2024	\$20,000		

Task Description

The EDO may rely on Special Advisors to assist in Water Plan-related issues beyond staff expertise or to assist with short-term schedule challenges. These areas may include but are not limited to water infrastructure and design, structural, and hydrogeology/ground water. Estimated WPSA-1 costs are summarized by item below.

Item	Cost
Hydrogeology and Groundwater	\$ 10,000
Civil Infrastructure	\$ 10,000
BUDGET	\$ 20,000

Notes on Cost*Hydrogeology and Groundwater*

Several projects include hydrogeologic elements that may require further expertise, including ground water recharge projects, ground water recapture pumping projects and other projects with a ground water component. Projects may include the Elwood Reservoir recharge project, the Phelps, CPNRD, and NPPD canal recharge projects, the recapture well network, and any COHYST or other groundwater model scenario runs. A specific hydrogeology and groundwater Special Advisor will be solicited and contracted on an as-needed basis.

Civil Infrastructure

Special Advisors in the area of civil infrastructure have been utilized by the EDO in the past for projects such as slurry wall gravel pits and analysis of proposed solutions to capacity constraints at the North Platte chokepoint. A specific civil infrastructure Special Advisor will be solicited and contracted on an as-needed basis.

General note on all Special Advisor budget line items: Please refer to the third paragraph in the Exceptions section of the Procurement Policy adopted by the GC and updated effective July 1, 2023, “Retention of special advisors to the ED of a technical or legal nature is exempt from the procurement procedures provided in this directive.”

Consequently, Special Advisors are not selected through a competitive process involving advertised RFQs or RFPs. Special Advisors are selected by the Executive Director (ED) based on qualifications – education, relevant experience, expertise and skills, reliability, credibility, and ability to work effectively with the ED and the staff of the ED Office. Special Advisors and the firms they are associated with cannot do any other work for the Program, individually or as part of a team. This is a critical restriction and generally orients special advisor selection to individuals who are sole proprietors or part of small firms that would not likely be doing significant levels of work for the Program on other specific, larger projects.



The billing rates are negotiated with the special advisors by the ED and are kept within the industry standard of practice based on each individual's qualifications. While industry standard of practice may not be precisely defined, anyone who is a practicing member of that professional community understands the limits of reasonableness associated with those boundaries. Appropriate expertise to make this assessment resides with the ED or ED Office staff. The industry standard of practice rates guidelines used in this process is established based on an on-going market survey process comparing labor rates of similarly qualified professionals in the field.

In the case of Special Advisors, individuals with similar experience and qualifications have been part of consultant teams selected through the Program's competitive procurement process over an eight-plus-year period. Comparison of the Special Advisor rates to the rates charged by comparable individuals through the competitive procurement process provides an indisputable basis for comparison. In all cases the Special Advisor rates are not only within the range of rates seen on the consultant teams which have been selected competitively, but typically at the middle to lower end of the range. As rates charged by Special Advisors are at the middle to low end of the range of rates for similar work acquired through the Program's competitive procurement process, the estimate for Special Advisors is considered fair and reasonable.

The anticipated level of effort for the upcoming year is also discussed with the special advisors by the ED and members of the EDO staff, but all work is assigned on an as-needed basis with no guarantee of any minimum level of assignments. During the budgeting process, the Special Advisors anticipated to be needed and roughly the level of effort expected to accomplish the work plan for the budget year is scrutinized by and discussed with the appropriate advisory committees, the Finance Committee, and the GC. Input is received and taken under advisement from all these sources as to the appropriateness of the budgets for these line items with appropriate adjustments made prior to budget finalization.