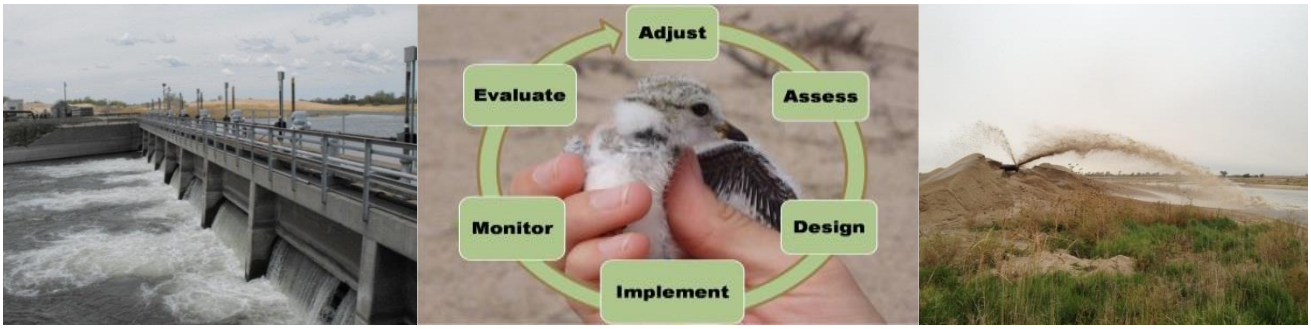
PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM

FISCAL YEAR 2023 BUDGET AND ANNUAL WORK PLAN
SCIENCE PLAN

Prepared by:
Executive Director's Office (EDO)
Platte River Recovery Implementation Program (PRRIP or Program)
Kearney, Nebraska

Prepared for:
PRRIP Technical Advisory Committee (TAC)
Brock Merrill, Bureau of Reclamation, 2022 TAC Chair

DRAFT Science Plan Budget and Work Plan will be Reviewed and Revised by Technical Advisory Committee on October 12, 2022 prior to review and approval by the Governance Committee (GC) in November and December of 2022.



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Introduction

The Platte River Recovery Implementation Program ("Program" or "PRRIP") initiated on January 1, 2007, as a basin-wide effort between the states of Colorado, Wyoming, and Nebraska and the Department of Interior to provide land, water, and scientific monitoring and research to evaluate Program benefits for the target species. The Program is being implemented in an incremental manner, with the First Increment covering the 13-year period from 2007 through 2019 and the First Increment Extension covering a 13-year period from 2021 through 2032. In general, the purpose of the Program is to implement certain aspects of the U.S. Fish and Wildlife Service's (Service) recovery plans for the target species that relate to the Program's identified "associated habitats" in the central Platte River by securing defined benefits for those species and their habitats. The Program will also provide ESA compliance for existing and certain new water-related activities in the Platte basin upstream of the Loup River confluence for potential effects on the target species; help prevent the need to list more Platte River species under the ESA; mitigate the adverse effects of certain new water-related activities through approved depletions plans; and establish and maintain an organizational structure that will ensure appropriate state and federal government and stakeholder involvement in the Program.

The Program is led by a Governance Committee (GC) consisting of representatives of Colorado, Wyoming, Nebraska, the Bureau of Reclamation, the Service, South Platte River water users, North Platte River water users, Nebraska water users, and environmental groups. The Program established key standing Advisory Committees to assist the GC in implementing the Program. Those committees include the Technical Advisory Committee (TAC), the Land Advisory Committee (LAC), the Water Advisory Committee (WAC), the Finance Committee (FC), and the Independent Scientific Advisory Committee (ISAC).

Jason Farnsworth serves as Executive Director (ED) of the Program. Farnsworth and staff in the Executive Director's Office (EDO) maintain offices in Nebraska and Colorado. The EDO worked closely with the GC, the Advisory Committees and their subcommittees and working groups, Program cooperators and partners, and others to develop the FY 2023 Program Budget and Work Plan based on guidance from the Final Program Document and Program goals and priorities.

This document presents a quick reference snapshot of the FY23 Science Plan Budget Spreadsheet (which is a separate document that is incorporated by reference) and the final FY23 Science Plan Annual Work Plan.



Table 1. Quick-reference snapshot of the FY 2023 PRRIP Science Plan Budget Spreadsheet, including a Table of Contents reference page number corresponding to the beginning page location for each budget line item in this FY2023 Work Plan. Line item numbers in red indicate new line items or items that have been modified.

PRRIP Budget ID	PRRIP Line-Item Description	*FY 2023 Estimated New Money*	FY 2023 Work Plan Page #
SCIENCE PLAN			
LP-2	Habitat Restoration and Management Actions on Program Lands	*$ 353,200*	4
LP-2-P	Trapping Projects	*$ 97,600*	5
PD-22	Sediment Augmentation Implementation	*$ 260,000*	6
WP-1(b)	*Phragmites* Control	*$ 200,000*	7
G-1	Remote Sensing Data Collection	*$ 305,200*	8
TP-1	Tern and Plover Monitoring & Research	*$ 23,600*	9
WC-1	Whooping Crane Monitoring & Research	*$ 170,200*	11
PS-1	Pallid Sturgeon Monitoring & Research	*$ 539,000*	12
G-5	Geomorphology & Vegetation Monitoring and Research	*$ 19,100*	14
PD-15	Environmental Permitting	*$ 50,000*	15
PD-18	Science Plan-related Equipment	*$ 134,500*	16
IMRP-3	EDO Special Advisors - Science Plan	*$ 90,000*	18
ISAC-1	ISAC Stipends & Expenses	*$ 269,200*	20
PD-3	PRRIP Peer Review and Publications	*$ 63,000*	23
PD-11	Science Plan-related Workshops	*$ 13,200*	25
	Science Plan Sub-Total	***$ 2,587,800***	

PROGRAM TASK & ID: LP-2. Habitat Restoration and Management Actions on Program Lands

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2023	$353,200		

Task Description

Implementation of target species habitat restoration and maintenance activities at Program habitat complexes and non-complex properties. Activities generally include creation and maintenance of tern and plover on and off-channel nesting habitats and creation and maintenance of on and off-channel whooping crane roosting habitat. Some of the specific management actions are tree clearing, nesting island maintenance, channel disking, herbicide application, and seeding.

Notes on Cost

The general breakdown of estimated costs for proposed Science Plan related management actions in 2023 is as follows:

Location	Estimated FY23 Cost
Non-complex	$102,071
Plum Creek Complex	$15,775
Cottonwood Ranch Complex	$34,044
Elm Creek Complex	$17,437
Pawnee Complex	$17,000
Fort Kearny Complex	$37,379
Audubon Rowe Complex	$15,000
Clark Island Complex	$58,065
Shoemaker Island Complex	$9,390
Chapman Complex	$47,00
TOTAL	**$353,161** **Round up to $353,200**

PROGRAM TASK & ID: LP2-P. Trapping Projects

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2023	$97,600		

Task Description

Mammalian predator trapping will be conducted under the existing agreement between the Program and USDA-APHIS. Mammalian predator trapping occurs at all managed tern and plover nesting sites to increase productivity within the AHR and beaver trapping occurs along the State Channel at the North Platte Choke Point maintain flow through the State Channel improvements.

Notes on Cost

Based on the estimated costs for FY23 under a new 5-year Cooperative Agreement with the USDA within the AHR, including seven off-channel sand and water nesting sites for FY23, and additional trapping needs at the North Platte Choke Point. Trapping costs are itemized as follows:

Category	Estimated FY23 Cost
Salary/Benefits	$58,683.07
Vehicle/Transportation	$12,571.00
Travel Cost	$1,000.00
Equipment/Supplies	$4,500.00
Subtotal	**$76,754.07**
Pooled Costs (11%)	$ 8,442.95
Overhead (16.15%)	$ 12,395.78
Total	**$97,592.80** **Round up to $97,600**

Products

- Increased tern and plover productivity from the AHR.
- Predator trapping data that will be summarized and included in the annual tern and plover monitoring report.
- Maintain flow conveyance at the North Platte Choke Point.

PROGRAM TASK & ID: PD-22. Sediment Augmentation Implementation

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2023	$260,000		

Task Description

Implementation of full-scale sediment augmentation, monitoring, data analysis, and reporting. Implementation will occur in the south channel of the Platte River along Jeffrey Island (the J-2 Return channel) in an attempt to arrest continued channel incision.

Notes on Cost

The FY23 tasks and estimated costs for sediment augmentation are as follows:

Task Description	Estimated FY23 Cost
80,000 tons of sediment augmentation in the south channel above the Overton bridge	$260,000
Total	**$260,000**

Project oversight, including project planning and design, development of bid package to secure augmentation contractor, and final project evaluation and reporting will be conducted by the EDO. This estimate assumes basic implementation of mechanical manipulation (not sand pumping) and monitoring and cost estimates based on previous years' experience, including FY22 when costs increased significantly. As the budget estimate is developed by using rates and the level of effort for similar work acquired for the Program through the competitive procurement process, final negotiation and award of the augmentation and monitoring contracts will be acquired through competition and the estimate for this work is considered fair and reasonable.

PROGRAM TASK & ID: WP-1 (b). *Phragmites* Control

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2023	$200,000		

Task Description

The objective of the Active Channel Capacity Improvements task is to fund management actions (primarily herbicide application) to prevent invasive vegetation infestation of the channel and maintain flow capacity and target species habitat. Channel capacity improvements will assist the Program in maintaining suitable on-channel roosting habitat for whooping cranes as well as make it easier to deliver Program water to and through the AHR.

Notes on Costs

The Platte Valley and West Central Weed Management Areas estimates it will cost on the order of $600,000 annually to control phragmites within the Platte River Basin into perpetuity. It is estimated that $200,000/year will be requested of and likely required by the Program for phragmites control to maintain or improve flow conveyance throughout the Platte River Basin to allow the Program to test FWS target flows and other Program flow management activities.

Annual cost breakdowns for allocation of the budget shown in Table below are based on control expenditures made by the Platte Valley Weed Management Area in previous years. The actual distribution of expenditures in any given year varies among categories and may include other categories associated with channel maintenance and enhancement such as river tillage operations for vegetation control in addition to herbicide-based control efforts.

Category	Amount	Approximate Unit Cost	Total Cost
Control (helicopter)	4,800 acres	$70/acre	$336,000
Control (Airboat)	600 hrs	$150/hr	$90,000
Herbicide	2,325 gals	$75/gal	$174,375
		Total (Rounded)	**$600,000**

Annual work activities will consist of control, removal, and monitoring of invasive vegetation within Platte River channels and its tributaries in Keith, Lincoln, Deuel, Dawson, Buffalo, Phelps, Hall, Merrick, and Polk counties. The activities will promote channel conveyance and desired vegetation communities by controlling invasive vegetation within the Platte River. By focusing on the entire system, the project will maximize resources through a collaborative partnership focused on rehabilitation of the active channel, promoting long-term maintenance, and developing an early detection and rapid response protocol to prevent re-infestations.

An endowment is currently being established to provide long-term funding for this effort. Once the endowment is fully funded, phragmites and other noxious weed control within Platte River Channels would be perpetually funded. The Program supports this concept. It is anticipated that the Program will spend $2.6 million on phragmites control during the Extension. Once an endowment is in place, the GC supports the concept of pledging these funds and contributing them to the endowment.

PROGRAM TASK & ID: G-1. Remote Sensing Data Collection

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2023	$305,200		

Task Description

Bathymetric LiDAR and aerial photography data collection for all Platte River channels within the Associated Habitat Reach (AHR) during the summer and fall. Field data collection and data reduction and analyses will be performed by the EDO.

Notes on Cost

Budget estimates are based on an existing 4-year contract which expires at the end of 2023. The FY22 tasks and contracted costs for data collection are as follows:

Task Description	Estimated FY23 Cost
Summer aerial imagery	$68,500
Fall aerial imagery and full reach bathymetric LiDAR	$236,700
Total	**$305,200**

Products

Processed LiDAR point data, three digital elevation models including topo-bathymetric bare earth, hydro-flattened bare earth, and highest hit, and 6-inch resolution 4-band (CIR and true-color) aerial photography. Collection specifications are identical for summer and fall acquisitions. Summer imagery acquisition coverage encompasses entire AHR within 3.5 miles of the channel. Fall imagery acquisition limited to channel areas. LiDAR coverage for all channels within the entire AHR.

PROGRAM TASK & ID: TP-1. Tern & Plover Monitoring and Research

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2023	$23,600		

Task Description

The EDO will implement the PRRIP tern and plover monitoring protocol during the 2023 nesting season. Monitoring efforts will be similar to 2022 and will include implementation of the monitoring protocol through outside monitoring efforts. Additional track surveys and camera monitoring of nests, shorelines, and predator fencing will be implemented to document predator presence and nest and/or brood predation. The research protocol for predator management, including exclosure fencing and predator deterrent lights will continue in 2023 to increase tern and plover nest and chick survival within the AHR. The funding included in this line item provides the seasonal personnel and equipment required to assess the performance of actions the Program takes to improve productivity of terns and plovers.

Notes on Cost

FY23 funding in this line item includes one seasonal employee to assist with tern and plover monitoring and implementing the predator management research protocol at off-channel sites. Direct costs are largely based on cost estimates for support of video monitoring and replacing and maintaining cameras and predator deterrent lighting that were damaged during the 2022 season. Materials to perform seasonal maintenance at off-channel nesting sites also included. Costs for miner safety training and MSHA certification as required for all staff monitoring terns and plovers at active mining sites are also included.

Expense Category	Estimated FY23 Cost
Personnel	**$17,408**
Direct Costs	
Nest, shoreline, site-level camera replacement	$900
Video camera monitoring (data and protection plan, batteries)	$2,700
Camera supplies (SD cards, batteries, posts, avian spikes, zip ties)	$1080
Predator deterrent lights	$250
Seasonal site and fence maintenance supplies	$350
MSHA certification	$900
Direct Cost Subtotal	**$6,180**
Total	**$23,558** **Round to $23,600**

Products

- Annual report detailing nest and brood activity, bird activity, and habitat conditions; data for long-term analysis of effects of Program actions.
- Data quantifying predator presence and impact on tern and plover productivity at off-channel sites within the AHR.
- Data on efficacy of exclosure fencing and predator deterrent lights for reducing predator presence on off-channel nesting sites and improving reproductive success of terns and plovers within the AHR.

- Data will be summarized in annual reports and final results will be published during the First Increment Extension.

PROGRAM TASK & ID: WC-1. Whooping Crane Monitoring and Research

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2023	$170,200		

Task Description

Spring and Fall 2023 implementation of the whooping crane monitoring protocol, data analyses, and reporting will be conducted by the EDO.

Notes on Cost

The EDO will implement the whooping crane monitoring protocol and perform data analyses and reporting for the spring and fall 2023 monitoring seasons. Costs are based on past technician rates and aerial flight services contracted through a competitive selection process. The budget for spring and fall 2023 field work to be completed by the EDO is as follows:

Expense Category	Estimated FY23 Cost
FY22 Spring Whooping Crane Monitoring	
Personnel	$23,664
Direct Costs (aircraft rental, ground crew mileage, equipment, etc.)	$75,810
Subtotal	**$99,474**
FY22 Fall Whooping Crane Monitoring	
Personnel	$17,830
Direct Costs (aircraft rental, ground crew mileage, equipment, etc.)	$52,821
Subtotal	**$70,651**
Total	**$170,125 Round to $170,200**

Products

- Spring and Fall 2023 Whooping Crane Reports detailing monitoring effort, whooping crane use locations, numbers of individuals sighted, and habitat conditions associated with sightings
- Data for long-term analysis of effects of Program actions.

PROGRAM TASK & ID: PS-1. Pallid Sturgeon Monitoring and Research

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2023	$539,000		

Task Description

The EDO will coordinate two research efforts dedicated to filling Program information gaps for pallid sturgeon. Genetics research by Dr. Ed Heist at Southern Illinois University, Carbondale, is designed to address issues with pallid sturgeon identification, hybridization, population structure and dynamics. Habitat and spawning research by Dr. Mark Pegg, Dr. Jonathan Spurgeon, and Kirk Steffensen at the University of Nebraska, Lincoln, is expected to provide data on the contribution of the lower Platte River to pallid spawning habitat, reproduction, recruitment, and population dynamics. This research will also provide information on seasonal pallid movements in and out of the lower Platte River and help quantify the environmental patterns (flow, temperature, turbidity) associated with these movements.

In fall 2022 the current PRRIP remote sensing contractor collected bathymetric LiDAR on the lower Platte River (LPR) to be used by an independent contractor to develop a 2D hydrodynamic river model for the LPR. These data and the subsequent model will be used to help inform ongoing pallid sturgeon habitat research on the LPR and to help match LPR flow, Program flow management, and pallid sturgeon habitat/use in the LPR for the PRRIP Water Management Study as described in the Pallid Sturgeon Agreement Framing Document, as approved by the GC in June 2021.

Notes on Cost

Genetics research in 2023 includes costs associated with genetic sequencing of 1,000 samples, supplies, and a graduate student research assistantship.

Habitat and spawning research in 2023 include costs associated with two graduate student research assistantships, two field technicians, and a research associate as necessary to provide sampling support during spawning season. Equipment, travel, supplies, boat storage rental space, facilities and administration costs are also included.

Hydraulic and hydrologic modeling to develop a 2D hydrodynamic river model for the LPR using LiDAR data will be advertised for outside contracting mid-year 2023.

The budget for 2023 is as follows:

Expense Category	Estimated FY23 Cost
Genetic research (SIU)	
Supplies & labor at $45/sample for 1000 samples	$45,000
Habitat & spawning research (UNL)	
Personnel, Support, Facilities & Administration	$142,494
Equipment, Travel, Supplies, Facilities & Administration	$101,480
Habitat Modeling	
Hydraulic and Hydrologic Modeling using LPR LiDAR data	$250,000
Total	**$538,974** **Round up to $539,000**

Products

- Research products will include annual report and presentation of results, accomplishments, and interpretations. Presentations at regional pallid sturgeon meetings and American Fisheries Society meetings are also expected.
- The genetics research is expected to focus field efforts on tracking and collection of habitat and spawning information for genetically identified pallid sturgeon. It will also address important issues related to species identification, hybridization, population structure and population demographics. Results will be widely applicable to the conservation stocking program, wider field efforts to characterize pallid sturgeon habitat, and population viability assessments. As such, we expect this research to contribute to a more focused and efficient management plan for this species.
- Habitat and spawning research is expected to fill knowledge gaps about lower Platte River contribution to pallid spawning habitat, reproduction, recruitment, and population dynamics, including the documentation of successful spawning on the Platte River (in conjunction with genetics research) and identification and description of pallid spawning habitat. An extensive passive telemetry network is expected to provide information on seasonal pallid movements in and out of the lower Platte River and help quantify the environmental patterns (flow, temperature, turbidity) associated with these movements.
- Development by an independent contractor of a 2D hydrodynamic river model using lower Platte River LiDAR data acquired in fall 2022. That model will be used to inform UNL habitat research and in the future for development of the PRRIP Water Management Study as outlined in the June 2021 Pallid Sturgeon Agreement Framing Document.

PROGRAM TASK & ID: G-5. Geomorphology & Vegetation Monitoring and Research

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2023	$19,100		

Task Description

Monitoring and mapping of *Phragmites* patches will be conducted over the growing season to document changes in *Phragmites* patch size in response to natural flows, target flows, and all AMP-related flow management activities. Time-lapse camera data will be collected annually to monitor the efficacy of natural flows, target flows, and all AMP-related flow management activities at reducing vegetation establishment or removing vegetation from the channel. Both efforts are designed to measure efficacy of Program management to reduce vegetation expansion into the river channel and maintain or improve whooping crane roosting habitat suitability throughout the AHR. Data collection and analyses will be performed by the EDO.

Notes on Cost

The FY23 estimated cost for a seasonal field technician to assist the EDO's riparian botanist with sequential monitoring and mapping of *Phragmites* patches over the growing season in three study reaches is estimated to be $17,408. The FY23 estimated cost for acquiring, maintaining, and installing time-lapse cameras on the bank line of Program Habitat Complexes is estimated to be $1,600.

Expense Category	Estimated FY23 Cost
Personnel	**$17,408**
Direct Cost	
Time-lapse camera replacement	$800
Time-lapse camera supplies (SD cards, batteries, posts, zip ties)	$800
Direct Cost Subtotal	**$1,600**
Total	**$19,008** **Round to $19,100**

Products

- Products will include a spatially explicit dataset including shapefiles of monitored *Phragmites* patches through time, patch characteristics such as area, height, density, composition, phenological stage, and plant health as response variables associated with data collected on elevation, river flow and stage, patch inundation, distance to water, herbicide application, and mechanical management.
- Products will include time-lapse imagery of channel inundation flows and vegetative response.
- Data will be assessed annually to produce an annual report of results in addition to providing data for long-term analysis of effects of Program actions.

PROGRAM TASK & ID: PD-15. Environmental Permitting

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2023	$50,000		

Task Description

Contract services to secure or maintain environmental permits associated with adaptive management and/or water projects.

Notes on Cost

HDR was awarded a contract for permitting services in 2022 that expires on 12/31/2025. The multi-year contract amount was $200,000 and specific dollar amounts were developed for specific services, as needed. Estimated annual costs for 2023 remain at $50,000 based on previous permitting work for the Program and are high enough to ensure enough budget is available to account for unforeseen eventualities in the permitting process that could slow down permit acquisition.

PROGRAM TASK & ID: PD-18. Science Plan-related Equipment

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2023	$134,500		

Task Description
Headwaters Corporation owns equipment and will charge the Program a use rate for Program-related activities.

Notes on Cost
Equipment charges are calculated on an annual basis and then converted into monthly rates. The basic methodology was described in detail in a memo to the Finance Committee/Governance Committee dated 11/02/11. The categories and associated calculation methods are summarized, and the corresponding values tabulated below.

Equipment	Use & Maintenance ($)	Fuel ($)	License & Insurance ($)	Monthly Total ($)	Comments	Miles/Year
6 - 4WD Pickup trucks	3750	2100	2025	7875	Owned by Headwaters Corp.	90,000
4WD SUV	600	300	250	1150	Owned by Headwaters Corp.	11,000
Airboat & Trailer	1000	175	200	1375	Owned by Headwaters Corp.	
ATV	100	30	140	270	Owned by Headwaters Corp.	
Side-by-Side (UTV)	200	45	125	370	Owned by Headwaters Corp.	
Drone	165			165	Owned by Headwaters Corp.	
TOTAL	**$5,815.00**	**$2,650.00**	**$2,740.00**	**$11,205.00**	**$134,500.00 (monthly total of $11,205 x 12 months rounded to nearest $100)**	

The cost categories used, and the calculation methodologies are as follows:

- Use & Maintenance – the use portion is calculated on an annualized replacement cost for the equipment and the maintenance portion is calculated based on experience data and known periodic

significant maintenance items (e.g., replacement of vehicle tires or the bottom shield or engine of the airboat) that are annualized to stabilize equipment costs between years.

- Fuel – the anticipated fuel costs based on anticipated miles, known miles per gallon rates, and anticipated cost of gasoline in Kearney, NE (weighted toward summer prices because that is the season of heaviest equipment use). A rate of $4.00/gallon is used in developing these costs. The cost of fuel is a significant piece of the equipment costs (about 24% of the total), and the unit cost of gasoline is the most uncertain of all factors used in the development of these costs.

- License/Insurance – the cost of licensing (trucks, airboats, and trailers all require licenses) and insuring the equipment, including liability insurance, is included in this cost.

PROGRAM TASK & ID: IMRP-3. EDO Special Advisors – Science Plan

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2023	$90,000		

Task Description

- **Climate Change (TBD)** – A Special Advisor to the EDO on Science Plan-related specialty topic of climate change and its impacts on water operations, water availability and forecasting, river processes, and/or target species ecology will be retained to review Program documents, research/monitoring design, modeling, and data analysis as well as attend and provide feedback at workshops and meetings.
- **Sediment Augmentation/*Phragmites*/Flow Interaction (TBD) –** A Special Advisor to the EDO on the experimental approach to sediment augmentation; the effects of germination suppression flows; and the interaction between flow, sediment, and vegetation (with emphasis on *Phragmites*). Depending on timing and need, this Special Advisor could be focused more on the issue of *Phragmites* or more on the issue of sediment augmentation.
- **Structured Decision Making (Dr. Philip Halteman, Compass)** – A Special Advisor to the EDO on the beginning developmental stages of a broad SDM process to assist with Second Increment negotiations. Dr. Halteman has prior experience with SDM, the PRRIP, and the GC and has the institutional knowledge and technical and facilitation expertise necessary to advise the EDO on early planning to ensure and successful and useful SDM process for the GC later in the Extension. (NOTE: this is a placeholder, another option is to secure SDM support through competitive selection with an RFP in 2023).

It is anticipated that Special Advisors will be retained in the second quarter of 2023 or later after consultation with the ISAC, the TAC, and/or others with recommendations for individuals to consider.

Notes on Cost

This FY23 budget line item is for expert assistance for the Executive Director's Office (EDO) on key topics for the Program. The budget breakdown for this line item is as follows:

Name	Area of Expertise	Hourly Rate	Estimated 8-hour Days	FY23 Total
TBD	Climate change impacts on water operations, water ecology, and/or migratory bird ecology.	$225	15	$27,000
TBD	Sediment augmentation; flow management actions; interaction between flow, sediment, and vegetation; *Phragmites*	$225	15	$27,000
Dr. Philip Halteman	Structured Decision Making (SDM)	$225	15	$27,000
Other Direct Costs (i.e., travel and expenses for 2023 Science Plan Reporting Session, trips to Kearney, NE, etc.)				$9,000
			Total not to exceed	**$90,000**

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 Governance Committee in June 2016, "Retention of special advisors to the ED of a technical or legal nature is exempt from the 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 based on qualifications – education, relevant experience, expertise and skills, reliability, credibility, and ability to work effectively with the ED and the staff of the EDO. Special Advisors and the firms they are associated with cannot do any other work for the Program, individually or as part of a team, while retained as a Special Advisor. 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 EDO 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 Governance Committee. 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 approval.

Products

Review of Program documents, advice on specific actions related to Science Plan and Water Plan implementation, participation in requested Program meetings (TAC meetings, ISAC meetings, annual Science Plan Reporting Session, etc.).

PROGRAM TASK & ID: ISAC-1. ISAC Stipends & Expenses

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2023	$269,200		

Task Description

The EDO proposes the following 2023 ISAC activities:

1) 2023 PRRIP Science Plan Reporting Session in Omaha, NE (in-person); February 2023
2) ISAC participation in March 2022 GC Quarterly Meeting (virtual)
3) 2023 PRRIP ISAC Fall Meeting in Kearney, NE (in person); October 2023
4) Additional meeting participation, document review, and/or specific ISAC member input as directed by the GC and EDO (virtual meetings/discussion as necessary)

Notes on Cost

The budget for work to be completed by the ISAC during 2023 is detailed below:

ISAC Cost Item	Estimated FY23 Cost
2023 PRRIP Science Plan Reporting Session (in-person meeting in February 2023): • In-person meeting in Omaha, NE to discuss status of Science Plan implementation and annual State of the Platte Report • 4-day meeting (3 days meeting, 1 day travel) = $225/hour x 8-hour day x 4 days x 7 **ISAC members** = $50,400 • Meeting prep & post-meeting discussion = $225/hour x 8-hour day x 2 days x 7 **ISAC members** = $25,200 • Travel expenses = $1,300 flight + $700 additional (hotel, meals, airport parking, ground transportation) = $2,000 x 7 **ISAC members** = $14,000	$89,600
March 2023 PRRIP GC Quarterly Meeting: • ISAC members attend GC Quarterly Meeting virtually to discuss recommendations and guidance from Science Plan Reporting Session; Chair and Vice Chair make presentation to GC on behalf of ISAC • 1-day meeting = $225/hour x 8-hour day x 7 **ISAC members** = $12,600	$12,600
2023 ISAC Fall Meeting (in-person meeting in October 2023): • In-person meeting in Kearney, NE to discuss status of Science Plan implementation and to support ISAC member field trips to PRRIP implementation and science activities on the ground • 4-day meeting (3 days meeting, 1 day travel) = $225/hour x 8-hour day x 4 days x **7 ISAC members** (includes new ISAC member filling second avian ecologist seat) = $50,400 • Meeting prep & post-meeting discussion = $225/hour x 8-hour day x 2 days x **7 ISAC members** = $25,200 • Travel expenses = $1,300 flight + $700 additional (hotel, meals, airport parking, ground transportation) = $2,000 x **7 ISAC members** = $14,000	$89,600

Additional Document Review, Specific ISAC Member Input, and/or Additional Virtual Meetings • Review Program documents/products and provide specific guidance as requested by GC, TAC, and EDO • 5 days x $225/hour x 8-hour day x **7 ISAC members** = $63,000	$63,000
ISAC Chair and Vice Chair • Additional time to work with PRRIP EDO between ISAC meetings to coordinate ISAC discussion and prepare presentations/documents for the GC • 4 days of review time x $225/hour x 8-hour day x **2 ISAC members** = $14,400	$14,400
TOTAL	**$269,200**

The daily service rate for ISAC members is based on industry standard rates for individuals of the caliber and stature required for the ISAC. A review of standard rates for Ph.D. senior level scientists revealed rates routinely in the range of $150 to $300 on an hourly basis. The EDO proposes keeping the approved FY2022 rate of $225/hour for FY2023. Labor rates for ISAC members is compared against individuals of similar qualifications and experience that are part of consultant teams that are awarded contracts with the Program through competitive processes in conformance with the PRRIP Procurement Policy. The level of effort is established by comparison of level of effort for similar tasks contained in contracts with consultants for the Program that were awarded through competitive processes in conformance with the PRRIP Procurement Policy.

It is anticipated the 2023 Science Plan Reporting Session in Omaha, NE and the 2023 ISAC Fall Meeting in Kearney, NE will be conducted in-person but a final decision on the meeting format will be made based on local and national health conditions, travel restrictions, and ISAC member willingness and ability to travel. Additional ISAC meetings and discussions will be held virtually in Teams.

2023 ISAC Members

The following table describes an updated ISAC membership and rotation schedule for the remainder of the Extension:

Area of Expertise	Extension ISAC Membership
Ecological statistics	July 2022-June 2025: Jennifer Hoeting, Ph.D. July 2025-June 2028: Jennifer Hoeting, Ph.D. July 2028-June 2032: **new member (or retain Jennifer Hoeting)**
Adaptive management and decision-making	July 2022-June 2025: Dave Marmorek, M.SC. July 2025-June 2028: **new member** July 2028-June 2032: renew member
Big river/fish ecology (pallid sturgeon focus)	July 2022-June 2024: David Galat, Ph.D. July 2024-beyond: **Leave seat open or new member (see fluvial geomorphology #2 ISAC area of expertise)**
Avian ecology #1 (whooping crane focus)	July 2022-June 2025: Aaron Pearse, Ph.D. July 2025-June 2028: Aaron Pearse, Ph.D. July 2028-June 2032: Aaron Pearse, Ph.D.
Avian ecology #2 (movement ecology focus)	July 2023-June 2026: **new member** July 2026-June 2029: renew member July 2029-June 2032: renew member

Area of Expertise	Extension ISAC Membership
Fluvial geomorphology #1 (sediment, morphology, vegetation focus)	July 2022-June 2025: Michal Tal, Ph.D. July 2025-June 2028: Michal Tal, Ph.D. July 2028-June 2032: Michal Tal, Ph.D.
Fluvial geomorphology #2 (sediment, morphology, river restoration focus)	July 2022-June 2024: Ned Andrews, Ph.D. July 2024-beyond: **Leave seat open or new member (see big river/fish ecology ISAC area of expertise)**

The rotation described above include the following structural and procedural considerations:

- Re-convene the ISAC Selection Panel appointed by the GC in September 2021 (Rabbe, Taddicken, Riley, Freeman, Lawrence, Hoeting) to identify, evaluate, interview, and recommend for selection one (1) additional ISAC member to be seated by the 2023 Science Plan Reporting Session in February 2023 (if possible). This additional ISAC member would be focused on general avian ecology with expertise in movement ecology to complement the specific whooping crane ecology focus of Dr. Aaron Pearse. A movement ecologist would possess the expertise necessary to provide the PRRIP advice on the analysis and interpretation of locational data provided by whooping crane telemetry to answer questions about the factors associated with whooping crane stopovers, stay lengths, and seasonal use of the central Platte River. Expertise with analyzing and interpreting locational data could also be leverage to provide the PRRIP advice on pallid sturgeon locational data obtained through passive and active telemetry to address questions about the factors associated with patterns of pallid sturgeon use of the lower Platte River.
- The ISAC would have seven (7) members through mid-2024. Dr. Ned Andrews and Dr. David Galat would both rotate off the ISAC in mid-2024. Based on Program need and GC direction, one of those seats would be filled bringing ISAC membership back down to six (6) members by mid-2024.

Products

ISAC review of the Extension Science Plan and implementation of that plan, experimental design, monitoring, data analysis and synthesis, and other Program science products and activities; work will culminate in reports and presentations to the GC.

PROGRAM TASK & ID: PD-3. PRRIP Peer Review & Publications

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2023	$63,000		

Task Description

- Two (2) PRRIP peer reviews – wet meadows hydrology data analysis report and sediment augmentation synthesis report (experimental design/approach and effectiveness).
- Publication of three (3) Program manuscripts.

Notes on Cost – Peer Review

Dr. Chadwin Smith of the EDO will lead two (2) peer reviews on behalf of the PRRIP in 2023 utilizing the Peer Review Guidelines in the Program Document. Activities for each peer review will include:

- Recommend at least three (3) candidates for each peer review panel according to appropriate areas of expertise; TAC review and GC review and approval required prior to beginning any review.
- Peer review candidate recommendations will come in the form of background information for all potential candidates, clear demonstration of on-point expertise, and signed conflict of interest statements for all potential candidates.
- Secure completed and signed contracts with each peer reviewers.
- Manage the peer review process – develop Scope of Work; provide document to be reviewed; communicate with panelists including at least one (1) virtual meeting in Teams to discuss review comments and improved the effectiveness of the final products of the Program's peer review process.
- Summarize all comments from each peer review panel.
- Deliver final report to EDO for each panel; facilitate discussion with the TAC regarding each final report; work with EDO staff to incorporate changes based on peer review comments.
- Collate all information into final report for discussion with and approval by the GC.

Cost estimates are based on prior years' experience with peer review panels and with the ISAC. Peer review panel members are expected to be of the same caliber and stature as ISAC members. Thus, we used the ISAC rate of $1,800/day for roughly a five day period to estimate the stipend for serving as a PRRIP peer review panelist – three days to review document(s) in question and two days to compile comments, submit those comments to the Program, and discuss comments/questions with the other peer review panel members and Dr. Smith.

For FY23, estimated peer review expenses are:

Document	# Reviewers	Per Reviewer Cost ($225/hr. x 8-hour day x 5 days)	Total Peer Review Panel Cost
Wet meadows hydrology data analysis report	3	$9,000	$27,000
Sediment augmentation experimental design/approach and effectiveness synthesis report	3	$9,000	$27,000
		Total	**$54,000**

Notes on Cost – Publication

Publication estimate of $3,000 per manuscript for open-access publication based on professional publication experience of EDO staff; costs could be higher or lower depending on the journal. The EDO expects to seek GC approval to publish:

- Manuscript on Wet Meadows Hydrology based on Program research.
- Manuscript based on Sediment Augmentation Synthesis Report.
- Manuscript on Camera Monitoring of Predator Presence and Impacts on Interior Least Tern and Piping Plover Productivity.

For FY23, estimated publication expenses are:

Potential Manuscript	Author	Manuscript Type	Target Journal	FY23 Cost
Wet Meadows Hydrology	EDO	Hydrology, Groundwater Modeling	*TBD*	$3,000
Sediment Augmentation Synthesis Report	EDO	Geomorphology	*Geomorphology*	$3,000
Camera Monitoring of Predator Presence and Impacts on Interior Least Tern and Piping Plover Productivity	EDO	Ecology	*TBD*	$3,000
			Total	**$9,000**

Products

- Two (2) PRRIP peer review reports.
- Three publications in refereed journals.

PROGRAM TASK & ID: PD-11. Science Plan-related Workshops

YEAR	BUDGET	BUDGET ADJUSTMENTS	EXPENDITURES
2023	$13,200		

Task Description
In-person Science Plan Reporting Session in Omaha, NE, in February 2023 to discuss status of Science Plan implementation and annual State of the Platte Report. In-person ISAC fall meeting in Kearney, NE, in October 2023 to discuss status of Science Plan implementation and to support ISAC member field trips to PRRIP management and science activities on the ground.

Notes on Cost
EDO facilitation of all meetings with *in-person* and *virtual* options for participation. Estimated FY23 costs include:

Expense Category	Estimated FY23 Cost
2023 Science Plan Reporting Session	
1 meeting over 3 days @ $3,400/day (room rental, projector & screen rental, phone charges, refreshments, evening meals, etc.), Omaha, NE	$10,200
2023 ISAC Fall Meeting	
1 meeting over 3 days @ $1000/day (field visits, refreshments, meals, etc.), Kearney, NE	$3,000
Total	**$13,200**

General Notes on Meeting Costs
It is anticipated the 2023 Science Plan Reporting Session in Omaha, NE and the 2023 ISAC Fall Meeting in Kearney, NE will be conducted in-person but a final decision on the meeting format will be made based on local and national health conditions, travel restrictions, and ISAC member willingness and ability to travel.

Because each meeting may be held in a different location (different cities and different hotels) a range of meeting room costs are possible. The typical range of room rental package rates is $2000-2500/day. The typical rate for providing refreshments (coffee, sodas, juices), morning or afternoon break foods (rolls, fruit, cookies), and box lunches (if the agenda calls for a working lunch) can vary considerably by location, the range of options selected, and the number of people attending. For planning purposes, a refreshments rate range of $250 to $500 per meeting is used. Equipment costs for projector, screens, and conference phones vary considerably depending on location. Projector/screen costs can range from $50 to $250 per day. Polycom conference phones with microphone extension costs can range from $50 to $100 per day. Conference call costs are based upon rate, number and duration of calls; estimated at $500 per day based upon experience.

Products
- PRRIP responses to ISAC comments/questions via the EDO.
- Updated Science Plan implementation and evaluation approaches based on ISAC feedback.