



State Water Contractors 2022/2023 Request for Proposals (RFP)

Introduction:

The State Water Contractors (SWC) Science Program is seeking to invest in high-quality science projects that will advance the understanding of complex systems in the San Francisco Bay, Sacramento-San Joaquin Delta and Upper Watersheds, consistent with the mission of the Science Program.

The SWC's mission is to collaboratively fund and facilitate objective, relevant, rigorous science that advances the understanding of factors affecting water supply reliability and habitat restoration for improved decision-making and management in the San Francisco Bay and Sacramento-San Joaquin Delta watershed.

The Science Program is guided by the [Science Plan](#), and this solicitation is consistent with the Goals, Objectives, and Management Questions contained in the Science Plan. The total amount of funding available is \$3 million and we anticipate funding several projects within this budget.

The following provides a background, information on topics, timelines, eligibility and application requirements.

Background:

The SWC was established in 1982 to promote the common interests of 27 member agencies that contract with the State Water Project (SWP) for some or all of their water supplies. The SWP consists of 34 storage reservoirs, 20 pumping plants, 4 pumping-generating plants, 5 hydroelectric power plants and more than 700 miles of canals and pipelines. It conveys an average of 2.4 million acre-feet (af) of water per year through pumping plants in the Sacramento-San Joaquin Delta. The SWP is critical to California's economy – it supplies irrigation for 750,000 acres of farmlands, which in turn contribute to the state's \$36 billion agricultural economy. The project provides fresh water for 27 million people and an array of industries in the Bay Area, Central Valley and Southern California, as well as essential benefits to protect our fish and wildlife, water quality and the ecosystem.

SWP operations are regulated by the State Water Resources Control Board and fish agencies (California Department of Fish and Wildlife, US Fish and Wildlife Service, National Marine Fisheries Service) to mitigate and minimize impacts of project operations. Despite regulatory permits that reduce exports, listed species continue to decline. Much of the Delta science has historically been focused on water project operations, however, it is clear that a multitude of factors are contributing to the continued decline and that Delta science must expand to better understand the totality of factors impacting the Delta ecosystem and species. This solicitation seeks solution-based studies that will inform critical uncertainties related to SWP water operations and non-operational stressors.

Topic, Objectives and Relevant Management Questions

The topic of this solicitation relates to three SWC Science Objectives (habitat and ecology, Delta outflow and non-operational stressors, see descriptions below). Proposals must be consistent with one or more science objectives. Management Questions are provided for reference, as investigators may propose a project that would address uncertainties related to one or more SWC Management Questions. Ideally, proposals would also address one or more management need or science question found in the [Delta Science Program's Science Action Agenda](#) and one or more of the [Delta Science Program Top Management Questions](#).

Solitation Topic

Proposals must address hypotheses related to secondary (non-flow) mechanisms underlying effects of restoration of biotic and abiotic habitat that by themselves or in conjunction with flow/hydrodynamics affect growth, migration, and survival of Delta Smelt, Longfin Smelt, Chinook Salmon and/or Central Valley Steelhead. Potential mechanisms for study include but are not limited to generation and transport of primary/secondary productivity, water temperatures, mobilization of contaminants, etc.

Habitat and Ecology

SWC Science Plan Objective:

Investigate benefits of habitat restoration to fish populations and implement studies on potential habitat restoration projects to support California EcoRestore and other restoration efforts; identify areas of scientific investigation on Delta and watershed ecology, such as physical and biological processes affecting fish communities and food webs; identify gaps in understanding and define needs for the SWC; and fund key scientific investments to reduce uncertainties related to SWC needs.

Relevant Management Questions for Consideration:

- Do the environmental factors that influence behavior and survival vary by habitat or life stage?
- What are the benefits of habitat restoration to the recovery, growth and survival of listed species?
- What habitat characteristics are most important for each life stage of listed fish species, and which are limiting at each life stage?
- How can these characteristics be incorporated into restoration actions?

Outflow

SWC Science Plan Objective:

Identify and promote effective monitoring and synthesis of ecosystem responses to outflow.

Relevant Management Questions for Consideration:

- What ecological benefits are provided by uncontrolled flows in wet years?
- What are the mechanisms underlying Delta outflow that affect fish?
- Do reservoir releases (spring, summer, fall) provide the same functions as uncontrolled flows?
- Do Delta outflow actions increase productivity or transport food?

Non-Operational Stressors

SWC Science Plan Objective:

Identify areas of scientific investigation on non-operational stressors, identify gaps in understanding and define needs for the SWC, and fund key scientific investments to reduce uncertainties related to SWC needs.

Relevant Management Questions for Consideration:

- What are the direct effects of contaminant mixtures on Endangered Species Act (ESA) listed fish species (all life stages, individual and population level) and on the food webs that support them?
- What are the sources and exposure pathways of contaminants to ESA listed fish species, and their food sources?
- What are the spatial and seasonal differences in toxicity for native fish species?

Proposal Review Process and Criteria

Overview

Successful proposals are those whose applicants thoroughly and accurately complete the requirements outlined in the solicitation, including the prescribed format for the proposal document. **All proposals must be submitted by email to science@swc.org by 5:00 p.m. on March 27, 2023**, to be considered for funding; hard copies will not be accepted. The process and selection criteria will consist of the following three phases:

- Phase I: Request for Proposals
- Phase II: Proposal Review
- Phase III: Award Processing

Proposal Requirements

All proposal requirements are detailed below.

Full proposals should include the following:

- Project Title
- Primary Investigator name and affiliation
- Co-Investigators' names and affiliations
- Purpose and Management Relevance
 - Speculate briefly on potential findings, indicate how different outcomes will be interpreted in relation to your hypotheses. Describe how those findings and outcomes can relate to and be used in resource management planning.
- Statement on how the proposed research addresses one or more SWC Science Objectives
- Research Location (include applicable maps)
- Abstract for Laypeople
- Project Objectives
 - Clearly state project objectives and describe how meeting those objectives will contribute to informing adaptive resource management. Identify the uncertainties that the investigation will address and the importance of resolving those uncertainties to conservation planners and managers.

Eligibility Criteria

Entities eligible to apply for grants from the SWC include but are not limited to any public or private agency or non-profit organization capable of entering into an agreement with the SWC.

Eligible studies may include:

- Data analysis and synthesis
- Development of resource management tools and technologies
- Development of or evaluation using conceptual or quantitative models

Although it's possible for a field effort to be a component of an eligible study, we understand there may be limitations to full field efforts due to the amount of funding available in this solicitation.

Proposal Requirements (cont.)

- Conceptual or Numerical Models
 - Present conceptual ecological model(s) or influence diagram(s) and accompanying narrative that conveys the current understanding of the environmental phenomena that the project will investigate. Describe important interrelationships and linkages among key model components and identify sources of variability and uncertainty that the project will confront.
- Hypotheses
 - Identify the management-relevant hypotheses that will be evaluated by the study through data collection and/or modeling.
- Study Design
 - Provide a description of the steps and logic for testing hypotheses. Include a description of the sampling design (experimental frame) or modeling approach that will facilitate hypothesis testing – sampling sites and times, a detailed description of data collection protocols, methods, tools (including gear if applicable), and specific measures that will be employed.
- Proposed Data Analysis
 - Describe analytical approaches and tools and provide a statistical rationale for the analyses that will be used to draw inferences.
- Anticipated Project Tasks, Timelines, and Deliverables
- Plans for Publishing and Presenting Research
- Research Budget
 - Provide each staff member, the number of hours, and hourly rates by task.
- Research Statement
 - A statement of whether the proposed research has been funded in whole or part by another entity. If so, include the funding entity, dollar amount and timeframe.
- CVs
- Bibliography/References
 - Provide primary sources of scientific literature and other information used to support the proposal.
- Proposal Summary Worksheet
 - Those submitting proposals are required to complete the Proposal Summary Worksheet and include it along with their submission. The Worksheet can be found as an addendum to this solicitation and on the SWC website at: <https://swc.org/portfolio-items/swc-solicitation-proposal-worksheet/?portfolioCats=7>.

Review, Project Selection and Awards

Phase I: Request for Proposals and Screening

Full proposals should be submitted by e-mail, as a PDF, to science@swc.org by 5:00 p.m. on March 27, 2023. The full proposals will be distributed to the SWC Science Coordination Group for a screening review of how well proposals address SWC Objectives and how well they address the solicitation topic. Successful proposals will undergo a formal review. Principal Investigators (PI) will be notified if they have or have not moved to formal review.

Phase II: Proposal Review, Selection and Approval

The review process will be made by a review panel made up of two internal (SWC Science Manager and a Member Agency technical expert) and three external reviewers. Based on the scoring criteria outlined below, the panel's recommendations on the selection will be provided to the SWC Science Coordination and Policy Advisory Teams prior to being presented to the SWC Board of Directors for discussion on June 15, 2023, and for funding approval on July 20, 2023.

Following discussion and approval by the SWC Board of Directors, PIs of successful proposals will be notified. Non-award decisions and transactions will be processed after successful applications have been confirmed.

Phase III: Award Processing

Upon SWC Board approval, SWC staff will process contract agreements using standard templates. The SWC has a 20% cap on overhead, however, exceptions to this cap can be made on a case-by-case basis under the discretion of the SWC. Contract agreements will be processed and completed by Fall 2023.

Review Criteria

The criteria to be considered in reviewing full proposals for funding are:

1. Alignment with SWC Goals and Objectives:

To what extent does the proposal address one or more of the priorities that are articulated in the RFP?

2. Technical Merit:

What are its greatest technical strengths and weaknesses? What is the conceptual model, and how will it be evaluated? How scientifically sound is the

proposed study? How well conceived and organized is the proposed study? Are the design and methods adequate and appropriate? Does the proposal follow the Delta Plan criteria for best available science (relevance, inclusiveness, objectivity, transparency and openness, timeliness)?

3. Purpose, Need and Relevance:

Is the proposal novel and/or important? Are collaborative efforts identified or is the project augmenting other studies? Would the study add to the base of knowledge or fill important gaps in understanding, or clarify the science (e.g., address an issue of current concern, poorly understood topic, or an area of disputed science, etc.)? Is it likely to advance management actions by resource managers and policymakers?

4. Scientific Strength:

Is the purpose of the project clearly stated? Are the proposal's goals, objectives, hypotheses, and questions clearly stated and internally consistent? Are the approach and study design clearly stated, well designed, and appropriate for the project goals? Are the project questions and design unbiased and objective? Is all the information needed to understand the basis for the proposed project included and documented? Is a conceptual model clearly stated in the proposal, and does it explain the underlying basis for the proposed work? Is the path to next steps clear?

5. Feasibility:

Is the approach well-documented and technically feasible? Is the budget and budget justification clearly detailed and appropriate? Are the persons involved, and responsibilities adequately identified? Is the scale of the project consistent with the objectives and within the grasp of the investigators? Can the project be completed within the proposed time frame? Will the proposal lead to a publishable product of value to the Bay-Delta community?

Review Criteria (cont.)

6. Qualifications:

Are the PI and team well qualified, with a track record of quality work and likelihood of achieving budget and schedule? Is the project team qualified to efficiently and effectively implement the proposed project? Do the proposers have available the infrastructure and other aspects of support necessary to accomplish the project? Is it clear who will be performing management tasks and administration of the project, and are resources set aside to do so? Has the PI exhibited the ability to turn in deliverables in a timely manner? Does the project team include all key personnel and other entities (including subcontractors) who will be performing the work described in the Proposal? Does the team have prior publication and productivity, and other qualifications?

7. Coincidental, Interdisciplinary and Collaborative Efforts:

Does the proposed project build connections that strengthen the research across strategic initiatives? Does the project foster collaborations with key stakeholders? Is the project team partnered with collaborative workgroups or science initiatives (e.g., Interagency Ecological Program, Collaborative Adaptive Management Team, Delta Regional Monitoring Program)?

8. Budget:

Is the budget reasonable and adequate for the work proposed? Does the proposal have a high likelihood of success within budget? Does the proposal include funding from other sources (e.g., matching funds, agency funding)? Has the work received funding from other entities (e.g., leveraged funding) with collaborative workgroups or science initiatives (e.g., Interagency Ecological Program, Collaborative Adaptive

Management Team, Delta Regional Monitoring Program)?

Scoring

Each review criteria element above will be evaluated and scored as follows:

- **Excellent:** Outstanding in all respects, with no technical concerns. Highly confident in success.
- **Very Good:** A good proposal with no significant technical concerns. Likelihood of success is high.
- **Good:** A reasonable proposal, with technical deficiencies that could be addressed. Likelihood of success on certain components of proposal.
- **Poor:** A technically deficient proposal, with serious impediments and concerns. Limited likelihood of success.

The review score for “excellent” is 4, “very good” is 3, “good” is 2, and “poor” is 1. Each reviewer will provide the sum of element scores for an overall score. Proposals that score 16 and above will be discussed further and ranked for the full proposal phase of the solicitation. The top projects will be selected for funding in ranked order until the budget threshold (\$3M) is reached. In the case of multiple proposals receiving the same score, proposals will be ranked based on technical merit scores and the SWC Science Manager’s input on how well the proposals address SWC Science Goals and Objectives.

Schedule

Proposal Solicitation Announcement	January 26, 2023
PI Notification and Request for Full Proposals	February 6, 2023
Full Proposals Due	March 27, 2023
Proposal Review	May 2023
Recommendations and Selection	May 2023
SWC Board Meeting (presentation on proposals)	June 15, 2023
SWC Board Meeting (request for Board authorization)	July 20, 2023
Award Notification	July 21, 2023
Contracting	Summer 2023

Proposal Summary Worksheet

Solicitation Topic

Proposals must address hypotheses related to secondary (non-flow) mechanisms underlying effects of restoration of biotic and abiotic habitat that by themselves or in conjunction with flow/hydrodynamics affect growth, migration, and survival of Delta Smelt, Longfin Smelt, Chinook Salmon, and/or Central Valley Steelhead. Potential mechanisms for study include, but are not limited to, generation and transport of primary/secondary productivity, water temperatures, mobilization of contaminants, etc.

Project Title:	
Hypotheses:	
Primary Investigator Name and Affiliation	Co-Investigators' Names and Affiliations
Name:	Name:
Title:	Title:
Business/Institution:	Business/Institution:
Address:	Address:
City/State/Zip:	City/State/Zip:
Phone:	Phone:
Email:	Email:
Layperson Abstract (300 words):	
Research Location (latitude/longitude coordinates):	
Proposed Budget:	Proposed Research Period (years):
Has proposed research been funded in whole or part by another entity? If so, include the funding entity, dollar amount and timeframe.	