

JUNE 2023

DRAFT

Delta Research Proposal Solicitation Notice

2023/2024 – Solicitation # 23000

Please submit public comments via email to:
DeltaResearch@deltacouncil.ca.gov by
5:00 PM on July 21, 2023.



**Delta
Science
Program**

DELTA STEWARDSHIP COUNCIL

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1 Background

The Delta Stewardship Council (Council) is pleased to announce the 2023/2024 Delta Research Proposal Solicitation (Solicitation). The Solicitation will be administered by the University of California San Diego, California Sea Grant (Sea Grant) in partnership with the Council's Delta Science Program (DSP) and will further the DSP's legislatively mandated mission to...

... provide the best possible unbiased scientific information to inform water and environmental decision-making in the Delta ... through funding research, synthesizing and communicating scientific information to policy-makers and decision-makers...
-Delta Reform Act 2009, Water Code Section 85280(b)(4).

As a result of this Solicitation, the DSP seeks to identify and fund research that will promote integrative understanding of the Sacramento-San Joaquin Delta and Suisun Marsh, particularly to support the science and natural resource management community's ability to measure, anticipate, and plan for a rapidly changing climate. Proposals must advance one or more of the Science Actions in the **2022-2026 Science Action Agenda (SAA)**. The SAA prioritizes science actions to fill gaps in knowledge and aligns them with management needs. For more information about the Solicitation focus and the SAA, see Section 8.

Eligible entities that wish to submit a proposal must first submit a Letter of Intent by the deadline set forth in the Solicitation as a prerequisite to be considered for an invitation to submit a full proposal. Letters of intent will be evaluated by DSP based on the requirements in Sections 9 and 11.1 of the Solicitation. All proposals will be evaluated by independent experts with the appropriate specialized knowledge, based on requirements and criteria in Sections 10 and 11 of the Solicitation. The Delta Lead Scientist will make the final award recommendations to the DSP. Successful proposals will result in an agreement to be negotiated with Sea Grant, the Delta Stewardship Council, and/or external funding partners such as the Bureau of Reclamation and State Water Contractors. There is approximately \$6 million available in total for awards. Sea Grant will collaborate closely with the Council in administering the Solicitation as well as for external and expert review of

submitted proposals, award agreements, and communication of funded work with key interested parties.

2 What's new about the Delta Research Proposal Solicitation

- In addition to a large project award category (\$200,001 to \$1,500,000), the Solicitation has a separate award category for small projects (maximum award of \$200,000). This category for small projects was added following public input on the 2021 Solicitation.
- In recognition of previous underfunding of SAA actions related to the human dimensions of the Delta, projects with a substantial social science component will be eligible for additional points during the review process.
- Large projects are required to have one or more Letter of Interest from a Delta community partner, resource manager, or decision-maker.
- All awards will be administered as formal agreements with Sea Grant. All collaborating entities will also be required to enter into agreements directly with Sea Grant. No subawards are allowed.
- Projects must directly advance at least one science action from the 2022-2026 SAA.

3 Schedule

Table 1. Schedule

Event	Date(s) and Deadlines
Proposal Webinar #1	September 5, 2023, 9 – 10 am Pacific Standard Time (PST)
Letter of Intent Deadline	October 2, 2023 by 5 pm PST submitted online using eSeaGrant
Proposal Webinar #2	October 30, 2023, 2 – 3 pm PST
Full Proposal Deadline	December 20, 2023 by 5 pm PST submitted online using eSeaGrant
Notice of Intent to Award	April 1, 2024
Project Start Dates (no sooner than)	July 1, 2024
Length of Project	Not to exceed 36 months; may be

	eligible for an amendment to extend the contract term date, not to exceed 12 months for good cause, as determined by and subject to the discretion and approval of California Sea Grant.
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Schedule is subject to change. Updates will be sent to applicants who have registered at the eSeaGrant online portal and will be noticed through email announcements, website postings, the Council's news releases (<https://deltacouncil.ca.gov/news-releases>; sign up for Council email updates at <https://deltacouncil.ca.gov/latest-news>), and California Sea Grant announcements (<https://caseagrants.ucsd.edu/funding>).

4 Where to Find Help

Please see the Delta Research Proposal Solicitation website [URL pending] for an electronic copy of the Solicitation, answers to Frequently Asked Questions, and other information about the Solicitation and proposal process. For important resources and links, reference Section 12 Resources for Applicants.

For technical assistance with using eSeaGrant to submit Letters of Intent and proposals, contact SGProposal@ucsd.edu.

Please review the Solicitation document carefully! If you still have questions about the Solicitation, contact DeltaResearch@deltacouncil.ca.gov. DSP staff will make every attempt to respond to inquiries.

Communications with Council or Sea Grant staff related to the Solicitation, other than as specified and allowed in the Solicitation, may disqualify a potential proposal from being considered.

5 Submittal Requirements

5.1 Letter of Intent

Letters of Intent must be submitted by the deadline in Section 3 (Schedule) using eSeaGrant: <http://eseagrants2.ucsd.edu/>.

All interested applicants must submit a Letter of Intent using eSeaGrant by the deadline specified in the Solicitation (see Section 3 Schedule). Letters of Intent will be evaluated based on the requirements in Sections 9 and 11.1 of the Solicitation. An invitation to submit a proposal will be issued to each applicant whose Letter of Intent is selected during the screening process. Letters of Intent received after the deadline will not be considered. For additional information regarding the Letter of Intent, see Section 9.

5.2 How to Submit a Proposal

Proposals must be submitted by the deadline in Section 3 (Schedule) using eSeaGrant: <http://eseagrant2.ucsd.edu/>.

Only applicants who have submitted a Letter of Intent may qualify for screening to receive an invitation to submit a proposal. Applicants that do not receive an invitation to submit a proposal will not be considered. Shortly after Letters of Intent are reviewed, successful applicants will receive an invitation to submit a proposal and an email with access to the eSeaGrant portal for submitting full proposals. Applicants must submit all proposal materials through the eSeaGrant portal by the deadline specified in the Solicitation (see Section 3 (Schedule)).

5.3 Informational Webinars

Two optional virtual webinars will be held to provide technical assistance and other guidance for proposals. Additional virtual webinars and/or workshops may be held on topics relevant to this Solicitation. Applicants registered on eSeaGrant will be notified of workshop details; or see the Council's events calendar web page for more information: <https://deltacouncil.ca.gov/events>. Workshops will be recorded, and the recordings will be made available online at [TBD]. Frequently Asked Questions and answers regarding this Solicitation will be posted online at [TBD].

6 Eligibility Requirements

6.1 Eligible Entities

Eligible entities for agreements are public and private entities eligible and in good standing to do business in California, including:

- A federally recognized Native American tribe or non-federally recognized California Native American tribe listed on the California Tribal Contact List maintained by the Native American Heritage Commission as described in Section 65352.4 of the Government Code;
- A California State agency, state college, or state university;
- A State agency, state college, or state university from another state;
- A local governmental entity, including those created as a Joint Powers Authority and local government entities from other states;
- An auxiliary organization of the California State University (CSU) or of a California community college;
- The Federal government including National Laboratories;
- A foundation organized to support the Board of Governors of the California Community Colleges;
- An auxiliary organization of the Student Aid Commission established under Education Code;
- A corporation (both domestic and foreign), partnership, limited partnership, or limited liability company, or other such similar organization that meets the requirements for doing business in California;
- A private independent individual, including sole proprietors;
- A domestic or foreign private college, university, or educational or research entity.

For proposals involving multiple entities, a single entity must be identified as the primary lead entity, and a single proposal describing the entire project must be submitted by that entity. Each participating entity requesting funds will be required to enter into a separate agreement with Sea Grant; no subcontracting is possible. The budgets of those participating entities must be clearly identified in the comprehensive project budget submitted by the lead entity. The separate agreement for each entity may not exceed the budget specified in the proposal.

Eligible activities include, but are not limited to:

- Research, data collection, analysis, synthesis, management, and delivery;
- Development of resource management tools and technologies;
- Development of conceptual or quantitative models;

- Production of peer-reviewed journal articles, conference presentations, and communications for the scientific/management community;
- Science communication for broader audiences and/or community engagement;
- Project management and coordination of a multidisciplinary team;
- Institutional Review Board review;
- Document/report preparation.

For assistance determining if your entity or proposed activities are eligible, please contact DeltaResearch@deltacouncil.ca.gov.

6.2 Ineligible Projects

Funds shall not be expended to pay the costs of the design, construction, operation, mitigation, or maintenance of restoration projects or any Delta Plan covered actions (for more information: <https://coveredactions.deltacouncil.ca.gov>).

7 Award Information and Project Categories

Applicants may submit more than one Letter of Intent and proposal (subject to an invitation to submit a proposal), but a maximum of one award will be made to an individual lead Principal Investigator (PI). However, lead PIs may be listed as co-PIs on other awarded projects if the total combined effort is less than or equal to 100% of their time. For projects with collaborating entities requesting funds, we request that one main PI submit a Letter of Intent on behalf of all collaborating entities.

There is approximately \$6 million available in total for awards. Availability of funding is dependent upon State and Federal budget appropriations for the specified fiscal year and is subject to change. All awards will be administered as formal agreements with Sea Grant. All collaborating entities will also be required to enter into agreements directly with Sea Grant. No subawards are allowed.

Project categories:

- **Small Projects:** Maximum award of \$200,000. Projects that leverage other funding sources or have low resource requirements are encouraged in this

category.

- **Large Projects:** Awards between \$200,001 and \$1,500,000. Mid-range budgeted projects are also encouraged in this category.

Project duration not to exceed 36 months; may be eligible for an amendment to extend the contract term date, not to exceed 12 months for good cause, as determined by and subject to the discretion and approval of California Sea Grant.

8 Solicitation Focus

Proposals must directly address one or more of the science actions described in the 2022-2026 SAA. For more information on the SAA, see Section 12, Resources for Applicants. Projects must either be physically located in the Delta¹ or provide a demonstrable link to the Delta.²

All proposals must present clear hypotheses or cogent research questions that can be addressed using a scientifically-sound research design. Research may invoke the biophysical sciences, social sciences, integrated social-ecological disciplines, traditional knowledge, and/or local place-based knowledge.

Proposals are encouraged to:

- Include substantial roles for undergraduate, graduate, and/or postdoctoral students, particularly those from underrepresented groups and a diversity of lived experiences;
- Have a plan for meaningful, early, and sustained engagement with community members or community organizations;
- Be based on or thoughtfully and respectfully incorporate tribal, traditional, and/or local knowledges.

The 2022-2026 SAA groups science actions under thematic Management Needs.

¹The 'Delta' means the Sacramento-San Joaquin Delta as defined in Water Code Section 12220 and the Suisun Marsh as defined in Public Resources Code Section 29101 (Water Code Section 85058).

²A link to the Delta could include hydrologic connection, tribal ancestral/spiritual connection, social/cultural connection, etc.

The following subsections list these Management Needs and associated science actions, which are of equal priority and not listed in order of importance.

8.1 Management Need 1: Improve coordination and integration of large-scale experiments, data collection, and evaluation across regions and institutions.

Science Actions:

- A. Establish publicly accessible repositories, interactive platforms, and protocols for sharing information, products, and tools associated with monitoring and modeling efforts, in support of forecast and scenario development, timely decision-making, and collaborative efforts.
- B. Evaluate the individual and institutional factors that enable or present barriers to coordination, learning, trusting, and using scientific information to inform decision-making and resource sharing within and among organizations.
- C. Identify and implement large-scale experiments that can address uncertainties in the outcomes of management actions for water supply, ecosystem function, and socioeconomic conditions in the Delta.

8.2 Management Need 2: Enhance monitoring and model interoperability, integration, and forecasting.

Science Actions:

- A. Evaluate and update monitoring programs to ensure their ability to track and inform the management of climate change impacts, emerging stressors, and changes in species distributions.
- B. Develop a framework for monitoring, modeling, and information dissemination in support of operational forecasting and near real-time visualization of the extent, toxicity, and health impacts of Harmful Algal Blooms (HABs).
- C. Enhance flood risk models through a co-production process with Delta communities to quantify and consider tradeoffs among flood risk

management, water supply and water quality management, habitat restoration, and climate adaptation.

- D. Iteratively develop, update, and make widely available forecasts of climatological, hydrological, social-ecological, and water quality conditions at various spatial and temporal scales that consider climate change scenarios.

8.3 Management Need 3: Expand multi-benefit approaches to managing the Delta as a social-ecological system.

Science Actions:

- A. Conduct studies to inform restoration and approaches to protecting human communities that are resilient to interannual hydrologic variation and climate change impacts.
- B. Develop integrated frameworks, data visualization tools, and models of the Delta social-ecological system that evaluate the distribution of environmental benefits and burdens of management actions alongside anticipated climate change impacts.
- C. Identify how ecosystem restoration projects, in comparison to existing water management strategies, benefit and burden human communities, with an emphasis on environmental justice.
- D. Test and monitor the ability of tidal, nontidal, and managed wetlands and inundated floodplains to achieve multiple benefits over a range of spatial scales, including potential management costs, tradeoffs, and unintended consequences.
- E. Synthesize existing knowledge and conduct applied, interdisciplinary research to evaluate the costs and benefits of different strategies for minimizing the introduction and spread of invasive species, and to inform early detection and rapid response strategies.

8.4 Management Need 4: Build and integrate knowledge on social process and behavior of Delta communities and residents to support effective and equitable management.

Science Actions:

- A. Use multi-method approaches (e.g., surveys, interviews, oral histories, and/or observations) to develop an understanding of how human communities' values, and uses of cultural, recreational, agricultural, and natural resources vary across geography, demographics, and time.
- B. Synthesize existing data and collaboratively develop additional long-term data collection and monitoring strategies to address knowledge gaps on human communities within the Delta and those reliant on the Delta, with the goal of tracking and modeling metrics of resilience, equity, and well-being over time.
- C. Measure and evaluate the effects of using co-production or community science approaches (in management and planning processes) on communities' perceptions of governance and on institutional outcomes, such as implementation or innovation.

8.5 Management Need 5: Acquire new knowledge and synthesize existing knowledge of interacting stressors to support species recovery and ecosystem health.

Science Actions:

- A. Identify and test innovative methods for effective control or management of invasive aquatic vegetation in tidal portions of the Delta under current and projected climate conditions.
- B. Identify thresholds in the survival and health of managed fish and wildlife species with respect to environmental variables (e.g., flow, temperature, dissolved oxygen) and location-specific survival probabilities to develop strategies that will support species recovery.
- C. Determine how environmental drivers (e.g., nutrients, temperatures, water residence time) interact to cause HABs in the Delta, identify impacts on human and ecosystem health and well-being, and test possible mitigation strategies.
- D. Integrate and expand on existing models of hydrodynamics, nutrients, and other food web drivers to allow for the forecasting of the effects of interacting stressors on primary production and listed species.

- E. Quantify spatial and temporal patterns and trends of chemical contaminants and evaluate ecosystem effects through monitoring, modeling, and laboratory studies.

8.6 Management Need 6: Assess and anticipate impacts of climate change and extreme events to support successful adaptation strategies.

Science Actions:

- A. Evaluate how climate change, sea level rise, and more frequent extremes will impact habitats, water supply, water quality, sediment supply, long-term species persistence, primary productivity, and food webs.
- B. Evaluate individual and cumulative impacts and tradeoffs of drought management actions on ecological and human communities over multiple timescales.
- C. Evaluate the possible multi-benefits of management actions that promote groundwater recharge for ecological functions and water resilience under climate change (e.g., multiple dry year scenarios).
- D. Identify how human communities connected to the Delta watershed are adapting to climate change, what opportunities and tradeoffs exist for climate adaptation approaches (i.e., agricultural practices, carbon sequestration, nature-based solutions/green infrastructure), and how behaviors vary with adaptive capacity.
- E. Predict and test how water allocation and supply decisions, and ecological flow scenarios should change under projected climate change to maintain habitat conditions, access of target species to critical habitat, and interactions among native and invasive species.

9 Letter of Intent Requirements

Letters of Intent are required. Proposals will only be accepted from applicants who have submitted a Letter of Intent and have received an invitation to submit a full proposal. Proposals must not substantially deviate from what is described in the Letter of Intent.

The page limit for the Letters of Intent is two (2) pages, Arial font size 12, single spacing, and standard margins, including header, footer, labeling, and

address information. Information in excess of two pages will not be considered.

Letters of Intent must include the following information:

- Name of lead PI, affiliation, and contact information
- Name of Co-PI(s) (if applicable) with affiliation(s)
- Title of project
- Indication of award type (Large Project, Small Project) and which SAA science action(s) will be addressed
- Brief discussion of the topic and approach, including how the specified science action(s) will be addressed.
- *For proposals in the Large Project category only:* identification of a management or community group (agency, division, and specific individuals if possible) relevant to the project; this is the group that will be submitting the required Letter of Interest (see Section 10.6).
- Approximate total budget (including all collaborating entities)
- List of 3-5 potential reviewers with contact information. A thorough conflict of interest screening is conducted for each potential reviewer.

10 Proposal Requirements

Listed below are the requirements for a complete proposal package. For lead PIs affiliated with academic institutions, final proposals must be submitted by the institution's sponsored research office. For deadlines, see Section 3 (Schedule). For instructions on how to submit, see Section 4. For instructions on how to submit a proposal via eSeaGrant, see Section 5.2. For award information, see Section 7 (Award Information and Project Categories).

10.1 Title Page

A signed title page must be included with the proposal. Please provide all requested information and obtain the required signatures; electronic signatures are acceptable. The completed and signed title page must be converted to a PDF and uploaded to eSeaGrant.

10.2 Project Summary/Abstract

The project summary must be submitted through eSeaGrant and **must not exceed 300 words**. The project summary should present a concise description of the proposed research in a way that is useful to a variety of readers without specialized expertise. **Project Objectives, Methodology, and Rationale** must be covered in separate sections.

Instructions in eSeaGrant will guide applicants through the completion of the form. Please follow the instructions carefully; the project summary is the most widely-consulted description of the project.

10.3 Project Narrative

The project narrative **must not exceed 12 pages**, Arial font size 12, single spacing, and standard margins (including introduction, objectives, approach, illustrations, charts, tables, and figures, but excluding the cited references list). Proposals exceeding this length limit will not be reviewed.

The narrative format and contents may vary but must include the following information:

10.3.1 Introduction and Background

Provide the rationale for the project (i.e., a well-defined problem or important opportunity) and a brief overview of the foundational literature. The introduction must include a clear, concise statement of the “real world” need for the research (rationale), how the project would address one or more SAA science actions, and a description of who might use the results and/or products and how they might use them.

10.3.2 Objectives, Hypotheses and/or Research Questions

List the project goals or objectives. Goals or objectives must be clearly related to anticipated outcomes. Clearly describe the hypotheses and/or research questions that the work will address. Demonstrate how objectives relate to hypotheses

and/or research questions.

10.3.3 Work Plan

Present the scientific/technical approach, experiments, procedures, and methods. Identify and discuss any new approaches (innovation) to solving problems and exploiting opportunities in resource management or development. Describe necessary materials and equipment, parties responsible for each task, and an approximate schedule. Where appropriate, discuss how uncertainties will be quantified and/or addressed. Discuss potential pitfalls and contingencies.

For projects with community engagement, describe who will be involved and the approach. Project teams are encouraged to engage with collaborative workgroups or science initiatives (e.g., Interagency Ecological Program, Central Valley Project Improvement Act Science Integration Team, Collaborative Adaptive Management Team, Delta Regional Monitoring Program, Bay-Delta Social Science Community of Practice, Sacramento River Science Partnership) if there are potentially overlapping efforts. Large projects are required to include relevant letter(s) of interest from community group(s) or management partners (see Section 10.6).

In a numbered or bulleted format, list and briefly describe all deliverables. Add project-specific deliverables to the following list of required deliverables:

- Annual progress reports;
- List of presentations, media coverage, and any other products;
- Final progress report, including lay-person or visual abstracts;
- Presentation(s) at relevant science conferences (e.g., Bay Delta Science Conference);
- Institutional Review Board approval or exemption, if applicable;
- Revised Data Management Plan (within 1 year of start date; see Section 10.8, Data Management Plan);
- Revised Engagement and Communication Plan (within 1 year of start date; see Section 10.7.1 Engagement and Communication Plan);
- Addition of project information to the Delta Science Tracker (<https://sciencetracker.deltacouncil.ca.gov/>);
- As requested, participation in a theme-based engagement workshop focused

- on the science-policy interface, to be hosted by the DSP and/or Sea Grant;
- Participation in the development of communication products developed by DSP and/or Sea Grant to communicate outcomes of the project; and
- Draft (and final, if available) manuscripts resulting from the project.

10.4 Works Cited

List all included cited references alphabetically. The list of references **does not** count toward the page limit of the narrative but must be included in the narrative PDF file.

10.5 Science Action Agenda Relevance

Describe, in a maximum of one page, how the proposed work will address one or more of the science actions in the 2022-2026 SAA and discuss its specific management relevance. This section and subsequent sections **do not** count toward the page limit of the narrative (12 pages) and must be provided in separate PDF files unless otherwise specified.

10.6 Letter of Interest from Management or Community Group

Letters of interest are required for proposals in the Large Projects category and optional, but encouraged, for proposals in the Small Projects category. Letters of interest must demonstrate that an end user outside of the project team is interested in the results or outcomes of the proposed research.

End users can be management or community organizations who are interested in using project findings to support decision-making, advocacy, public welfare, and/or resource stewardship. They may include, but are not limited to, representatives of state, local, or federal agencies or water districts, tribal governments or coalitions, local governments, and non-governmental organizations.

Letters of interest **must not exceed two pages** each and must include a statement indicating the group's level of interest in and understanding of the project. Participatory research models, in which end users are an active and engaged part of the research process, are encouraged but not required (for more information on

participatory research, see Section 10.7 Broader Impacts and Equitable Engagement). If multiple letters are to be included in the proposal, please consolidate all letters into a single PDF for uploading to eSeaGrant. Letter must also describe:

- the history of collaboration, or whether this project represents a new collaboration;
- the group's role and specific contributions, including frequency of engagement;
- how the project will affect (benefit/burden) the group;
- whether and how groups will be compensated for their contributions; and
- optional: in-kind support and/or cost share, such as volunteer time or equipment.

10.7 Broader Impacts and Equitable Engagement

This section (not to exceed 2 pages) must describe how the information produced from the project will lead to broader impacts that could contribute to more effective and equitable management of the Delta. Broader impacts may be accomplished through the research itself, through activities that are directly related to the research, or through activities that are complementary to the research.

Applicants are encouraged to engage with tribes and local communities (e.g., through trusted liaisons or community-based organizations) and/or to employ participatory research methods. Participatory research is an umbrella term for an approach to research in which the community that is intended to be the beneficiary of the research is engaged in the research process itself. For example, researchers could develop questions and methods in partnership with the communities impacted or affected by the proposed research.

Broader impacts could include: outreach; education and mentorship; curriculum development and educator training at any level; public scientific literacy, public engagement with science, and participatory research; equitable public access to information and resources; partnerships among academia, industry, and others; infrastructure for research and education; policy engagement such as testimony in

a public hearing, and science communication.

Evaluation of broader impacts will include the applicant's Vulnerable Communities assessment (below, Section 10.7.2) and the depth of consideration given to community engagement plans. See Sections 12.2 Environmental Justice and 12.3 Community Engagement for guidance and resources.

10.7.1 Engagement and Communication Plan

Proposals must include plans for communicating project goals, messages, and results with relevant communities. Instead of one-way science communication that is reactive or done as an afterthought, making engagement an intentional, long-term process creates a context for mutually beneficial interactions between researchers and the people using their research, such as managers or communities. The DSP is asking researchers to think holistically, well before time of message delivery, to 1) identify the audiences for their work, 2) purposefully craft project messages and vehicles for delivery that effectively engage with these specific audiences, and 3) define metrics to evaluate the effectiveness of the engagement effort. At a minimum, plans must contain details about the communication goals, audience(s), frequency and method of community engagement, and the vehicle/media used. An optional template for Engagement and Communication is available online on the Delta Research Proposal Solicitation webpage [URL TBD].

10.7.2 Vulnerable or Historically Marginalized Communities

Applicants are required to evaluate and describe any potential connections between the project and a community that is socially vulnerable or historically marginalized in the context of environmental change. For example, research may investigate or evaluate potential management actions to address one or more of the factors that contribute to higher social vulnerability to climate change impacts in a specific community. To identify vulnerable communities and estimate how their project may affect specific communities, applicants may use a tool such as the Delta Adapts Map Tool or refer to results of the Council's interviews with Environmental Justice (EJ) community representatives (see Section 12.2

Environmental Justice).

Governor Brown's 2015 Executive Order B-30-15 requires that, "State agencies' planning and investments shall...protect the state's most vulnerable populations." Vulnerable communities in the context of climate change are here defined as those that "experience heightened risk and increased sensitivity to climate change and have less capacity and fewer resources to cope with, adapt to, or recover from climate impacts. These disproportionate effects are caused by physical (built and environmental), social, political, and/or economic factor(s), which are exacerbated by climate impacts. These factors include, but are not limited to, race, class, sexual orientation and identification, national origin, and income inequality" (California's Office of Planning and Research: Integrated Climate Adaptation and Resiliency Program).

10.8 Data Management Plan

Proposals must include a data management plan (DMP), which is a written document that describes the data that will be acquired or generated during the course of a research project, how those data will be managed and stored, and what mechanisms will be used to share and archive the data. If funding is required for data management and archiving, please make sure that the proposed budget includes funds for data management.

Applicants are strongly encouraged to use reproducible workflows (e.g., script-based analyses in R; documentation of coding or QA procedures), follow FAIR (findable, accessible, interoperable, reusable) data principles, publish model code, and publish journal articles using open-access services.

Data management should be consistent with the following principles:

- Data are understandable to general users.
- Data are interoperable (machine readable).
- Standard data and metadata formats are used for similar data types.
- Quality Assurance/Quality Control (QA/QC) procedures are documented and followed.
- Appropriate steps have been taken to protect human subjects data (e.g., IRB

review).

- Open and transparent data and metadata are accessible to the public in a reasonable time frame. All data generated through awarded projects are **required to be made publicly accessible** no later than two years after the end date of the project, except where prohibited by law, regulation, or policy or security requirements, for example with human subjects data.

The DSP respects the sovereignty of Tribes and will not require disclosure of sensitive or confidential information. For projects based on traditional and tribal knowledges, DSP and the project team will work together to prepare a data sharing agreement that defines how project results and deliverables will be used, in alignment with the CARE data principles (see Section 12, Resources for Applicants).

DMPs must be a maximum of 3 pages and include, at a minimum, the following information:

- How the DMP is aligned with the applicant's established data management approach (if applicable);
- Date the plan was created or updated;
- Point of contact for access to, or questions about, the data or model(s);
- Brief description of the data to be acquired or generated during the project, including approximate size (in MB) of the dataset;
- Brief description of metadata;
 - Must meet California Department of Fish and Wildlife's Minimum Data Standards (<https://www.wildlife.ca.gov/Data/BIOS/Metadata>)
- Description of short-term storage and backup procedures, including physical and electronic resources;
- Procedures for long-term archiving and preservation of data and model(s)
- How data and model(s) will be accessed and shared; applicants are strongly encouraged to have a plan for sharing data directly with impacted communities;
- Format(s) in which data will be generated, maintained, and made available;
- Quality control/quality assurance procedures;
- Rights and requirements for data use and model(s), and how models will be licensed; and
- Proposed data publishing organizations. See Section 12.4, Data Management,

for a list of relevant open data portals.

DMPs are living documents. Therefore, successful applicants must revise the DMP within 12 months of project initiation.

For more guidance on DMPs, see Section 12 Resources for Applicants.

10.9 Environmental Compliance Questionnaire and IRB Certification

An Abbreviated Environmental Questionnaire, which can be found at https://seagrant.noaa.gov/Portals/1/Forms/NSGO%20Abbreviated%20Environmental%20Compliance%20Questionnaire_102022.docx, is required with each proposal. Only one questionnaire is to be submitted per proposal, even if there are multiple institutions involved. For questions not applicable to the proposed research, please note N/A on the form. Leave blank the question about Grant/Project Number.

Projects must comply with all applicable laws and regulations, including the Delta Reform Act (Water Code Section 85000 et seq.). Applicants are responsible for obtaining all permits necessary to complete project work. Scientific studies that involve the collection of fish, wildlife, or endangered or rare plants must have a valid Scientific Collecting Permit or Plant Voucher Collection Permit.

For any research involving human research subjects, the applicant must ensure that subjects are protected from research risks in conformance with the relevant Federal policy known as the Common Rule (Federal Policy for the Protection of Human Subjects, 45 CFR 690). Before data collection begins, all projects involving human subjects must provide documentation that they (1) have approval from an Institutional Review Board (IRB) before issuance of an agreement or (2) affirm that the IRB has declared the research exempt from IRB review. IRB approval or exemption will be a required deliverable of all projects involving human subjects. Applicants are responsible for ensuring that collection, storage, use, and dissemination of data concerning human subjects complies with all applicable laws concerning such data, including privacy laws.

10.10 Budget and Budget Justification

All budget sections require justification. Review the budget instructions to see what is expected as justification for each section. Please make clear what other sources of support (fiscal, personnel, equipment, or logistical), if any, will be used to support the work proposed.

Applicants must budget for all costs associated with project delivery, for example coordination, permit fees, co-production costs associated with community engagement, travel, presentations to the Council, publishing, project reporting, science communication and broader outreach, and document accessibility (<https://webstandards.ca.gov/accessibility/>).

10.10.1 Ineligible Costs

The following are ineligible costs for reimbursement:

- Costs incurred outside of the agreement term
- Costs related to the preparation of the proposal
- Land acquisition
- Out-of-state travel without prior written authorization
- Costs of the design, construction, operation, mitigation, or maintenance of covered actions
- Routine printing production expenses (technical printing, such as for surveys, is an allowable expense)

Ineligible costs for reimbursement may be identified as cost share if funds will be spent during the agreement term. Ineligible costs may be removed from the budget of a project selected for funding.

10.11 Project Team Experience and Qualifications

Applicants must demonstrate that the project team has the experience, facilities and equipment, and the capacity to successfully perform the proposed tasks within the term of the agreement. The project team includes all key personnel and other entities who will be performing the work described in the proposal.

Discuss any relevant prior projects, prior publications or examples of productivity, or previous collaborations that the work leverages. Where relevant, include the project team's experience with interdisciplinary and collaborative efforts, natural resource management, Delta communities, local and traditional knowledges, and outreach.

10.12 Resumes

An abbreviated resume (**maximum of 2 pages for each person**) of all key personnel must be included in the submission. Resumes must include the key personnel's educational and employment history, a list of relevant publications and other outcomes (e.g., online or media resources, data releases, software), and participation in collaborative activities. Please combine all resumes into a single PDF for uploading to eSeaGrant.

10.13 Current and Pending Support

Using the online form in eSeaGrant, please list other current and pending projects associated with all key personnel. Applicants may also upload the form provided.

11 Proposal Review Procedure

11.1 Letter of Intent Review

Letters of Intent (LOI) will be assigned a pass/fail score by the DSP based on their relevance to science actions identified in the 2022-2026 Science Action Agenda, eligibility, and whether they fall within the geographic scope of the Delta.³

Applicants will be notified within 3 weeks of the LOI deadline if their LOIs were or were not successful. Applicants with successful LOIs will receive an electronic invitation to submit a full proposal.

³ Projects under this Program are not required to be physically located within the Delta; however, project activities must provide a demonstrable link(s) to the Delta. A link to the Delta could include hydrologic connection, tribal ancestral/spiritual connection, social/cultural connection, etc. The 'Delta' means the Sacramento-San Joaquin Delta as defined in Water Code Section 12220 and the Suisun Marsh as defined in Public Resources Code Section 29101 (Water Code Section 85058).

11.2 Administrative Review

Administrative review determines if the Proposal is complete (Table 2). Proposals that receive a “No” for one or more of the Administrative Review Evaluation Criteria will be considered incomplete and may not be considered eligible under this Solicitation.

Table 2. Administrative Review Criteria

CRITERION	SCORE
Proposal is complete	Yes/No
Applicant is an eligible entity	Yes/No

11.3 Technical Review

All proposals that advance past administrative review will go through independent technical review by at least two external experts selected by DSP and Sea Grant. Technical reviewers will be professionals in fields relevant to the proposed project and screened for any potential conflict of interest. Technical reviewers will evaluate each proposal in accordance with the Technical Review Criteria (Table 3) and may submit narrative comments that support their scores.

Table 3. Technical Review Criteria

Large Projects		Small Projects	
CATEGORY	MAXIMUM SCORE	CATEGORY	MAXIMUM SCORE
Scientific merit	25	Scientific merit	35
Relevance to SAA	25	Relevance to SAA	25
Broader Impacts and Equitable Engagement	18	Broader Impacts and Equitable Engagement	10
Project has a substantial social science component	7	Project has a substantial social science component	5
Feasibility	10	Feasibility	10
Reasonableness of budget	5	Reasonableness of budget	5
Team qualifications	5	Team qualifications	5
Data management plan	5	Data management plan	5
TOTAL POSSIBLE POINTS	100	TOTAL POSSIBLE POINTS	100

The following is a list of questions that will be provided as additional guidance for proposal reviewers:

- **Scientific Merit**
 - Will the work address key scientific uncertainties and fill important information gaps? The proposed research does not have to be hypothesis-driven but must, at a minimum, include a clear statement of research questions.
 - Is the underlying scientific basis or underlying knowledge base for the proposed work clearly explained, and is it based on the best possible information, including current scientific literature, Tribal expertise, traditional knowledge, and local knowledge?
 - Does the proposal adequately describe the project purpose and justify the project need, considering relevant existing knowledge?
 - Are the methods, including data analysis and reporting, clearly linked to and appropriate for addressing the objectives and research questions?

- **Relevance to the SAA**

- In what ways is the project responsive to the 2022-2026 SAA? Which science action(s) will be addressed?
- *Large Projects Only*: Does the letter of interest demonstrate a strong and effective connection with management needs and meaningful engagement with practitioners, Delta communities, and/or resource managers?
- Does the proposed work have significance at the landscape and regional scale?
- Will the information produced contribute to effective adaptive management or co-production (i.e., participatory knowledge development) of science for the Delta?
- *If applicable*: Will the project leverage existing datasets or tools?

Broader Impacts. Small projects will be scored on addressing at least one component of community engagement, positive impact on vulnerable (i.e. environmental justice (EJ)) communities, or outreach and training as described below. Large projects will be scored based whether all three components are addressed.

- **Community and Tribal engagement**
 - How well does the proposed work incorporate realistic and ample opportunities for community partnership, participation, and/or input?
 - How will feedback from engagement be incorporated or influence the proposed work?
 - Will there be any co-production of knowledge or participatory research with tribal experts or community groups?
- **Positive impact on vulnerable communities**
 - Will the research process and/or products have the potential for a meaningful positive impact on underrepresented groups or promote environmental justice?
 - Will the process and or product promote principles of justice, equity, diversity, and inclusion?
- **Outreach and Training**

- Does the Engagement and Communication Plan explain how the information will be made directly available to the entities that will most benefit from it, including scientists, managers, and the public?
 - Does the proposed work include training and mentoring for students (K-12, undergraduate, graduate), post-doctoral scholars, and/or educators (e.g., curriculum development)?
 - Is there a plan for policy engagement, such as testimony in a public hearing or presentations to decision-makers?
 - Will the proposed work include partnerships among academic, industry, and/or non-governmental organizations?
- **Project has a substantial social science component** (this criterion includes interdisciplinary projects with a substantial social science component)
 - Does the proposed project employ methods, theories, or data from any of the social science disciplines, including but not limited to political science, sociology, economics, anthropology, geography, or psychology?
 - Does the project meaningfully integrate information on social and natural dimensions of the Delta?
- **Feasibility**
 - Is there an adequate description of how each element of the project will be implemented (e.g., methods, materials, equipment, responsible parties)?
 - Does the schedule demonstrate a logical sequence and timing of project tasks? Is it feasible to complete the proposed work within the proposed time frame?
 - Are the necessary facilities, equipment, and administrative capacity available to successfully perform and manage the proposed tasks?
- **Reasonableness of budget**
 - Is there justification for all costs in the budget?
- **Team qualifications.** The DSP is committed to funding researchers from a broad range of institutions and career stages, including those who have not received prior funding from the DSP.
 - Does the project team have adequate expertise to complete the proposed work?
 - What is the project team's record of publication, productivity, management, engagement, training, and outreach?

- **Data management plan**

- Does the DMP address all sections described in the Solicitation, including best practices for open science?

11.4 Review Panel

Following completion of the technical review, the DSP will convene one or more Review Panel(s) facilitated by California Sea Grant. The Delta Lead Scientist (or their designee) will serve as the non-voting chairperson of the Review Panel(s) with primary responsibility of ensuring that the discussion is balanced, fair, and comprehensive. Representatives from other agencies and entities may be invited to participate in the Review Panel(s). The Review Panel(s) will consider technical reviews and rank projects according to the review criteria.

11.5 Funding Decisions

The Delta Lead Scientist will consider the Review Panel recommendations, and, in coordination with funding partners, make funding recommendations to the DSP. Selection by the Delta Lead Scientist will be made with consideration of the following:

- Review Panel recommendations
- Distribution of projects across SAA science actions
- Budget requests relative to available funds
- Management relevance to the Delta
- Diversity of applicants' institutions and career stages

The intent to award does not guarantee an ensuing agreement. For proposals recommended for funding, intent to award letters will be distributed to the primary applicant and will include any requested changes in response to proposal review feedback and requested changes to the proposal and/or budget (if any). To proceed to an executed agreement, successful applicants must provide any revisions and additional documentation as requested by Sea Grant in a timely manner.

11.5.1 Budget Contingency Clause for State-Funded Contract Agreements

(1) If the Budget Act of the current year and/or any subsequent years covered under the ensuing Agreement does not appropriate sufficient funds for the program, the Agreement shall be of no further force and effect. In this event, the Council will have no liability to pay any funds whatsoever to the Contractor or to furnish any other considerations under the Agreement and Contractor shall not be obligated to perform any provisions of the Agreement.

(2) If funding for any fiscal year is reduced or deleted by the Budget Act for purposes of this program, the Council will have the option to either: cancel the Agreement with no liability occurring to the Council or offer an Agreement amendment to Contractor to reflect the reduced amount. Contractor shall be reimbursed for any completed work or work in progress at the time of termination of an executed Agreement if approved by the Council.

11.6 Recognition of Funding Source

Successful applicants must acknowledge funding from the Delta Stewardship Council's DSP and any applicable partner organizations providing project funds, as specified in the agreement language. Recognition of funding under this program extends to publications, websites, and other media-related and public-outreach products.

12 Resources for Applicants

- Delta Residents Survey [link to be added when available]

12.1 Science Action Agenda

- [2022-2026 SAA Web Page](#)
- [Researcher's Guide to Funding and Tracking Priority Science](#)
- [Delta Science Tracker](#)
- Sommer, T., Conrad, J. L, & Culberson, S. (2023) Data to Decisions: How to Make Science More Relevant for Management of the San Francisco Estuary. *San Francisco Estuary and Watershed Science* 21(1).
<http://dx.doi.org/10.15447/sfews.2023v21iss1art1>

12.2 Environmental Justice

- [Summary of the Council's interviews](#) with EJ community groups to understand their research needs
- The Council's [summary of EJ in the Delta](#)
- Delta Adapts [Mapping Tool of Social Vulnerability](#) shows the location of socially-vulnerable communities in the Delta. For more information, see the Draft Equity Technical Memo (<https://deltacouncil.ca.gov/pdf/delta-plan/2021-01-15-delta-adapts-equity-technical-memorandum.pdf>).
- [California Healthy Places Index](#) is a mapping tool to explore the community conditions that impact life expectancy, including air and water quality, access to healthcare, housing, education, and income.
- [CalEnviroScreen](#) - Pollution Vulnerability Interactive Map
- [California EPA Environmental Justice Page](#)
- [California Department of Justice Environmental Justice Page](#)
- [Federal EPA Environmental Justice Page](#)

12.3 Community Engagement

Proposals may, but are not required to, use the Council's template for an engagement and communication plan, available on the Delta Research Proposal Solicitation webpage [URL TBD].

- [Community Engagement Guide for Sustainable Communities](#) from PolicyLink
- [Tips for Meaningful Community Engagement Draft Guidance Document and webinar on two case studies of meaningful engagement](#) from the CA Coastal Conservancy
- [Guide to Equitable, Community-Driven Climate Preparedness Planning](#) from the Urban Sustainability Directors Network
- [Environmental Justice Primer for Ports: The Good Neighbor Guide to Building Partnerships and Social Equity with Communities](#) from the federal EPA
- [Best Practices for Meaningful Community Engagement](#) from Groundwork USA
- [Centering Community in the Public Engagement Process](#) from Vision Zero

12.4 Data Management

Applicants may, but are not required to, use the [Data Management Plan Template](#) from the Interagency Ecological Program.

- Recommendations from Environmental Data Summit white paper (<https://cawaterlibrary.net/document/enhancing-the-vision-for-managing-californias-environmental-information>)
- Open and Transparent Water Data Act (AB 1755) (https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB1755)
- [CARE data principles](#) for Indigenous data
- California Water Quality Monitoring Council
 - [Open Data Fact Sheet](#)
 - [Data Management Plan Fact Sheet](#)
- [Open and Transparent Water Data Act \(AB1755\)](#)
- [Guidance from the Interagency Ecological Program](#)
- [CDFW Minimum Metadata Standards](#)

Data delivery can include publishing data to relevant open data portals, including but not limited to:

- Surface water data reported to California Environmental Data Exchange

- Network (CEDEN) (<http://www.ceden.org/>),
- Environmental Data Initiative (EDI) (<https://environmentaldatainitiative.org/>),
- California Natural Resources Agency Open Data Platform (<https://data.cnra.ca.gov/>),
- California Open Data Portal (<https://data.ca.gov/>),
- Groundwater data reported to GeoTracker GAMA (https://www.waterboards.ca.gov/water_issues/programs/gama/geotracker_gama.shtml),
- Species observation data of tracked species (<https://www.wildlife.ca.gov/Data/CNDDDB/Plants-and-Animals>) reported to the California Natural Diversity Database (CNDDDB) (<http://wildlife.ca.gov/Data/CNDDDB>) using the online field survey form (<https://www.wildlife.ca.gov/Data/CNDDDB/Plants-and-Animals>) or other digital method,
- Fish passage assessment data reported to the California Fish Passage Assessment Database (PAD) (<https://nrm.dfg.ca.gov/PAD/>),
- The Knowledge Network for Biocomplexity (KNB) <https://knb.ecoinformatics.org/> (supported by NCEAS), and
- Data Observation Network for Earth (DataONE): <https://www.dataone.org/> (supported by NCEAS)

12.5 More About the Delta Stewardship Council

- Enabling legislation: Sacramento-San Joaquin [Delta Reform Act of 2009](#)
- [Delta Stewardship Council](#)
 - [Delta Plan](#)
 - [Delta Science Program](#)
 - [Delta Science Plan](#)
 - [Science Action Agenda](#)
- Boundaries of the Sacramento-San Joaquin Delta
 - [Map of Legal Delta](#), GIS
 - [Map of Legal Delta](#), PDF
 - Statutory Definition of Legal Delta ([Water Code Section 12220](#)) and [Water Code Section 85058](#)

12.6 Other Useful Links

12.6.1 Federal Departments and Programs

[United States Fish and Wildlife Service](#)

[United States Bureau of Reclamation, Bay-Delta Office](#)

[National Oceanic Atmospheric Administration](#)

12.6.2 State and Regional Resources

[State Water Resources Control Board](#)

[Sacramento River Science Partnership Charter](#)

[California Water Action Plan](#)

[California Wetland Monitoring Workgroup](#)

[Surface Water Ambient Monitoring Program \(SWAMP\)](#)

12.6.3 Climate Change Information

[Delta Adapts: Creating a Climate Resilient Future](#)

[Integrated Climate Adaptation and Resiliency Program](#)

[CDFW Climate Science Program](#)

13 Acronyms

Council	Delta Stewardship Council
DMP	Data Management Plan
DSP	Delta Science Program
IRB	Institutional Review Board

OPR ICARP	Office of Planning and Research: Integrated Climate Adaptation and Resiliency Program
PST	Pacific Standard Time
PI	Principal Investigator
SAA	Science Action Agenda

14 Definitions

Co-production

Co-production is one type of participatory research in which information is produced by both the researchers and the community being researched. Participatory research is an umbrella term for an approach to research in which the community that is intended to be the beneficiary of the research is engaged in the research process itself. Both co-production and participatory research have core philosophies of inclusivity and of shifting the traditional paradigm in which researchers have power over people from whom information is extracted.

Collaboration

Sharing information and resources and modifying activities based on a common interest or objective that multiple parties involved jointly define. Collaboration is distinguished from coordination or cooperation, in which the interests or objectives are independently defined or pursued. Parties include scientists (including federal, state, and local agencies), academics, consultants, non-governmental organizations, community-based organizations, and interested public who are actively participating in scientific and management activities in the Delta.

Delta

The Sacramento-San Joaquin Delta as defined in Water Code Section 12220 and the Suisun Marsh as defined in Public Resources Code Section 29101 (Water Code Section 79702[e]).

Native American Tribe

References in the Solicitation to tribes, tribal knowledge, and tribal experts/expertise include all federally recognized Native American tribes recognized by the United States Department of the Interior, Bureau of Indian Affairs and listed annually in the Federal Register and all non-federally recognized California Native American tribe listed on the California Tribal Contact List maintained by the Native American Heritage Commission as described in Section 65352.4 of the Government Code.

Nonprofit Organization

An organization qualified to do business in California and qualified under Section 501(c)(3) of Title 26 of the United States Code (Water Code Section 79702[p]).

Public Agency

A California agency or department [including public universities], special district, joint powers authority, county, city, city and county, or other political subdivision of the state (Water Code Section 79702[s]).

Subcontractor

Any third-party entity other than the project proponent/applicant that performs a portion of the Scope of Work and includes subrecipients, subawardees, independent subcontractors, and consultants.

Vulnerable Communities

Vulnerable communities, in the context of climate change ... are defined here as those which “experience heightened risk and increased sensitivity to climate change and have less capacity and fewer resources to cope with, adapt to, or recover from climate impacts. These disproportionate effects are caused by physical (built and environmental), social, political, and/or economic factor(s), which are exacerbated by climate impacts. These factors include, but are not limited to, race, class, sexual orientation and identification, national origin, and income inequality ([OPR ICARP](#)).