

# CACHE SLOUGH SCOPE OF WORK, 4TH DRAFT

June 14, 2016

## PROJECT PURPOSE

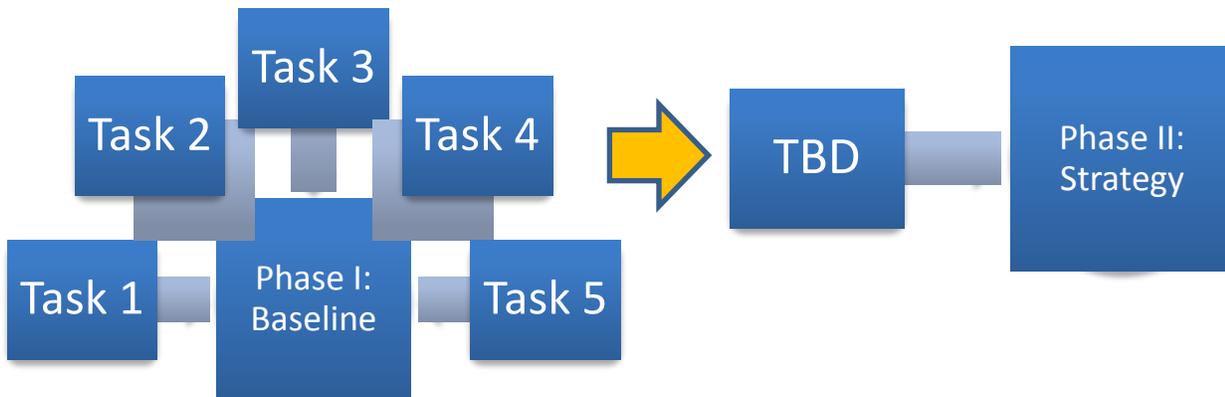
The purpose of this project is to develop a restoration strategy for the Cache Slough Complex (CSC) that identifies areas for habitat restoration and projects that would be eligible for Proposition 1 funding. Through engagement in a collaborative planning process between local, state, and federal agencies and interests, a locally-supportable vision and strategic planning approach will be developed that considers multiple land use plans and processes focused in the CSC, reduces potential conflicts between those uses, and identifies opportunities for a landscape-level integrated approach. This regional planning effort will compliment already-ongoing collaborative work among local, state and federal agencies in the larger Yolo Bypass/Cache Slough (YBCS) Region; and builds on and further develops efforts by the local partners in the Corridor Management Framework (CMF).

A collaborative partnership of agencies currently consisting of the Delta Conservancy, Solano County, Solano County Water Agency, Reclamation District 2068, and Yolo County have prepared a scopeto develop a vision for the CSC with a consensus on implementable projects, programs, and potential agreements to achieve regional goals and objectives. Additional local stakeholders including representatives from the agricultural community, reclamation and resource conservation districts, and other local, regional, state and federal government agency representatives, may participate in this collaborative partnership as it develops further. Science subject matter experts may also be consulted for technical support . Outreach to local stakeholders will be led by the local partner agencies.

The YBCS is a key area of public focus for many short and long term planning processes including federal and state programs to improve regional flood management and advance habitat restoration activities to mitigate for the state and federal water projects operations, preserve declining endangered species in the Sacramento-San Joaquin Delta, and incorporate improvements to the regional flood management system. The CSC is located at the downstream end of the YBCS and is an integral part of the regional landscape, hydrology, and hydraulics. Existing land uses in the region are primarily agriculture, local and regional flood protection, terrestrial and aquatic habitat, and water supply for local agriculture and regional municipal and industrial needs. The CSC can be affected by actions further up in the YBCS such as modification to the flood management system and habitat restoration, among other activities.

These land uses will be analyzed, individually and collectively, to identify a suite of multi-objective solutions and strategies that if implemented, can ensure effective science-based restoration efforts that would be realized with the least possible impact on existing and potential future land uses and with local support. The primary objective is to identify habitat restoration opportunities, while preserving agriculture, other land uses and infrastructure, flood management objectives, and the operation and maintenance of existing water resources infrastructure located in the CSC.

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## PROJECT WORK SCOPE

Implementation of this work will be conducted through an ongoing series of meetings between state, federal and local agencies to insure: 1) a consensus-driven process; 2) development of a Charter or guidance document; 3) development of goals and objectives for guide the process; and 4) ongoing collaborative oversight and direction of the study. This effort will bring together multiple stakeholders and compile and integrate relevant existing data and information to determine the adequacy of understanding of current conditions and analyze possible future conditions leading to a comprehensive and collaborative strategic planning approach for the CSC that is locally supportable for implementation.

This scope of work is divided into two phases. The initial phase will develop and assess the baseline condition for potential conflicts and synergies between the multiple existing uses within the CSC. Each partner agency will have an opportunity to collect and interpret data and information that will be contributed to the development of the baseline condition. The data will be assimilated into a data visualization platform that will facilitate a collaborative process where the partners can work together to develop a consensus around the adequacy of the baseline conditions.

Completion of Phase I will demonstrate that the collaborative effort can achieve an effective consensus based process to that will facilitate the development of future strategies, actions, and projects that will formulate a strategic plan for the CSC in Phase II. At the completion of Phase I the Delta Conservancy Board will evaluate the process and approach and determine if the effort should continue. The results of this initial phase will inform the scope of the final phase and are anticipated to be completed within 6months. The overall process is anticipated to take 12 months to complete.

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## PHASE I: BASELINE DEVELOPMENT

The intent of Phase I is to identify and compile data, literature and other relevant information to understand each use and their interactive relationships within the YBCS landscape. This body of information will be interpreted and summarized in a literature review to develop the current state of knowledge and description of the existing conditions for the CSC.

Each Partner will have an opportunity to conduct a preliminary interpretation of the data resources for a quantitative and qualitative understanding of each data source and the totality of the information and its adequacy to inform the planning objectives toward development of the vision. The baseline data and information collected by each partner agency will be integrated into a comprehensive data-base for access and use, by all partners collaboratively, to develop an inventory of existing resources and infrastructure and an assessment of the baseline condition. The collaborative partners will determine the adequacy of the current data compilation; identify potential flaws and critical data gaps and discuss the need for additional data gathering and/or consider possible simplifying assumption in lieu thereof. A Draft Baseline Assessment Report will document the results of the data and literature, conclusions, recommendations, and considerations to implement strategy development in Phase II.

### MAJOR PHASE I DELIVERABLES:

1. Database and Visualization Tool(s)
2. Baseline Condition Mapping
3. Baseline Ecosystem, Land Use and Water Assessment Report

### TASK 1. PHASE I GENERAL ADMINISTRATION AND SUPPORT

#### 1.1. Delta Conservancy:

**1.1.1. Facilitated Collaborative Partners Kick-off Meeting(s):** Conduct initial meeting(s) (up to 3) to define a consensus-driven process (including a potential charter or guidance document), roles and responsibilities, meeting protocols, discuss task schedules and analysis procedures, discuss stakeholder outreach strategies, and identify study objectives and desired outcomes. Following this meeting, any refinements will be made to the scopes of work for these team members, as necessary, and an overall project schedule will be developed.

**1.1.2. Regular Collaborative Partners Meetings:** Conduct monthly (up to 5) meetings to perform ongoing collective oversight of the study's progression.

**COST: UP TO \$15,000**

#### **DELIVERABLES:**

- *Charter or guidance document.*

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- *Description of potential information sources.*
- *Refined scopes of work and overall project schedule.*
- *Meeting summaries.*

**RESPONSIBLE PARTY:** *Delta Conservancy Consulting Team*

**FUNDING SOURCE:** Delta Conservancy Federal funding through a Request for Bid competitive process

## **1.2. Solano County Support**

- 1.2.1.** Administrative Services: Internal project management and coordination
- 1.2.2.** Meeting Attendance: Staff participation in stakeholder, partner agency, and collaborative partner meetings.
- 1.2.3.** Participate in Baseline Condition Assessment process.
- 1.2.4.** Review deliverables.
- 1.2.5.** Phase II preparations.

**COSTS:** *\$30,000*

**DELIVERABLE:** *Ongoing administration and coordination of work, stakeholder meeting summaries, outreach database.*

**RESPONSIBLE PARTY:** *Solano County Resource Management*

**FUNDING SOURCE:** Delta Conservancy Proposition 1 funding through a non-competitive agreement with Solano County

## **1.3. Yolo County Support**

- 1.3.1.** Administrative Services: Provide meeting locations, contact information, mailing lists, local outreach.
- 1.3.2.** Meeting Attendance: Staff participation in Stakeholder, Partner, and Collaborative Partner meetings.
- 1.3.3.** Data Collection, Interpretation, Integration, and Support.
- 1.3.4.** Participate in Baseline Condition Assessment process.
- 1.3.5.** Review Deliverables.
- 1.3.6.** Phase II preparations.

**COST:** *\$25,000*

**RESPONSIBLE PARTY:** *Yolo County*

**FUNDING SOURCE:** Delta Conservancy Proposition 1 funding through a non-competitive agreement with Yolo County

**TOTAL TASK 1 COST = \$70,000**

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## **TASK 2. ECOSYSTEM RESTORATION COMPONENT**

**2.1. Data Acquisition, Integration, Interpretation.** The purpose of this task is to acquire and integrate relevant ecosystem data to support integrated assessment of proposed management strategies in the CSC.

- 2.1.1.** Identify relevant ecosystem data types and sources. Acquire data. Format data as needed for integration. Ecosystem data sources are expected to include, but not be limited to, BDCP, FRPA, Delta Landscapes, CDFW, and DWR. Data regarding flood system constraints and opportunities are essential components of this process. The partners will incorporate information related to flood management planning — including, but not limited to, data from the Central Valley Flood Protection Plan (including the Conservation Strategy and the Basin-Wide Feasibility Study) and its Regional Flood Management Planning process — throughout Phase I and Phase II tasks.
- 2.1.2.** Perform basic interpretation. Develop appropriate analytical and visualization tools to support an initial interpretation of compiled data and information. Conduct initial interpretation of data and information to characterize and quantify existing ecosystem conditions.
- 2.1.3.** Complete an initial ecosystem data gap analysis that classifies potentially useful data as either easily available but not provided by owner, not easily available (for formatting, privacy, or other reasons), or non-existent. Based on this categorization, develop a plan to fill data gaps as part of this or future efforts.
- 2.1.4.** Prepare and transmit data and information (as well as supporting analytics and visualization tools) for availability and use by the collaborative partnership.

**COST: \$50,000**

### **DELIVERABLES:**

- *Ecosystem restoration opportunities spatial database (ESRI ArcGIS geodatabase, or equivalent format compatible with data and visualization platform),*
- *Ecosystem parametric time series database (format compatible with data and visualization platform),*
- *Up to three (3) preliminary data visualizations for agricultural interpretation, and*
- *A brief technical memorandum (draft and final).*

**RESPONSIBLE PARTY:** Delta Conservancy Consulting Team

**FUNDING SOURCE:** Delta Conservancy Proposition 1 funding through a non-competitive agreement with SFEI-ASC and Flow West

**TOTAL TASK 2 COST = \$50,000**

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## **TASK 3. AGRICULTURE/LAND USE COMPONENT: SOLANO COUNTY**

The purpose of this task is to acquire and integrate diverse baseline data and information on land use and agriculture, its economic values, and sustainability needs, to be evaluated in concert with and to inform proposed ecosystem restoration projects and other proposed management actions in the YBCS. The baseline data and information integrated in this task will provide critical information to enable evaluation of the region's ecosystem, flood and other elements envisioned as part of the Phase 2 study.

**3.1. Conduct Stakeholder Outreach and Involvement:** County internal meetings and staff participation at agency oversight meetings covered under Project Administration and Coordination Task.

**3.1.1.** Conduct series of meetings to inform local residents, businesses, and representatives of other local governmental agencies about the various planning process in the Yolo Bypass/Cache Slough area; interviews with key stakeholder individuals, groups, agencies, and organizations to solicit information, stakeholder perspective, involvement and input on the potential impacts of these activities.

**3.1.2.** Develop a stakeholder contact information database, and maintain the database as additional parties are included; establish a Cache Slough Working Group stakeholder committee.

**3.1.3.** Preparation of agendas, information packets, meeting reports, minutes.

**COST: \$8,000;** Outreach process envisions approximately 8 meetings, \$2,000 per meeting (8 meetings at \$2,000 = \$16,000 - \$8,000 cost share from Solano County).

**DELIVERABLE:** Meeting summaries.

**RESPONSIBLE PARTY:** Solano County Department of Resource Management

**3.2. Acquire and Integrate Agricultural Data and Information:**

**3.2.1.** Review and adapt data and information acquired for Solano County's Sustainable Groundwater Water Resources Evaluation. This data includes public / private lands, parcels, crop types, land uses, conservation easements, Williamson Act lands, and selected land surface elevations. This data has been integrated to support a water balance evaluation and will need to be re-organized for use in this agricultural evaluation, as well as for ease of use in the development of the LESA model described in Task 3.3.

**3.2.2.** Review and adapt data and information acquired for Solano County's Sustainable Groundwater Water Resources Evaluation. This data includes public/private lands, parcels, crop types, land uses, conservation easements, Williamson Act lands, and selected land surface elevations. This data has been integrated to support a water balance evaluation and will need to be re-organized for use in this agricultural evaluation, as well as for ease of use in the development of the LESA model described in Task 3.3.

**3.2.3.** Complete an interpretation of baseline agricultural conditions using data and information from Tasks 3.2.1 and 3.2.2 and other available data. This will require

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development of basic visualizations (expected to include maps, time series plots, and other summary materials) that facilitate use of agricultural data and information in Task 5.

- 3.2.4.** Complete a data gap analysis that identifies missing data and categorizes it as either collected, collected but not readily available or not collected. For collected data that is not readily available, complete outreach, data formatting, or other tasks required to acquire the data, subject to a budget limitation of up to 50% of the entire task budget. New data will not be collected for this project. However, basic outlines for critical data collection will be completed to guide future data collection work.

**COST: \$50,000**

**DELIVERABLE:**

- *Agriculture and infrastructure spatial database (ESRI ArcGIS geodatabase, or equivalent format compatible with data and visualization platform),*
- *agriculture and infrastructure time series database (format compatible with data and visualization platform),*
- *Up to ten (10) preliminary data visualizations for agricultural interpretation, and*
- *A brief technical memorandum (draft and final).*

**RESPONSIBLE PARTY:** *Solano County Department of Resource Management*

**3.3. Develop Agricultural Impact Model and Framework: Land Evaluation and Site Assessment (LESA) and Indirect analysis using IMPLAN/Bureau model review of indirect impacts:** Solano County will first develop and utilize a Land Evaluation and Site Assessment (LESA) Model, as a tool to develop a more comprehensive understanding of the agricultural significance of parcels located within the study area. Creation of a new GIS layer using LESA will help the County and the collaborative partners develop a better understanding of the distribution of agricultural land resources within the study area, and would inform ecosystem restoration and flood planning efforts to be considered in Phase 2. The second subtask is key to attaining the broader range of economic considerations with a focus on indirect and induced effects complementing and completing the LESA work, using additional data sources such as IMPLAN and/or U.S. Bureau of Economic Analysis production data and other sources. This would include multiplier effects relative to the larger economy, such as business-to-business supplier purchases and consumption spending, applied to land used for different purposes, with varying LESA scores and with indirect and induced impacts. This analysis will enable the County to create a new, additional parcel-level GIS layer that reflects a more comprehensive economic look at agriculture within the study area.

- 3.3.1.** Develop a Land Evaluation and Site Assessment (LESA) Model for CSC with agency staff and a broad range of stakeholders.
- 3.3.2.** Develop rating factors
- 3.3.3.** Conduct model evaluation and application to parcels.
- 3.3.4.** Develop LESA GIS Layers

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- 3.3.5. Develop range of economic values for estimating the direct, indirect, and induced regional economic effects, using prior work and additional IMPLAN or US Bureau Economic models.
- 3.3.6. Develop economic impact multipliers for application to land used for different purposes, with varying LESA scores and with consideration to indirect and induced effects.
- 3.3.7. Conduct evaluation.
- 3.3.8. Create new GIS indirect economic effect layer(s).

**COST: \$140,000**

**DELIVERABLE:** *A Technical Memorandum:*

- *Model development and assumptions.*
- *Economic rating factors*
- *GIS Layers*

**RESPONSIBLE PARTY:** *Solano County Department of Resource Management*

**TASK 3 FUNDING SOURCE:** Delta Conservancy Proposition 1 funding through a non-competitive agreement with Solano County

**TOTAL TASK 3 COST = \$198,000**

**TASK 4. WATER RESOURCES INFRASTRUCTURE COMPONENT:** The purpose of this task is to produce analytical tools to identify and evaluate existing water resources infrastructure (water supply diversions, flood management and drainage facilities, etc.) in the CSC and their relationship (opportunity/constraint) to proposed land use changes in YBCS. Data and tools developed in this task will be essential to develop an operational reliability assessment of water resources infrastructure in and around the CSC.

- 4.1. **Identify resources:** Identify readily available literature and data related to existing water resources infrastructure in the CSC that may be influenced by proposed actions in the YBCS. Assign a division of responsibility between SCWA and DC Consultant Team for compilation of this literature and data.
- 4.2. **Acquire, compile, review, and summarize readily available literature and data.** Create an integrated database of existing water resources infrastructure and relevant monitoring/data collection locations that includes geospatial, time-series, and other relevant data types. Data types expected to include, but not be limited to, location of water supply, drainage, and flood management facilities, environmental monitoring data and locations (food production, ESA species), hydrodynamics (residence time, flow, velocity) water quality (DOC, Bromide, Chloride, Microcysts, etc.), and operation and maintenance practices.
- 4.3. **Perform basic interpretation.** Develop appropriate analytical and visualization tools to support an initial interpretation of compiled data and information. Develop categorical criteria to characterize



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- 5.4. Conduct Baseline Condition Assessment.
- 5.5. Prepare Baseline Condition Assessment report.
- 5.6. Refine Phase II scope of work as necessary.
- 5.7. Final report documenting achievements, needed information and next steps.
- 5.8. Conduct 6 to 8 facilitated collaborative workshops to assess baseline and initial interpretation of ecosystem, land use and water priority areas in preparation for Phase 2 analysis. This includes administrative costs associated with coordination of workshops.

**COST: \$125,000 (\$75 for 5.1-5.6 and \$50 for 5.7&5.8)**

**DELIVERABLE:**

- *Master spatial database (ESRI ArcGIS geodatabase, or equivalent format compatible with data and visualization platform),*
- *Master time series database (format compatible with data and visualization platform),*
- *Baseline data visualizations for baseline interpretation, and*
- *Draft Baseline Condition Assessment, Revised Phase II Scope.*

**RESPONSIBLE PARTY:** Delta Conservancy Consulting Team

**FUNDING SOURCE:** Delta Conservancy Proposition 1 funding through a non-competitive agreement with SFEI-ACS and Flow West (\$75,000) and Federal funding for Request for Bid competitive process (up to \$50,000)

**TOTAL TASK 5 COST = \$125,000**

**TOTAL PHASE I COST: \$518,000**

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## PHASE II: STRATEGY DEVELOPMENT

The purpose of this project is to develop a restoration strategy for the Cache Slough Complex (CSC) that identifies areas for habitat restoration and projects that would be eligible for Proposition 1 funding. The goal of Phase II is to identify an implementable suite of potential multi-beneficial programmatic solutions and projects, eligible for Proposition 1 implementation funding, that produce a strategy to integrate and balance ecological restoration opportunities to maximize their effectiveness while avoiding and/or minimizing their impacts on existing land use, agriculture, regional economics, local values, and continued operation and maintenance of critical water supply and flood management infrastructure.

Based on the conclusions, recommendations, and considerations presented from Phase I, the intent of Phase II is to evaluate multi-objective approaches to achieve the planning objectives and vision for the region. This effort is envisioned as a series of workshops with the collaborative partners working on a consensus based approach for a landscape-scale short and longer-term vision for the CSC. Data analysts will participate in workshops to support the collaborative partners by accessing relevant information in real time to support the collaborative partners in their deliberations.

The collaborative partners will develop conceptual actions that can be virtually implemented through the visualization tools to determine their effectiveness through focused sensitivity analyses of key parameters and objective performance measures.

The results of this regional planning effort will be a series of strategic actions for achieving the planning objectives and vision. The collaborative partners will assist in capturing the decision points and resulting strategies that evolve in developing a consensus for a preferred strategy. A draft document will be presented for consideration and comment. The release of a final plan will be consensus driven.

### TOTAL PHASE II COST:

**A rough estimate of Phase II costs, based on current understanding that will be modified in Phase I, is between \$400,000 and \$800,000**

### TOTAL PROJECT COST:

**\$900,000 to \$1,300,000**