**Business Case/Relevance to SFCWA**

**-COLLABORATIVE MANGEMENT-**

**In coordination with member agencies, monitor and engage effectively with activities of the Delta Stewardship Council, Delta Protection Commission, Delta Conservancy, Central Valley Flood Protection Board, Delta Science Board, Regional Monitoring Board, Independent Science Board, and Interagency Ecological Program. (Delta Governance and Water Management)**

The California Estuary Workgroup and associated data projects, restoration assessment forums and community outreach involve direct participation by and from all Delta agencies listed above. The CEMW is directly involved with the member agencies below and the restoration network to develop technology to communicate estuary and resource management information to all stakeholders.

**Agencies Actively Participating (or Targeted for Participation) in the CEMW**

* State Agencies
  + Delta Conservancy
  + Delta Science Program of Delta Stewardship Council
  + Department of Water Resources
  + Department of Fish and Wildlife
  + State Water Resources Control Board
* Federal Agencies
  + US Environmental Protection Agency
  + US Geological Survey
* Other Groups
  + Delta Regional Monitoring Program
  + Interagency Ecological Program
  + Sacramento Regional County Sanitation District
  + San Francisco Bay Regional Monitoring Program
  + San Francisco Estuary Institute-Aquatic Science Center
  + Southern California Coastal Water Research Project
  + State and Federal Contractors Water Agency
  + The Bay Institute

We are actively pursuing relationships with federal fish agencies with future plans to incorporating fish data.

**BDCP early implementation: The collaborative adaptive management team. Place for managing project and assessing data before release to public.**

The main objective of the Estuary workgroup is to aggregate critical estuary data products required to address questions and make them available when needed in a convenient and easy to use form. As part of this program, all estuary ERP/restoration project data will be posted for review by the CEMW and syndicated to Baydeltalive.com. The project focuses on the development of tools that will facilitate interactive project management of real time data parameters, discrete sampling, historical sampling and special projects. Project managers will be able to search project areas by spatial extent and review all results (data, maps, documents, images, video) from that extent. Managers can either view and download general data or graph time series data to compare values (when values are comparable) to other data. Users will be able to compare data to monitoring and assessment thresholds (when thresholds are available) and set triggers when needed.

Early implementation teams will require access to many datasets currently targeted as priority data by the community: Water Quality, Fish, Nutrient, Food Web, Delta GIS and others. Please see Appendix B for a complete list of targeted datasets.

Completion of the CEMW toolset will provide managers with tools to automate particular aspects of the monitoring and assessment: Communications, data visualizations, project tracking, Triggers, Sensor Managements and Real Time Data Visualization.

Participating “public” projects will be easily accessed and syndicated to the public for an easily organized transparent process. Public can have access to Project metadata, maps, datasets, monitoring results and more.

**Continue collaborative efforts with Delta science entities to improve monitoring, assessment and reporting of Bay-Delta monitoring and research results through facilitation of the California Monitoring Workgroup and data portal. (Science Program)**

The whole premise behind the CEMW is to develop a common baseline picture of the Delta resources based on best science data available. The collaborative process will bring to light critical baseline datasets so that we can begin to “paint with pixels” a picture of the Sacramento San Joaquin Delta. The process will bring data from behind agency walls and into the public forum where a baseline can be developed. The baseline will allow for joint fact finding, management and assessment of future projects. The most important aspect of this part of the project is that the members of the CEMW are themselves scientists. The make-up of the workgroup is 80% scientists and 20% managers.

**Participation in and support science conference forums and work efforts to increase mutual collaboration and understanding among entities engaged in delta Science. (Science Program)**

All product created by the workgroup is showcased at all Delta science and general conferences. Work is presented as collaborative so that all stakeholders are properly recognized for their participation and cooperation.

**-JOINT FACT FINDING AND CENTRALIZATION OF DELTA DATA-**

Joint fact-finding is only possible when there is a forum supported by all entities to engage in the fact finding together. The CEMW is the forum and the CEMW toolset provides the technology and archive for such collaborations. As a result the CEMW toolset has successfully aggregated data from many agencies, universities, studies and individuals. Additionally the forum supports agreements for base data, data methods, assessment methods, metadata, future monitoring, illustration and determination of future science needs. The results are implemented using the software as: workflow within the toolset, trigger messaging, data visualizations, data libraries, data compilations and much more. The workgroup tools become a reflection of the groups baseline understanding of the Delta.

Lastly the effort centralizes data location and archives the data in order to reduce data redundancies and reduce time spent by stakeholders to discover and use data. The CEMW will develop a system for data provenance and tracking how data is used or how compilations of data are put together. This process will set the standard for conversation and understanding and reduce the feeling of “moving target” for those working in the Delta community.

**SHORT-TERM EFFORTS UNDERWAY**

1. Produce Web Services from Fish and Game IEP data by working directly with Tier 3 Data team. Develop web services for CEDEN and additional datasets. \* See attached Appendix B for detail.
2. Communicate complicated chemical, biological and physical processes to a larger audience.
3. Collection of metadata standards to create umbrella metadata for searching hosted data and web services.
4. Begin monitoring and assessment consolidation efforts. Use CEMW toolset to communicate outcome and apply outcome to data as thresholds or triggers.
5. Presentation and access to FLASH DATA.

**-HABITAT RESTORATION AND ADPATIVE MANAGEMENT-**

**Implement and facilitate habitat projects including related monitoring and adaptive management efforts.**

The implementation of habitat projects and the efficient future management of monitoring and adaptive practices and related decision making will require a information platform capable of managing all data related to these efforts. The CEWM and BDL will provide mediums for aggregating data, assessing data, visualizing the data, tracking and archiving data and communicating required information to all stakeholders including the public.

One of the primary CEMW objectives is to consolidate restoration efforts and methodologies by the creation of a task force committed to the development of ecosystem restoration performance measures. The task force is led by California Fish and Wildlife ERP division and reports back regular to CEMW for review and vote. These pieces will assist manager to determine the value of restoration efforts.

The CEMW toolset will allow for multi disciplinary control panels for managing a project area. Project managers will be able to customize the data, maps, documents, real time station data and visualizations they need to manage their project on a daily basis.

**Seek partnerships with the Conservancy and others to advance habitat improvement in the Delta. Support the growth of the Delta Conservancy’s capacity to develop and manage habitat projects.**

The Delta Conservancy is an official member agency of the Estuary Monitoring workgroup and has a voting role in the development of the workgroups tools, data and data aggregation methods, data stories and restoration objectives. The conservancy is very supportive of the CEMW efforts and will use current technology tools to further their own internal and external objectives.

**SHORT-TERM IN PROGRESS**

* Prepare monitoring plan for Lower Yolo with California Fish and Wildlife performance measure unit, IEP and FRPA.
* Translating and making FRPA more accessible to managers using data case studies.
* Custom project pages for communication of McCormack Williamson Tract to board.
* Implementation of trigger mechanisms for RPA’s Water Quality Objectives and TMDLs.
* Indicators and presentations of targets for Temperature, Dissolved Oxygen and Turbidity and Pesticide data (from Freeport and Vernalis).

**-ECOSYSTEM STRESSORS-**

**Community wide coordinated efforts to research and publish findings on Delta ecosystem stressors.**

The CEWM toolset will support sub-projects to investigate and publish finding regarding Delta ecosystem stressors. Specifically nutrients. The toolset will be applied to SFSU and Patricia Glibert studies of nutrient data in the SF Bay. Result will be posted as visualizations and stories for communication to the Delta community on the workgroup website and syndication to [www.baydeltalive.com](http://www.baydeltalive.com).

It is efforts like these that will help communicate complicated chemical, biological and physical processes.

**-COMPLIANCE, REPORTING AND VALUATION-**

A digital platform will automate reporting of many aspects of restoration projects. Pre-determination of issues surrounding compliance with SWRCB can be avoided through the use of trigger mechanisms and early warning systems. The long-term results of all projects can be compared to determine where efforts are succeeding and others are failing.

**-AGENCIES CAN’T DO IT-**

**IT project within the agencies lack funding, staffing and have unsuccessful track records.**

The cyber infrastructure for water and natural resource management is a vital component for successful management and execution of high stakes infrastructure plans. There have been various attempts at developing a data and collaborative management infrastructure within the agencies, but without success. Data remains sequestered within agency walls and client software developed to manage these resources has been unsuccessfully implemented at the scale needed. Reasons for the issues around these unsuccessful IT projects are many, but the prospect of a system for agencies to collaborate can only be successfully implemented by a 3rd party. SFCWA has a vested interest in seeing this type of project succeed and should consequently take the lead.

**-GENERAL BENEFITS-**

1. Collaborative discovery, traceable using software.
2. Collaborative platform for evolving state of the art science.
3. The project provides good public relation opportunities on various fronts.
4. Create forum for predictable policy implementation.

**-DIRECT COMMUNITY PARTICIPATION-**

**Metropolitan Water District of Southern California**

• Main underwriter BDL

**SFCWA**

• Funding for data acquisition and presentation of data via estuary workgroup tools. Development of ecosystem restoration performance measures and forum for viewing and tracking these efforts.

**California Department of Water Resources**

• 2 staff, data

• Possible Funding

**Estuary Portal Workgroup: (IEP,**

• Science Data, Conceptual frameworks, restoration performance measures

**California Department of Fish & Wildlife**

• Staff to work on direct data access from state server for all IEP data

**State Water Resources Control Board**

• Staff, Data

• Possible Funding in 2013

**Environmental Protection Agency**

• Funding for CEDEN Data

**San Francisco Estuary Institute**

• Staff, Landscape level assessment, GIS

**United States Geological Survey**

• Staff, Software Components

**-DATA AND WEB PORTAL WORK COMPLETE OR PRIORITY AS OF OR FOR 2013-**

**Baydeltalive.com and iPhone App**

• Complete and available in the App Store February 2013

• Full version Estuary Portal and workgroup members signed up and trained.

• New release Baydeltalive.com for public communication of Delta science, projects and community data.

**1641 Report Data Online and Accessible**

• Services and Hosted Data Types

• Spatial Queries All Data

• Data Comparison Tools

**CEDEN Data Online and Accessible**

• Set Up Data Services and Custom Query Tools in Progress

**Nutrient Data Online and Accessible- Visualizations**

• Add nutrient Data in Progress

• Develop custom UI for visualizing data in progess

**New Funding Opportunities**

• Prepare Community Needs Assessment for Foundation grants and financial participation by agencies by June 2013. In progress