



- Semiannual Report on State Water Project Strategic Initiatives

Detailed Report

This report provides status of efforts to optimize benefits and address challenges regarding Metropolitan's State Water Project Contract. Staff is taking action to protect Metropolitan's State Water Contract rights and benefits in five strategic areas: costs, energy, infrastructure reliability, supplies, and water quality. Highlights are listed below and explained in the subsequent pages.

Overview

- ❖ Received 2010 Statement of Charges which were slightly less than last year's (page 2).
- ❖ Favorable decision in Hyatt-Thermalito litigation protecting Metropolitan's financial interest at a magnitude of tens of millions of dollars per year (page 2).
- ❖ Maximized utilization of available SWP supplies in 2009 (page 8).

2009 State Water Project Order

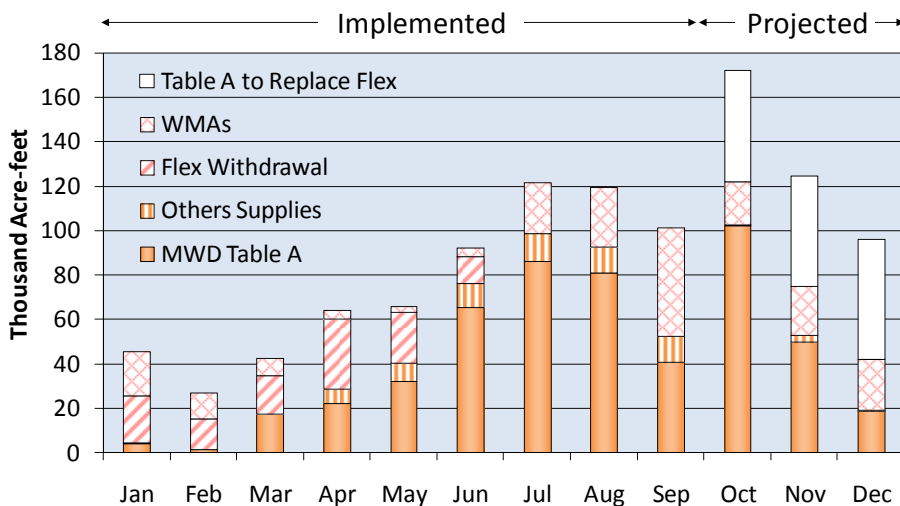


Figure 1. Metropolitan's SWP 2009 Water Order. Water management actions (WMAs) include withdrawal of groundwater from storage programs along the California Aqueduct and north of Delta transfers. Flex withdrawal is withdrawal of flexible storage from Perris and Castaic Reservoirs and Table A to Replace Flex is the return of water withdrawn from the flexible storage program. Others Supplies includes the Table A and non-project supplies Metropolitan receives from Coachella Valley Water District, Desert Water Agency, and Ventura County Watershed Protection District.

- ❖ Development of tool to project water quality of delivered SWP supplies (page 10).

SWP Strategic Initiatives

	Page
<i>Costs and Efficient Business Processes</i>	2
<i>Reliable Energy Sources</i>	4
<i>Infrastructure Reliability</i>	6
<i>Water Supplies</i>	8
<i>Water Quality</i>	10



Ensure Costs are Accurate and Reasonable and Promote Efficient Business Processes

Metropolitan repays the State for its costs of developing and transporting water. Because of significant cost exposure and need for reliable supplies, Metropolitan strives to influence efficiency of operations and equity of benefits provided.

Key near-term goals include:

- DWR obtaining a cost-effective Federal power license for Lake Oroville power generation complex that protects water supplies;
- Ensuring that DWR billings are accurate and reasonable;
- Maintaining the value of the investment in Hyatt-Thermalito power generation facilities; and
- DWR improving use of management tools and disclosing relevant business information to the State Water Contractors.



Figure 2. Close-up of Hyatt Power Plant switchyard (DWR Photo).

MILESTONE:

2010 STATE WATER PROJECT CHARGES RELEASED

The Department of Water Resources released their estimate of the calendar year 2010 water supply charges. The \$651 million estimate is \$1 million lower than last year. DWR was able to maintain stability in the overall charges as capital and operating cost increases are offset by lower projected energy costs due to higher generation from project hydropower facilities and lower costs for purchased energy. Staff and Metropolitan's auditors Richardson and Company are reviewing the charges and will present the results of the reviews and audit at upcoming committee meetings.

MILESTONE:

FAVORABLE DECISION IN HYATT-THERMALITO LITIGATION

A decision has been issued in favor of defendant DWR, Metropolitan, and other intervenors in the litigation over the valuation of power revenues from the Hyatt-Thermalito generation facilities. The court accepted all of the arguments favorable to Metropolitan that contractual language does not require DWR to sell power at market price or credit proceeds from the sale of Hyatt power to the Delta Water Charge at market price. The period for the plaintiffs to appeal the decision is pending. Favorable resolution of this litigation will prevent annual cost increases of tens of millions of dollars.

EMERGING CHALLENGE:

OROVILLE FERC RELICENSING ISSUES

Settlement on new FERC license conditions for the Oroville SWP Facilities was executed in March 2006. Since then, the SWRCB and National Marine Fisheries Service have been conducting reviews required by Section 401 of the Clean Water Act and the federal Endangered Species Act. Metropolitan and the State Water Contractors have sent joint letters commenting on the SWRCB 401 certification process and the NMFS green sturgeon biological opinion proceedings that seek to have the requirements revised to conform to the settlement agreement. Potential adverse impacts include reduced fall deliveries to the Delta and reduced hydropower generation revenues from rescheduling Oroville releases to a lower value time period.



Figure 3.

Green sturgeon
(Photo by Toz Soto,
Karuk Tribe
Fisheries Dept.,
<http://www.nmfs.noaa.gov/pr/species/fish/greensturgeon.htm>)

EMERGING CHALLENGE:**STAFF RETENTION AT DWR**

DWR continues to face difficulties with respect to recruiting and retaining experienced Field Division and O&M staff, Trades and Crafts personnel, and non-engineering personnel in the energy related field. Staffing problems can be attributed to Department of Personnel Administration processes and delays as well as lagging salaries. Chronic staffing problems lead to crisis-to-crisis management and constrain DWR's ability to efficiently respond to new operational and regulatory requirements. DWR O&M management is working to balance their workforce requirements with the mandatory three days per month furlough requirement, while at the same time maintaining daily operations without a substantial increase in overtime. To ensure no facility outages are caused by furlough days, employees are allowed to accumulate and schedule unpaid time off.



Figure 4. DWR staff monitoring operations at Joint Operations Center (DWR Photo).

Ensure Cost Effective Reliable Energy Sources

With the expiration of long-standing contracts and radical changes in energy market regulations, the SWP is experiencing increased exposure to energy and fuel price fluctuations, credit risk, and power plant reliability risk.

Metropolitan influences and supports DWR to provide a reliable supply of energy at an affordable and predictable cost for the SWP. Metropolitan staff actions are focused on the following goals:

- Increasing attention to evolving green-house gas and renewable policies;
- Developing a strategic plan and IRP-like power portfolio strategy that manages cost and risk when pursuing future acquisitions and sales; and
- Ensuring reliable infrastructure that supports the ability to use cost-effective off-peak energy for pumping.

MILESTONE:

DEVELOPMENT OF INTEGRATED ENERGY RESOURCES PLAN FOR THE SWP

Metropolitan staff and the SWC took an aggressive role in working with DWR to respond to the Governor's mandate for greenhouse gas reduction state-wide. The principles of a SWP carbon management plan have been jointly drafted by the SWC and DWR and approved by the SWC Board. This policy is the first step in developing a broader SWP energy strategic plan that focuses on electricity/ fuel source mix, amounts of energy needed and identification of long- and short-term energy procurement strategies. DWR has completed a draft of the plan that examined a balanced portfolio that includes the renewable energy goals, identifies upper limits for long-term contracts for natural gas-fired energy and evaluates the allocation of the balance of SWP energy purchases to short-term contracts and "spot market" purchases. Metropolitan staff is reviewing the draft plan and DWR is expected to issue the final plan in early 2010.



Figure 5. Gov. Schwarzenegger signs legislation to reduce greenhouse gas emissions in 2006 (Photo from gov.ca.gov.)

MILESTONE:

LODI ENERGY CENTER

DWR has been participating in the process that will lead to construction of a new 280 megawatt natural gas-fired power generation facility by the Northern California Power Agency - a Joint Powers Authority - in the Lodi area. Project development took a significant step forward in May 2009 when the NCPA participants voted to approve entering into a contract with the manufacturer of the generator that required a \$15 million deposit. The state-of-the-art project is projected to come on-line in 2012 and will provide more than 65 megawatts of electricity to the SWP. Current efforts are focused on development of the project participation agreement that will address financing, construction, governance and operation of the project.

MILESTONE:

ATTRACTIVE ENERGY MARKET OPPORTUNITIES

DWR is in the process of entering into contracts to lock in attractive off-peak energy costs through 2013. This process was supported by the State Water Contractors and is leading to favorable energy contracts that would provide low prices for the next several years. These contracts would be in the range of 15 to 20 percent of the project's energy needs under the current operating mode with Delta restrictions.

EMERGING CHALLENGE:***SUSPENSION OF NATURAL GAS HEDGING PROGRAM***

The SWC Board requested that DWR suspend its natural gas hedging program pending review of DWR's approach over the last two months. The SWC has played an active role in identifying and reviewing options for consideration as the basis for altering the program approach or potentially terminating the program. DWR with SWC support is now seeking to exercise clauses in its long-term gas related contracts to lock in low cost terms through 2015.

EMERGING CHALLENGE:***ELECTRICAL TRANSMISSION***

DWR has existing contracts with privately-owned utilities for transmission. Progressive pressure brought about by electricity load growth has increased transmission congestion and the owners have been regularly requesting FERC approval for increased rates under those contracts. Metropolitan has joined the SWC and DWR by intervening in the FERC proceedings to assure that the rate increases are reasonable. Further rate increase proposals are expected if Renewable Portfolio Standards requirements that are being proposed under AB 32 and other legislative initiatives are approved.

Additionally California's Independent System Operator recently imposed a new transmission tariff under its market redesign and technology upgrade (MRTU) which poses financial penalties and rewards in managing congestion points on California's complex electric grid, defined by over 3,000 nodes. DWR has spent considerable staff and consultant time preparing for MRTU as the SWP is highly reliant on the grid to move its electric energy resources to and from pumping and generation plants. State energy planners indicate that \$6 to \$10 billion in new transmission lines are needed in California by 2020. Hence, there are strong prospects of the SWP paying progressively greater costs for energy transmission.

DWR and SWC have recently begun dialogue with the Bureau of Reclamation and San Luis Delta-Mendota Water Authority regarding the prospects of joint development of a new transmission line to serve the CVP/SWP joint facilities which ultimately could include Delta conveyance.

Ensure Sufficient Infrastructure Reliability

Metropolitan and other contractors' water delivery schedules call for the SWP system to move more water through its aging infrastructure, requiring increased focus on maintaining infrastructure reliability.

To ensure that DWR is operating, maintaining and repairing SWP facilities with Metropolitan's interests in mind, staff is pursuing the following goals:

- Monitoring and influencing key project decisions; and
- Providing DWR shop-services to support equipment maintenance and rehabilitation.

MILESTONE:

INLAND FEEDER CONNECTION COMPLETED

The Inland Feeder connection to the State Water Project is scheduled to be operational in October. Metropolitan staff have been working with DWR to coordinate the installation of the flow meter and the removal of the bulkhead separating the two facilities.



Figure 6. Arrowhead East Tunnel Construction for the Inland Feeder (MWD Photo.)

MILESTONE:

EAST BRANCH ENLARGEMENT DEFERMENT

Metropolitan along with the six other East Branch Enlargement (EBE) Contractors requested that DWR indefinitely postpone the publishing of the Notice of Preparation for the EBE Environmental Impact Report and to the extent practical, suspend all further environmental work. The delay in completion is warranted due to the increased likelihood that deliveries in the State Water Project water will remain reduced due to endangered species constraints for the foreseeable future. Metropolitan

staff are coordinating among the other EBE Contractors in developing a deferred online date that would ensure future reliability in a cost effective manner.



Figure 7. California Aqueduct (DWR Photo.)

EMERGING CHALLENGE:

AQUEDUCT SUBSIDENCE CONCERNS

Since the early 1900's excessive groundwater pumping in the San Joaquin Valley has caused subsidence of land along a 68-mile stretch at the present location of the California Aqueduct. Pumping and subsidence were temporarily reduced with the onset of Central Valley Project deliveries to farmers in the late 1960's. According to DWR's records, the California Aqueduct has dropped in elevation up to 34 inches in some areas along this stretch. Settlement of the aqueduct has resulted in reduced flow capacity within portions of the aqueduct, thus incurring increased costs for greater on-peak pumping.

Due to Delta fishery restrictions that have reduced CVP exports, farmers in the San Joaquin Valley are resuming increased dependency on local aquifers to meet their needs. This has prompted concerns that continuation of excessive groundwater pumping will result in further compaction of the aquifer and land subsidence. In response, the United States Geological Survey has proposed a study to DWR to investigate groundwater conditions and land subsidence along the California Aqueduct. The study is supported by Metropolitan and the SWC and is scheduled to start later this year. DWR's share of costs for the three year study is \$112,000, of which Metropolitan will pay 46 percent.

EMERGING CHALLENGE:***OROVILLE RIVER VALVE DAMAGE***

During testing of the river valves at Oroville Dam on July 22, 2009, a steel wall in the valve chamber blew out, injuring five workers. The valves allow colder water from the bottom of the reservoir to enter the Feather River through two tunnels. The valves are not used routinely, except during drought years such as this year and last year when there is a need to maintain releases to the Feather River under low reservoir conditions. The valves will remain inoperable until inspection, damage assessment, and necessary repairs are completed. DWR is modifying SWP operations to adjust for operational constraints, while at the same time maintaining the current 40% SWP allocation. Inspection and investigations are ongoing; a report from DWR is expected by the end of the year.



Figure 8. Oroville Dam (DWR Photo.)

EMERGING CHALLENGE:***LAKE PERRIS DAM REHABILITATION***

DWR recently indicated that they are going to release the Draft EIR for the Lake Perris Dam Remediation Project in October. The final EIR is expected to be completed by April 2010, with possible design continuing throughout 2010 and construction potentially from January 2011 through July 2013. Staff will be coordinating its comments on the EIR with other funding participants for Lake Perris: Coachella Valley Water District and Desert Water Authority.

EMERGING CHALLENGE:***CASTAIC OUTLET TOWER REPLACEMENT***

DWR has indicated that it is concerned that the Castaic Lake outlet tower may fail during a major earthquake along the San Gabriel fault. Metropolitan staff have met with DWR and Castaic Lake Water Agency to discuss the problem and potential solutions. Metropolitan staff are evaluating alternatives and considering the water supply and water quality impacts that may result from a tower failure. The outlet tower discharges directly into Metropolitan's Foothill Feeder pipeline and power plant.

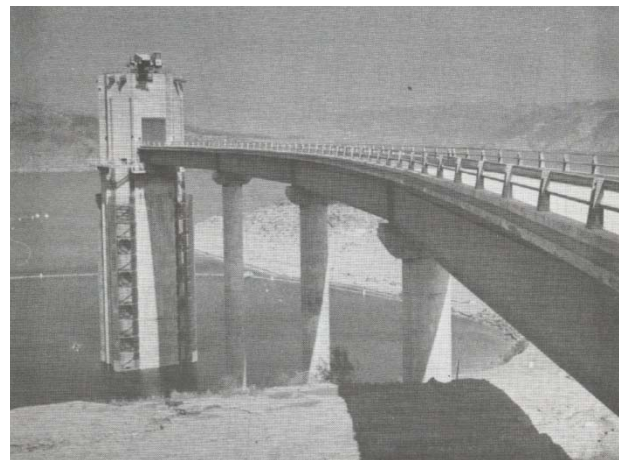


Figure 9. High Intake Tower at Castaic Dam Outlet Works (DWR Photo.)

Ensure Cost-Effective Water Supplies

Staff participates in activities to optimize Metropolitan's water supply benefits, including protection of its contract rights.

Metropolitan is working with other SWP Contractors and State agencies to ensure cost-effective water supplies. Key goals are:

- Monitoring current water supply conditions;
- Developing water management actions; and
- Preserving access to flexible storage.

MILESTONE:

DELTA HABITAT CONSERVATION AND CONVEYANCE PROGRAM

Metropolitan is participating in the Delta Habitat Conservation and Conveyance Program, a joint effort of state and federal agencies, along with other federal and state water contractors to accomplish the environmental work and feasibility studies for constructing Delta conveyance facilities. Staff and other SWC participants are reviewing costs and feasibility in the early planning and design phase. Metropolitan's engineering staff is working closely with DWR's project team to review and provide comment on engineering solutions.

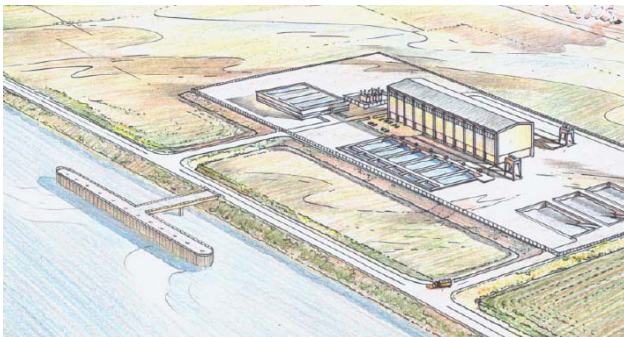


Figure 10. In-River conceptual design for Delta conveyance facility intake (DWR Graphic.)

MILESTONE:

INITIATED TWO-GATES FISH PROTECTION DEMONSTRATION PROJECT

Metropolitan staff worked with a team of State Water Project and Central Valley Project contractors to expedite the implementation process for the Two-Gates Project to test operational opportunities to produce water supply and fishery benefits. Recent accomplishments include preparation of draft

CEQA/NEPA documentation and a Biological Assessment, briefings for the California Department of Water Resources and United States Bureau of Reclamation, independent scientific peer review by the CALFED Science Program, development of project operational protocols, and identification of funding sources for project implementation.

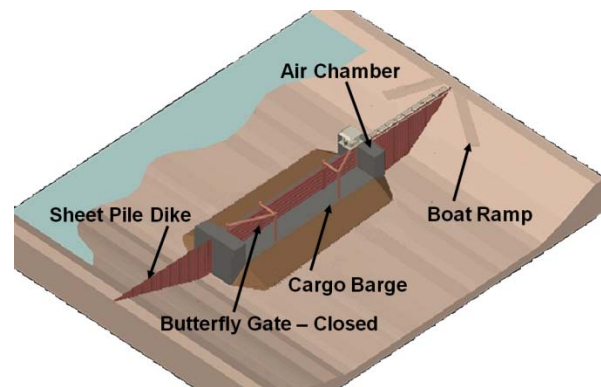


Figure 11. Barge-Gate system concept for 2-Gates project (MWD Graphic.)

MILESTONE:

MAXIMIZED UTILIZATION OF SWP RESOURCES

In the face of the 15 percent initial Table A allocation for 2009, Metropolitan's submitted delivery schedule included full use of its 153,940 acre-foot Castaic Reservoir flexible storage account by the end of June 2009. Withdrawals of 39,000 acre-feet were made from Perris Reservoir flexible storage account.

Utilization of the flexible storage accounts coupled with water recoveries from other SWP storage programs allowed Metropolitan to preserve its Table A supplies for meeting SWP-exclusive area demands during the last six months of 2009. Exclusive areas cannot receive Colorado River water. With the subsequent increases in the Table A allocation ultimately reaching 40 percent, by the end of June Metropolitan was positioned to meet exclusive area demands through December 2009, replace the Castaic flexible storage account to its full volume of 153,940 acre-feet, and carryover as much as 100,000 acre-feet of 2009 Table A supply for delivery in 2010. As seen in Figure 12, the unit cost to move SWP supplies in 2009 was approximately \$500/acre-ft.

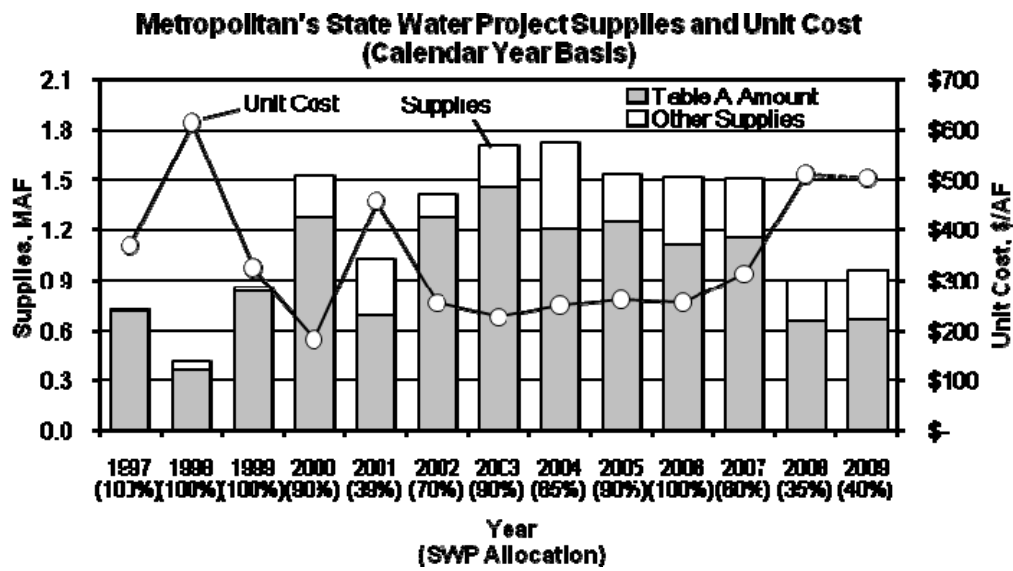


Figure 12. Total annual MWD SWP supplies and transfers in million acre-ft (left) and unit cost in \$/AF (right). Unit costs reflect payments to DWR and do not include costs related to ground water storage programs with partners along the California Aqueduct. Table A refers to Metropolitan's regular SWP allocation (currently 40 percent). Other supplies include prior year's carryover, withdrawal from Central Valley Storage programs, Article 21, Pool A, Pool B, Flexible Storage withdrawal, Article 14b, Environmental Water Account Exchange and north of Delta transfers.

EMERGING CHALLENGE:

ACTIONS TAKEN TO PROTECT FISH IMPACT SUPPLIES

In June 2009 the National Marine Fisheries Service issued a biological opinion for long-term CVP and SWP operations that found the projects jeopardize the continued existence of threatened and endangered fish species including Chinook salmon and Central Valley steelhead. DWR estimates that the remedy actions in the NMFS BO could on average result in an additional 300,000 to 500,000 AF of pumping restrictions for both the state and federal projects in addition to restrictions imposed by the 2008 USFWS Delta smelt BO. Metropolitan is pursuing strategies to assure the reliability of SWP supplies from the Delta, including implementation of the Two-Gates Project, other early activities such as habitat restoration, and completion and implementation of the Bay Delta Conservation Plan which would provide for a new conveyance system.

In July 2009, the California Department of Fish and Game issued a "consistency determination" under the California Endangered Species Act which authorized the incidental take of Delta smelt by the SWP based on the federal biological opinion and incidental take statement. DWR would need to obtain new California Endangered Species Act incidental take authorizations if pending litigation challenging the validity of the federal biological opinion is successful.

Protect and Improve Water Quality

The quality of SWP water is highly variable, creating challenges in meeting drinking water standards, integrating various water supply sources, and supporting service area needs for groundwater and recycling.

Metropolitan is pursuing its SWP water quality needs by:

- Promoting projects to protect and improve water quality in the Bay-Delta watershed and SWP system;
- Implementing the Municipal Water Quality Investigations program; and
- Supporting DWR in administering appropriate criteria for the introduction of non-project water into the California Aqueduct.

MILESTONE:

SEMITROPIC ARSENIC TREATMENT PROGRAM

The Semitropic Groundwater Storage Program has provided Metropolitan with dry year water supply benefits. The Semitropic Water Storage District implemented a pilot project to investigate the feasibility of removing arsenic from well water prior to being pumped into the California Aqueduct. The pilot is a low cost process that uses the existing canal to mix chemicals that cause arsenic to coagulate and settle out of the water column. Based on initial operations, Metropolitan's water quality experts have been making recommended modifications to improve the system's performance. Operations next year are expected to remove arsenic at a higher rate.

MILESTONE:

DWR MWQI MODELING PROGRAM

DWR's MWQI Program has been developing a modeling tool that will assist water treatment plant operators forecast the quality of water coming from the Delta. A water quality forecast can assist treatment plant operators with the planning of chemical purchases, the type of treatment processes needed, blend ratios, and help guide responses to unexpected events such as the 2004 Jones Tract levee failure. The MWQI program recently released a preliminary model forecast. Once fully developed, this forecasting tool will help operators to better meet water quality standards and control costs.



Figure 13. Water quality samples taken by MWQI staff (DWR photo.)

EMERGING CHALLENGE:

DELTA WETLANDS PROJECT WATER QUALITY PROTECTION

Semitropic Water Storage District is pursuing participation in the Delta Wetlands Project, which has five basic parts: diversion of water in the Delta, water storage on two Delta islands, habitat creation, supplemental water storage in groundwater banks south of the Delta, and water supply for south-of-Delta users. Semitropic is currently undertaking a CEQA analysis to update the 2001 FEIR for the Delta Wetlands project by considering new information and changed circumstances. Storage of water on Delta islands has the potential to generate adverse water quality impacts, as evidenced by the Jones Tract levee failure event in 2001. In 2000, the California Urban Water Agencies signed a Water Quality Management Plan with the original project proponent, Delta Wetlands Properties, to ensure that the project protected drinking water quality. Metropolitan will evaluate the new project EIR and work with CUWA and others to ensure that water quality concerns are addressed.



Figure 14. Clifton Court Forebay (DWR Photo).

Acronyms

AF	– Acre-Feet
BO	– Biological Opinion
CEQA	– California Environmental Quality Act
CESA	– California Endangered Species Act
CUWA	– California Urban Water Agencies
CVP	– Central Valley Project
CY	– Calendar Year
DHCCP	– Delta Habitat Conservation and Conveyance Program
DWR	– California Department of Water Resources
EBE	– East Branch Enlargement
ESA	– Endangered Species Act
FEIR	– Final Environmental Impact Report
FERC	– Federal Energy Regulatory Commission
IRP	– Integrated Resources Plan
MAF	– Million Acre-Feet
MW	– Megawatt
MWQI	– Municipal Water Quality Investigations
NCPA	– Northern California Power Agency
NEPA	– National Environmental Policy Act
NMFS	– National Marine Fisheries Service
POU	– Privately-Owned Utility
SOC	– Statement of Charges
SWC	– State Water Contractors, Inc. (includes Metropolitan)
SWP	– State Water Project
SWRCB	– State Water Resources Control Board
USBR	– United States Bureau of Reclamation