

MEETING OF THE
BOARD OF DIRECTORS OF THE
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
Jointly with the
PLANNING & OPERATIONS COMMITTEE
July 14, 2014, 8:30 a.m.
MWDOC Conference Room 101

P&O Committee:

Director Osborne, Chair
Director Barbre
Director Hinman

Staff: R. Hunter, K. Seckel, R. Bell,
H. De La Torre, P. Meszaros, J. Berg

Ex Officio Member: L. Dick

MWDOC Committee meetings are noticed and held as joint meetings of the Committee and the entire Board of Directors and all members of the Board of Directors may attend and participate in the discussion. Each Committee has designated Committee members, and other members of the Board are designated alternate committee members. If less than a quorum of the full Board is in attendance, the Board meeting will be adjourned for lack of a quorum and the meeting will proceed as a meeting of the Committee with those Committee members and alternate members in attendance acting as the Committee.

PUBLIC COMMENTS - Public comments on agenda items and items under the jurisdiction of the Committee should be made at this time.

ITEMS RECEIVED TOO LATE TO BE AGENDIZED - Determine there is a need to take immediate action on item(s) and that the need for action came to the attention of the District subsequent to the posting of the Agenda. (Requires a unanimous vote of the Committee)

ITEMS DISTRIBUTED TO THE BOARD LESS THAN 72 HOURS PRIOR TO MEETING --

Pursuant to Government Code section 54957.5, non-exempt public records that relate to open session agenda items and are distributed to a majority of the Board less than seventy-two (72) hours prior to the meeting will be available for public inspection in the lobby of the District's business office located at 18700 Ward Street, Fountain Valley, California 92708, during regular business hours. When practical, these public records will also be made available on the District's Internet Web site, accessible at <http://www.mwdoc.com>.

ACTION ITEMS

1. RESOLUTION AUTHORIZING EXECUTION OF THE STATE LANDS COMMISSION AMENDED GENERAL LEASE THAT EXTENDS THE TERM OF THE LEASE TO MAY 31, 2019 FOR THE DOHENY OCEAN DESALINATION PROJECT PILOT PLANT TEST FACILITIES
2. OC-88 METERING/BILLING MISTAKE
3. BUILDING/LEASE AGREEMENT BETWEEN MWDOC AND OCWD

INFORMATION ITEMS (The following items are for informational purposes only – background information is included in the packet. Discussion is not necessary unless a Director requests.)

4. BAY DELTA CONSERVATION PLAN
 - a. Western Delta Alternative
 - b. State Water Project and BDCP Science Reports
 - c. Draft Implementing Agreement Comments
5. DRAFT DISCUSSION REQUEST FOR PROPOSAL - O.C. RELIABILITY STUDY 2015
6. STATE WATER RESOURCES CONTROL BOARD PROPOSED EMERGENCY REGULATIONS TO PROMOTE WATER CONSERVATION
7. STATUS REPORTS
 - a. Ongoing MWDOC Reliability and Engineering/Planning Projects
 - b. WEROC
 - c. Water Use Efficiency Projects
 - d. Water Use Efficiency Programs Savings and Implementation Report
8. REVIEW OF ISSUES RELATED TO CONSTRUCTION PROGRAMS, FACILITY AND EQUIPMENT MAINTENANCE, WATER STORAGE, WATER QUALITY, CONJUNCTIVE USE PROGRAMS, EDUCATION, DISTRICT FACILITIES, and MEMBER-AGENCY RELATIONS

ADJOURNMENT

NOTE: At the discretion of the Committee, all items appearing on this agenda, whether or not expressly listed for action, may be deliberated, and may be subject to action by the Committee. On those items designated for Board action, the Committee reviews the items and makes a recommendation for final action to the full Board of Directors; final action will be taken by the Board of Directors. Agendas for Committee and Board meetings may be obtained from the District Secretary. Members of the public are advised that the Board consideration process includes consideration of each agenda item by one or more Committees indicated on the Board Action Sheet. Attendance at Committee meetings and the Board meeting considering an item consequently is advised.

Accommodations for the Disabled. Any person may make a request for a disability-related modification or accommodation needed for that person to be able to participate in the public meeting by telephoning Maribeth Goldsby, District Secretary, at (714) 963-3058, or writing to Municipal Water District of Orange County at P.O. Box 20895, Fountain Valley, CA 92728. Requests must specify the nature of the disability and the type of accommodation requested. A telephone number or other contact information should be included so that District staff may discuss appropriate arrangements. Persons requesting a disability-related accommodation should make the request with adequate time before the meeting for the District to provide the requested accommodation.



ACTION ITEM

July 16, 2014

TO: Board of Directors

FROM: **Planning & Operations Committee**
(Directors Osborne, Barbre, Hinman)

Robert Hunter, General Manager

Staff Contact: Karl Seckel/Richard Bell

SUBJECT: Resolution Authorizing Execution of the State Lands Commission Amended General Lease that Extends the Term of the Lease to May 31, 2019 for the Doheny Ocean Desalination Project Pilot Plant Test Facilities

STAFF RECOMMENDATION

Staff recommends the Board of Directors adopt the attached Resolution in accordance with the State Lands Commission request to authorize the General Manager to execute the amended lease to extend the term through May 31, 2019. The State Lands Commission on June 19, 2014 approved the extension.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

DETAILED REPORT

Staff has been in the process of permitting the non-operational extension of the Phase 3 Extended Pumping and Pilot Plant Test facilities through May 31, 2019 in accordance with the Project Participants South Coast Water District and Laguna Beach County Water District direction. The State Lands Commission (SLC) lease terminated on May 31, 2014 and requires this extension which has been in process for the past few months. We submitted an application with the \$3,025 application fee in February. The SLC approved the lease extension at their

Budgeted (Y/N): No	Budgeted amount:	Core ____	Choice YES
Action item amount: SLC estimated processing fee of \$3,025 was paid on application		Line item: Phase 3 Budget Contingency	
Fiscal Impact (explain if unbudgeted): Available in the remaining contingency fund			

June 19, 2014 meeting. We have received the lease documents and SLC staff now has asked for a Board Resolution authorizing the General Manager to enter into the lease extension. This same action was taken in 2012 for the prior lease extension but SLC staff requires a new resolution as the prior resolution was specific to the prior extension and is not considered sufficient for this extension. Once we submit the subject new resolution and the approved lease is received from SLC, we then submit it to the California Coastal Commission who will then process our permit application for the time extension. We are currently working with State Parks on a new lease for the pilot plant facilities, which is the last action to approve the extension.

The extended lease would allow us to keep the facilities on Doheny State Beach through May 31, 2019. This will provide several project benefits: (1) it would allow tours of the test facility by local, state and federal elected and governmental officials, (2) it would provide excellent opportunities for public outreach efforts, and (3) it would preserve the facility for future use if and when the project proceeds to the design phase.

RESOLUTION NO. ____

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE MUNICIPAL WATER DISTRICT OF ORANGE COUNTY AUTHORIZING THE GENERAL MANAGER TO EXECUTE STATE LANDS COMMISSION GENERAL LEASE EXTENSION FOR CERTAIN DOHENY OCEAN DESALINATION PROJECT TEST SLANT WELL FACILITIES

WHEREAS, the Municipal Water District of Orange County previously gave the General Manager general signatory authority to enter into Lease PRC 8651.9 with the State Lands Commission, and said Lease was subsequently executed on December 22, 2005, to allow construction, operation and maintenance of Test Slant Well Facilities located within the jurisdictional area of the State Lands Commission;

WHEREAS, with concurrence by the then South Orange Coastal Ocean Desalination Project Participants, the Municipal Water District of Orange County previously submitted an application to extend said Lease, and the Municipal Water District of Orange County and State Lands Commission subsequently amended said Lease on August 22, 2008, extending said Lease through May 31, 2012;

WHEREAS, with concurrence by the then South Orange Coastal Ocean Desalination Project Participants, the Municipal Water District of Orange County submitted an application to the State Lands Commission to further extend said Lease through May 31, 2014 and the State Lands Commission subsequently amended said Lease effective March 29, 2012;

WHEREAS, with concurrence by the South Coast Water District and Laguna Beach County Water District, for the Doheny Ocean Desalination Project, successor project to the South Orange Coastal Ocean Desalination Project, the Municipal Water District of Orange County submitted an application to the State Lands Commission to further extend said Lease through May 31, 2019, and

WHEREAS, the MWDOC Board of Directors previously adopted the Phase 3 Extended Pumping and Pilot Plant Test Project Mitigated Negative Declaration, Mitigation Monitoring and Reporting Plan by RESOLUTION NO. 1836 on June 18, 2008, and completed all subsequent filings with respect to the environmental effects of said project.

NOW, THEREFORE, THE BOARD OF DIRECTORS OF THE MUNICIPAL WATER DISTRICT OF ORANGE COUNTY DOES HEREBY RESOLVE AS FOLLOWS:

1. The Board of Directors has reviewed and has determined the need for extension of the term of said Lease for the Test Slant Well Facilities.
2. The Board of Directors finds that the amendment of the Lease has been evaluated and fully addressed in the Mitigated Negative Declaration and

Mitigation Monitoring and Reporting Plan for the project, which was not challenged and is therefore conclusively presumed to be in compliance with CEQA. (Pub. Res. Code §21167.2.) This Lease amendment does not change or modify the approved project and would not result in any new or more severe environmental effects. (Pub. Res. Code §21166; 14 C.C.R. §15162.)

3. Therefore, the Board of Directors hereby approves and authorizes the execution of said amended Lease and grants signatory authority to the General Manager to sign said Lease and any future Lease extensions and amendments to said Lease on behalf of the District.

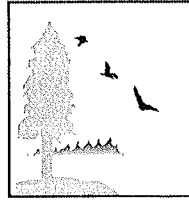
CALIFORNIA STATE LANDS COMMISSION

100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

RECEIVED

JUN 13 2014

MWD OF OC

*Established in 1938*

JENNIFER LUCCHESI, Executive Officer
(916) 574-1800 Fax (916) 574-1810
California Relay Service TDD Phone 1-800-735-2929
from Voice Phone 1-800-735-2922

Contact Phone: (916) 574-1900**Contact Fax: (916) 574-1835**

June 9, 2014

File Ref: PRC 8651.9

Richard Bell
Municipal Water District of Orange County
P.O. Box 20895
Fountain Valley, CA 92728

SUBJECT: General Lease – Public Agency Use, South Orange Coastal Ocean
Desalination Project, Dana Point, Orange County

Dear Mr. Bell:

Enclosed are two copies of the lease amendment. If you find the lease amendment to be in order, please arrange to have both copies duly signed, notarized, and returned to me as soon as possible. A fully executed copy will be returned to you upon California State Lands Commission (Commission) approval. This matter is scheduled for the consideration of the Commission on June 19, 2014.

If you have any questions regarding the amendment, please contact me immediately at (916) 574-2275.

Sincerely,

Drew Simpkin
Public Land Management Specialist

Enclosures

RECORDED AT THE REQUEST OF
AND WHEN RECORDED MAIL TO:
STATE OF CALIFORNIA
State Lands Commission
Attn: Title Unit
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

STATE OF CALIFORNIA
OFFICIAL BUSINESS
Document entitled to free recordation
pursuant to Government Code Section 27383

County: Orange

SPACE ABOVE THIS LINE FOR RECORDER'S USE

STATE OF CALIFORNIA
STATE LANDS COMMISSION

THIRD AMENDMENT OF LEASE NO. PRC 8651.9

WHEREAS, the State of California, acting through the State Lands Commission, hereinafter called Lessor, and, the Municipal Water District of Orange County hereinafter called the Lessee, have heretofore entered into an agreement designated as Lease No. PRC 8651.9, authorized by the State Lands Commission on December 5, 2005, and executed December 8, 2005, whereby the Lessor granted to said Lessee a General Lease – Public Agency Use covering certain State Land situated in the Pacific Ocean, Orange County; and,

WHEREAS, on August 22, 2008, the Lessor amended the Lease to extend the lease term to May 31, 2012, land description, and authorize the installation of a buried discharge pipeline, outfall diffuser and temporary installation of a submersible pump; and,

WHEREAS, on March 29, 2013, the Lessor amended the Lease in order for the Lessee to extend the lease term to May 31, 2014; and,

WHEREAS, Section 4, Paragraph 15(e) provides that the Lease may be terminated and its terms, covenants and conditions amended, revised or supplemented only by mutual written agreement of the parties; and,

WHEREAS, the Lessee now desires to amend the **Term, Land Use or Purpose** and **Section 2, Special Provisions of the Lease (Third Amendment)**.

NOW THEREFORE, the parties hereto agree to amend Lease No. PRC 8651.9 as follows:

- 1) Section 1, Basic Provisions, Term: extend the term of the lease to May 31, 2019.
- 2) Section 1, Basic Provisions, Land Use or Purpose: authorize the continued maintenance of a test slant well, discharge pipeline, outfall diffuser, and submersible pump for public information and educational tours.
- 3) **Section 2, Special Provisions:** include the following:
 - a) Lessee shall obtain Lessor's authorization prior to operating the slant test well or removing any portion of the slant test well, discharge pipeline, outfall diffuser or submersible pump.
 - b) No later than 180 days prior to the expiration of the Lease, Lessee shall submit a plan for removal of the facilities or evidence that the facilities should be abandoned in place. Should Lessor's staff determine that the facilities should be abandoned in place, Lessee shall submit a Lease Application and Minimum Expense Deposit to enter into a long-term Abandonment Agreement for the long-term monitoring and maintenance of the facilities.

The effective date of this Third Amendment to the aforesaid Lease shall be June 19, 2014.

This Third Amendment, containing two (2) pages, is a portion of Lease No. PRC 8651.9, with a beginning date of December 5, 2005, consisting of four (4) sections.

All other terms and conditions of the Lease, as amended, shall remain in full force and effect.

This Third Amendment will become binding on the Lessor only when duly executed on behalf of the State Lands Commission of the State of California.

IN WITNESS WHEREOF, the parties hereto have executed this Third Amendment as of the date hereafter affixed.

LESSEE:
MUNICIPAL WATER DISTRICT
OF ORANGE COUNTY

LESSOR:
STATE OF CALIFORNIA
STATE LANDS COMMISSION

By: _____

By: _____

Title: _____

Title: _____

Date: _____

Execution of this document was authorized by
the State Lands Commission on _____.

NOTARY ACKNOWLEDGEMENT



ACTION ITEM

July 16, 2014

TO: Board of Directors

FROM: **Planning & Operations Committee**
(Directors Osborne, Barbre, Hinman)

Robert Hunter
General Manager

Staff Contact: Karl Seckel

SUBJECT: OC-88 Metering/Billing Mistake

STAFF RECOMMENDATION

Staff recommends the Board of Directors review the discussions to date, provide input and direct staff to seek input from the impacted MWDOC Member Agencies.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

SUMMARY

MWDOC, MET, SMWD and the South County Pipeline water purchasers (SMWD, MNWD, Trabuco Canyon WD, City of San Juan Capistrano, City of San Clemente and South Coast Water District) have been investigating differences in meter reads between the OC-88 master meter at the South County Pump Station/AMP and the sum of the downstream meters. Over the years the differences have been greater than the 1% accuracy we would normally expect and were often beyond the acceptable 2% meter error accuracy typically found to be acceptable.

Beginning in November 2012, we sought the input and expertise of MET's operations and meter calibration team to assist in the efforts. The statistical anomaly identified was that the OC-88 MET meter was typically higher than the sum of the downstream meters. Normal meter discrepancies include variances that go in both directions. During this time, SMWD

Budgeted (Y/N):	Budgeted amount:	Core __	Choice __
Action item amount:	Line item:		
Fiscal Impact (explain if unbudgeted):			

completed extensive calibrations on the downstream meters, they checked for leaks and flow tests were conducted to check the accuracy of the MET meter. Finally, as allowed under the MET Administrative Code, MWDOC and SMWD requested that MET call in the manufacturer of the meter to complete a review and calibration of the meter at a cost of about \$15,000, which would be paid by the South County Pipeline agencies if the meter is within calibration and would be paid by MET if the meter is out of calibration.

MET called in Accusonic in November 2013. The meter and piping was dewatered, inspected and measurements were completed along with testing of the electronics (November and April). Their report was issued in April 2014 and the findings were that the input diameter for the meter was 65.256 inches compared to the field measured 64.075 inches. The original programming failed to take into consideration the mortar lining added to the pipe. The difference in wetted perimeter, flow area and the geometric positioning of the transducers, all resulted in the meter reading being 3.42% too high.

MET and MWDOC have held several discussions and have exchanged information relative to the incorrect meter reading/billing. The discussions have the goal of reaching an equitable reimbursement for our Member Agencies and have included the following:

- Potential billing adjustments could include:
 - Volumetric charges
 - RTS charges (which are based on the 10-year running average of MET sales)
 - Capacity charge (could impact the peaking and thus the capacity charge, likely by only a small amount)
 - Tier 2 charges (for 2007 and 2008)
 - Interest charges
- Legally involving the Vendor because they were responsible for the installation, calibration, testing and certification provided to MET at the time of start-up
 - Statute of limitations may apply (3 to 4 years depending on what provision); would be difficult to calculate “damages”
- MET Admin Code 4506 - Metering Error – provides that adjustments can go back 6 months prior to the point of discovery.
- MET Admin Code 4507 - Billing and Payment Mistakes – provides that adjustments can go back 3 years prior to the point of discovery; this section also provides that adjustments, credits or charges shall NOT bear interest.
- The vast majority of past reimbursements have been made under these code provisions for 6-month or 3-year periods (RTS and interest calculations did not apply)
- Prior Precedence – MET had one very similar circumstance in 2004; in that instance, the MET Board approved reimbursement for the entire period (RTS and interest calculations did not apply)
- MET has held that volumetric and Tier 2 charges are appropriate but is very firm that interest calculations, RTS adjustments and Capacity Charge adjustments should not apply. MET’s belief is that the intent of the language in their Administrative Code with

respect to interest is very clear. They have also indicated that in other billing/metering disputes, their typical practice is to NOT ask for RTS and Capacity Charge adjustments if the issue went against the member agency and they would like to stay consistent with that.

Attached is a Table outlining the details of the events, the timing and the associated costs, including rough estimates for the RTS and interest charges, which MET is not supporting. All figures are close estimates and are not final amounts at this time.

- MET would normally reimburse the 6-month (\$2.01 million) or 3-year (\$4.33 million) volumetric amounts Administrative Code without the RTS or interest amounts.
- MWDOC has negotiated the reimbursement payment for the entire 9-year period (\$8.14 million) without the RTS and interest amounts. This settlement is within the authority of MET's General Manager to recommend but does require MET Board approval.
- There is some degree of risk in a legal challenge for additional payments based on statute of limitation considerations.
- Based on the totality of facts, MWDOC and MET staff believe the \$8.14 million reimbursement rather than the \$2.01 million or \$4.33 million reimbursements are equitable to all parties.

MWDOC Impact

MWDOC has examined its charges to the South County Pipeline users over the same time period and has estimated that the same overbilling issue by MET has resulted in MWDOC overbilling of the six agencies by about \$73,000. It is recommended that MWDOC reimburse our agencies for this overbilling.

Conclusions/Recommendations

Much time and effort went into the forensic work to determine the nature of the metering discrepancy. Fortunately, it has been resolved and MWDOC & MET staff have identified a reasonable resolution. The following recommendations are made:

1. Review the issues with our Board and MET Directors and receive input
2. Direct staff to prepare a breakdown for the South County Pipeline agencies so they will have visibility as to what their refund amounts would be
3. Review the issues with the impacted agencies
4. Based upon the collective feedback, provide input to MET to allow them to take this item to their Board in August for resolution; if we disagree with the negotiated solution, it will likely take longer to resolve
5. Seek authorization from the MWDOC Board on our overbilling based on the high meter reads to refund approximately \$73,000 from the MWDOC Reserves



Item No. 3

ACTION ITEM

July 16, 2014

TO: Board of Directors

FROM: **Planning & Operations Committee**
(Directors Osborne, Barbre, Hinman)

Robert Hunter
General Manager

SUBJECT: BUILDING/LEASE AGREEMENT BETWEEN MWDOC AND OCWD

STAFF RECOMMENDATION

Staff recommends the Board of Directors: Authorize the General Manager and Board President to execute Amendment No. 4 to the Agreement and Lease between MWDOC and OCWD regarding Shared Administrative Office Facilities.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

SUMMARY

The Ad Hoc Building Committee has been meeting with the OCWD Ad Hoc Committee and together the Committee's are recommending an Amendment to the existing Agreement and Lease. The OCWD Board has already approved the attached amendment.

Budgeted (Y/N):	Budgeted amount:	Core __	Choice __
Action item amount:	Line item:		
Fiscal Impact (explain if unbudgeted):			

**AMENDMENT NO. 4 TO AGREEMENT AND LEASE
BETWEEN ORANGE COUNTY WATER DISTRICT AND
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
RE SHARED ADMINISTRATIVE OFFICE FACILITIES**

This AMENDMENT NO. 4 TO AGREEMENT AND LEASE BETWEEN ORANGE COUNTY WATER DISTRICT AND MUNICIPAL WATER DISTRICT OF ORANGE COUNTY RE SHARED ADMINISTRATIVE FACILITIES (hereinafter, the “Fourth Amendment”) is entered into as of _____, 2014, by and between the ORANGE COUNTY WATER DISTRICT (“OCWD”) and the MUNICIPAL WATER DISTRICT OF ORANGE COUNTY (“MWDOC”).

RECITALS

- A. OCWD and MWDOC entered in to the written “Agreement and Lease Between Orange County Water District and Municipal Water District of Orange County re Shared Administrative Office Facilities,” dated as of April 15, 1987 (the “Original Lease”), to govern their joint design, construction and use of a shared administrative office facility at OCWD property referred to in the Original Lease as the “OCWD Premises.”
- B. The Original Lease was amended by Amendment No. 1 and an Addendum, both effective as of May 4, 1988; by Amendment No. 2, effective as of July 3, 1992; and by the “Third Amendment to Agreement and Lease,” entered into as of November 4, 1992 (the Original Lease, as amended by the above-described instruments, is hereby referred to as the “Lease Agreement”).
- C. The Lease Agreement characterizes certain areas and facilities used by both OCWD and MWDOC as “Common Facilities” and “Common Areas,” with their operation and maintenance costs to be shared by OCWD and MWDOC based upon each agency’s proportion of exclusively used space within the Office Facilities.
- D. The Lease Agreement designates the main north-south corridor from the southern entrance of the Office Facilities to the northern end of the Board Room lobby, comprising approximately 1829 square feet (the “Main North-South Corridor”) as part of the Common Areas. By reason of proposed OCWD improvements to the Main North-South Corridor, OCWD and MWDOC agree that the Main North-South Corridor should be treated as part of the OCWD Offices, and not as part of the Common Areas.

NOW, THEREFORE, in consideration of the above Recitals and the mutual promises, conditions and covenants contained herein, the parties agree to amend and modify the Lease Agreement as follows:

- 1. Except as set forth herein, capitalized terms in this Fourth Amendment shall have the meanings ascribed to such terms in the Lease Agreement.

2. Notwithstanding any other provision in the Lease Agreement, and as of the effective date of this Fourth Amendment, the Main North-South Corridor shall be included within the OCWD Offices, and not the Common Areas; provided, however, that MWDOC and its officers, employees, agents, representatives and invitees shall have the uncontrolled and unrestricted right to use the Main North-South Corridor as an access way between the external areas of the OCWD Premises, on the one hand, and the Common Facilities, Common Areas and MWDOC Offices within the Office Facilities, on the other.

3. The last sentence of Section 5.2 of the Lease Agreement is hereby amended as follows: "All costs incurred in the annual operation, maintenance and repair of the Common and Office Facilities shall be apportioned on the following basis: 66.4% to OCWD and 33.6% to MWDOC."

4. Exhibit 1 to the Lease Agreement shall be deemed to be modified as follows:

4.1 To delete the reference to "SCWC" and allocate the 1486 square feet of SCWC space to MWDOC office space; and

4.2 To delete the reference to 1829 square feet of "Main Corridor" and allocate that 1829 square feet to OCWD office space.

5. Exhibit 2 to the Lease Agreement shall be deemed to be modified in accordance with this Fourth Amendment, to reflect that the "OCWD Share of Costs" shall be 66.4%, and that the "MWDOC Share Costs" shall be 33.6%.

6. Except as set forth hereinabove, all of the terms, conditions and provisions of the Lease Agreement shall remain in full force and effect.

IN WITNESS WHEREOF, the parties have executed this Fourth Amendment as of the date first written above.

ORANGE COUNTY WATER DISTRICT

Shawn Dewane, President

Michael Markus, General Manager

APPROVED AS TO FORM:

Joel D. Kuperberg
Rutan & Tucker, LLP

**MUNICIPAL WATER DISTRICT OF
ORANGE COUNTY**

Larry Dick, President

Robert Hunter, General Manager

APPROVED AS TO FORM:

Russell G. Behrens
Best, Best & Krieger



INFORMATION ITEM

July 14, 2014

TO: **Planning & Operations Committee**
(Directors Osborne, Barbre, Hinman)

FROM: **Robert Hunter, General Manager**

Staff Contact: Karl Seckel and Richard Bell

SUBJECT: **BDCP - Western Delta Intake Concept**

STAFF RECOMMENDATION

Staff recommends the Planning & Operations Committee receive and file the report. No action is required at this time.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

SUMMARY

At the recent Water Summit, the Western Delta Intake Concept (WDIC) proposed by Robert Pyke, Consulting Engineer in December 2012, was presented by Tim Neuharth, a Delta farmer (Steamboat Acres). He asserted that it is a less expensive and superior alternative to the proposed BDCP Preferred Alternative. Curt Schmutte from MET responded and indicated that this concept was considered, but rejected as described in the BDCP November 2013 Draft EIR/EIS. This proposal can be found on the author's website under its name or by searching under "Western Delta Intake Concept". The main problems with this approach are: (1) its westerly location, which is vulnerable to salinity from tidal influence under various conditions and from future sea level rise which will require greater amounts of stored water to be released to repulse saline water, (2) location in an area that has greater numbers of Delta Smelt than the current Clifton Court Forebay, (3) high levels of dissolved natural organic matter (NOM) which are precursors to disinfection byproducts may result from adjacent marsh creation with excavated peat soils from Sherman Island, (4) uncertainty whether the new permeable levees could yield 15,000 cfs, (5) expectation of decreasing yield from suspended solids and biofouling clogging of the permeable levees to be constructed from native, fine sands, (6) potential for earthquake induced liquefaction of the levee's if built from native, fine sands found below Sherman Island, and (7) the

Budgeted (Y/N):	Budgeted amount:	Core __	Choice __
Action item amount:	Line item:		
Fiscal Impact (explain if unbudgeted):			

sustainable yield of this concept is lower than the BDCP Preferred Alternative and would be further reduced compared to the BDCP Preferred Alternative as the result of sea level rise.

DETAILED REPORT

The Western Delta Intake Concept includes several features of which the major are the following facilities:

- Modification of Sherman Island into a pumping forebay
 - Removal of up to 45 feet of peat by hydraulic dredging and creation of an adjacent wetlands in the southwesterly portion of the Island.
 - Construction of new permeable levees around most of Sherman Island using sands from Sherman Island found below the peat soils to allow up to 15,000 cfs to flow into the Island when water levels in the forebay are lower than the surrounding rivers and sloughs.
- A pumping plant and tunnels to convey 15,000 cfs from the Sherman Island Forebay to a new 1.0 MAF reservoir near Clifton Court Forebay (Brushy Creek Reservoir).
- Restoration of flood plains and habitats along the Sacramento and San Joaquin Rivers and their tributaries
- Reconfiguration of the South Delta intakes with new fish screens adjacent to the existing Clifton Court Forebay to provide for up to 15,000 cfs capacity which under wet conditions could produce with the Sherman Island Forebay a combined 30,000 cfs for downstream storage.
- Conversion of the Delta Cross Canal gates into a boat locks to prevent fish passage from the Sacramento River into the Central Delta.

The yield from this location would be constrained by higher salinity waters from the Bay during various years and during the summer and fall. Additional stored water would have to be released to repulse saline water. The author admits that the average yield would have a higher salinity than the BDCP Preferred Alternative but could yield an average of 6 mafy. This assertion is not supported and this alternative has not been modeled or evaluated in any depth. The design of the fine sand levee with a pore size of 1 mm would prevent entrainment of most larvae but would likely clog over time from suspended solids and biofouling. Sea level rise would also require significant changes in the Delta and channel configurations to avoid degradation of water supply. To create the Sherman Island forebay about 45 feet of peat soils would be hydraulically dredged and used to build a marsh in the southwesterly portion of the island. This would likely increase the concentrations of natural organic matter in the water flows into the Sherman Island forebay. Higher levels of NOM are precursors to disinfection byproducts. This matter was not considered. Sherman Island is currently about 20 feet below msl and has about 45 feet of peat deposits. These soils are proposed to be removed for the construction of the permeable levee, to access sands for construction of the levees, and to create new marshland. This would set a minimum reservoir bottom elevation around 70 feet below msl, which would require the permeable levees to be at least 85 feet high. This would place them under State Division of Dam Safety regulation and control. Costs are not described and no modeling analysis has been conducted to ascertain its performance. Due to its vulnerable location to salinity and sea level rise and the reliance on permeable levees, it is our opinion and others that this concept would be much less effective and unsustainable when compared to the BDCP Preferred Alternative. Attached is the author's concept paper dated December 17, 2012 and an Addendum dated February 24, 2013.

Robert Pyke, Consulting Engineer

Addendum to “A Self-Regulating, Inclusive and Sustainable Solution for the Sacramento San Joaquin Delta”, December 17, 2012

February 24, 2013, Updated May 8, 2013

The referenced 14-page white paper outlines a comprehensive solution to the current problems of the Sacramento - San Joaquin Delta called the Western Delta Intakes Concept (WDIC). The white paper introduced the concept that in normal to dry years, water would be extracted from the Delta only through a new forebay constructed on the eastern two-thirds of Sherman Island into which water would be drawn during periods of extraction through “permeable embankments that would replace the existing levees along the Sacramento and San Joaquin Rivers; the approach velocities to these permeable embankments would be 100 times slower than the maximum approach velocities used in the current design of fish screens”. While the intent to make extraction of water as invisible as possible to migrating fish, including both salmonids and Delta smelt, was clear, this language failed to explain two other important considerations, one involving the fact that the existing levees would be left in place, both to provide added protection to the new embankments and to create new riparian habitat, and the other involving the small proportion of total flow at Sherman Island that would be extracted.

Details of Permeable Embankments

The general layout of the WDIC is shown in Figure 1. More detail of the proposed permeable embankments and levees is shown in this figure than in Figure 3 of the white paper. New permeable embankments would be constructed inside the existing levees along approximately 22,000 feet of the Sacramento River and 31,000 feet of the San Joaquin River and would constitute the world’s largest and finest fish screens. The permeable embankment on the Sacramento River side would have a crest width of 100 feet in order to allow the improvement of State Highway 160 to a dual carriageway with 2 lanes in each direction. A new levee with a crest width of 100 feet would connect the western end of this embankment to the Antioch Bridge. The existing levee along 3-Mile Slough at the eastern end of Sherman Island would be improved to the “fat levee” standard with a crest width of 50 feet as suggested in the Delta Protection Commission’s Economic Sustainability Plan. The permeable embankment on the San Joaquin River side would have a matching crest width of 50 feet. The existing levees would be intermittently breached to allow flow of water to and through the new permeable embankments.

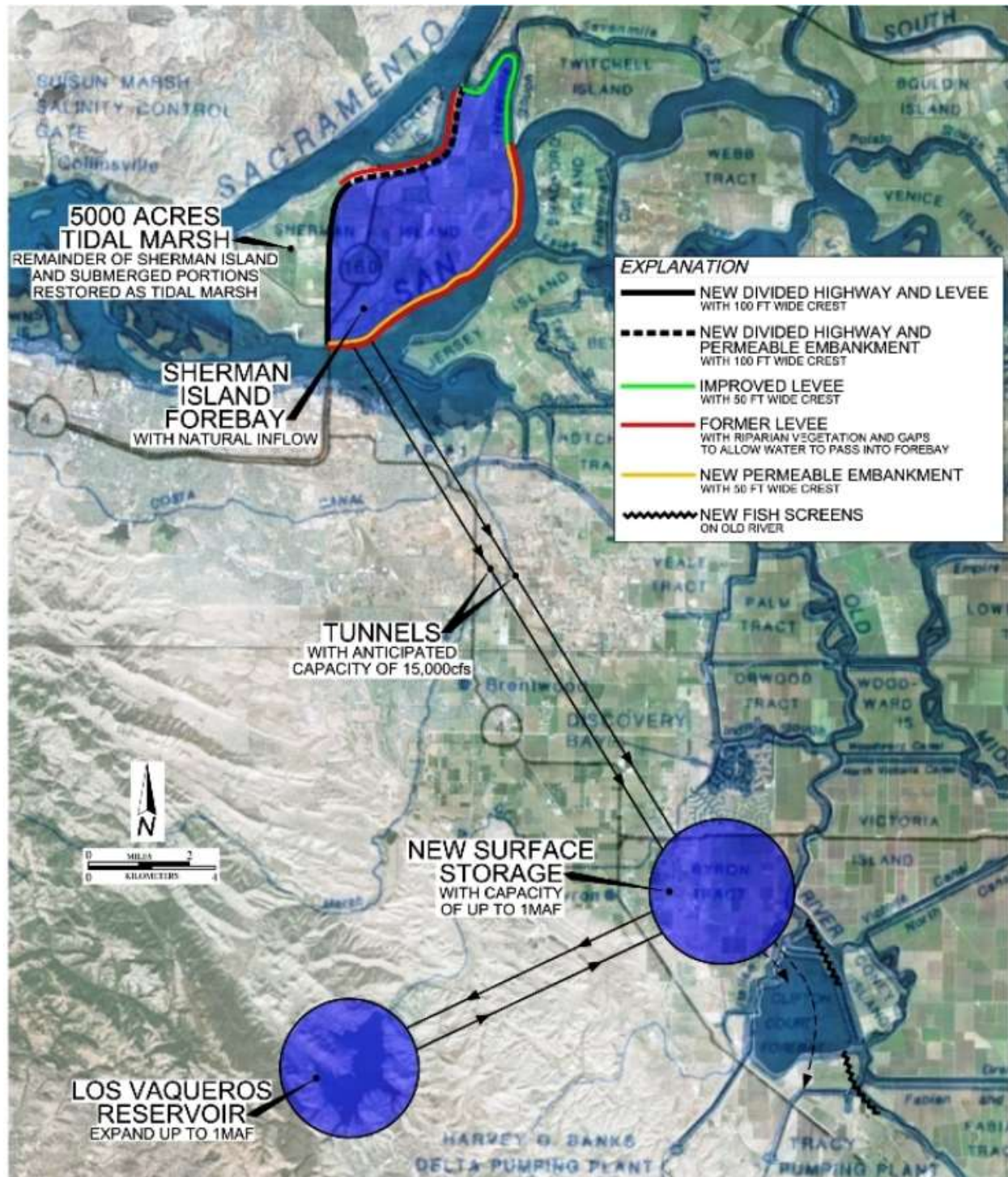


Figure 1 – The Western Delta Intakes Concept

The former levees would then be reconfigured as necessary and planted with appropriate vegetation to provide both erosion protection and riparian habitat. A schematic cross-section through the new permeable embankments and the former levee is shown as Figure 2.

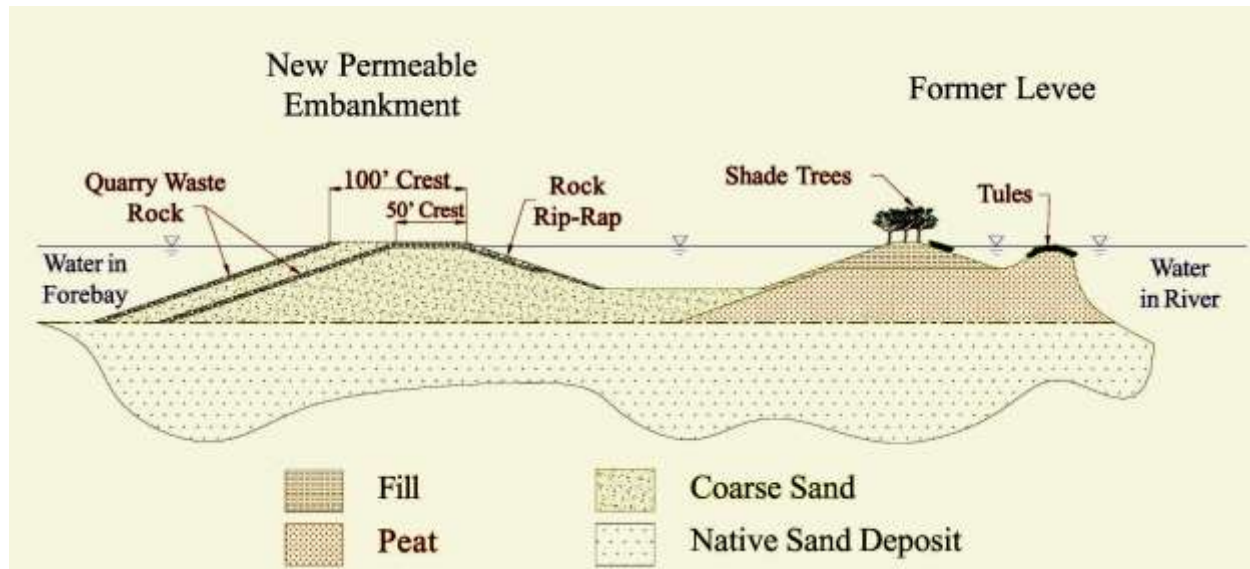


Figure 2 – Cross Section through Permeable Embankment

Of the three materials required for construction of the permeable embankment, only the quarry-waste rockfill needs to be imported. The heavier rock rip-rap would be salvaged from the existing levees and the coarse sand would be obtained from the interior of Sherman Island. The peat inside the forebay would be removed using hydraulic dredging techniques prior to the construction of the new embankments and would be used to create up to 5,000 acres of tidal marsh to the west of the forebay. The coarse sand would also be placed using hydraulic techniques and compacted as necessary in order to make it highly resistant to liquefaction. The maximum pore size in this material would be less than 1 mm, smaller than even Delta smelt eggs and much smaller than the juvenile Delta smelt that was downstream to the mixing zone in Suisun Bay following spawning upstream. Figure 3, from Bennett (2005)¹, shows schematically the size of Delta smelt at various stages during their short life. Thus not even migrating Delta smelt would be at risk of being sucked into these embankments. In fact it can be said zero fish will be taken with this arrangement, as opposed to the up to 15 million fish a year that are sucked into the South Delta salvage facilities.

¹ Bennett, William A., Critical assessment of the delta smelt population in the San Francisco Estuary, California. Journal Issue: San Francisco Estuary and Watershed Science, 3(2)
<http://escholarship.ucop.edu/uc/item/0725n5vk>

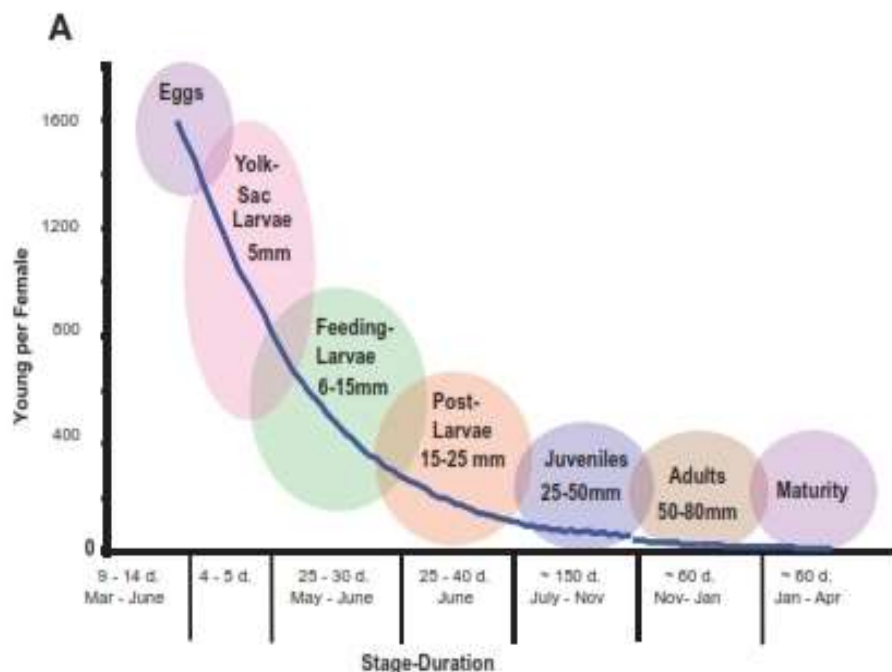


Figure 3 – Sizes of Delta Smelt

Magnitude of Flows at Sherman Island

In order to illustrate the second of the additional considerations noted above, flows measured in March 2011 in the San Joaquin River at Jersey Point, across the river from Sherman Island, are shown in Figure 3. . Even with relatively high flows in the San Joaquin River, the natural flow in the river is dwarfed by the tidal flows. At periods such as this, when under the WDIC 15,000 cfs might be extracted both from the Old River and at Sherman Island, the half of the 15,000 cfs drawn into Sherman Island on the San Joaquin River side would be only a small fraction of the total flow passing Sherman Island.

In addition to the fact that the approach velocities of water drawn through the permeable embankments would be very small, for much of the day there would also be good “sweeping velocities” as a result of the tidal and river flows being parallel to the permeable embankments. Moreover, because of the dominance of the tidal flows, these sweeping velocities are not uni-directional but are reversing.

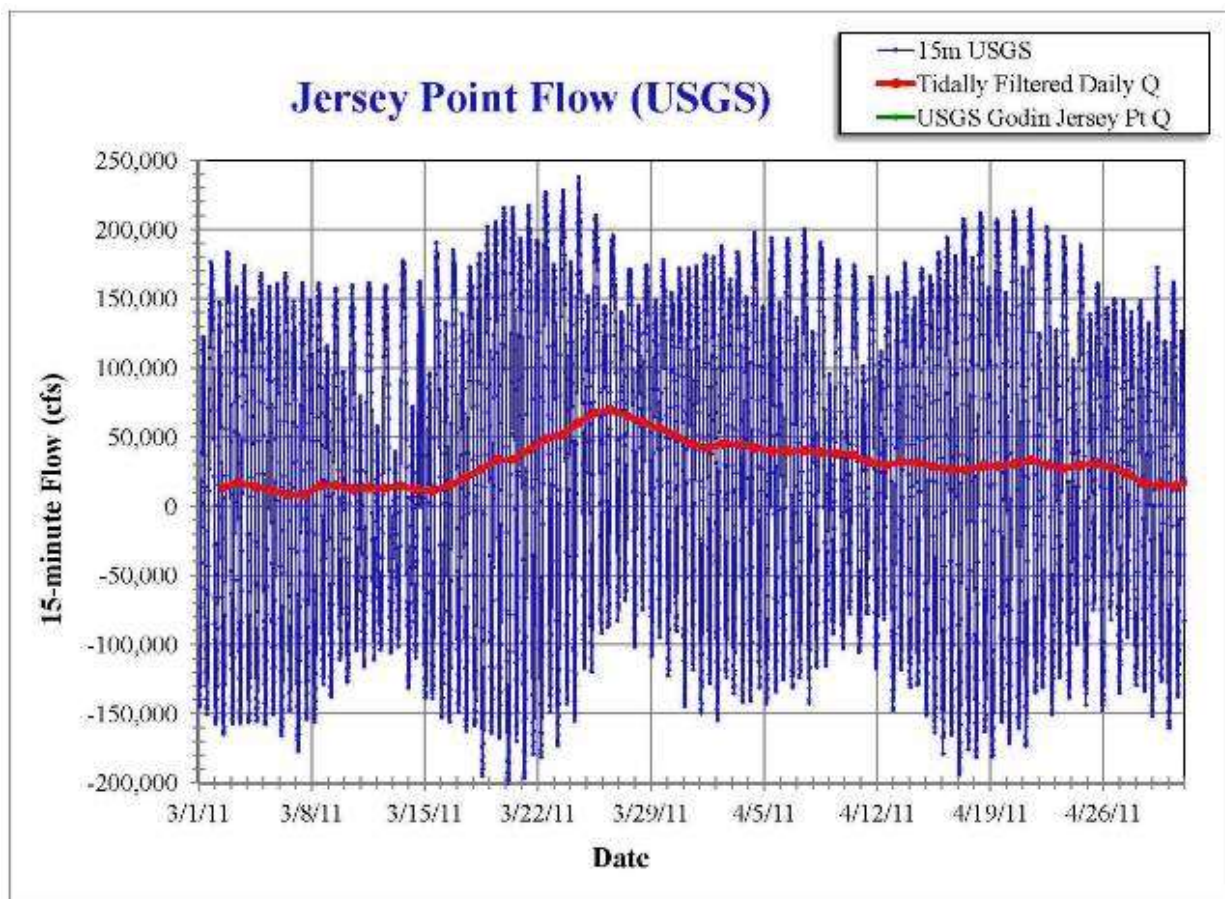


Figure 4 – Flows at Jersey Point

Other Concerns:

Possible clogging of the permeable embankments. It is possible over time that the permeable embankments might clog, reducing the amount of water that can be drawn in through the embankments, but this can be mitigated in three ways: (1) the embankments will be designed to initially have greater flow capacity than required; (2) the outer slopes of the embankments will be maintained and can be replaced as necessary; and (3) the pumps that extract water from Sherman Island could be designed so that the flow can be reversed and water stored in the proposed Brushy Creek reservoir used to raise the water level in Sherman Island so that the embankments are back-flushed. The kind of routine maintenance described under item (2) would typically be instigated after an initial period of, say, five years, and then perhaps a mile or two of the outer surface of the embankment would be replaced each year.

Possible salt water intrusion. While the intent of the WDIC is to maintain X2 well west of Sherman Island, it is possible that in the event of a prolonged drought that, even in the absence of extraction of water from the Delta for export, brackish water might come back as far as Sherman Island and enter the forebay. However, before the resumption of normal operations any brackish water can be pumped out drawing in fresh water to flush out the forebay. The brackish water would either be dumped to the west of the forebay during ebb tides or would be treated in a nearby brackish water desalination plant.

Impact of future sea level rise. The risk that X2 will move significantly inland as a result of sea-level rise can be managed to the point of it being negligible. As sea level rises the current position of X2 can be managed by raising the Delta levee system, restricting the channels of the Sacramento and San Joaquin Rivers, which are broader than they need to be adjacent to Sherman Island, the Sacramento in particular having been dredged out by the California Debris Commission in order to eliminate mining waste, and putting gates on the deepwater ship channels if necessary. If the Delta pool is raised with freshwater to balance the rise in the oceans, the salt water / fresh water transition does not have to move. It would help, and is a good idea otherwise, to have more tidal marshes around San Francisco, San Pablo and Suisun Bays to absorb tidal energy, Sea level rise is a much bigger problem for communities around San Francisco and San Pablo Bays than it is for the Delta.

Summary

The proposed intake forebay is located on Sherman Island in order to fulfill two of the main goals of the WDIC, to help restore natural flows through the Delta and to make the overall scheme self-regulating. That raises other issues including the possible impacts on migrating fish, but these issues can all be managed.

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A Self-Regulating, Inclusive and Sustainable Solution for the Sacramento San Joaquin Delta

December 17, 2012, Updated May 17, 2013

The Delta

The Sacramento San Joaquin Delta is a remarkable place of enormous environmental, economic and cultural significance. In multiple ways it is the crossroads of California.

It is the location where the waters of two once-mighty rivers originating in the Sierra Nevada meet the salt waters of the Pacific Ocean that enter through San Francisco Bay. This estuarine environment is the heart of a food web that supports both aquatic species that live in the Delta and the salmonids that pass through the Delta on their journeys to the sea and back again to spawn upstream.

Because the junction of the rivers takes place on the inland side of the Coast Ranges, an inland delta with thick deposits of peat was formed over the last 10,000 years as sea level rose tens of feet. The peat marshes and tortuous waterways that resulted formed an environment that was extremely hospitable to many terrestrial as well as aquatic species. But, after the discovery of gold in the foothills of the Sierras, these impenetrable marshes, which were inhospitable to European settlers, gave way to the shipping trade routes that supplied the original forty-niners. Then, the combined efforts of the state and federal governments led to the draining of the swamps and the creation of dredged channels, a system of levees and prime agricultural lands.

Land subsidence, which resulted from early farming operations, led to some islands and tracts with land surfaces below sea level. Today, ocean-going vessels pass on a water surface that is elevated above fields of corn, alfalfa, asparagus, blueberries and tomatoes. The economic output of Delta agriculture is approximately \$5 billion and the Ports of Stockton and West Sacramento are vital to the economies of those cities and to the Central Valley. In addition to the two shipping routes, the Delta is bordered by three interstate highways and crossed by three state highways and the BNSF railroad.

Natural gas from as far away as Canada and from local gas production fields within the Delta is stored under McDonald Island for distribution to the surrounding metropolitan areas. Twenty percent of California's natural gas-powered electricity is generated in the Delta region. Electric power from Washington State is carried to the northern outskirts of Los Angeles by the WAPA power lines. Numerous other electric power lines cross the

Delta. Liquid fuel pipelines crossing the Delta also supply large portions of Northern California and Nevada

Fifty marinas and campgrounds provide recreational opportunities for the surrounding metropolitan areas of the San Francisco Bay Area, Sacramento and Stockton. The Delta receives three times as many visitor days per year than Yosemite National Park. While presently modest in scale, the patchwork quilt of fields and the meandering waterways, the migrating wildfowl, the ebb and flow of the tides, the sunsets over Mt Diablo and the legacy communities of the Delta, offer great potential for additional tourism, including eco-tourism, that is consistent with the lifestyle that Delta residents currently enjoy.

For better or worse, the Delta is also the crossroads of water supply in California with “surplus” water in the Sacramento River being drawn across the Delta by the pumping plants in the South Delta for export to the South Bay, the San Joaquin Valley, and over the Tehachapi Mountains to Southern California. The East Bay Municipal Utility District and the San Francisco PUC divert water upstream of the Delta and EBMUD’s Mokelumne Aqueduct crosses the Delta. The pumping plants of the Contra Costa Water District, the East Contra Costa Irrigation District and other Delta agricultural water districts take water directly from the Delta.

The geography of the Delta was changed forever by reclamation. However, a relatively stable modified ecosystem was created in which, for instance, salmon and striped bass co-existed for many years. But that modified ecosystem is now threatened by multiple stressors at the same time that water exporters are seeking to maintain exports at a higher level than was the case prior to the turn of the century. So, we are at another kind of crossroads with two opposing caravans, neither of which wants to yield the right-of-way.

Hydrological Background

What are now known as the State Water Project (SWP) and the Central Valley Project (CVP) were created in response to a six-year drought in California from 1928-1934. In more recent times we have come close to having two additional six-year droughts although in each case a single wet year or wet month staved off disaster - and this was before the last housing boom and the conversion of large swaths of the Central Valley to permanent crops. The other side of the coin is that it started raining on Christmas Eve in 1861 and the rain continued virtually unabated for 43 days. An estimated one-quarter of California’s cattle perished in a vast inland sea and Sacramento was flooded to a depth of 10 feet. Recent geologic studies suggest that such storms have occurred about once every two or three centuries over the last millennium.

The pattern in California precipitation of bunches of wet years and bunches of dry years, or droughts, is illustrated in Figure 1, which was developed for the Delta Vision effort.

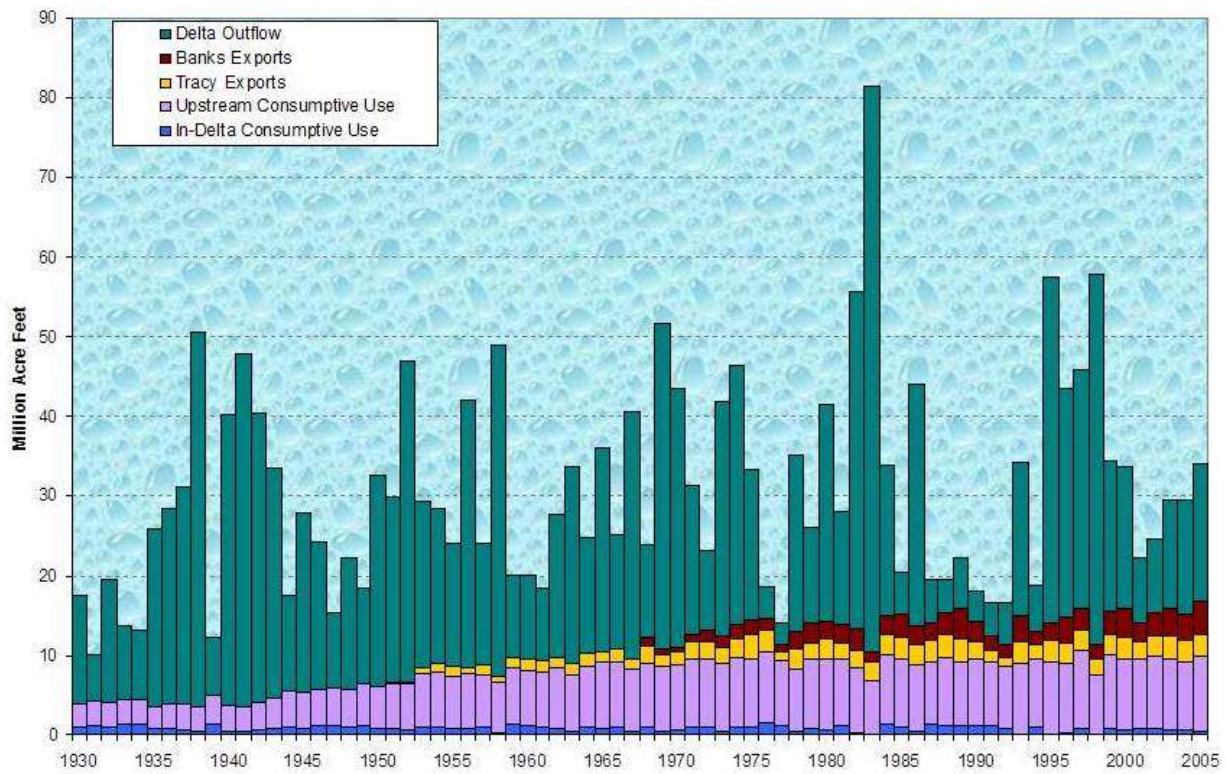


Figure 1 – Sacramento – San Joaquin Rivers Flow and Usage

It can be seen in Figure 1 that the combination of upstream diversions and in-Delta use was only a fraction of the total flow in the rivers, even in drought years, for the first half of the last century. It is only in the second half of the last century, when the CVP and the SWP start operating in earnest, that the total diversions grow to well over half the natural flow in the rivers and approach the entire natural flow in the worst years. The State Water Board has opined that, based on worldwide observations, the ecosystem is damaged if any more than 25 percent of the natural flow is taken out of a river but you do not have to be a highly trained ecologist to conclude that the pattern shown in Figure 1 is alarming. Clearly there is not enough water to go around in dry years.

So, while it is often said that the dominant feature of water supply and use in California is that the supply is in the north of the state while the greater part of the demand is in the south of the state, the fact that the supply is extremely variable is equally important.

An oddity that can be observed in Figure 1 is that in very wet years, such as 1983 or 1998, the total diversions are smaller than usual. That occurs for the obvious reason that in those years there is water, water everywhere, but isn't that when greater volumes of water should be diverted and placed in storage?

A final observation that can be made about Figure 1 is that there are three big bumps in precipitation and river flows in the late sixties through the early seventies, the late seventies and the early eighties, and the late nineties. These all correspond to periods of much higher salmon runs. While it is true both that there are multiple stressors impacting the river-Delta-Bay ecosystem and that ocean conditions for salmon might also have been better during those same periods, the conclusion that more water is good for fish is inescapable. The corollary of that is that efforts to create improved habitat and food supply for fish without increased flows are unlikely to be successful.

Historical Background

The state legislature passed the Central Valley Project Act in 1933. The act authorized the sale of revenue bonds to construct the project, but during the Great Depression, the bonds didn't sell. With the Rivers and Harbors Act of 1935, the federal government assumed control of the project and its initial features were authorized for construction by the U.S. Army Corps of Engineers. Funds for construction of the initial features of the Central Valley Project were provided by the Emergency Relief Appropriation Act of 1935. The project was authorized by a finding of feasibility by the Secretary of the Interior and approved by the President on December 2, 1935, for construction by the Bureau of Reclamation. When the Rivers and Harbors Act was reauthorized in 1937, Reclamation took over CVP construction and operation.

The "peripheral canal" of some sort has been included in discussion of California water transfers since at least the 1940s. For instance, the Bureau of Reclamation proposed a Folsom-Newman Canal that would divert water from the American River near Folsom Dam, and a "Hood-Clay Pump Canal" would divert Sacramento River water in the north Delta to the Folsom-Newman Canal. This water would then flow by gravity south to a point on the Delta Mendota Canal near San Luis Reservoir.

A peripheral canal was not included in the initial features of the State Water Resources Development System, subsequently called the State Water Project, as defined by the Burns-Porter Act which was approved by the voters on November 8, 1960. However, by 1964 an Interagency Delta Committee had recommended "the transfer of water for export through a new hydraulically isolated channel around the Delta, with the present level of salinity control accomplished by a continuation of moderate releases from upstream storage reservoirs. Irrigation water of adequate quality would be provided for the Delta by a combination of controlled freshwater releases from the canal and overland water facilities in the western Delta." The Committee's "Plan of Development for the Sacramento-San Joaquin Delta" provided for local water supply, flood control, salinity protection, fish and wildlife, recreation, and navigation in the Delta, as well as water conservation and transfer of water across the Delta for state and federal export.

The plan centered on the peripheral canal concept but also included several other components to fulfill all of the planning objectives. This peripheral canal was subsequently adopted as the Delta Water Facility of the State Water Project.

However, it is critically important to note this plan assumed increased diversions from the north coast sources, as described in Department of Water Resources Bulletin No. 76, Delta Water Facilities, December, 1960. This Bulletin preceded the work of the Interagency Delta Committee, examined alternatives for Delta Water Facilities which included a semi-isolated conveyance along the North Fork of the Mokelumne River and a master levee system, but not a peripheral canal as such. Page 11 of the Bulletin explains the need for water from north coastal sources and has a chart showing the projects and the timing of need which is reproduced as Figure 2.

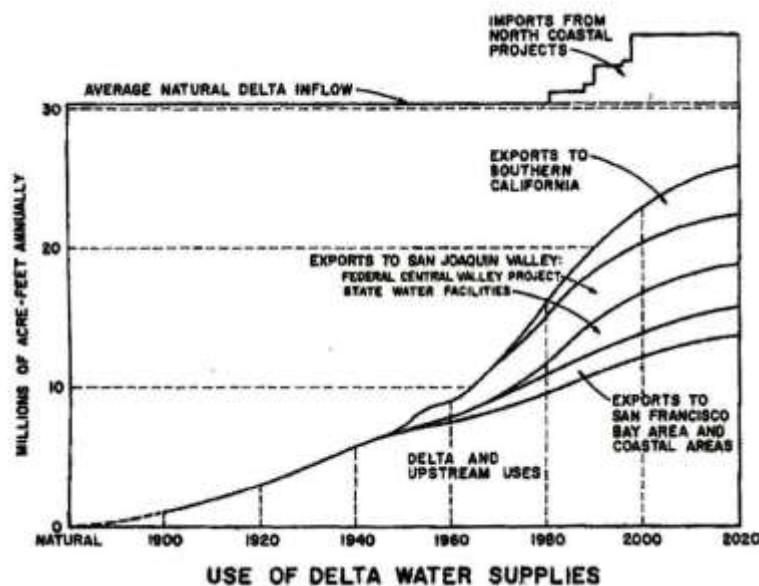


Figure 2 – 1980 Projection of Average Delta Inflow and Usage

Bulletin No. 76 explained that “full demands on the State Water Resources Development System can be met until 1981 from surplus water in and tributary to the Delta with regulation by the proposed Oroville and San Luis Reservoirs. However, upstream depletions will reduce the available surplus supplies and water will have to be imported from north coast sources after that year” and “economic development of water supplies will necessitate importation of about 5,000,000 acre-feet of water seasonally to the Delta from north coastal streams to areas of deficiency.” It also notes that “in 1959 the State Legislature directed that water shall not be diverted from the Delta for use elsewhere unless adequate supplies for the Delta are first provided.”

It is interesting that Bulletin No. 76 placed equal emphasis on water supply, Delta water quality, fishery resources, flood and seepage control and transportation and recreation.

And, although the impact on the overall ecosystem was not considered in the same way that it would be today, it was recognized that diversions from north coast sources were required to maintain some semblance of natural flow through the Bay-Delta estuary. In effect, exports would be supplied by these north coast sources rather than by the precipitation in the Sacramento and San Joaquin basins.

Of course this plan would have decimated the ecosystems of the northern rivers, thus, then-Governor Jerry Brown, acting on the advice of DWR Deputy Director Jerry Meral, did the right thing back in 1980 by renouncing those diversions forever and lobbying for the inclusion of the northern rivers in the federal Wild and Scenic Rivers Act. At the same time they shot themselves in the foot relative to “the Canal” and a referendum on the legislature's authorization of a peripheral canal in AB 200 was defeated in June 1982 by a vote of 63 to 37 percent of the electorate.

In summary, the peripheral canal idea of the 1960's included two really important considerations that are no longer included in the Bay Delta Conservation Plan (BDCP), which is the current attempt to construct an isolated conveyance and to obtain 50-year incidental take permits under the state and federal Endangered Species Acts. The 1960's plan included the diversions from north coast sources to maintain flows through the estuary and it provided for intermediate release facilities to maintain water quality in the Delta.

The Current Status

In the absence of the once planned diversions from the Northern Rivers, too much water is extracted from the Delta in dry years. Coupled with increased contamination from urban and agricultural waste water and poor ocean conditions, this led to a precipitous decline in some aquatic species, known as the Pelagic Organism Decline (the POD), in the first decade of this century. But there is also the fundamental flaw that the export pumps are simply in the wrong place because the north-south water transfer crosses the east-west salmon passage and because the pumps are located at the dead-end of intake canals from which fish have no escape. While something like 15 million fish are “salvaged” at the existing fish salvage facilities each year, many of the salvaged fish do not survive their transport by truck back to the Western Delta and some fish still pass through these facilities and are sucked into the pumps. Even construction of modern fish screens may not help very much as long as the incoming current is perpendicular to the screens.

However, the POD did trigger an appropriate general response first from the then-Governor who established the Delta Vision Blue Ribbon Task Force and then from the

State Legislature, which enacted the Sacramento-San Joaquin Delta Reform Act of 2009. While typically vague with respect to details, the Delta Reform Act did put into law the concept developed by Delta Vision that the goals of providing a more reliable water supply for California and protecting, restoring and enhancing the Delta ecosystem were co-equal. Further, the Delta Reform Act says that the co-equal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place. And the Delta Reform Act states rather clearly that “the policy of the State of California is to reduce reliance on the Delta in meeting California’s future water supply needs through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency.”

The federal Central Valley Project Improvement Act of 1992 had also amended previous authorizations of the Central Valley Project to include fish and wildlife protection, restoration, and mitigation as project purposes having equal priority with irrigation and domestic uses. That Act also established fish and wildlife enhancement as a project purpose equal to power generation, although progress on implementing these new provisions has been slow.

Thus, the overall framework for a twenty-first century solution is clear, but the goals are not quantified and there is no physical plan to accomplish the stated goals.

The Way Forward

Given the pattern of precipitation and history described above, it would seem that there are two key things that should be recognized with respect to addressing the problems that the Delta is facing. These are the facts that:

1. Manmade alteration of the Delta in combination with larger export flows has turned the Delta from an estuarine environment into a more lacustrine environment which favors invasive species over native species; and
2. Precipitation in California is extremely variable and not just the past variability, but also future variability, which many climate scientists predict might be greater, must be addressed in any sustainable water management plan.

There are six principles that should be incorporated in any detailed solution:

1. That natural flows through the Delta should be restored to the maximum practical extent, both in terms of quantity and the pattern of flow;

2. That much less, or zero, water should be extracted at periods of low flows, and only water available during periods of higher flow that is surplus to the needs of Delta farmers and the Delta ecosystem should be exported;
3. That additional South of Delta storage should be constructed in order to bank the greater than average amounts of water that could be extracted in wet years;
4. Project operations should be self-regulating and not rely on complicated legal assurances or guarantees which are difficult to enforce;
5. The Project should be relatively simple to design, permit and construct.
6. The Project should not have physical facilities which intrude on the character of the Delta

Adherence to these principles, with appropriate pumping and temporary storage facilities, will allow simultaneous recovery of the Delta ecosystem and sustainable exports at existing levels.

Does the BDCP Solve the Problem?

The apparent preferred conveyance alternative that is currently included in the BDCP consists of three 3,000 cfs intakes located along the Sacramento River between Freeport and Courtland, a large forebay near Hood, and 37-mile long twin tunnels that will take water by gravity flow to the vicinity of the existing South Delta pumping plants. The intakes will be provided with modern fish screens but the design of these fish screens is yet to be finalized and tested. Because use of the Sacramento River intakes will be limited by stringent bypass flow requirements, significant export flows will still be drawn across the Delta to the South Delta pumps but the BDCP includes no provision for channel or levee improvements.

Does this conveyance alternative help solve the overall problems of the Delta or even the problem of providing more reliable exports? The short answer is no. It provides some guarantee of better water quality, which is of particular importance to urban water users or wholesalers like the Metropolitan Water District of Southern California because it helps keep treatment costs down and helps maintain agency competitiveness relative to other sources of supply, but it does little else. Extracting significant amounts of water from the North Delta will not contribute to restoring more natural flows through the Delta. Lower flows in the Delta rivers and channels is not an improvement over the current cross flows. And the BDCP includes no mechanism for extracting more water in

wet years to make up for extracting less water in dry years. To the contrary, the BDCP potential preferred alternative of February 2012 relied on reducing Delta flows during drier months to meet export water supply demands¹. Also, the current situation wherein fish get sucked towards or even into the South Delta pumps would be somewhat improved by the BDCP if the South Delta pumps are in fact operated less frequently, but would not be eliminated. BDCP modeling suggests that during certain periods all of the exports would continue to be “through Delta” and none would be diverted via the new isolated facility.

A Concept that Does Solve the Problem

A concept known as the Western Delta Intakes Concept (WDIC) that would solve the current problem is illustrated in Figure 3. It contains six physical elements:

1. Restoration of floodplains on the Sacramento and San Joaquin Rivers and their tributaries in order to provide flood storage and stretch out the flood hydrograph in addition to providing significant flood management benefits; the only specific restoration candidate at present is the proposed Lower San Joaquin Bypass, which is now included in the BDCP and is worthy of support.
2. Location of new intake facilities somewhere in the Western Delta to allow flows to pass through the Delta in a natural way before surplus flows are extracted; the specific proposal is to use much of Sherman Island as an intake forebay; the peat underlying the forebay would be removed by hydraulic dredging and used to create tidal and subtidal habitat on the western end of Sherman island and in the vicinity of the submerged portion of Sherman Island; the peat removal is driven by drinking water quality considerations but would also allow natural infiltration of water into the Sherman Island forebay from the adjacent rivers. In order to provide an inflow capacity of up to 15,000 cfs, the levees along the Sacramento and San Joaquin Rivers would be replaced by permeable embankments; the approach velocities to these permeable embankments would be 100 times slower than the maximum approach velocities used in the current design of fish screens; in normal conditions with relatively low flows in the San Joaquin River, water would be extracted only at Sherman Island; no water would be extracted at Sherman island if Delta outflows drop below the level needed to keep X2 well west of Sherman Island ensuring that chloride and bromide levels in the exported water are kept below acceptable levels; the Delta Cross Channel gates would be

¹ See Table C.A.-34 on page C.A-110:

http://baydeltaconservationplan.com/Libraries/Dynamic_Document_Library/BDCP_Effects_Analysis_-_Appendix_5_C_Attachment_C_A_-_CALSIM_and_DSM2_Results_4-13-12.sflb.ashx

converted into to a boat lock in order to prevent Sacramento River salmon being diverted into the Delta.

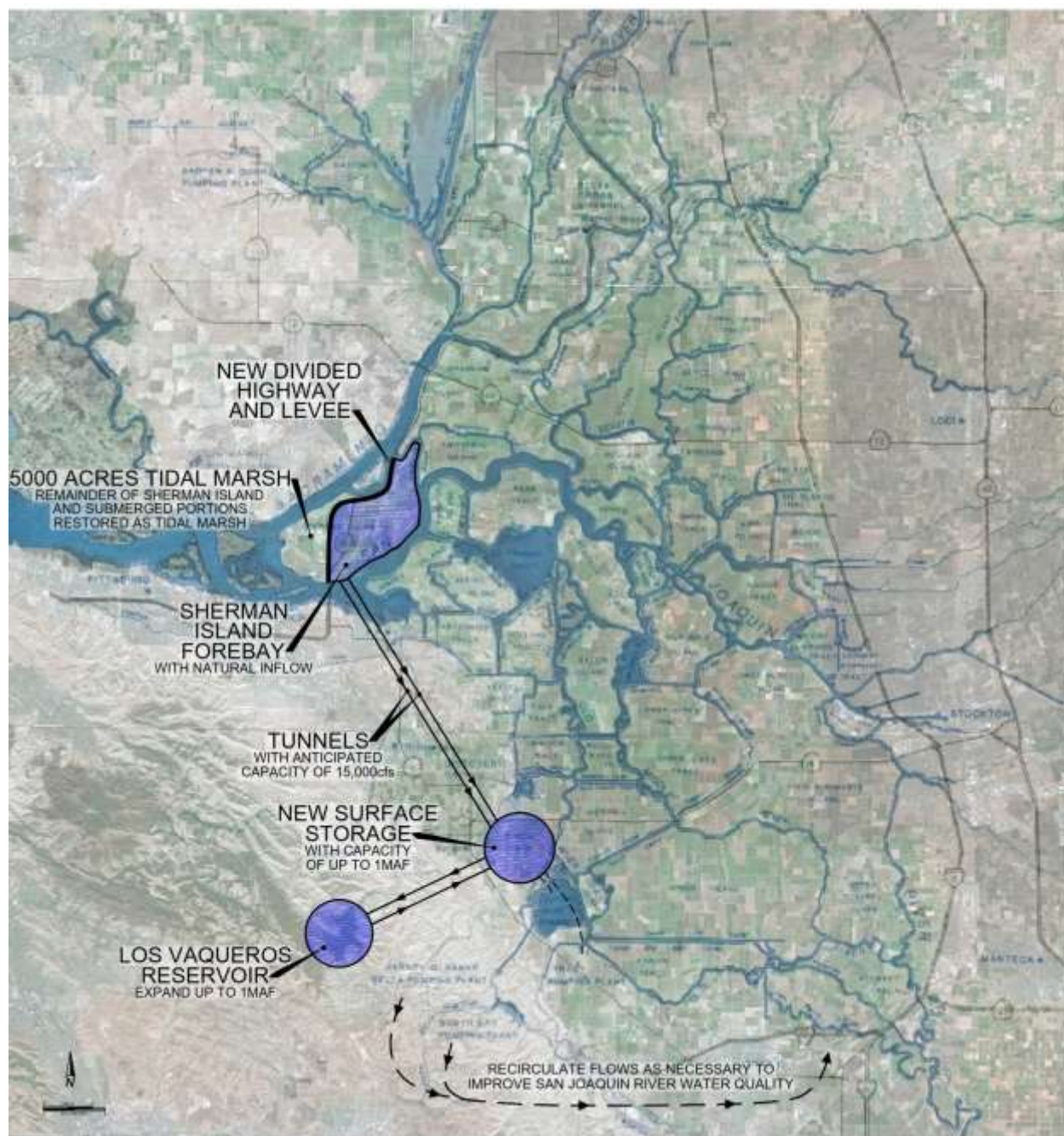


Figure 3 – The Western Delta Intakes Concept

3. Construction of a pumping station and one or more tunnels to extract water from Sherman Island and move it to new forebays for the existing South Pumps and

new storage facilities that would be located adjacent to the existing Clifton Court Forebay; these storage facilities would likely consist of a new Brushy Creek reservoir and a further enlargement of the existing Los Vaqueros reservoir; a pumped storage hydro-electric facility could be constructed between these two reservoirs so that the project could be energy neutral or positive.

4. During periods of very high flow in the San Joaquin River, the new intakes and the existing South Delta pumping plants with new screened intakes along the Old River would be used simultaneously; with the Banks and Jones pumping plants in the South Delta operating at their full capacity of 15,000 cfs, which they have never done in the past because of restrictions on operation of the Banks pumping plant, the combined rate of extraction could then be as much as 30,000 cfs; when the Banks and Jones pumping plans extract water from the South Delta, water extracted at Sherman Island would be stored in the Brushy Creek and Los Vaqueros reservoirs as necessary until Banks and Jones pumping capacity becomes available to move this stored water south.
5. Additional south-of-Delta storage would be constructed in order to store the surplus water that would be extracted in wet years, mostly in currently drawn-down groundwater basins but also perhaps including new Westside surface storage.
6. In order to maintain South and Central Delta water quality, a lined canal would be constructed to allow freshwater to be recirculated from the state and federal aqueducts into the San Joaquin River above Vernalis as necessary.

Environmental Restoration Elements

The WDIC includes the following environmental restoration elements:

1. Restores a more natural flow regime through the Delta.
2. Extracts surplus flows only after they have passed through the Delta.
3. Ensures that a greater flow and fresher water enters the Delta from the San Joaquin River.
4. Creates new tidal and sub-tidal habitat at the western end of Sherman Island.
5. Adds 10 miles plus of shaded riparian habitat.
6. Funds a world-class biological and water quality monitoring system throughout the Delta.

The WDIC is also intended to be complementary with renewed dredging of Delta channels, restoration of the mid-channel berms and a comprehensive program to further upgrade Delta levees that includes the development of semi-continuous shaded riparian habitat.

The concept does not directly include but would be supportive of other restoration measures, such as those at the lower end of the Yolo Bypass in the vicinity of Liberty and Prospect islands, which are already planned by others, construction of the Lower San Joaquin Bypass, and restoration of Franks Tract.

Rather than seeking incidental take permits using analyses that are not validated and verified, the WDIC would comply with the state and federal endangered species acts by simply not taking endangered species.

Additional Considerations

The WDIC can stand on its own but it is nonetheless intended to be part of a comprehensive solution to California's water supply challenges that includes greater regional self-sufficiency that might involve and further conservation and water use efficiency measures, recycling of waste water, reclaiming of storm water and desalinization of both brackish and seawater.

The WDIC is also intended to be compatible with longer-term strategies for flood risk management including the addressing of further sea level rise and to be compatible with future transportation needs and land-use in the Delta. In other words, it is consistent with a sustainable long-term vision for the Delta and California.

The WDIC does not rely on unsupported expectations that new habitat in the Delta will benefit fish in the absence of suitable flows or vague promises of adaptive management, but its operations can be fine tuned as a result of long-term observations obtained from the monitoring system. The WDIC is compatible with our best understanding of environmental science, engineering and economics but, more than anything-else, it is driven by commonsense.

By retaining the ability to operate the South Delta pumps, the WDIC does not put all the eggs in one basket but allows temporary flexibility of operations should unexpected conditions arise.

Comparison of Alternatives

It is not possible to do a complete comparison of the WDIC and the BDCP in this relatively brief paper, but their features can be compared in a general way, as shown in Table 1.

	WDIC	BDCP	DESP
Cost	Middling	Highest	Lowest
Protects Delta from salt water intrusion	Yes	No	Yes
Provides more sustainable export water supply	Allows sustained average exports in the order of 6 maf per year on average	Lower exports, maybe 4.7 maf, and no provision for a six-year drought	Even lower exports, maybe 4.2 maf, and no provision for a six year drought
Restores more natural flow through the Delta	Yes	No	No
Takes little or no water in periods of low flow	Yes	No	No
Maintains both export and Delta water quality	Yes	Marginal	Marginal
Creates new habitat	Yes	Yes	Yes
Self-regulating	Yes	No	No
Simple to design, permit and construct	Yes	No	Yes
Negative impacts on the Delta as a Place	No	Yes	No
Negative impacts on Delta agriculture	No	Yes	No
Includes flood control benefits	Yes	No	Yes
Contributes to improved transportation	Yes	No	No

Table 1 – Comparison of Alternatives

The colored backgrounds in each cell indicate the relative success of each alternative with regard to the issues listed in the left-hand column, green indicating more success and red

indicating less success or that the issue is ignored. The relative importance of the various issues could be indicated by varying the height of each row although that has not been done in this presentation. But, if that were done, cost in particular should likely be given more weight.

Table 1 also includes a loosely-defined alternative that is labeled the DESP. This is an alternative that is minimally intrusive to the Delta as a Place. It is based on the recommendations of the Economic Sustainability Plan developed by the Delta Protection Commission². The DESP alternative includes full implementation of the levee upgrades that are recommended in the Economic Sustainability Plan and habitat improvements that are compatible with existing farming operations. The DESP addresses head on the major reasons often cited in the media as justification for an isolated conveyance such as that proposed under the BDCP, which is that the Delta levees might explode or dissolve in a large earthquake leading to saltwater intrusion that might interrupt water exports for as long as three years. That scenario is hyperbole and is not supported by recent DWR studies of the consequences of even a worse than worst case levee failure scenario. However, the peer-reviewed Economic Sustainability Plan pointed out that a further-improved levee system would not only address the hazards to water exports posed by earthquakes but also would provide improved flood protection, would allow planting on the water side of levees to create shaded riparian habitat, and could be constructed for between \$2-4 billion. While the Economic Sustainability Plan, which is directed solely to economic sustainability of the Delta, does not address all current problems of the Delta, it is a far cheaper and less intrusive solution to the perceived earthquake problem than constructing twin tunnels under the Delta for \$14 billion and it is far more cost-effective because levee improvements serve multiple purposes.

Even without more detailed scoring and weighting, it is clear that the BDCP comes in third among these three alternatives on both positive rather than negative impacts and benefit-cost. More detailed studies would be required to determine whether the WDIC or the DESP wins on benefit-cost.

The DESP can in fact be viewed as a “no regrets” first stage of the WDIC. The DESP components can and should be funded for immediate construction while the water exporters figure out whether they can afford the additional cost of the full WDIC. Regardless, the WDIC offers greater benefits at a lower cost than the emerging BDCP preferred alternative. The WDIC therefore must be considered in any evaluation of alternatives that is required under NEPA or CEQA and in any comparative benefit-cost analyses undertaken as part of the BDCP development.

² <http://forecast.pacific.edu/desp.html>



INFORMATION ITEM

July 14, 2014

TO: Planning & Operations Committee
(Directors Osborne, Barbre, Hinman)

FROM: Robert Hunter, General Manager

Staff Contact: Karl Seckel and Richard Bell

SUBJECT: State Water Project and BDCP – Science Reports

- **SWRCB Workshop on Delta Outflows and Related Stressors (Expert) Panel Summary Report**
- **Delta Independent Science Board Comments on BDCP DEIR/EIS**

STAFF RECOMMENDATION

Staff recommends the Planning & Operations Committee receives and files the report. No action is required at this time.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

SUMMARY

In May, two major science reports were released by the State related to the State Water Project Bay-Delta salinity control outflows and Bay-Delta Conservation Plan (BDCP). On May 5 the SWRCB “Workshop on Delta Outflows and Related Stressors (Expert) Panel Summary Report” was released. Following this report, on May 20, 2014 the Delta Independent Science Board (Delta ISB) released its review of the draft BDCP Environmental Impact Report/Environmental Impact Statement. Both reports raise substantial issues and further evaluation is likely to be required. The SWRCB staff report is expected out in early 2015.

Budgeted (Y/N):	Budgeted amount:	Core __	Choice __
Action item amount:		Line item:	
Fiscal Impact (explain if unbudgeted):			

DETAILED REPORT

The SWRCB is required to update its Water Quality Control Plan for the Bay-Delta and to be informed by the BDCP. They need to consider flows in context with the BDCP implementation. This is a long process and the current schedule would have the SWRCB staff report released early next year. The SWRCB Expert Panel on Delta Outflows and Related Stressors was established to inform the State Water Board and staff. The panel and State Water Board staff appear to be leaning towards the use of the natural/unimpaired hydrograph with set percentages to regulate outflows. The State Water Contractors and MET oppose this overly simplistic approach. The report does indicate uncertainty on the science of the continued use of the X2 (2,000 ppm salinity) iso-halocene line for compliance and the required flows to meet the underlying objectives of the plan.

The Delta Reform Act of 2009 instructs the Delta ISB to review the BDCP Draft EIR/EIS and to submit its comments to the Delta Stewardship Council (DSC) and the California Department of Fish and Game. The Delta ISB focused its review on the adequacy of the science and the validity of the conclusions drawn from that science. Their findings are highlighted in a detailed, 131-page report which will be used by the Council to shape its comments on the BDCP which will be discussed at its May 29-30 meeting.

Following is the report's summary statement contained in its transmittal letter to the DSC:

" ... We commend the preparers of the Draft BDCP documents for assembling and analyzing mountains of scientific information, and for exploring environmental impacts of many proposed BDCP actions. The preparers faced a bewildering array of regulatory requirements and economic, social, and political pressures.

We find, however, that the science in this BDCP effort falls short of what the project requires. We highlight our concerns in the attached report. The report, in turn, draws on our detailed responses to charge questions from the Delta Stewardship Council (Appendix A) and on our reviews of individual chapters in the DEIR/DEIS (Appendix B). Our concerns raise issues that, if not addressed, may undermine the contributions of BDCP to meeting the co-equal goals for the Delta. ... "

Following are the Delta ISB summary of major concerns as listed in their report:

"We find that the DEIR/DEIS currently falls short of meeting this "good enough" scientific standard. In particular:

1. Many of the impact assessments hinge on overly optimistic expectations about the feasibility, effectiveness, or timing of the proposed conservation actions, especially habitat restoration.
2. The project is encumbered by uncertainties that are considered inconsistently and incompletely; modeling has not been used effectively to bracket a range of uncertainties or to explore how uncertainties may propagate.
3. The potential effects of climate change and sea-level rise on the implementation and outcomes of BDCP actions are not adequately evaluated.

4. Insufficient attention is given to linkages and interactions among species, landscapes, and the proposed actions themselves.
5. The analyses largely neglect the influences of downstream effects on San Francisco Bay, levee failures, and environmental effects of increased water availability for agriculture and its environmental impacts in the San Joaquin Valley and downstream.
6. Details of how adaptive management will be implemented are left to a future management team without explicit prior consideration of (a) situations where adaptive management may be inappropriate or impossible to use, (b) contingency plans in case things do not work as planned, or (c) specific thresholds for action.
7. Available tools of risk assessment and decision support have not been used to assess the individual and combined risks associated with BDCP actions.
8. The presentation, despite clear writing and an abundance of information and analyses, makes it difficult to compare alternatives and evaluate the critical underlying assumptions.”

It is unclear at this time how the BDCP DEIR/S will respond to the DSIB/DSC comments. It is important that a defensible EIR/EIS be developed to better assure a successful outcome from expected legal challenges anticipated to be filed after the Notice of Determination and Record of Decision are made and filed. Some of the comments probably cannot be answered at this time and would require the implementation of the BDCP to gain the scientific data to address those concerns raised in the DSIB comments.

The two reports referenced herein are available from staff; they are 82 pages and 133 pages in length if you would like to peruse them.



INFORMATION ITEM

July 14, 2014

TO: **Planning & Operations Committee**
(Directors Osborne, Barbre, Hinman)

FROM: **Robert Hunter, General Manager**

Staff Contact: Karl Seckel and Richard Bell

SUBJECT: BDCP – Draft Implementing Agreement Comments

STAFF RECOMMENDATION

Staff recommends the Planning & Operations Committee receive and file the report and provide input as desired. Staff will incorporate the comments included herein with our prior BDCP comments as reviewed previously by the Board. No additional action is required at this time.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

SUMMARY

The Draft Bay Delta Conservation Plan Draft Implementing Agreement was released for comments on May 30, 2014 and the comment period for both the Draft BDCP/DEIR/S and Draft Implementing Agreement were extended to July 29, 2014. Staff has reviewed the Draft Implementing Agreement, the legal instrument that specifies how the BDCP will be implemented. Staff recommends that the General Manager submit comments on these draft documents with our previously prepared comments on the Draft BDCP/DEIR/S.

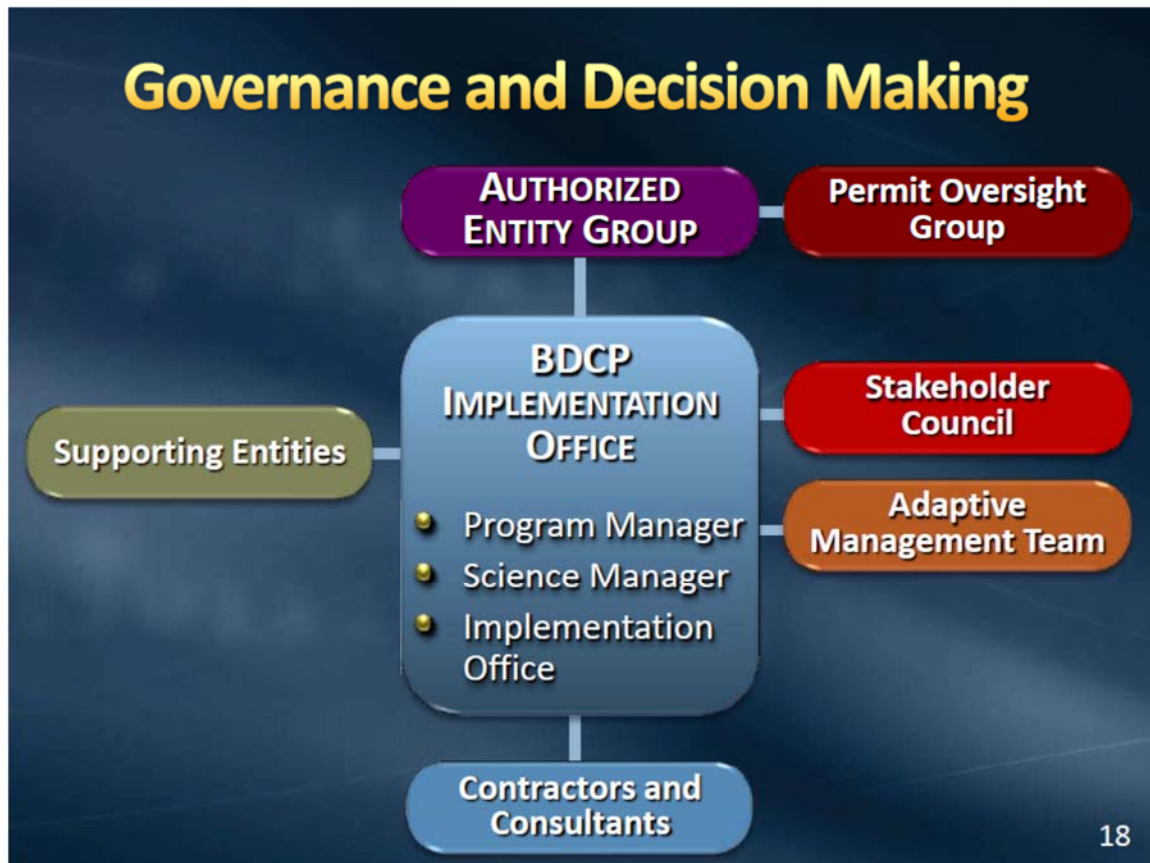
Budgeted (Y/N):	Budgeted amount:	Core __	Choice __
Action item amount:	Line item:		
Fiscal Impact (explain if unbudgeted):			

DETAILED REPORT

The Draft Implementing Agreement is a 92 page legal agreement for the BDCP between the State/Federal fishery/wildlife agencies (US Fish and Wildlife Service, National Marine Fishery Service, California Department of Fish and Wildlife), California Department of Water Resources, and State Water Project/Central Valley Project Contractors. The U.S. Bureau of Reclamation is not a party to the agreement as they are not a permit applicant for the BDCP under the ESA (Endangered Species Act) or NCCPA (California Natural Communities Conservation Planning Act). They are a participant in the BDCP by the roles and responsibilities as set forth in the BDCP. This is due to the Federal requirement that Federal agencies comply with ESA through Section 7 (individual species with consultation and issuance of a biological opinion for protection of the affected species consultation process and not through the Section 10 HCP (habitat conservation plan for multiple species) permitting process. The Draft Implementing Agreement indicates that U.S. Bureau of Reclamation will enter into a separate memorandum agreement with the Parties for carrying out their defined roles and responsibilities.

General Obligations of the Parties

The Parties are required to fulfill their obligations under the Implementing Agreement, the BDCP, the Permits and the Integrated Biological Opinion. MWDOC is represented through MET and the State Water Contractors/Authorized Entities Group. The overall BDCP Governance and Decision Making organization is shown below:



The Authorized Entities (DWR, USBR, and SWP/CVP contractors that receive take authorizations pursuant to the BDCP) general obligations include:

- Implementing the Conservation Measures and other BDCP actions as specified in the Bay Delta Conservation Plan and the Implementing Agreement and funding such measures as outlined. (Note: CM-1 is the change in diversion point to the north Delta with new conveyance (twin 9,000 cfs tunnels and new screened intake on the Sacramento River. CM-2 thru CM-21 are the other habitat and related conservation measures).
- Participating in the Authorized Entity Group for decision-making.
- Participating in the Adaptive Management and Monitoring Program.
- Participating in the scientific research program.
- Conferring with the Implementation Office and Permit Oversight Group for decision-making only, regarding the BDCP implementation matters and obtaining concurrence or approval of Permit Oversight Group where required.
- Funding a portion of the Conservation Strategy.

The Fish and Wildlife Agencies general obligations include:

- Participating in the Permit Oversight Group.
- Participating in the Adaptive Management and Monitoring Program.
- Participating in the scientific research program.
- Conferring with the Implementation Office regarding Plan implementation matters.
- Providing one written communication, to the maximum extent practicable, for responses, reviews, concurrence, acceptance, or approvals of BDCP reports, plans, and other documents (for actions that are regulatory in nature or require the concurrence and/or approval of the Permit Oversight Group).
- Funding a portion of the Conservation Strategy.
- Adhering to the Assurances and Protections provided under the Implementing Agreement.
- Investigating and taking appropriate steps to further reduce the adverse effect of all factors that stress the fish and wildlife species dependent upon the Bay-Delta estuary.
- Providing assistance to third parties engaged in activities in the Delta to help ensure that such activities proceed in compliance with State and federal endangered species laws and in a manner that does not compromise the likelihood of success of the BDCP.
- Implementing, where appropriate, certain BDCP actions as specified in the Plan and the Implementing Agreement.

The Implementing Agreement incorporates by reference the BDCP and each of its provisions and it is noted that the Implementing Agreement shall govern where there is a conflict with the BDCP.

The Draft Implementing Agreement contains 24 sections:

1. Parties to the Agreement

2. Recitals and Purpose of the Agreement
3. Definitions
4. Findings
5. Role of Bureau of Reclamation in the BDCP
6. Incorporation of the BDCP
7. General Obligations of the Parties
8. Take Authorizations
9. Activities and Actions Covered by the BDCP
10. Conservation Strategy
11. Plan Implementation
12. Changed Circumstances
13. Funding (Obligations of the Parties and Response to Inadequate Funding to implement the HCP/NCCP)
14. Assurances and Protections
15. Implementation Structure
16. Compliance Monitoring and Reporting
17. Planning Documents
18. Relationship of the BDCP to Other Regional Conservation Plans
19. Relationship of the BDCP to the Delta Plan
20. Specific Obligations of the Fish and Wildlife Agencies
21. Term
22. Remedies and Compliance
23. Modifications and Amendments
24. Miscellaneous Provisions

Following is a brief discussion of some of the important provisions in the Implementing Agreement. Overall, the main benefit of pursuing the BDCP, a habitat conservation plan for all species, rather than one species at a time, as is the current case, is a permitting process that provides more certainty in receiving “take” authorization from the permitting entities and for providing an agreed upon framework for future decisions.

Take Authorizations. Section 8 provides the authorization for incidental take of both Non-Listed Covered Species and Fully Protected Species to the Permittees. Under the non-listed covered species take authorization the Implementing Agreement states that if they become fully protected, the Permittees are automatically authorized for incidental take per the BDCP and Implementing Agreement. Under the take authorizations for fully protected species, section 8.6 states that “CDFW acknowledges and agrees that the BDCP includes measures that are intended to avoid, to the maximum extent practicable, the take of any Fully Protected Species as a result of the implementation of Covered Activities.” It goes on to say that if implementation of the Covered Activities causes the take of a Fully Protected Species that is also a Covered Species, the take is authorized. Similar language is provided for take under the ESA.

Changed Circumstances. Section 12 recognizes that ecological conditions in the Delta are likely to change as a result of future events and circumstances that may occur during the course of the implementation of the BDCP over the next 50 years. The BDCP identifies changes in circumstances that are reasonably foreseeable and that could adversely affect reserve system lands or water in the Plan Area, consistent with the “changed circumstances” provisions of the ESA and NCCPA.

The BDCP sets out measures designed to respond to these foreseeable future changes. The specific approaches and steps for the planned responses will be developed and implemented through the adaptive management program, except those that fall outside its scope as specifically described in the BDCP. The Implementing Agreement specifies the process to respond to changed circumstances (See also Unforeseen Circumstances).

Funding. Section 13 pertains to funding the implementation of the BDCP. The Parties recognize that the ESA and NCCPA each require that adequate funding will be assured to implement a HCP and/or NCCP. The Permittees agree to provide the funds necessary to carry out their obligations under the BDCP which are identified in the BDCP. This includes the costs for CM1 mitigation and related program elements. The State and Federal Government shall be responsible for funding the remainder of the BDCP.

As of this time, there is no Federal Government position regarding potential funding obligations of the United States. In the event of inadequate funding by the Permittees, they could lose their permits. Regarding shortfalls in funding from the State and Federal Government there is conflicting language in the current draft which needs to be corrected, as noted below in our comments.

No Surprise Rule. Section 14 Assurances and Protections addresses regulatory assurances and unforeseen circumstances under the BDCP. The “No Surprise Rule” under the ESA states “...that once an incidental take permit has been issued pursuant to a HCP, and its terms and conditions are being properly implemented, the federal Fish and Wildlife Agencies will not require additional measures for Changed Circumstances not provided for in the Plan or for unforeseen circumstances, without the consent of the Permittee, including land, water (including quantity and timing of delivery), financial compensation, or restrictions on the use of those resources.”

Further, the Implementing Agreement states “If the status of a species addressed under a HCP unexpectedly declines because of unforeseen circumstances, the primary obligation for undertaking additional conservation measures rest with the federal government, other government agencies, or other nonfederal landowners who have not yet developed HCPs.” The Implementing Agreement notes that in the event of unforeseen circumstances, the Fish and Wildlife Agencies may require additional limited measures, excluding additional financial commitments or resource restrictions, without the consent of the Permittees. It is noted that the “No Surprise Rule” does not apply to federal agencies.

Jeopardy Determination. Under Section 22 (page 79-84) the permits can be suspended or revoked to avoid jeopardy (a situation where the operational take of a species would result in jeopardizing the continued existence of the species) to a Covered Species. Section 22.5 provides for a meet and confer process to identify potential actions that may be available to forestall the suspension or revocation. This process should fully determine if the cause of the jeopardy is due to either to inadequate monitoring or other stressors rather than water exports and actions should be directed to their cure prior to suspension or revocation of the permit.

Comments on the BDCP Draft Implementing Agreement

Following are suggested comments on the BDCP Draft Implementing Agreement that are based on preliminary MET legal staff comments and those developed by staff and the OC

Work Group. We recommend submittal of comments to the BDCP based on these suggested comments.

Comments In Support of Current Language (Areas where we agree with current Implementing Agreement provisions that should not be changed in ways that would weaken protections to water exports)

- **Permit Oversight Group Members.** It is appropriate that the state and federal fish and wildlife agency members of the Permit Oversight Group be either the named directors or administrators or designees that are duly authorized to exercise their authority. Delegation to staff members without such authority would lead to inefficiencies and decision-making gridlock.
- **Real Time Operations Purpose.** The stated purpose of Real Time Operations of “maximizing conservation benefits to covered fish species and maximizing water supplies” is appropriate. This reflects a fundamental purpose of the BDCP of restoring and protecting water supplies, and acknowledges that real time operations is a tool that can benefit water supply as well as fish species.
- **Real Time Operations Ultimate Decision.** In the event of disagreement among agency directors over a proposed Real Time Operations adjustment, it is appropriate that the adjustment will not be made.
- **Adaptive Management Team Membership.** Given the SWP and CVP Contractors’ extensive responsibility in funding and implementing the Plan, it is fully appropriate that one SWP Contractor and one CVP Contractor be designated as voting members of the Adaptive Management Team.
- **Funding from the State of California and the United States.** Consistent with the Planning Agreement and in recognition that the BDCP is a comprehensive and ambitious plan that provides significant benefits to the public generally, the Implementing Agreement appropriately provides that the State of California and the United States will be responsible for funding the Plan where not otherwise funded by the Authorized Entities.
- **Regulatory Assurances.** The Implementing Agreement appropriately includes provisions that provide the Permittees with No Surprises and other assurances and protections, consistent with Endangered Species Act (ESA) and Natural Communities Conservation Planning Act (NCCPA) law and regulation.
- **Assurances Provided to Reclamation.** Given Reclamation’s integral role in the BDCP and in coordinated CVP/SWP operations, the assurances provided to Reclamation against additional expenditures of resources, to the maximum extent possible, are appropriate.

Comments Seeking Changes

- **Ultimate Decision Making Authority and Signatories to the Implementing Agreement (Page 1):** It is not clear who will be obligating the commitments of the

United States and the State of California that are beyond those of the Authorized Entities. It is recommended that the Secretary of the Interior and the Governor sign the agreement to help ensure that those commitments will be met. As stated in Section 1.0 of the Implementing Agreement, the level of agency signatory has not been determined and will be considered further. Staff suggests that the Governor, Secretary of the Interior, and the Secretary of Commerce should be the signatories for the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and the National Marine Fisheries Service, respectively. By having the Governor and the Secretaries sign on behalf these state and federal agencies, it helps ensure that the United States government and the State of California live up to their obligations under the Implementing Agreement. As for the Authorized Entities (Department of Water Resources and State Water Project/Central Valley Project Contractors), it is more clear as to who has the ability to legally bind these entities. At minimum, when conflicts arise, decision-making must be moved to the highest levels possible.

Covered Species (Page 7): Sections 3.20 and 8.5.1 of the Implementing Agreement define “Covered Species” listed in Exhibit “A”. Since those species listed in Exhibit “A” link directly to the species for which the Permittees have been given “no surprises” protection, Exhibit “A” is important to understand the risk being undertaken by the Permittees. Exhibit “A” was not attached to the Implementing Agreement and should be released for review before the parties enter into the agreement. Listing of all known species is critically important to provide broad coverage.

Furthermore, amended language is needed to allow incorporation of currently unknown native species as “Covered Species” where restoration activities are shown to provide a benefit without going through the full amendment process. It is critical that the listing of “Covered Species” is as broad as possible based on current science and is sufficiently flexible to assure an efficient process.

- **Unforeseen Circumstances (Page 10):** Section 3.51 of the Implementing Agreement defines “Unforeseen Circumstances” as those “changes in circumstances affecting a Covered Species or geographic area covered by the BDCP that could not reasonably have been anticipated by the Permittees, USFWS, or NMFS at the time of the BDCP’s negotiation and development, and that result in a substantial and adverse change in the status of a Covered Species.”

Since the reasonably foreseeable changes in circumstance have been included in the BDCP, the definition should be modified to state that unforeseen circumstances are those “changes in circumstances affecting a Covered Species or geographic area covered by the BDCP that could not reasonably have been anticipated by the Permittees, USFWS, or NMFS at the time of the BDCP’s negotiation and development, and were therefore not included in the BDCP, and that result in a substantial and adverse change in the status of a Covered Species.”

- **Bureau of Reclamation’s Role (Page 15):** The Bureau of Reclamation is not a party to the Implementing Agreement. Section 5.0 of the outlines the role of the Bureau of Reclamation. It states that the Bureau will enter into a Memorandum, or similar agreement, with the Parties of the Implementing Agreement outlining the Bureau’s roles and responsibilities. This memorandum or similar agreement should

be attached to the Implementing Agreement as an exhibit and incorporated by reference into the Implementing Agreement, and this section should be changed to reference that exhibit.

- **Take Authorizations (Page 19):**

Section 8.2: Other Authorized Entities - Section 8.2 recognizes that certain third parties may seek take authorizations under the BDCP for ongoing operation of water diversions that are not associated with the SWP or CVP. These parties will be considered Other Authorized Entities. A sentence should be added clarifying that SWP/CVP Contractors shall not be held liable or be asked to take actions by USFWS, NMFS or CDFW as a result of Other Authorized Entities violating the terms and conditions of any take authorization issued by the Department of Water Resources. Also, the section references Exhibit C. Exhibit C has not been released, and should be released prior for review to finalization of the Implementing Agreement.

Implementation and Conservation Measures Definitions - The definition of "Implementation" is not provided under the Definition section. It should be noted that it includes construction and operation/maintenance over the 50 year term of the permit. The definition of "Conservation Measures" should be more clearly defined that their implementation means that they meet the "maximum extent practicable" test.

- **Neutrality of Permitting and Decision Tree Outcomes (Page 24):** The provision related to Decision Tree Outcomes includes a reference to permit terms and conditions including the operational and flow criteria related to the high-outflow scenario. All Decision Tree outcomes should be described at an equal level of detail and fully evaluated with sound science before a decision is made. The high outflow scenarios should not be predisposed as being the permitted outcomes to be included as permit terms and conditions. Refer to MWDOC's BDCP comment letter which raises this issue under "Balancing and Proportionality" and its importance with regard to the issue of outflows and an expanded monitoring program over a reasonable habitat range compared to the historical narrow and limited monitoring program that in all likelihood has understated the Delta and Longfin Smelt populations as well as the effect of other stressors. Improved scientific understanding of the stressors impacting the smelt population is needed.
- **Real-Time Operations Adjustments (Page 27-29):** Real time operations decisions should not compromise the discretion of the Project Operators to maximize water supply benefits provided the requirements of BDCP are being met. Where exports are reduced due to real time adjustments, they should be made up later in the year through additional exports, so as to remain neutral. Given the SWP and CVP Contractors' vested interest and expertise in water operations, one SWP Contractor and one CVP Contractor should serve as voting (not non-voting) members on the Real Time Operations Team.

- **Adaptive Management (Page 29-30)**. It is not clear how the limits for non-flow actions of Adaptive Management will be defined. A monetary cap for non-flow Adaptive Management Actions needs to be established. For water operations, the Implementing Agreement lists four resources sources and their priority of use. These sources are not defined and specifics on how they would be used and managed are not provided.
- **Reserve System Lands and Funding (Page 42)**: - The maintenance requirements/costs for the tunnels have not yet been finalized. Before implementation is begun, the cost and cost allocation for the Preferred Alternative (Alt. No. 4) should be fully understood. The final costs and performance objectives of the conveyance system must be reflected in contractual agreements to provide certainty that investments in the conveyance facilities result in adequate returns for State and Federal water contractors. This comment should also be addressed as it relates to the amount and who funds the non-wasting endowment required in Section 11.4.1.
- **Changed Circumstances (Page 44)**: As the Implementing Agreement states, "Ecological conditions in the Delta are likely to change as the result of future events and circumstances that may occur during the course of the implementation of the BDCP." Section 12.0 should include a "no surprises" statement guaranteeing Permittees that the Fish and Wildlife Agencies will not require the permit holder to provide any additional land, water, or financial compensation nor impose additional restrictions on the use of land, water or other natural resource without the Permittee consent provided the Implementation Office acts as required in Section 12.1.

Also there does not appear to be a division of responsibility between the Authorized Entities and the State and federal governments for implementing responses to Changed Circumstances. This should be addressed.

Contributions for a changed circumstance action for any particular Conservation Measure should be on a pro-rata basis according to the overall funding for that measure.

- **Inadequate Funding and Rough Proportionality (Page 47)**: Section 13.2 Inadequate Funding references the requirement for rough proportionality and permit suspension and revocation. This section needs to be revised as discussed below.

Timing - The Implementing Agreement provides only 45 days to regain rough proportionality or develop an acceptable plan to do so. Given the scope and complexity of the BDCP, this timeframe is unreasonably short and unrealistic.

Suspension and Revocation Standard - No metric is provided for when a failure of rough proportionality would trigger a partial suspension or revocation of the Permits. Consistent with the shortfall in funding provision, a failure to maintain rough proportionality due to a shortfall in state or federal funding should not be a basis for partial suspension or revocation of the permits provided the Permittees are fully meeting their obligations.

Minimal Effect – Consistent with “no surprises” assurances, the Implementing Agreement should provide that as long as the Permittees are fully meeting their obligations, the permits may not be revoked or suspended. At a minimum, the meaning of “more than a minimal effect” needs to be defined in order to protect the Permittees’ from backstopping the obligations of the state and federal government.

Funding Shortfalls - Section 13.2 states that “In the event of a shortfall in State or federal funding, a Fish and Wildlife Agency(ies) shall not suspend or revoke the State and/or Federal Permits or invalidate Reclamation’s take statement if the shortfall in funding is determined to be likely to have no more than a minimal effect on the capacity of the Plan to advance the biological goals and objectives.” This language allows the Permittee’s permits to be revoked as a result of something outside of their control – this needs to be changed to protect the Permittees. Also the funding obligations of California and the United States are lumped together. The funding split between California and the United States needs to be identified.

- **Authority of the Fish and Wildlife Agencies (Page 74-78).** The Fish and Wildlife Agencies maintain too much authority in decision-making with respect to Plan implementation based on their defined roles in the Permit Oversight Group and Adaptive Management Team. The proper role for the Fish and Wildlife Agencies with respect to Plan Implementation is advisory and to insure overall compliance with permit requirements.
- **Miscellaneous Provisions (Page 88 -93):** The following provisions should be included in this section.

Provision Needed Regarding Inconsistent Permits by State Board/Others - An “off-ramp” provision should be provided in the event permits inconsistent with the BDCP are ultimately issued by the State Water Board or others (e.g., USACOE).

Provision Needed Regarding Consistent Positions in Other Regulatory Proceedings - A provision is needed wherein the Parties agree not take positions inconsistent with the BDCP in other documents and proceedings such as under NEPA, CEQA, Clean Water Act, Porter-Cologne Water Quality Control Act, and California Water Code.

- **Miscellaneous Comments**

On page 45, the second paragraph under Section 13.0 indicates that the Permittees agree to provide such funds as may be necessary to carry out their obligations under the BDCP. This indicates an unlimited funding commitment and this is incorrect and should be clarified as noted under Section 13.1 of the Implementing Agreement.

On page 64, Stakeholders Council should also include at least one representative from southern California in addition to Metropolitan Water District of Southern California.

IMPLEMENTING AGREEMENT

for the

BAY DELTA CONSERVATION PLAN

by and among

THE UNITED STATES FISH AND WILDLIFE SERVICE

THE NATIONAL MARINE FISHERIES SERVICE

THE CALIFORNIA DEPARTMENT OF WATER RESOURCES

THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

AND

STATE WATER PROJECT/CENTRAL VALLEY PROJECT CONTRACTORS

DRAFT

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Exhibits

- Exhibit A: List of Covered Species**
- Exhibit B: BDCP Plan Area**
- Exhibit C: Certificate of Inclusion Template**
- Exhibit D: BDCP Implementation Schedule**
- Exhibit E: Natural Lands Conservation Easement Template**
- Exhibit F: Agricultural Lands Conservation Easement Template**
- Exhibit G: Notice List**
- Exhibit H: SWP/CVP Contractors that are Parties**

1.0 PARTIES TO THIS AGREEMENT

This Implementing Agreement (Agreement) is made and entered into by and among the State of California, acting through the California Department of Water Resources (DWR) and the California Department of Fish and Wildlife (CDFW) of the State of California Natural Resources Agency, certain State Water Project and Central Valley Project contractor water agencies (SWP/CVP Contractors), and the United States, acting through the Fish and Wildlife Service (USFWS) of the United States Department of the Interior and the National Marine Fisheries Service (NMFS) of the United States Department of Commerce. This Agreement governs the implementation of the joint habitat conservation plan (HCP) and natural community conservation plan (NCCP) for the Sacramento–San Joaquin Delta (Bay Delta Conservation Plan, Plan, or BDCP). [Note to Reviewers: the parties will further consider the level of agency signatory prior to the release of the final Implementing Agreement].

The United States Bureau of Reclamation (Reclamation) of the United States Department of the Interior is not a Party to this Agreement. References to Reclamation's roles and responsibilities in this Agreement reflect those as set forth in the BDCP. There are no obligations on behalf of Reclamation established in this Agreement.

2.0 RECITALS AND PURPOSES OF THE AGREEMENT

2.1 Recitals

The Parties have entered into this Agreement in consideration of the following facts:

- 2.1.1** The DWR is a State agency within the California Natural Resources Agency charged with responsibility for operating and maintaining the State Water Project's existing facilities, including the Clifton Court Forebay and the Banks Pumping Plant. DWR enters into this Agreement pursuant to the Burns–Porter Act and other applicable laws of the State of California.
- 2.1.2** The SWP/CVP Contractors receive water under contract from the State Water Project and the Central Valley Project. The SWP/CVP Contractors will participate in various aspects of the implementation of the BDCP, including the funding and implementation of certain portions of the Conservation Measures.
- 2.1.3** The USFWS is a federal agency within the United States Department of the Interior charged with responsibility for administering the federal Endangered Species Act (ESA) and providing for the conservation of federally listed fresh water aquatic and terrestrial species and their habitat. USFWS is

authorized to issue take permits under Section 10(a)(1)(B) of the ESA for the incidental take of federally listed fresh water aquatic and terrestrial species provided that applicants for such permits submit an HCP that meets permit issuance criteria set forth in Section 10 of the ESA and its implementing regulations. USFWS enters into this Agreement pursuant to the ESA, the Fish and Wildlife Coordination Act, and the Fish and Wildlife Act of 1956.

- 2.1.4** The NMFS is a federal agency within the United States Department of Commerce charged with responsibility for administering the ESA and providing for the conservation of federally listed anadromous and marine species and their habitat. NMFS is authorized to issue take permits under Section 10(a) of the ESA for the incidental take of federally listed anadromous and marine species provided that applicants for such permits submit an HCP that meets permit issuance criteria set forth in Section 10 of the ESA. NMFS enters into this Agreement pursuant to the ESA and its implementing regulations.
- 2.1.5** CDFW is a State agency within the California Natural Resources Agency charged with responsibility for administering the Natural Community Conservation Planning Act (NCCPA). CDFW is authorized to issue permits under Section 2835 of the Fish & Game Code to authorize the take of any species, whether or not it is listed as an endangered, threatened, candidate, or fully protected species under State law, where the conservation and management of the species is provided for in an NCCP approved by CDFW. CDFW enters into this Agreement pursuant to the NCCPA.
- 2.1.6** The U.S. Bureau of Reclamation (Reclamation) is a federal agency within the United States Department of the Interior charged with responsibility for operating and maintaining the Central Valley Project's existing Delta facilities, including the Jones Pumping Plant and Delta Cross Channel. Reclamation is not a permit applicant for the BDCP under the ESA or NCCPA. However, Reclamation is a participant in the BDCP.
- 2.1.7** In October 2006, Reclamation, the Parties and several other entities entered into a Planning Agreement that identified the goals, objectives, guidelines, criteria and procedures for the preparation of a joint HCP and NCCP (Planning Agreement). A First Amendment to the Planning Agreement was executed in 2009. The BDCP and this Agreement have been prepared in accordance with the Planning Agreement.

2.1.8 The overall goal of the BDCP is to restore and protect ecosystem health, water supply, and water quality within a stable regulatory framework. To accomplish this goal, the Plan:

- Provides for the conservation and management of Covered Species within the Plan Area through the preservation, restoration, and enhancement of aquatic, riparian and associated terrestrial natural communities and ecosystems that support these Covered Species and through other conservation actions.
- Includes measures to minimize and mitigate to the maximum extent practicable the effects on the Covered Species.
- Provides a means by which Covered Activities and Associated Federal Actions can be carried out in a manner that complies with applicable State and federal environmental laws.
- Sets out a comprehensive approach to coordinating and standardizing applicable requirements for Covered Activities and Associated Federal Actions within the Plan Area.
- Provides an allocation of responsibility among the Parties for BDCP requirements, taking into account the impacts of the Covered Activities and Associated Federal Actions.
- Establishes a more efficient and effective approach to regulatory compliance with State and federal endangered species laws than through project-by-project, species-by-species permitting.
- Provides clear expectations and Assurances and Protections.

2.1.9 The provisions of the BDCP were developed to satisfy the requirements of the Sacramento–San Joaquin Delta Reform Act of 2009, California Water Code (Water Code) § 85300 *et seq.*

2.1.10 DWR and the participating SWP/CVP Contractors have submitted the BDCP to USFWS and NMFS for the purpose of obtaining incidental take authorizations under Section 10(a)(1)(B) of the ESA for the species covered by the BDCP, as appropriate, within the Plan Area.

2.1.11 Reclamation has incorporated the BDCP into a biological assessment to support a Section 7 consultation for Reclamation’s

actions within the Plan Area and the resulting Integrated Biological Opinion and related Incidental Take Statement that will be issued prior to the execution of this Agreement.

2.1.12 DWR and the SWP/CVP Contractors have submitted the BDCP to CDFW for the purpose of obtaining a permit for take of the Covered Species within the Plan Area pursuant to Section 2835 of the NCCPA.

2.1.13 DWR and the participating SWP/CVP Contractors are agreeing to substantial commitments of water, land, other natural resources, financial resources, human resources and other assets to provide for the conservation and management of the Covered Species, their habitats and other natural communities, in exchange for the Fish and Wildlife Agencies providing take authorizations, and the Assurances.

2.2 Purposes

The purposes of this Agreement are to:

- Clarify the provisions of the BDCP and the processes the Parties intend to follow to ensure successful implementation of the BDCP in accordance with the take authorizations and applicable law.
- Ensure that each of the terms and conditions of the BDCP, this Agreement, the Permits, and the Incidental Take Statement are properly implemented.
- Set forth the remedies and recourse should any Party fail to perform its obligations.
- Delineate the responsibilities, financial or otherwise (including the commitment and management of resources), among the entities responsible for the financing and/or implementation of the BDCP.
- Satisfy the requirement that an NCCP include an implementation agreement containing provisions described in the NCCPA.
- Set out the Assurances and Protections provided to the Authorized Entities.

3.0 DEFINITIONS

The following terms as used in this Agreement will have the meanings set forth below. Terms specifically defined in State or Federal statutes, including the ESA or the NCCPA, or the regulations adopted under those statutes, shall have the same meaning when used in this Agreement. Where such terms are defined in this Section 3.0, those definitions may elaborate on, but are not intended to conflict with, such statutory or regulatory definitions.

3.1 “Adaptive Management Team” means the team that will have primary responsibility for the development of performance measures, effectiveness monitoring and research plans; analysis, synthesis and evaluation of monitoring and research results; solicitation of independent scientific review; development of proposals to modify Conservation Measures and biological objectives and other actions set out in Chapter 3.6. The Adaptive Management Team will be chaired by the Science Manager, and will consist of representatives of DWR, Reclamation, the two participating SWP/CVP Contractors (a single representative of the SWP Contractors, a single representative of the CVP Contractors), CDFW, USFWS and NMFS as voting members. Advisory, non-voting members will be the Lead Scientist for the Interagency Ecological Program, the Lead Scientist for the Delta Science Program or a designee, and the Director of the NOAA Southwest Fisheries Science Center.

3.2 “Agreement” means this Implementing Agreement, which incorporates the BDCP by reference.

3.3 “Annual Progress Report” means the annual report prepared by the Implementation Office, as provided in Section 16.3.1.

3.4 “Associated Federal Actions” means the otherwise lawful activities and projects described in Chapter 4 that may be implemented in the Plan Area by Reclamation for which Incidental Take is authorized by USFWS and NMFS pursuant to the Incidental Take Statement in the Integrated Biological Opinion.

3.5 “Assurances and Protections” shall mean (1) the assurances provided to the Permittees by USFWS and NMFS pursuant to the “No Surprises” rule and by CDFW pursuant to Fish & Game Code Section 2820(f); and (2) the procedural mechanisms provided to Reclamation by USFWS and NMFS pursuant to the terms of the Memorandum and as described in this Agreement.

3.6 “Authorized Entities” means DWR, Reclamation, and those SWP/CVP Contractors that receive take authorizations pursuant to the BDCP.

3.7 “Authorized Entity Group” means the group established to provide program oversight and general guidance to the Program Manager regarding the implementation of the Plan. The Authorized Entity Group will consist of the Director of DWR, the Regional Director for Reclamation, a representative of the participating SWP Contractors, and a representative of the participating CVP Contractors, or their designees.

Such designee shall be duly authorized to exercise the authority of the principal and may include a deputy or principal assistant.

3.8 “Bay Delta Conservation Plan,” “BDCP” and “Plan” mean the joint HCP and NCCP prepared by the Permittees in coordination with Reclamation and with the technical assistance of the Fish and Wildlife Agencies.

3.9 “Central Valley Project” or “CVP” means the Central Valley Project, as defined in 3404(d) of Title XXXIV of Public Law 102-575, and operated by Reclamation.

3.10 “Central Valley Project Improvement Act” or “CVPIA” means Title XXXIV of Public Law 102-575.

3.11 “CEQA” means the California Environmental Quality Act (Cal. Pub. Res. Code §§ 21000–21177) and all rules, regulations and guidelines promulgated pursuant to that Act.

3.12 “CESA” means the California Endangered Species Act (Fish & Game Code §§ 2050–2116) and all rules, regulations and guidelines promulgated pursuant to that Act.

3.13 “Changed Circumstances,” as defined by 50 C.F.R. § 17.3 and § 222.102, means changes in circumstances affecting a species or the geographic area covered by the BDCP that have been reasonably anticipated by the Parties and that have been planned for in the BDCP. “Changed Circumstances” are defined under Fish & Game Code § 2805 (c) to mean reasonably foreseeable circumstances that could affect a Covered Species or the Plan Area. Changed Circumstances and planned responses to those circumstances are described in Chapter 6.4.2. Changes in circumstances that are not identified as Changed Circumstances will be treated as unforeseen circumstances.

3.14 “Chapter” means a chapter, subchapter, or section of the BDCP.

3.15 “Consensus” means that either all voting members of the Adaptive Management Team or all voting members of the Real Time Operations Team agree to the proposal at hand, or that no voting member dissents from the proposal.

3.16 “Conservation Measure” means each action detailed in the Conservation Strategy in Chapter 3 to minimize and mitigate impacts, to the maximum extent practicable, and to provide for the conservation and management of Covered Species.

3.17 “Conservation Strategy” means the program described in Chapter 3 that consists of four components: (1) biological goals and objectives; (2) Conservation Measures; (3) adaptive management; and (4) monitoring.

3.18 “Coordinated Operation Agreement” means the Agreement between the United States of America and the State of California for the Coordinated Operation of the Central Valley Project and the State Water Project dated November 24, 1986.

3.19 “Covered Activities” means the otherwise lawful activities and projects described in Chapter 4 that may be implemented in the Plan Area by non-federal Parties for which take is authorized by the Fish and Wildlife Agencies pursuant to the Permits.

3.20 “Covered Species” means the species, listed and non-listed, for which take may be authorized and for which the BDCP provides measures to minimize and mitigate, to the maximum extent practicable, the impacts of Covered Activities, and provides for the conservation and management of those species. Covered Species are listed in Exhibit A to this Agreement.

3.21 “Delta” and “Sacramento–San Joaquin Delta” mean the Sacramento–San Joaquin Delta as defined in Water Code § 12220.

3.22 “CDFW” means the California Department of Fish and Wildlife, a department of the California Natural Resources Agency.

3.23 “Effective Date” means the date on which this Agreement takes effect, as provided in Section 21.1.

3.24 “ESA” means the Federal Endangered Species Act of 1973, as amended (16 U.S.C §§ 1531–1544) and all rules, regulations and guidelines promulgated pursuant to that Act.

3.25 “Federally Listed Species” means the species that are listed as threatened or endangered species under the ESA. See 50 C.F.R. § 17.11.

3.26 “Federal Permits” means the federal Incidental Take Permits issued by USFWS and NMFS to the Permittees, pursuant to Section 10(a)(1)(B) of the ESA.

3.27 “Fish and Wildlife Agencies” means USFWS, NMFS and CDFW.

3.28 “Fully Protected Species” means the Covered Species that are identified in Fish & Game Code sections 3511, 4700, 4800, 5050 and 5515.

3.29 “Implementation Office” means the office that, under the direction of a Program Manager, will manage, coordinate, oversee, and report on all aspects of Plan administration, subject to the oversight of the Authorized Entity Group and certain limitations set out in the BDCP and this Agreement, as further described in Section 15.2.

3.30 “Incidental Take” under federal ESA means the take of a covered fish or wildlife species that results from, but is not the purpose of, carrying out an otherwise lawful activity.

3.31 “Incidental Take Statement” means the statement that is attached to the integrated biological opinion that is issued by USFWS and NMFS. It anticipates and authorizes the amount or extent of take for federally listed species.

3.32 “Integrated Biological Opinion” means the joint biological opinion that is issued by USFWS and NMFS to complete the Section 7 consultation associated with the BDCP. The Integrated Biological Opinion will also serve as a Conference Opinion for certain Covered Species and proposed critical habitat.

3.33 “Listed Species” means State Listed Species or Federally Listed Species.

3.34 “Memorandum” means a separate memorandum, or similar agreement, describing Reclamation’s roles and responsibilities in the implementation of BDCP.

3.35 “Migratory Bird Treaty Act” means the federal Migratory Bird Treaty Act (16 U.S.C. §§ 703–712) and all rules, regulations and guidelines promulgated pursuant to that Act.

3.36 “NMFS” means the National Marine Fisheries Service, an agency of the Department of Commerce.

3.37 “NCCPA” means the California Natural Community Conservation Planning Act (Fish & Game Code §§ 2800–2835), and all rules, regulations and guidelines promulgated pursuant to that Act.

3.38 “NEPA” means the National Environmental Policy Act (42 U.S.C. §§ 432–4347) and all rules, regulations and guidelines promulgated pursuant to that Act.

3.39 “Non-listed Species” means a species that is not listed as endangered or threatened under the ESA or is not listed as endangered or threatened, or designated as a candidate for such status, under CESA.

3.40 “NPPA” means the California Native Plant Protection Act (Fish & Game Code §§ 1900–1913) and all rules, regulations, and guidelines promulgated pursuant to that Act.

3.41 “Other Authorized Entities” means the entities described in Chapter 7.1.2.2 that receive take authorizations through the Permits issued to DWR.

3.42 “Other Stressors Conservation Measures” means a certain category of conservation measures, as described in Conservation Measures 13–21.

3.43 “Party” and “Parties” mean the signatories to this Agreement, individually and collectively.

3.44 “Permit Oversight Group” means the State and federal fish and wildlife agencies, specifically, the Regional Director of USFWS, the Regional Administrator of NMFS, and the Director of CDFW or their designees. Such designee shall be duly authorized to exercise the authority of the principal and may include a deputy or principal assistant.

3.45 “Permits” mean the Federal Permits and the State Permit.

3.46 “Permittees” means DWR and the SWP/CVP Contractors.

3.47 “Plan Area” means the area covered by the BDCP, as described in Chapter 1 and depicted in Exhibit B of the Plan.

3.48 “Planning Agreement” means the Planning Agreement regarding the Bay Delta Conservation Plan executed in October of 2006 by the Parties, Reclamation and several other entities, as amended in 2009.

3.49 “Reserve Unit Management Plan” means a Reserve Management Plan as described in Chapter 3.4.11.2.2.

3.50 “Reserve System” means the assemblage of land acquired and dedicated in perpetuity by either fee interest or conservation easement that is designed to advance the preservation, conservation, enhancement and restoration objectives of the Conservation Strategy of the BDCP.

3.51 “Rough Proportionality” means implementation of BDCP Conservation Measures that is roughly proportional in time and extent to the impact on habitat or Covered Species authorized under the BDCP and as required by Fish & Game Code § 2820(b)(9).

3.52 “State-Listed Species” means the species that are listed as threatened or endangered species, or a candidate for such status, under CESA, as fully protected species under the Fish & Game Code, or as rare species under the NPPA. See Cal. Code Regs., tit. 14, §§ 670.2, 670.5, Fish & Game Code §§3511, 4700, 4800, 5050 and 5515. Published notifications in the California Regulatory Notice Register identify candidate species.

3.53 “State Permit” means the State NCCPA take Permit issued to the Permittees pursuant to Section 2835 of the Fish & Game Code.

3.54 “State Water Project” or “SWP” means the State Water Project as authorized by Water Code sections 12930 *et seq.* and Water Code sections 11100 *et seq.* and operated by DWR.

3.55 “Supporting Entity” means an agency, organization or individual that performs certain Plan implementation tasks, at the request of the Program Manager, as provided in Section 15.7 and further described in Chapter 7.1.9.

3.56 “SWP/CVP Contractors” means the individual water agencies that hold water delivery contracts with DWR for SWP water (SWP Contractors) or Reclamation for CVP water (CVP Contractors), or an entity comprising such agencies, and that have executed this Agreement. SWP/CVP Contractors may include the State and Federal Water Contractors Agency (SFWCA), a joint exercise of powers agency, and the San Luis & Delta Mendota Water Authority (SLDMWA), a joint exercise of powers agency. The SWP/CVP Contractors are listed on Exhibit H to this Agreement.

3.57 “Take” and “Taking” mean, in the context of the ESA to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in such conduct. 16 U.S.C. § 1532(19) and in the context of the Fish & Game Code Section 86 mean to hunt, pursue, catch, capture, or kill or attempt to hunt, pursue, catch, capture, or kill.

3.58 “Take Authorizations” means the Federal Permits, the State Permit, and the Incidental Take Statement issued with the Integrated Biological Opinion to collectively authorize take associated with Covered Activities and Associated Federal Actions.

3.59 “Unforeseen Circumstances” means (a), in the context of the ESA, changes in circumstances affecting a Covered Species or geographic area covered by the BDCP that could not reasonably have been anticipated by the Permittees, USFWS or NMFS at the time of the BDCP’s negotiation and development, and that result in a substantial and adverse change in the status of a Covered Species (50 C.F.R. §§17.2 and 222.102), and (b), in the context of the NCCPA, changes affecting one or more species, habitats, natural communities, or the geographic area covered by a conservation plan that could not reasonably have been anticipated at the time of Plan development, and that result in a substantial adverse change in the status of one or more Covered Species (Fish & Game Code § 2805(k)).

3.60 “USFWS” means the United States Fish and Wildlife Service, an agency of the United States Department of the Interior.

4.0 FINDINGS

4.1 Findings by USFWS and NMFS

As part of their findings, USFWS and NMFS will make certain determinations, after opportunity for public comment, regarding the adequacy of the BDCP to meet the permitting requirements of the ESA. To issue Permits pursuant to the BDCP, USFWS and NMFS must find that: (1) the taking of Covered Species within the Plan Area in accordance with the BDCP will be incidental to the carrying out of otherwise lawful activities; (2) the actions set forth in the BDCP will, to the maximum extent practicable, monitor, minimize and mitigate the impacts of such incidental taking; (3) adequate assurances of funding to implement the BDCP have been provided; (4) the requested taking of Covered Species will not appreciably reduce the likelihood of survival and recovery of such species in the wild or result in the destruction or adverse modification of critical habitat; and (5) the BDCP contains all measures deemed necessary and appropriate by USFWS and NMFS for the purposes of Section 10 of the ESA.

4.2 Findings by CDFW

4.2.1 NCCPA

In a separate document, entitled the “Findings of Fact and NCCPA Permit for the Bay Delta Conservation Plan,” CDFW will make certain findings, after opportunity for public comment, regarding the adequacy of the BDCP and this Agreement to meet the permitting requirements of the NCCPA. To issue a Permit under the NCCPA, CDFW must find that the BDCP adequately provides for the conservation and management of Covered Species and their habitat and otherwise satisfies all legal requirements under Section 2820 of the Fish & Game Code, as follows:

- (1) The BDCP has been developed consistent with the process identified in the Planning Agreements entered into pursuant to Fish & Game Code § 2810.
- (2) The BDCP integrates adaptive management strategies that are periodically evaluated and modified based on the information from the monitoring program and other sources, which will assist in providing for the conservation of Covered Species and ecosystems within the Plan Area.
- (3) The BDCP provides for the protection of habitat, natural communities, and species diversity on a landscape or ecosystem level through the creation and long-term management of habitat reserves or other measures that provide equivalent conservation of Covered Species appropriate for land, aquatic, and marine habitats within the Plan area.
- (4) The development of reserve systems and conservation measures in the Plan Area provides, as needed to provide for the conservation of species, all of the following:

(A) Conserving, restoring, and managing representative natural and semi-natural landscapes to maintain the ecological integrity of large habitat blocks, ecosystem function, and biological diversity.

(B) Establishing one or more reserves or other measures that provide equivalent conservation of Covered Species within the Plan Area and linkages between them and adjacent habitat areas outside of the Plan Area.

(C) Protecting and maintaining habitat areas that are large enough to support sustainable populations of Covered Species.

(D) Incorporating a range of environmental gradients (such as slope, elevation, aspect, and coastal or inland characteristics) and high habitat diversity to provide for shifting species distributions due to Changed Circumstances.

(E) Sustaining the effective movement and interchange of organisms between habitat areas in a manner that maintains the ecological integrity of the habitat areas within the Plan Area.

(5) The BDCP identifies activities, and any restrictions on those activities, allowed within reserve areas that are compatible with the conservation of species, habitats, natural communities, and their associated ecological functions.

(6) The BDCP contains specific Conservation Measures that are intended to meet the biological needs of Covered Species and that are based upon the best available scientific information regarding the status of Covered Species and the impacts of permitted activities on those species.

(7) The BDCP contains a monitoring program.

(8) The BDCP contains an adaptive management program.

(9) The BDCP includes the estimated timeframe and process by which the reserves or other Conservation Measures are to be implemented, including obligations of the Plan signatories and consequences of the failure to implement such measures in a timely manner.

(10) The BDCP contains provisions that ensure adequate funding to carry out the conservation actions identified in the BDCP.

(11) This Agreement includes provisions defining species coverage, including any conditions of coverage.

(12) This Agreement includes provisions for establishing the long-term protection of any habitat reserve or other measures that provide equivalent conservation of Covered Species.

(13) This Agreement includes specific terms and conditions, which, if violated, would result in the suspension or revocation of the State Permit, in whole or in part. These terms and conditions address, but are not limited to, provisions specifying the actions CDFW shall take under all of the following circumstances:

(A) If the Permittees fail to provide adequate funding.

(B) If the Permittees fail to maintain the Rough Proportionality between impacts on habitat or Covered Species and Conservation Measures.

(C) If the Permittees adopt, amend, or approve any plan or project without the concurrence of the CDFW that is inconsistent with the objectives and requirements of the approved Plan.

(D) If the level of Take exceeds that authorized by the State Permit.

(14) This Agreement includes provisions specifying procedures for amendment of the Plan and this Agreement.

(15) This Agreement includes provisions ensuring implementation of the monitoring program and adaptive management program.

(16) This Agreement includes provisions for oversight of Plan implementation for purposes of assessing mitigation performance, funding, and habitat protection measures.

(17) This Agreement includes provisions for periodic reporting to CDFW and the public for purposes of information and evaluation of Plan progress.

(18) This Agreement includes mechanisms to ensure adequate funding to carry out the conservation actions identified in the Plan.

(19) This Agreement includes provisions to ensure that implementation of Conservation Measures on a Plan basis is roughly proportional in time and extent to the impact on habitat or Covered Species authorized under the Plan.

As required by Fish & Game Code, Section 2821, concurrent with its approval of the BDCP, the CDFW will establish a list of species that are authorized for take pursuant to Fish & Game Code, Section 2835, and make specific findings to support coverage pursuant to Fish & Game Code, Section 2820. CDFW must further determine whether

the mitigation measures specified in the Plan are consistent with Fish & Game Code, Section 2801, subdivision (d).

4.2.2 The Sacramento-San Joaquin Delta Reform Act of 2009

CDFW has found that the BDCP satisfies the requirements of the Sacramento–San Joaquin Delta Reform Act of 2009, Water Code sections 85300 *et seq.* Specifically, as required by Water Code, Section 85320, CDFW has found:

- The BDCP complies with Chapter 10 (commencing with Section 2800) of Division 3 of the Fish & Game Code such that the BDCP can be approved as an NCCP.
- The Environmental Impact Report (EIR) prepared for the BDCP complies with Division 13 (commencing with Section 21000) of the California Public Resources Code, including by providing a comprehensive review and analysis of all of the following:
 - A reasonable range of flow criteria, rates of diversion, and other operational criteria required to satisfy the criteria for approval of a natural community conservation plan as provided in subdivision (a) of Section 2820 of the Fish & Game Code, and other operational requirements and flows necessary for recovering the Delta ecosystem and restoring fisheries under a reasonable range of hydrologic conditions, which will identify the remaining water available for export and other beneficial uses.
 - A reasonable range of Delta conveyance alternatives, including through-Delta, dual conveyance, and isolated conveyance alternatives and including further capacity and design options of a lined canal, an unlined canal, and pipelines.
 - The potential effects of climate change, possible sea level rise up to 55 inches, and possible changes in total precipitation and runoff patterns on the conveyance alternatives and habitat restoration activities considered in the EIR.
 - The potential effects on migratory fish and aquatic resources.
 - The potential effects on Sacramento River and San Joaquin River flood management.
 - The resilience and recovery of Delta conveyance alternatives in the event of catastrophic loss caused by earthquake or flood or other natural disaster.

- The potential effects of each Delta conveyance alternative on Delta water quality.
- In compliance with Water Code Section 85321, the BDCP includes a transparent, real-time operational decision making process in which fishery agencies ensure that applicable biological performance measures are achieved in a timely manner with respect to water system operations.

5.0 ROLE OF BUREAU OF RECLAMATION IN THE BDCP

Federal agencies, such as Reclamation, comply with the ESA through the Section 7 consultation process and not through the Section 10 HCP permitting process. Given the scale of Reclamation's CVP operations and the degree to which these operations are coordinated with the SWP, BDCP has been designed to address both SWP and CVP operations in the Delta. Reclamation will enter into a Memorandum, or similar agreement, with the Parties that sets out Reclamation's roles and responsibilities pursuant to the BDCP and establishes processes to ensure that Reclamation's actions are implemented in a manner consistent with the Plan.

6.0 INCORPORATION OF THE BDCP

The BDCP and each of its provisions are intended to be, and by this reference are, incorporated herein; provided, wherever possible, the terms of this Agreement and the terms of the BDCP shall be interpreted to be supplementary to each other; provided further, in the event of a direct conflict between the terms of this Agreement and the BDCP, the terms of this Agreement shall control.

7.0 GENERAL OBLIGATIONS OF THE PARTIES

7.1 Authorized Entities

The Authorized Entities will fulfill all of their respective obligations under this Agreement, the BDCP, the Permits and the Integrated Biological Opinion. The Authorized Entities' general obligations include:

- Implementing the Conservation Measures and other BDCP actions as specified in the Plan, in Chapter 3 and this Agreement.
- Participating in the Authorized Entity Group as described in Chapter 7.1.3.
- Participating in the Adaptive Management and Monitoring Program.
- Participating in the scientific research program.

- Conferring with the Implementation Office and Permit Oversight Group regarding Plan implementation matters and obtaining concurrence or approval of Permit Oversight Group where required.
- Funding a portion of the Conservation Strategy.

7.2 Fish and Wildlife Agencies

The Fish and Wildlife Agencies will fulfill all of their respective obligations under this Agreement, the BDCP, the Permits and the Integrated Biological Opinion. The Fish and Wildlife Agencies' general obligations include:

- Participating in the Permit Oversight Group.
- Participating in the Adaptive Management and Monitoring Program.
- Participating in the scientific research program.
- Conferring with the Implementation Office regarding Plan implementation matters.
- Providing one written communication, to the maximum extent practicable, for responses, reviews, concurrence, acceptance, or approvals of BDCP reports, plans, and other documents.
- Funding a portion of the Conservation Strategy.
- Adhering to the Assurances and Protections provided under this Agreement.
- Investigating and taking appropriate steps to further reduce the adverse effect of all factors that stress the fish and wildlife species dependent upon the Bay-Delta estuary.
- Providing assistance to third parties engaged in activities in the Delta to help ensure that such activities proceed in compliance with State and federal endangered species laws and in a manner that does not compromise the likelihood of success of the BDCP.
- Implementing, where appropriate, certain BDCP actions as specified in the Plan and this Agreement.

7.3 Collaboration Among Parties

The Parties agree that frequent collaboration is essential to the success of the BDCP. Each Party will use its best efforts and act in good faith to: meet and confer with any other Party upon the request of that Party to address matters pertaining to the BDCP, the Permits, or this Agreement; provide relevant, non-proprietary, non-confidential information pertaining to the BDCP upon the request of any Party; provide timely responses to requests from any Party for advice, concurrence, or review and comment on reports, surveys or other documents, regarding matters pertaining to the BDCP, the Permits, or this Agreement; accomplish implementation tasks assigned to a Party by the Implementation Office consistent with the direction given; and cooperate, to the fullest extent possible, on matters important to the successful implementation of the BDCP and achievement of the purposes of the Plan.

8.0 TAKE AUTHORIZATIONS

The Fish and Wildlife Agencies have found that the BDCP fulfills the requirements of the ESA and the NCCPA for the issuance by the Fish and Wildlife Agencies of Take Authorizations for the Covered Activities and Associated Federal Actions.

8.1 Take Authorizations Issued to Authorized Entities

8.1.1 Permittees

Concurrent with their execution of this Agreement, the USFWS and NMFS will each issue a Federal Permit to DWR and the SWP/CVP Contractors that authorizes the incidental take of Covered Species resulting from Covered Activities, and CDFW will issue a State Permit to DWR and the SWP/CVP Contractors that authorizes the take of Covered Species resulting from Covered Activities.

The take authorizations will cover the Permittees, including all of their respective officers, directors, employees, agents, subsidiaries, member agencies, contractors, and the Supporting Entities, as applicable, who engage in any Covered Activity. All contracts between Permittees and any such person or entity regarding the implementation of a Covered Activity will require compliance with the Permits, and Permittees shall remain ultimately responsible for compliance with the Permits.

8.1.2 Reclamation

USFWS and NMFS will issue an Incidental Take Statement in the Integrated Biological Opinion that authorizes take of Federally Listed Covered Species for Associated Federal Actions carried out by Reclamation and/or its agents and contractors, as described in Chapter 4.

8.2 Take Authorizations Issued to Other Authorized Entities

Through CM 21, certain third parties may seek take authorizations under the BDCP for ongoing operation of water diversions that are not associated with the SWP or CVP, and for remediation actions associated with those diversions, as described in Chapter 4. Those third parties who participate in the remediation program described in CM21 will be considered Other Authorized Entities.

Other Authorized Entities will receive take authorizations through DWR for the operation of their non-project diversions and for associated remediation actions through the Permits. An Other Authorized Entity will receive take authorization after executing a Certificate of Inclusion that meets the minimum requirements of the template set forth in Exhibit C of this Agreement and that has been approved by the Fish and Wildlife Agencies as to the specific Other Authorized Entity, to ensure compliance with the terms and conditions of the Plan and Permits. The Implementation Office will issue the Certificates of Inclusion for the State Permit and the Federal Permit issued by USFWS, and NMFS will issue the Certificates of Inclusion for the Federal Permit issued by NMFS after receiving a recommendation from the Implementation Office. The USFWS, NMFS, and CDFW agree and acknowledge that DWR shall not be liable for any violations of the terms and conditions of the Certificate of Inclusion that are committed by an Other Authorized Entity, provided the Fish and Wildlife Agencies have approved or issued the applicable Certificate of Inclusion. The Certificate of Inclusion shall be withdrawn and any Take authorization extended to the Other Authorized Entity shall be terminated by the Implementation Office and/or the Fish and Wildlife Agencies if the Other Authorized Entity fails to comply with such terms and conditions. Other Authorized Entities will not be members of the Authorized Entity Group nor will they have a specific role in the governance of the BDCP, other than as potential members of the Stakeholder Council. Other Authorized Entities shall remain responsible for compliance with other applicable laws.

8.3 Timing of Take Authorizations

As of the Effective Date, the Authorized Entities may take the Covered Species as a result of the implementation of Covered Activities and Associated Federal Actions in the Plan Area consistent with the provisions of this Agreement, the BDCP, the Integrated Biological Opinion, and the take authorizations.

8.4 No Take Beyond that Authorized

If CDFW determines, after conferring with the Implementation Office, that take is occurring beyond that authorized by the State Permit, CDFW, at its discretion, may suspend or revoke the State Permit, in whole or in part, pursuant to the procedures in Section 22.4 of this Agreement. Modifications to the BDCP through adaptive management or other provisions of the Plan that would result in an increase in take of Covered Species beyond that analyzed in the BDCP are not authorized. Any such

modification must be proposed, reviewed, and approved as an HCP and/or NCCP amendment in accordance with Section 23.3 of this Agreement.

8.5 Take Authorizations for Non-listed Covered Species

8.5.1 Federal Permits

Covered Species that have not been listed as of the Effective Date as threatened or endangered under the ESA have been treated in the BDCP as if they are Listed Species. In the event a Non-listed Covered Species becomes a Federally Listed Species in the future, incidental take of that species will, without any further action on the part of the Permittees, be automatically authorized by the Federal Permits pursuant to the terms of the BDCP and this Agreement.

8.5.2 Section 7 Consultations

Under the provisions of Section 7 and its implementing regulations, Incidental Take Statements contained in biological opinions apply only to species listed as endangered or threatened under the ESA. The Integrated Biological Opinion also serves as a conference opinion pursuant to 50 C.F.R. § 402.10(d) and (e) that evaluates all Covered Species as though listed and provides a basis for authorizing incidental take should non-listed Covered Species become listed in the future. In the event a Non-listed Covered Species becomes listed in the future, USFWS and NMFS will adopt the conference opinion as the final biological opinion for that species in accordance with 50 C.F.R. § 402.10(d) for Associated Federal Actions undertaken by Reclamation unless significant changes have occurred in the proposed action or the information used in the conference opinion. If the conference opinion can be adopted pursuant to 50 C.F.R. § 402.10(d), USFWS and NMFS will not request, impose, recommend, or require mitigation, conservation, compensation, enhancement, or other protection for such Covered Species, beyond that expressly provided in this Agreement.

8.5.3 State Permit

Under the NCCPA, take of unlisted species may be authorized under a Section 2835 permit. The State Permit authorizes the take of all Covered Species as of the Effective Date, regardless of whether they have been listed under State law.

8.6 Take Authorizations for Fully Protected Species

CDFW acknowledges and agrees that the BDCP includes measures that are intended to avoid, to the maximum extent practicable, the take of any Fully Protected Species as a result of the implementation of Covered Activities. However, if implementation of Covered Activities causes the take of a Fully Protected Species that is also a Covered Species, CDFW acknowledges and agrees that the take is authorized under the State Permit, pursuant to Fish & Game Code § 2835.

8.7 Take Authorizations for Plant Species Under the ESA

The take of Covered Species that are federally listed plants is not prohibited under the ESA, and therefore take authorization for federally listed plants is not necessary. Plant species included on the list of Covered Species are listed on the Federal Permits in recognition of the Conservation Measures and benefits provided for those plants under the BDCP and for the purpose of demonstrating the avoidance of jeopardy pursuant to the Section 7 Biological Opinion. As of the Effective Date, any reference in this Agreement or the BDCP to the authorized take of Covered Species shall, for the purpose of incidental Take authorized under Section 10(a)(1)(B), exclude plant species. To the extent permitted by law, if at any time during the term of this Agreement and the Federal Permits, any plant listed as a Covered Species becomes subject to the take prohibition under the ESA, the Federal Permits shall automatically become effective as to such species, and the Permittees shall receive incidental take authorization for such species.

8.8 Take Authorizations for Rare Plants Covered by the Native Plant Protection Act

CDFW acknowledges and agrees that the BDCP provides sufficient protection to Covered Species that are listed under the NPPA as rare plants for a finding of compliance with the NPPA.

8.9 Take Authorization for Species Covered by the Migratory Bird Treaty Act

The USFWS agrees to issue a Special Purpose Permit under 50 C.F.R. § 21.27 to authorize take of migratory birds protected by the Migratory Bird Treaty Act (MBTA) that are Covered Species and that are also listed under the ESA as threatened or endangered. The Special Purpose Permit will authorize take in the amount specified in the BDCP, subject to the terms and conditions set forth in the Federal Permits.

The Special Purpose Permit will be valid for three years and will be renewed pursuant to the MBTA, provided the Permittees are in compliance with the Federal Permits. Each renewal of the Special Purpose Permit shall be for a period of three years, or longer if the maximum permit term has been extended by law, provided that the Federal Permits remain in effect for such period. If and when any other Covered Species that is protected under the MBTA is designated a Federally Listed Species, the Federal Permits will automatically constitute a Special Purpose Permit for that species as of the date the Federal Permits become effective as to such species.

The Federal Permit will constitute a Special Purpose Permit under the Migratory Bird Treaty Act as provided at 50 C.F.R. § 21.27 for the Take of migratory birds protected by the MBTA that are Covered Species and that are also listed under the ESA as threatened

or endangered, subject to the terms and conditions specified in the Federal Permit, as of the Effective Date. The Special Purpose Permit will be valid for a period of three (3) years from the Effective Date, provided the Federal Permit remains in effect for such period. The Special Purpose Permit will be renewed in accordance with the Migratory Bird Treaty Act provided that the Permittees remain in compliance with the Federal Permit. Each such renewal will be valid for the maximum period allowable under the applicable regulations at the time of the renewal (which, as of the Effective Date is three (3) years), provided that the Federal Permit remains in effect for such period. If and when any other Covered Species that is a migratory bird becomes a Federal Listed Species, the Federal Permit will automatically constitute a Special Purpose Permit for that species as of the date the Federal Permit becomes effective as to such species as provided in this Agreement.

9.0 ACTIVITIES AND ACTIONS COVERED BY THE BDCP

9.1 Introduction

The BDCP is intended to provide the basis for the issuance of regulatory authorizations under the ESA and the NCCPA for a range of ongoing and anticipated activities in the Plan Area. These actions have been designated as either Covered Activities, which encompass those actions that will be undertaken by non-federal parties, or Associated Federal Actions, which refer to those actions that are authorized, funded, or carried out by Reclamation within the Plan Area. Covered Activities and Associated Federal Actions encompass all actions that are proposed for coverage under the Take Authorizations to be issued by the Fish and Wildlife agencies on the basis of the BDCP.

9.2 Covered Activities

The Covered Activities, as described in Chapter 4, consist primarily of activities related to the development and operation of water conveyance infrastructure associated with the SWP that will occur within the Plan Area. Specifically, those SWP-related actions covered by the BDCP involve the following actions:

- The development and operation of new Delta conveyance facilities, in conjunction with the operation of existing facilities, to transport and deliver water to State Water Project and Central Valley Project contractors.
- The maintenance and monitoring of water infrastructure and other facilities.

The Covered Activities also include actions associated with restoration of aquatic and terrestrial habitats, monitoring of Covered Species, and research and study of species and their habitats.

9.3 Associated Federal Actions

The BDCP Associated Federal Actions comprise those activities that are primarily the responsibility of Reclamation, including actions that are carried out, funded, or authorized by Reclamation in the Plan Area, and that would receive appropriate ESA coverage through Section 7. These actions relate to the operation of the CVP's Delta facilities, and conveyance through the SWP's Delta facilities to meet CVP purposes. These actions include the operation of existing CVP Delta facilities to convey and export water for project purposes, associated maintenance and monitoring activities, and the preservation, restoration and creation of habitat. The CVP is operated in coordination with the SWP under the Coordinated Operation Agreement. Associated Federal Actions are described in Chapter 4.

9.4 Integration of the BA and BDCP

The BDCP is a comprehensive plan designed to provide the basis for the biological assessment submitted by Reclamation to support the Section 7 consultation with USFWS and NMFS regarding its CVP-related actions within the Delta. The BDCP Conservation Strategy described in Chapter 3 and the Associated Federal Actions described in Chapter 4 have been incorporated into the biological assessment by Reclamation as its proposed action. The BDCP does not distinguish precisely between the effects on Covered Species and their habitat attributable to the CVP-related federal actions and to Covered Activities associated with the SWP. Rather, the BDCP includes a comprehensive analysis of the effects related to both the SWP and the CVP within the Plan Area, and sets out a Conservation Strategy that adequately addresses the totality of those effects. The incorporation of the BDCP into the biological assessment and subsequent Integrated Biological Opinion ensures comprehensive take authorization for Associated Federal Actions.

9.5 Approval, Adoption or Amendment of Future Plans or Projects by Permittees Inconsistent with the BDCP Objectives and Requirements

The approval, adoption, or amendment of a future plan or project by any Permittee other than the BDCP, that is substantially inconsistent with the objectives and requirements of the BDCP, without the concurrence of the Fish and Wildlife Agencies, is grounds for suspension or revocation of the State Permit. If CDFW determines, after conferring with the Permittees, that such a plan or project has been approved, adopted, or amended in a manner that is substantially inconsistent with the objectives or requirements of the BDCP, CDFW will provide written notice to the Permittees documenting the nature of the inconsistency.

Within fifteen (15) days of the issuance of such notice, CDFW, the Program Manager, and the Permittees shall meet and confer to consider the basis for CDFW's determination

and to identify steps that may be taken to address any such inconsistency. In the event that the inconsistency is not satisfactorily addressed within forty-five (45) days or within a period mutually agreed to by CDFW and the Permittees, CDFW, at its discretion, may suspend or revoke the State Permit, in whole or in part, pursuant to Section 22.4 of this Agreement. CDFW shall not revoke the State Permit until such time as the review process set forth in Section 15.8 of this Agreement has been completed, provided the process has been invoked by a Permittee.

10.0 CONSERVATION STRATEGY

The Conservation Strategy has been designed to achieve the BDCP's overall goals of restoring and protecting ecosystem health, water supply, and water quality in the Delta within a stable regulatory framework. The Conservation Strategy has been developed to meet the regulatory standards of Sections 7 and 10 of the ESA and the NCCPA. The BDCP describes the intended biological outcomes of the Conservation Strategy and details the means by which these outcomes will be achieved. The Conservation Strategy includes biological goals and objectives and conservation actions that appropriately minimize and mitigate the potential effects of Covered Activities and Associated Federal Actions on these resources and provides for the conservation and management of Covered Species and the natural communities upon which they depend. The Conservation Strategy also includes comprehensive programs for adaptive management, monitoring, and research. Additional details regarding the BDCP Conservation Strategy are found in Chapter 3 of the BDCP.

10.1 Biological Goals and Objectives

The biological goals and objectives reflect the ecological outcomes that are expected to occur through the implementation of the BDCP. Biological goals articulate the broad, intended outcomes of the BDCP. Biological objectives are specific, measurable outcomes that are expected to be achieved through the implementation of the Conservation Strategy. The biological goals and objectives are intended to provide the following functions.

- Describe the desired biological outcomes of the Conservation Strategy and how those outcomes will contribute to the long-term conservation of Covered Species and their habitats.
- Provide, where feasible, quantitative targets, metrics, and timeframes for achieving the desired outcomes.
- Serve as benchmarks by which to measure progress toward achieving those outcomes across multiple temporal and spatial scales.
- Provide metrics that will be used to assess the effectiveness of the Conservation Measures and inform decisions regarding potential

adjustments to the Conservation Measures through the adaptive management process.

Through the implementation of the Plan, including adjustments made through the adaptive management process, Permittees will satisfy their obligation to achieve the biological goals and objectives. Unless otherwise specified in the Plan or this Agreement, failure to achieve a biological goal(s) and/or objective(s) shall not be a basis for a determination by the Fish and Wildlife Agencies of non-compliance with the Plan or for the suspension or revocation of the Permits, provided the Permittees are properly implementing the BDCP and are in compliance with this Agreement and the terms and conditions of the Permits.

10.1.1 Relationship to Plan Implementation

Progress toward achieving the biological goals and objectives will be measured during implementation of the Plan through monitoring and targeted research. Biological objectives may be modified over time.

10.1.2 Process to Modify Biological Objectives

Biological objectives may be modified through either the adaptive management decision-making process as described in Chapter 3.6.3.5 and Section 10.3.4 of this Agreement or through the formal amendment process set out in Chapter 6.5.3 and Section 23.3 of this Agreement.

10.2 Conservation Measures

The Parties agree that the implementation of the Conservation Measures will, to the maximum extent practicable, minimize and mitigate impacts to Covered Species and provide for the conservation and management of Covered Species. These measures have been developed in accordance with the principles of conservation biology and address, among other things, ecological processes, environmental gradients, biological diversity, and regional aquatic and terrestrial linkages.

The Conservation Measures are expected to be sufficient to achieve the biological goals and objectives of the Plan during the 50-year timeframe for Plan implementation. Most of the Conservation Measures address several goals and objectives, and most objectives will be met through a combination of Conservation Measures.

The Conservation Measures are described in Chapter 3.4.

10.2.1 Decision Tree Process

10.2.1.1 Purpose and Function

The Parties agree that a key area of scientific uncertainty concerns the volume of Delta outflow that is necessary to advance the biological goals and objectives for both delta smelt and longfin smelt. To address these uncertainties, a “decision tree” process will be established to further investigate the role and contribution of fall and spring outflow for these smelt species. The Decision Tree process is a component of an adaptive management process and is described in CM1. The Parties acknowledge that the outflow requirements associated with the Decision Tree may be met through project operations or other means.

The Decision Tree process describes two potential outcomes for spring outflow and two potential outcomes for fall outflow. The outcomes of the Decision Tree are linked to scientific hypotheses. These hypotheses will be tested over the next approximately ten years using the best available scientific information. The specific outflow requirements for both delta smelt and longfin smelt at the time the new conveyance system becomes operational will be based on the best available science that tests these hypotheses associated with spring and fall outflow.

For permitting purposes, the applicants propose a project with operational and flow criteria intended to achieve the biological goals and objectives, which, among other things, include the range of operational and flow criteria for the high-outflow and low-outflow scenarios. It is expected that USFWS, CDFW, and NMFS will issue Permits for the proposed project, which may include as permit terms and conditions the operational and flow criteria related to the high-outflow scenario in the application.

However, all of the Parties, including USFWS, NMFS, and CDFW, agree that future science and improved information will be used as described herein to determine fall and spring outflow criteria applicable when the conveyance facilities become operational. The relevant Fish and Wildlife Agencies will make the final decision about criteria that will be implemented when the conveyance facilities become operational pursuant to the decision-making process set out in Section 10.2.1.2 and the review process described in Section 15.8.

10.2.1.2 Decision-making Process

The Parties agree that the processes established in Chapter 3.6.3.5, and Section 10.3 and 10.4 for the adaptive management and monitoring program will be used to decide matters regarding the Decision Tree process. The decision tree process will involve the following steps.

1. Clearly articulate scientific hypotheses designed to reduce uncertainty about what outflow criteria are needed to achieve the biological objectives for delta smelt and longfin smelt.
2. Development and implementation of a science plan and data collection and analysis program to test the hypotheses, and report the results of the

analysis as well as the robustness of the results and extent and sources of uncertainty.

3. Completion and peer review of a report that (i) incorporates all pertinent and credible available scientific information including, but not limited to, the data, analyses, and results that emerge from the above investigations, (ii) includes a critical assessment and synthesis of such scientific information, and (iii) interprets such scientific information in order to identify a recommended course of action with respect to the alternatives set out through the decision tree process. This step will be administered by the Implementation Office under the direction of the Adaptive Management Team.
4. Prior to the time CM1 operations begin, the Implementation Office will provide the report (including the Adaptive Management Team's recommendation) to the Authorized Entity Group and the Permit Oversight Group for decision pursuant to Chapter 3.6.3.5.3, and Sections 10.3 and 10.4.

10.2.1.3 No Requirement for Plan or Permit Amendment

The Permits and related Section 7 consultation processes will be used to authorize Take associated with Covered Activities and Associated Federal Actions based in part on specific outflow criteria. Neither the BDCP nor the associated regulatory authorizations would need to be amended to allow for the implementation of flow criteria determined through the Decision Tree process.

10.2.1.4 Relationship of Decision Tree Process to the Adaptive Management Program

The Parties acknowledge that changes to CM1 may occur through the adaptive management program, which will go into effect once the BDCP has been permitted. Notwithstanding the foregoing, with respect to changes to CM1 related to outflow requirements for delta and longfin smelt pursuant to the Decision Tree process, such changes may not occur through the adaptive management program until the Authorized Entity Group and Permit Oversight Group act on the recommendation as set out in the Decision Tree report. The outflow criteria applicable to CM 1 may be within the range of outflow criteria analyzed in the decision tree and will be based on the best available science.

10.2.1.5 Relationship of the Decision Tree Process to Other Covered Fish Species

The Parties recognize that other covered fish species, including salmonids and sturgeon, are affected by outflow. As such, the Parties understand that NMFS and CDFW will

consider outflow needs for other Covered Species as part of their review of the Plan. The outflow needs of these species will also be investigated as part of the scientific research and analysis that will be conducted prior to the new conveyance system becoming operational. In the event that information developed during this period indicates that changes to the outflow requirements of CM1 associated with these other fish species are warranted, adjustment will occur in the context of the adaptive management program.

10.2.2 Real Time Adjustments to Water Operations

10.2.2.1 Purpose and Function

The Parties shall establish a “real time operations” mechanism to allow for short-term adjustments to be made to water operations, within the established ranges and criteria as set out in CM1 and CM2, for the purpose of maximizing conservation benefits to covered fish species and maximizing water supplies.

The Parties agree that any real time operational adjustments shall be made in accordance with the following guidelines:

- The primary BDCP agencies (CDFW, USFWS, NMFS, DWR, and Reclamation) will collaborate in making real time operational adjustments.
- The scope of real time operational adjustments will apply only to certain identified operational parameters and will occur within the boundaries of, or consistent with, the operational criteria set out in CM1 and CM2.
- Real time adjustments that are anticipated to be implemented in the coming year will be identified in the Annual Delta Water Operations Plan developed by DWR and Reclamation with input from the RTO Team. The Annual Delta Water Operations Plan will also describe how project reoperations and the Supplemental Resources Fund assets will be used as part of real time operations for the purpose of maximizing conservation benefits to covered fish species and maximizing water supplies.

10.2.2.2 Real Time Operations Process

10.2.2.2.1 Real Time Operations Team

The Parties shall establish a Real Time Operations Team (“RTO Team”), which will consist of one representative each from USFWS, NMFS, CDFW, Reclamation, and DWR. The RTO Team will also include one representative of the SWP Contractors and one representative of the CVP Contractors, who will serve as non-voting members. The voting members may, by consensus, expand the membership of the RTO Team.

10.2.2.2.2 Function of the RTO Team

The RTO Team will track and document real time operational adjustments as they are implemented in relation to what was identified in the Annual Delta Water Operations Plan and assess the effect of such adjustments on Covered Species and quantify the effects on water supply. The RTO Team will also document use of the Supplemental Resources Fund as part of real time operations. Documentation of any adjustment that was made to operations, and the effect, if any, of the adjustment on water supply, will include information regarding the circumstances that warranted an adjustment and the expected benefits to the targeted Covered Species and to water supply. The RTO Team shall make such information available to the public through a website or other electronic medium. This information will be used by DWR and Reclamation in the development of subsequent Annual Delta Water Operations Plans. This subsection describes the operations planning expected to occur on an annual basis for the purpose of maximizing conservation benefits to covered fish species and maximizing annual water supplies.

10.2.2.2.3 Decision-Making Process

The RTO Team shall operate by consensus when making recommendations related to real time adjustments to water operations. In the event that consensus cannot be reached among the RTO Team, the matter will be elevated to the director of CDFW and the regional director of the relevant federal Fish and Wildlife Agency and the director of DWR and the regional director of Reclamation. Absent the concurrence of the relevant agency directors, the disputed real time operational adjustment will not be made.

10.2.2.3 Scope of Real Time Operational Adjustments

The Parties recognize and agree that any such operational adjustments effectuated through the real time process shall be limited to the specific parameters and criteria set out in Chapter 3.4.1.4 and shall apply only to those facilities and activities identified in CM1 and CM2. Some operational parameters will not be subject to real time adjustments, as these components of the system would be operated pursuant to discrete criteria set out in the Conservation Measure.

Facilities that will be subject to real time operational adjustments are as follows:

- North Delta Intakes (CM1)
- Delta Cross Channel Gates (CM1)
- Head of Old River Gate (CM1)
- South Delta Diversions (Clifton Court and Jones Pumping Plant) (CM1)
- Fremont Weir Operable Gates (CM2)

The extent to which real time adjustments that may be made to each parameter related to these facilities shall be limited by the criteria and/or ranges set out in CM1 and CM2. That is, operational adjustments shall be consistent with the criteria, and within any ranges, established in the Conservation Measures.

Any modifications to the parameters subject to real time operational adjustments or to the criteria and/or ranges set out in CM1 or CM2 shall occur only through the adaptive management program or by Plan amendment. Similarly, any changes to the facilities or activities subject to real time operational adjustments shall occur only through the adaptive management program or by Plan amendment.

10.2.3 Process to Modify Conservation Measures

Conservation measures may be modified solely through the adaptive management decision-making process as described in Chapter 3.6.3 and Section 10.3.4 of this Agreement or, if necessary, through the formal amendment process set out in Chapter 6.5.3 and Section 23.3 of this Agreement.

10.3 Adaptive Management Program

10.3.1 Purpose

Under the adaptive management and monitoring programs, new information and insight gained during the course of Plan implementation will be used to develop and potentially implement alternative strategies to achieve the biological goals and objectives. Monitoring and research will be used, among other things, to confirm Plan implementation and to measure the efficacy of the Conservation Measures, factors affecting the response of the ecosystem and Covered Species to these measures, and the influence of factors present outside the Plan Area.

The Parties recognize that some of the Conservation Measures may not achieve their expected outcomes, while others may produce better results than expected. Through monitoring and research efforts, new scientific data, information, and analysis, the Parties will be informed regarding the capacity of the Conservation Measures to meet the biological goals and objectives. The adaptive management program will afford the flexibility to allow for changes to be made to Conservation Measures and biological objectives, including the addition to or elimination of such measures or objectives, to improve the effectiveness of the Plan over time.

10.3.2 Adaptive Management Team

10.3.2.1 Purpose and Function

An Adaptive Management Team shall be established as set forth in Chapter 3.6.2.2. The Adaptive Management Team shall have primary responsibility for administration of the adaptive management and monitoring program and shall have the authority to make decisions involving certain specified matters; for certain other matters, the role of the Adaptive Management Team will be to develop and make recommendations regarding potential adaptive changes for consideration by the Authorized Entity Group and the

Permit Oversight Group; and for other matters, the Adaptive Management Team will serve as a source of guidance and advice to the Implementation Office.

10.3.2.2 Membership and Composition

The Adaptive Management Team shall be chaired by the Science Manager and shall consist of representatives of DWR, Reclamation, two participating State and federal water contractors (one each representing the SWP and CVP), CDFW, USFWS, and NMFS. Each of the foregoing parties shall be voting members. The Lead Scientist for the Interagency Ecological Program, the Lead Scientist for the Delta Science Program and the Director of the NOAA Southwest Fisheries Science Center shall also be members of the Adaptive Management Team, but shall serve in an advisory capacity only and shall not be eligible to vote on matters. The directors of DWR and CDFW and the regional directors of Reclamation, USFWS, and NMFS will each designate a management-level representative to serve on the Adaptive Management Team, each of whom shall be qualified to represent both policy and scientific perspectives on behalf of their respective agencies.

10.3.2.3 Meetings of the Adaptive Management Team

The Adaptive Management Team shall determine its meeting schedule and administrative matters. The Implementation Office shall ensure that a record of Adaptive Management Team meetings and its actions is posted to a website or other appropriate electronic medium to ensure public access. The record should include a list of meeting attendees, meeting agenda, decisions and/or recommendations made, assignments to conduct additional work on a matter, audiovisual presentations or other materials distributed, and other documents relevant to the deliberations of the Adaptive Management Team.

On a periodic basis, the Adaptive Management Team shall open its meetings to the public. The Adaptive Management Team will institute procedures with respect to public notice of and access to these meetings. The date, time, and location of the meetings will be posted on the BDCP website at least ten (10) days prior to such meetings. The meetings will be held at locations within the City of Sacramento or the legal Delta.

10.3.3 Adaptive Management Changes Involving Routine or Administrative Matters

10.3.3.1 Scope of Routine and Administrative Matters

The Adaptive Management Team shall make decisions involving routine scientific matters associated with adaptive management, effectiveness monitoring, and research activities. The Adaptive Management Team shall also make decisions regarding administrative matters involving the Adaptive Management and Monitoring Program. These matters have been specifically assigned to the Adaptive Management Team in Chapter 3.6. They include: reassessment of and modifications to problem statements and

conceptual models; synthesis of scientific information; preparation and distribution of information pertaining to adaptive management, effectiveness monitoring, and scientific research to various parties, including policy-makers, stakeholders, and the public.

10.3.3.2 Development of Proposals regarding Routine or Administrative Matters

On a periodic basis or otherwise as appropriate, the Adaptive Management Team will consider, based on biological monitoring data and other information available at the time, whether conditions warrant a routine or administrative change to the Adaptive Management and Monitoring Program. As part of its deliberations, the Adaptive Management Team may seek input from independent scientists or from other appropriate sources, including the Technical Facilitation Sub-group of the Stakeholder Council. In the event that the Adaptive Management Team determines that a routine adaptive management change may be warranted, it may develop a proposal for the change. The Authorized Entities, the Fish and Wildlife Agencies, or the Stakeholder Council also may submit for consideration by the Adaptive Management Team, through the Science Manager, proposals for such adaptive changes. The Adaptive Management Team may receive proposals from other interested parties and, at its discretion, may review any such proposals and determine whether such proposals will receive further consideration.

In its consideration of issues and development of recommendations the Adaptive Management Team will identify relevant policy, legal, and regulatory principles and will make decisions regarding routine or administrative matters consistent with the schedule, budget and the adaptive resources available to support the Adaptive Management and Monitoring Program. The Science Manager will work with the Program Manager to define the policy, legal, budget or schedule issues at hand and will provide such information to the Adaptive Management Team prior to any action on the matter. The Adaptive Management Team will consider technical input that may be received from the Technical Facilitation Subgroup of the Stakeholder Council, as described in Chapter 7.1.6.

10.3.4 Adaptive Management Changes to Conservation Measures or Biological Objectives

The Adaptive Management Team shall be responsible for developing proposals for changes to the Conservation Measures and to the biological objectives for consideration by the Authorized Entity Group and the Permit Oversight Group. On a periodic basis or otherwise as appropriate, the Adaptive Management Team will consider, based on biological monitoring data and other information available at the time, whether conditions warrant a change to a Conservation Measure or a biological objective. As part of its deliberations, the Adaptive Management Team may seek input from independent scientists or from other appropriate sources, including the Technical Facilitation Sub-group of the Stakeholder Council. In the event that the Adaptive Management Team determines that a change in a Conservation Measure or a biological objective may be

warranted, it may develop a proposal for a change. The Authorized Entities, the Fish and Wildlife Agencies, and the Stakeholder Council may submit to the Adaptive Management Team, through the Science Manager, proposals for a change to a Conservation Measure or biological objective, and such proposals shall be considered by the Adaptive Management Team. The Adaptive Management Team may also receive proposals for adaptive changes from other interested parties and, at its discretion, review any such proposals to determine whether such proposals will receive further consideration.

In its consideration of issues and development of recommendations the Adaptive Management Team shall take into account the policy, legal, and regulatory principles that may be relevant to the proposed change to a Conservation Measure or a biological objective and shall make its recommendations consistent with the adaptive resources available under the Plan, as set forth in Section 10.3.7. The Science Manager will work with the Program Manager to define policy, legal, budget, schedule and adaptive resource issues and will provide such information to the Adaptive Management Team prior to any action on the matter. The Adaptive Management Team shall review relevant data and information, and take into account any input from the Authorized Entity Group, the Permit Oversight Group, or the Stakeholder Council, including technical input that may be received from the Technical Facilitation Subgroup of the Stakeholder Council.

Adaptive management actions that are associated with the implementation of the Conservation Measures and are within the scope of the Conservation Measures as described in the Plan will be determined and undertaken by the Implementation Office. Such actions shall not be subject to the processes set out in Section 10.3 and will not require the approval or concurrence of the Authorized Entities, the Fish and Wildlife Agencies, or the Adaptive Management Team.

10.3.5 Decision-making Process

The decision-making process set out in this Section shall be used to effectuate changes to elements of the Adaptive Management and Monitoring Program, including those that are considered to be “routine” or that involve changes to the administration of the Adaptive Management and Monitoring Program, and to the Plan’s Conservation Measures or biological objectives.

10.3.5.1 Decision-Making Process

10.3.5.1.1 Routine or Administrative Matters

In the event that the Adaptive Management Team achieves consensus as to whether adopt a routine or administrative change, the decision on the matter shall be considered final. Such decisions of the Adaptive Management Team shall not be subject to review and consideration by the Authorized Entity Group and the Permit Oversight Group, nor shall they be subject to the review process established in Section 15.8 of this Agreement.

In the event that the Adaptive Management Team fails to reach consensus regarding a proposed routine or administrative change, the Adaptive Management Team will document for the Authorized Entity Group and the Permit Oversight Group the change under consideration and the nature of the disagreement, including the divergent positions taken by the voting members of the Adaptive Management Team. The Program Manager will forward the documentation to the Authorized Entity Group and the Permit Oversight Group for their consideration. The Program Manager may supplement the documentation prepared by the Adaptive Management Team with any information the Program Manager believes will assist the Authorized Entity Group and Permit Oversight Group in reaching a determination on the matter. Resolution of the issue in dispute will follow the process set out below pertaining to changes to Conservation Measures or biological objectives; however, with respect to potential routine or administrative changes, if the Authorized Entity Group and Permit Oversight Group are unable to reach agreement, the Permit Oversight Group will decide the matter.

The Program Manager shall be responsible for documenting any routine or administrative changes that are adopted. Such information will be included in the Annual Progress Report, as described in Chapter 6.3.3.

10.3.5.1.2 Matters Involving Potential Changes to Conservation Measures or Biological Objectives

With respect to its consideration of a proposed change to a Conservation Measure or a biological objective, the Adaptive Management Team may or may not reach consensus regarding the matter. In either event, the Adaptive Management Team, upon completing its consideration of the proposed change, shall promptly notify the Authorized Entity Group and the Permit Oversight Group of the outcome of its deliberations.

As part of its notification, the Adaptive Management Team shall include information to assist the Authorized Entity Group and the Permit Oversight Group in their consideration of the proposed change. Specifically, the Adaptive Management Team shall provide the Authorized Entity Group and the Permit Oversight Group with the following information:

- A description of the proposed change, including, as applicable, the extent, magnitude, and timing of the proposed modification.
- A description of the scientific rationale for the proposed change and why it is reasonably expected to better achieve the biological objectives (if the change is to a Conservation Measure) or goals (if the change is to an objective) of the Plan.
- Identification of any alternatives that were considered and the reasons for their rejection.

- A description of any uncertainties associated with the change and potential approaches to reducing any such uncertainties.
- A report describing any information derived from independent science review and an explanation of how that information was addressed in the recommendation.
- An analysis of the potential cost in water, land, money, or other resources associated with the change being proposed.
- An analysis of the means by which the adaptive resources available to support adaptive management actions will be used to fund the proposed change, if applicable.
- A cover letter and any information the Program Manager believes may be helpful in assisting the Authorized Entity Group and Permit Oversight Group in making their decision.

If the Adaptive Management Team has not reached consensus on the recommendation, it will forward to the Program Manager the proposals, each prepared by a member or group of members within the team, which represents the differing views of how the matter should be resolved.

The Authorized Entity Group and the Permit Oversight Group will jointly meet to consider and act on the matter presented by the Adaptive Management Team. In the process of its deliberations, the Authorized Entity Group and Permit Oversight Group may jointly meet and confer with the Adaptive Management Team to discuss the matter at hand. The Authorized Entity Group and the Permit Oversight Group shall decide matters taking into account the policy, legal, and regulatory principles, as set forth below, as well as budgetary and scheduling considerations and the parameters established for the adaptive resources available to support the change under consideration. The Authorized Entity Group and Permit Oversight Group may base their decision on the information provided by the Adaptive Management Team and the Program Manager, or they may gather additional information or commission independent expert review to further inform their decision.

Any member of the Authorized Entity Group or Permit Oversight Group may introduce supplemental information not provided by the Adaptive Management Team or the Program Manager for the purpose of better informing deliberations. The member may further seek independent expert review of the supplemental information. With regard to such information, if any member should so request, it will be provided to the Adaptive Management Team for its review and comment. The Adaptive Management Team may comment on the information either through a report reflecting the consensus of its members or, in the event no such consensus is reached, through individual comments.

As part of their deliberations on changes to Conservation Measures, the Authorized Entity Group and the Permit Oversight Group shall take into account the following legal, policy, and regulatory principles:

- The scope and nature of a proposed adaptive response will be considered within the totality of the circumstances, including the degree to which the change is reasonably expected to offset the impacts of Covered Activities or Associated Federal Actions and Plan implementation or to better achieve the biological objectives.
- The proposed adaptive management action must be consistent with the legal authority of the entity responsible for effectuating the action.
- The Adaptive Management process will be used to help ensure that Conservation Measures are in conformity with the ESA and NCCPA permit issuance criteria throughout the course of Plan implementation. Changes will be limited to those actions reasonably likely to ensure that (1) the impacts (or levels of impacts) of a Covered Activity or Associated Federal Action on Covered Species that were not previously considered or known are adequately addressed or (2) a Conservation Measure or suite of Conservation Measures that are less than effective, particularly with respect to effectiveness at advancing the biological goals and objectives, are modified, replaced or supplemented to produce the expected biological benefit.
- The strength of the scientific evidence linking the proposed change to a Conservation Measure and to the ability of the Plan to achieve the relevant biological objective or objectives.
- An assessment will be made of a potential adaptive change so that the desired outcome(s) will be achieved with the least resource costs. As long as equal or greater biological benefits can be achieved, adaptive responses should favor changes that minimize impacts to water supply or reliability.
- Prior to any decision to change a Conservation Measure in a manner that would potentially result in the modification of water supplies consistent with Section 9.3.7, non-operational alternatives will be considered and, if such alternatives are rejected, the Adaptive Management Team will provide an explanation provided as to why they were not sufficient to address the effects of the Covered Activity, or Associated Federal Action, or achieve the biological objective(s) of the Plan.

If the Authorized Entity Group and the Permit Oversight Group jointly agree that the proposed change to a Conservation Measure or biological objective is warranted, the change will be adopted and incorporated into the Plan.

In the event that the Authorized Entity Group and the Permit Oversight Group are unable to reach agreement on the proposed change to a Conservation Measure or biological objective, the dispute review process described in Chapter 7.1.7 and Section 15.8 of this Agreement will be available to the Parties. If invoked, the appropriate Fish and Wildlife Agency official with authority over the matter, after considering the available information and taking into account the advice of the review panel, shall decide whether the proposed change, or an alternative to the proposed change, will be adopted.

The Program Manager shall be responsible for documenting any changes made to the Conservation Measures or the biological objectives. Such information will be included in the Annual Progress Report, as described in Chapter 6.3.3.

10.3.6 No Requirement for Plan or Permit Amendment

The Parties recognize and agree that a change to a Conservation Measure or to a biological objective shall not require an amendment to the BDCP nor to the regulatory authorizations issued pursuant to the Plan, provided such change is adopted through the adaptive management process, as described in this Section, and in a manner consistent with the adaptive resources available for such changes, as described in Section 10.3.7 and Chapter 3.4.

10.3.7 Resources to Support Adaptive Management

10.3.7.1 Resources Generally Available to Support Changes in Conservation Measures

Pursuant to the adaptive management process described in Section 10.3.4, the Parties may modify or adjust Conservation Measures and biological objectives. Such changes to Conservation Measures include the following strategies: modifying approaches to the implementation of the measures, shifting resources from less effective to more effective Conservation Measures, adding and/or eliminating Conservation Measures, and using the Supplemental Adaptive Management Fund to fund, if necessary, any such changes to the Conservation Measures.

The Parties agree that any potential adaptive management changes to the Conservation Measures, either individually or cumulatively, shall not require the commitment of resources, including land, water, or money, in excess of those specifically provided for under these strategies, including the Supplemental Adaptive Management Fund, or alter the financial commitments of the Plan participants, as set out in Chapter 8.

10.3.7.2 Resources Available to Support Changes to Water Operations Conservation Measures

In the event that changes to CM1 are adopted through the adaptive management process, the resources necessary to implement such changes shall be drawn from the following sources, to the extent available, and in the order of priority set out below.

- Adjusting operations on an inter-annual basis.
- Sharing resources derived from water supply improvements.
- Re-allocating resources from less effective Conservation Measures.
- Drawing funds from the Supplemental Adaptive Management Fund.

The limits and constraints associated with each of the foregoing sources are set out in Chapter 3.4 and Chapter 8. Any such changes to CM1 shall be consistent with the funding commitments set out in those chapters.

10.3.7.3 The Supplemental Adaptive Management Fund

10.3.7.3.1 Purpose

A Supplemental Adaptive Management Fund, as described in Chapter 3.4.23.5, shall be established to support adaptive management changes to CM1, as well as to other Conservation Measures, determined to be necessary during Plan implementation. The Fund will be made available to support an adaptive management change in the event that sufficient resources cannot be secured through the first three of the approaches identified in Section 10.3.7.2. Funding for the Supplemental Adaptive Management Fund will be as described in Chapter 8 of the Plan and Section 13.1 of this Agreement.

10.3.7.3.2 Availability of the Fund

The Parties agree that the funds within the Supplemental Adaptive Management Fund shall be made available pursuant to the process and criteria set out in the Plan and this Section to support adaptive management changes to any of the Conservation Measures. Prior to any such use of the Supplemental Adaptive Management Fund, the parties shall determine whether sufficient resources to support an adaptive change are available from any of the sources identified in Section 9.3.3.2, subject to the limitations associated with each. If a determination is made that adequate funds are not available through these sources, the Supplemental Adaptive Management Fund may be used at any time, provided the following actions have occurred or determination have been made beforehand.

- A 5-year periodic review has determined that one or more of the biological objectives are unlikely to be achieved through the implementation of the existing Conservation Measures.

- The biological objectives have been assessed to determine their likely achievability through the implementation of the Plan and, adjustments were made on the basis of new circumstances and scientific information.
- A lack of progress toward achieving one or more biological objectives is related to or caused by the Covered Activities or Conservation Measures.
- Adjustments to one or more Conservation Measures (e.g., more flow, changes in habitat restoration targets or locations) are likely to address the problem.
- To the extent appropriate, existing assets have been reallocated to support adequate changes to Conservation Measures (Chapter 3.4.23.3, *Redirected Funding to the Most Effective Conservation Measures*).
- Measures that do not adversely affect water supply, if any, have been implemented.

If the consideration of the foregoing factors confirms the need to use the fund, the Implementation Office, pursuant to the direction provided through the adaptive management process, would initiate actions to deploy the money available through the Supplemental Adaptive Management Fund to provide the additional resources necessary to implement the adaptive management change. The parties anticipate that such funds could be used to acquire water to supplement flows, undertake additional natural community restoration, or implement a range of other actions. In the event that additional outflow was determined to be necessary, supplemental water may be acquired from voluntary sellers. In the event that additional natural community restoration actions or investment in predation reduction activities were determined to be necessary, these actions may also be funded through the Supplemental Adaptive Management Fund.

10.3.7.3.3 Relationship to Regulatory Assurances and Protections

The resources provided for under the Supplemental Adaptive Management Fund, as well as other resources that may be available through actions described in Section 9.3.7.2, reflect the full extent of the commitment of the Parties to support changes made to the Plan through the adaptive management process. These commitments shall be considered part of the overall resource obligations of the Parties in the context of the regulatory Assurances and Protections described in Section 14.0.

10.4 Biological Monitoring and Research

Biological monitoring and research shall be conducted to provide new data and information regarding ecological and scientific matters relevant to the BDCP pursuant to Chapter 3.6. The data and information gathered through these and other efforts will be

used to inform key decisions, including those involving adaptive management actions, and to assess progress toward meeting the Plan’s biological goals and objectives.

10.4.1 Scope of Biological Monitoring

The purpose of the biological monitoring program is to provide the necessary data, information, and analysis to determine the effect of the Plan on Covered Species and their habitats and to assess the effectiveness of the Plan in advancing the biological goals and objectives. Specifically, “effects” monitoring will provide the basis for evaluating the impacts of Covered Activities, Associated Federal Actions, and Conservation Measures on Covered Species, including the amount of take of Covered Species; “effectiveness” monitoring will provide the basis for determining the effectiveness of the Conservation Measures and identifying the need for adaptive management responses, as described in Chapter 3.6.4.4.

Effectiveness monitoring actions are identified in the descriptions of each Conservation Measure identified in Chapter 3.4, and listed by Conservation Measure in Table 3.E-2 of Appendix 3.E of the Plan. Metrics and protocols for effectiveness monitoring will be developed, under the direction of the Adaptive Management Team, at the early stages of Plan implementation and will be periodically revised to reflect new scientific developments and improved technological capability.

10.4.2 Responsibility of Adaptive Management Team

The Adaptive Management Team shall have primary responsibility for the overall development and administration of the monitoring and research program, as described in Chapter 3.6.2.2. The Adaptive Management Team will also be responsible for integrating the adaptive management and monitoring activities into one cohesive program.

10.4.3 Annual Monitoring and Research Plan

The Implementation Office shall prepare an Annual Monitoring and Research Plan, based on the recommendations and guidance provided by the Adaptive Management Team. The plan will identify, among other things, the type, scope, nature and timing of the proposed monitoring and research activities and the rationale and need for such activities, as further described in Chapter 3.6.4.

A draft of the Annual Monitoring and Research Plan will be submitted to Authorized Entity Group and the Permit Oversight Group for their joint approval. In the event that the Authorized Entity Group and the Permit Oversight Group are unable to reach agreement on the Annual Monitoring and Research Plan, the Permit Oversight Group will determine whether the proposed plan, or an alternative to that plan, will be adopted. If a member(s) of the Authorized Entity Group does not agree with the decision of the Permit

Oversight Group, the dispute will be resolved pursuant to the review process described in Chapter 7.1.7.

The Implementation Office will incorporate the Annual Monitoring and Research Plan into the Annual Work Plan and Budget, as described in Chapter 6.3.1.

10.4.4 Role of Independent Science

The Adaptive Management Team may direct scientific reviews and solicit independent scientific advice to assist the team in its management of the monitoring and research program. The Adaptive Management Team, through the Science Manager, will coordinate monitoring and research efforts with the Delta Science Program, the IEP, the Authorized Entity Group, the Permit Oversight Group, and the Stakeholder Council.

11.0 PLAN IMPLEMENTATION

11.1 Implementation Schedule

The Implementation Office will ensure that the Conservation Measures are implemented substantially in accordance with the Implementation Schedule, Exhibit D. The Parties agree that implementation of the Conservation Measures in accordance with the Implementation Schedule will help ensure that the impacts of Covered Activities and Associated Federal Actions on Covered Species are minimized and mitigated, to the maximum extent practicable, and that the measures are sufficient to provide for the conservation and management of Covered Species.

11.1.1 Maintaining Rough Proportionality Between Impacts and Conservation Measures

If the Conservation Measures are implemented in accordance with the Implementation Schedule and procedure as detailed in Chapter 6.1.2 and Tables 6-1 and 6-2 of the Plan, Rough Proportionality will be considered by CDFW to be maintained in accordance with the NCCPA.

11.1.2 Procedure for Addressing Failure to Maintain Rough Proportionality

If a Fish and Wildlife Agency determines that Rough Proportionality between impacts to Covered Species and the implementation of the Conservation Measures is not being maintained, that agency will invoke the following process. If a Fish and Wildlife Agency determines, after conferring with the Implementation Office, that the conditions of the Implementation Schedule are not being met, the Fish and Wildlife Agencies, the Program Manager, and the Permittees shall meet and confer. Within forty-five (45) days of the determination, the Permittees shall either (a) regain Rough Proportionality by demonstrating substantial implementation of the actions according to the existing

Conservation Strategy and Implementation Schedule; or (b) enter into an agreement with the relevant Fish and Wildlife Agency(ies) to expeditiously regain Rough Proportionality. Such an agreement may include advancing and/or accelerating plans to acquire, restore, or enhance lands of the appropriate land cover type.

If the Implementation Office has not re-established Rough Proportionality within forty-five (45) days or has not entered into and maintained compliance with an agreement with the Fish and Wildlife Agency(ies) within that period that sets a course of action to regain Rough Proportionality in a timely manner, the Fish and Wildlife Agency(ies) may suspend or revoke their Permits, in whole or in part. The partial suspension or revocation may include removal of one or more Covered Species or reduction in the scope of the Take Authorizations. The Fish and Wildlife Agency(ies) may suspend but shall not revoke the Permits until such time as the review process set forth in Section 15.8 of this Agreement has been completed, provided the process has been invoked by a Permittee.

11.2 Advance Credit for Interim Implementation Actions

Implementation actions that have been undertaken or completed prior to the issuance of the Permits, but after the date of execution of the Planning Agreement in October 2006, will be credited toward meeting the overall BDCP conservation requirements, provided that the actions (1) are consistent with the Conservation Measures; (2) advance the BDCP's biological goals and objectives; and (3) do not constitute mitigation associated with projects that are not a Covered Activity or Associated Federal Action.

Interim implementation actions that may meet the three aforementioned conditions include those listed in Table 6-4 of the Plan. These actions may be credited toward the fulfillment of the Conservation Measures set out in Chapter 3, after evaluation by the Fish and Wildlife Agencies.

11.3 Credit for Restoration Actions Identified in the CVP/SWP Long-Term Operation Biological Opinions and State Incidental Take Permit

Notwithstanding the provisions of Section 11.2 above, the Parties agree that 8,000 acres of tidal habitat restoration identified in the USFWS Biological Opinion (issued December 15, 2008) and the CDFW Consistency Determination (issued October 14, 2011), and further discussed in the NMFS Biological Opinion (issued June 4, 2009) and the CDFW Consistency Determination (issued April 27, 2012) and in the Section 2081 permit issued for longfin smelt (issued February 23, 2009), will be credited to the BDCP as restoration actions fulfilling a portion of the obligations identified in Conservation Measure 4 once the required criteria have been met.

11.4 Reserve System

The creation and management of the Reserve System is a component of the Conservation Strategy, as described in Conservation Measure 3 in Chapter 3.4.3. The Implementation Office shall oversee the creation of the Reserve System, which will consist of a number of individual reserve units. The Reserve System will be created through the permanent protection and long-term management of aquatic and terrestrial habitats.

11.4.1 Provisions to Ensure Long-Term Protection of Reserve System Lands

Reserve System lands shall be permanently protected through acquisition of fee title or conservation easement, or, where there is an identified impediment to transferring fee title or creating a conservation easement, through the use of another site protection mechanism approved by the Fish and Wildlife Agencies. All Reserve System conservation easements will comply with California Civil Code sections 815–816 and California Government Code, section 65965 *et seq.* Conservation easement templates for natural lands and for agricultural lands will be developed by the Authorized Entities and will be subject to the approval of the Fish and Wildlife Agencies. Upon approval by the Fish and Wildlife Agencies, those templates will be deemed to be attachments to this Agreement as Exhibit E for natural lands and Exhibit F for agricultural lands. The easement templates may be revised, subject to approval of the Fish and Wildlife Agencies, without amendment to this Agreement.

The Fish and Wildlife Agencies shall designate which template provisions are to be required in each easement, unless otherwise approved by the Fish and Wildlife Agencies, and which provisions can be amended in individual easements without the further approval of the Fish and Wildlife Agencies. In cases requiring approval of an easement template revision, or a revision to a particular easement, the Implementation Office shall seek and obtain the approval of the applicable Fish and Wildlife Agencies. The Fish and Wildlife Agency(ies) requested to approve a revision to the easement template, or to approve an easement revision specific to a particular parcel of land, shall respond to the Implementation Office within sixty (60) days.

The Implementation Office will ensure that non-wasting endowments, or substantial equivalent as approved by the Fish and Wildlife Agencies, are established for Reserve System lands to ensure funding for long-term management in perpetuity.

The Implementation Office shall carry out the reserve management responsibilities, as further described in Chapter 3.4.11 of the Plan. The Implementation Office may delegate planning and implementation tasks to other Parties or qualified third parties, including but not limited to universities, scientists and other contractors. However, the Permittees shall remain solely responsible for ensuring the management of the reserve lands and the timeliness and quality of all requirements of reserve management during the term of the Permits and ensuring mechanisms are in place for reserve management in perpetuity.

Where the Authorized Entities have funded an endowment to fully satisfy certain conservation obligations under the Plan and the endowment has been reviewed and approved in writing as adequate by the Fish and Wildlife Agencies, funding is deemed adequate to carry out such obligations, and the Fish and Wildlife Agencies shall not require additional funds or resources from the Authorized Entities with regard to those obligations.

11.4.2 Reserve Management Plans

11.4.2.1 Reserve Unit Management Plans

The Implementation Office will prepare and implement management plans for protected natural communities and Covered Species habitats that are found within those communities. Management plans will be prepared by reserve unit, which may be an individual reserve or multiple reserves in a specified geographic area that share common management needs. Within two years of acquiring parcels, the Implementation Office will conduct surveys to collect information to identify actions necessary to achieve the applicable biological objectives related to management and enhancement of the reserve. The Implementation Office will prepare reserve unit management plans in collaboration with the Fish and Wildlife Agencies, and will submit plans to the Fish and Wildlife Agencies for approval within four years of the first acquisition within each reserve unit. Prior to approval of a reserve unit management plan, reserves will be managed using best practices based on successful management of the site prior to acquisition, or based on management at other similar sites.

General enhancement and management actions to be implemented throughout the reserve system are described in Chapter 3.4.11.2.3 and address fire management, recreation, invasive plant control, nonnative animal control, mosquito abatement, pesticides, levee maintenance, reserve system connectivity and permeability, and access control. Management and enhancement actions specific to certain natural communities will be included in reserve management plans, as provided in CM 11.

The Implementation Office shall evaluate each Reserve Management Plan for effectiveness and revise it as appropriate (a) to incorporate new acquisitions within the same reserve unit and to document new best management practices; (b) at least every five (5) years to ensure that the BDCP adaptive management and monitoring program and the results of the latest research are being applied to management in each reserve unit, and (c) whenever necessary under Changed Circumstances pursuant to Section 12.0 of this Agreement.

11.4.2.2 Management of Agriculture and Grazing Easements or Leases

Reserve unit management plans for cultivated lands, grasslands or other natural communities may include ongoing grazing or agricultural activities, if approved by the

Fish and Wildlife Agencies, pursuant to Conservation Measure 11, Chapter 3.4.11.2.7. For reserve units that are acquired through fee title, the Implementation Office shall include the terms of the reserve unit management plan in any lease or other agreement that allows continued grazing or other agricultural use of the land. For lands that are acquired through conservation easement, any key elements related to maintaining or enhancing habitat for Covered Species (i.e., essential requirements, restrictions or other criteria required for the reserve unit management plan) shall be included or referenced in the conservation easement. The reserve unit management plan itself shall be completed within two (2) years after recording the conservation easement.

12.0 CHANGED CIRCUMSTANCES

Ecological conditions in the Delta are likely to change as a result of future events and circumstances that may occur during the course of the implementation of the BDCP. The BDCP identifies changes in circumstances that are reasonably foreseeable and that could adversely affect reserve system lands or waters in the Plan Area, consistent with the “changed circumstances” provisions of the ESA regulations and in the NCCPA. To ensure successful implementation of the Conservation Strategy, the BDCP sets out measures designed to respond to these foreseeable future changes.

The BDCP identifies the specific Changed Circumstances that can reasonably be expected to occur in the Plan Area during the course of Plan implementation and that may compromise the effectiveness of the implementation actions set out in the BDCP. As set out in Chapter 6.4.2, the Plan describes the responses that will be implemented through the BDCP to adequately address such events and discusses their potential to prevent or impede the BDCP from achieving anticipated biological outcomes. The specific approaches and steps related to many of the planned responses will be developed and implemented through the adaptive management program (Chapter 3.6). However, for certain Changed Circumstances, responsive actions will fall outside the scope of the adaptive management program; these actions are specifically described in Chapter 6.4.2. The planned responses to Changed Circumstances have been designed to be practicable yet sufficient to effectively address such events.

12.1 Process to Respond to Changed Circumstances

The Implementation Office and the Fish and Wildlife Agencies shall be responsible for identifying the onset of a Changed Circumstance, using information obtained from system-wide or effectiveness monitoring, scientific study, or information provided by other sources. Once the Implementation Office and/or the Fish and Wildlife Agencies has become aware that a Changed Circumstance has occurred or is likely to occur, they will take immediate steps to investigate and confirm the event. The Implementation Office shall notify the Authorized Entity Group, the Permit Oversight Group and the Stakeholder Council of the change in circumstances.

After documenting the occurrence of a Changed Circumstance, the Implementation Office will determine specific responsive actions that are consistent with the requirements set out in Chapter 6.4.2 and develop a schedule for their implementation. The Implementation Office will confer with the Fish and Wildlife Agencies regarding the details of the response and a timeframe for implementation. For actions implemented through the adaptive management and monitoring program, the decision-making process described in Chapter 3.6 will be used. After implementing such actions, the Adaptive Management Team will oversee monitoring efforts to determine the effectiveness of the responsive actions and report the associated result and finding through the annual reporting process.

13.0 FUNDING

The Parties recognize that the ESA and the NCCPA each require that adequate funding will be assured to implement an HCP and/or an NCCP. The Parties acknowledge that such assurances do not require that all necessary funds be secured at the time of permit issuance, but rather establish that such funding is reasonably certain to occur during the course of Plan implementation.

The Permittees agree to provide such funds as may be necessary to carry out their obligations under the BDCP. Furthermore, as described in Chapter 8 of the Plan, the State and federal governments have committed to provide additional funding to implement the Plan. The Parties agree that the detailed accounting of the estimated costs associated with the various components of the BDCP, as set out in Chapter 8.2 and Tables 8-5 through 8-36, reflect best efforts to determine the level of funding necessary to implement the Plan.

The Parties and Reclamation have identified the various sources from which funding will likely be drawn, as described in Chapter 8.3 and Tables 8-37 through 8-59, sufficient to support a viable funding strategy. Such sources of funding include State and federal water contractor revenue, contractor-issued bonds, State-issued bonds, federal agency appropriations, and State and federal grants.

The Parties acknowledge that the sources of funding identified in the Plan, including bonds for infrastructure, have historically proven to be reliable means by which public projects may be funded. In addition, the primary sources of funding that the Parties intend to rely upon are typical of the type of sources that are generally available to public agencies to fund large-scale infrastructure and mitigation projects.

The Parties agree that the assessment of funding requirements for the BDCP, the viability of the sources identified for such funding, and the commitments made by the Parties in the Plan and this Agreement provide an adequate basis for a finding by the State and federal Fish and Wildlife Agencies that sufficient assurances of funding have been provided pursuant to the ESA and the NCCPA. In the event that certain sources of funds cease to be available or circumstances warrant a reexamination of the viability of the

BDCP funding strategy, Section 13.2 of this Agreement will guide the Parties in their efforts to remedy any actual or imminent shortfall.

13.1 Obligations of the Parties

The overall level of funding required for the implementation of the Plan is set out in Chapter 8 and this Agreement. The Parties acknowledge and agree that the overall level of funding set out in the Plan represents a best estimate of such costs and that the funding obligations of the Parties, as described in the Plan and this Agreement, will be fulfilled over the course of Plan implementation. The Plan and this Agreement contain provisions for periodic evaluation of funding and for addressing any potential for inadequate funding.

13.1.1 Obligations of the Authorized Entities

The Authorized Entities shall be responsible for funding a share of the overall cost of the BDCP, as set forth in the Plan. The Authorized Entities will provide funding equal to the costs associated with the construction, operation, and maintenance of the new conveyance infrastructure set out in CM1 and for the mitigation associated with such infrastructure, as described in Chapter 8.3.4. The Authorized Entities will contribute towards all other Conservation Measures and related program elements, as described in the column “Amount Paid by Contractors” in Table 8-41 in Chapter 8.3.4.1. [Note to Reviewers: This amount in table 8-41 of the draft BDCP totals \$903 million]. Consistent with the foregoing, the Authorized Entities shall not be obligated to provide, either directly or through another agency, funding to implement any other elements of the Plan.

13.1.2 Obligations of California and the United States

[Note to Reviewers: no Federal Administration Position on Financing – While the United States has been engaged in the development of this draft Agreement, there is no federal position as of this time regarding potential funding obligations of the United States. The Parties anticipate reaching agreement on a federal and state cost share.]

Subject to the limitations in Section 24.15 of this Agreement, and as described in Chapter 8 Tables 8-37 through 8-40, the State of California, acting through the appropriate State agency or agencies and the United States, acting through the appropriate federal agency or agencies, shall be responsible for funding the implementation of the Plan, except as funded by the Authorized Entities pursuant to 13.1.1, which will include the Supplemental Adaptive Management Fund.

13.1.3 Additional Funding Opportunities

To provide supplemental funding for Plan implementation, State, federal, and local agencies, including any of the Parties, may pursue funding from sources other than SWP

and CVP contractors. Such sources include those identified in BDCP Chapter 8.3 (including Tables 8-37, 8-39, 8-40, 8-48 through 8-55), as well as other sources that may be available. If Reclamation or DWR, or other State or federal agencies, pursue such funding for purposes of satisfying costs of Plan implementation that are not obligations of the CVP and SWP contractors, then Reclamation and DWR shall not directly, or otherwise charge or pass such costs to the SWP/CVP contractors.

13.2 Inadequate Funding

Subject to the limitations in Section 24.15 of this Agreement, the Parties and Reclamation have committed to provide substantial resources to ensure the proper implementation of the BDCP and, through the Plan and this Agreement, have provided assurances that adequate funding for such purposes will be available and forthcoming.

A Fish and Wildlife Agency determination that the BDCP is not being adequately funded shall require a demonstration that: 1) a funding shortfall exists; and 2) such shortfall either a) prevents a specific action or actions from being implemented in a timely manner, as defined by the rough proportionality criteria set out in Chapter 6, or b) prevents a specific action or actions from being properly and fully implemented, as described in the relevant provisions of the BDCP.

In the event of a funding shortfall from the Authorized Entities, the Fish and Wildlife Agencies will evaluate the impact of the shortfall on Plan implementation and determine whether the funding deficiency should affect the scope or ongoing viability of the regulatory authorizations. The Plan and this Agreement contain provisions that provide for rough proportionality and that are intended to ensure there would be no mitigation debt in the event of inadequate funding. If circumstances warrant suspension or revocation of one or both of the Federal Permits (and/or invalidation of Reclamations' Incidental Take Statement) USFWS and NMFS may proceed pursuant to procedures in Sections 22.1, 22.2 and 22.3 of this Agreement. If CDFW determines adequate funding is not being provided by the Authorized Entities, CDFW may suspend or revoke the State Permit, in whole or in part, pursuant to the procedures in Section 22.4 of this Agreement. If the Authorized Entities elect to institute measures to cure the funding shortfall, implementation of such measures shall begin no later than ninety (90) days from the date of the meeting with the Fish and Wildlife Agencies.

In the event of a shortfall in State or federal funding, a Fish and Wildlife Agency(ies) shall not suspend or revoke the State and/or Federal Permits or invalidate Reclamation's take statement if the shortfall in funding is determined to be likely to have no more than a minimal effect on the capacity of the Plan to advance the biological goals and objectives.

The Parties have committed to provide substantial resources to ensure the proper implementation of the Plan. The Plan is designed to demonstrate that this funding will be adequate for such purposes and will be forthcoming. However, in the unanticipated event

of a shortfall in State or federal funding, the Implementation Office will make reasonable adjustments to expenditures to continue to meet the obligations of the Plan. If these adjustments are inadequate to meet Plan requirements, the Implementation Office will confer with the Fish and Wildlife Agencies to identify alternative courses of action. Actions that may be considered to address such shortfalls include adjusting the scope of the Plan in proportion to the public funding shortfall. Such actions may focus initially on the terrestrial components of the Plan and would be incorporated into the Plan through the formal amendment process described in Chapter 6.5.3 of the Plan and Section 23.3 of this Agreement. The Authorized Entities will not be required to provide land, water, or monetary resources beyond their commitments in this Plan in the event of a shortfall in State or federal funding.

14.0 ASSURANCES AND PROTECTIONS

The ESA regulations and provisions of the NCCPA provide for regulatory and economic assurances to Parties covered by approved HCPs or NCCPs concerning their financial obligations under a plan. Specifically, these assurances are intended to provide a degree of certainty regarding the overall costs associated with mitigation and other Conservation Measures, and add durability and reliability to agreements reached between permit holders and the Fish and Wildlife Agencies. That is, if unforeseen circumstances occur that adversely affect species covered by an HCP or an NCCP, the Fish and Wildlife Agencies will not require of the permit holder any additional land, water, or financial compensation nor impose additional restrictions on the use of land, water, or other natural resources without their consent.

The assurances provided under the ESA and the NCCPA do not prohibit or restrain USFWS, NMFS, CDFW, the Permittees or any other public agency from taking additional actions to protect or conserve species covered by an NCCP or HCP. The State and federal agencies may use a variety of tools at their disposal and take actions to ensure that the needs of species affected by unforeseen events are adequately addressed.

14.1 Regulatory Assurances under the ESA – The No Surprises Rule

Under the No Surprises rule (63 Fed. Reg. 8859 (Feb. 23, 1998)), once an incidental take permit has been issued pursuant to an HCP, and its terms and conditions are being properly implemented, the federal Fish and Wildlife Agencies will not require additional measures for Changed Circumstances not provided for in the plan or for unforeseen circumstances, without the consent of the Permittee, including land, water (including quantity and timing of delivery), financial compensation, or restrictions on the use of those resources (63 Fed. Reg. 8859, 8868 (Feb. 23, 1998)). If the status of a species addressed under an HCP unexpectedly declines because of unforeseen circumstances, the primary obligation for undertaking additional conservation measures rests with the federal government, other government agencies, or other nonfederal landowners who have not yet developed HCPs.

However, the federal Fish and Wildlife Agencies may, in the event of unforeseen circumstances, require additional measures provided they are limited to modifications in conserved natural community areas or to the HCP's operating conservation program (*e.g.*, the Conservation Strategy) for the affected species, and that these measures do not involve additional financial commitments or resource restrictions without the consent of the Permittee. These assurances are provided to all HCP permittees that properly implement their plans. The No Surprises rule, however, does not apply to federal agencies. 50 C.F.R. § 222.307(g).

14.2 Regulatory Assurances under the Natural Community Conservation Planning Act

Under the NCCPA, CDFW provides assurances to permittees commensurate with the long-term conservation assurances and associated implementation measures that will be implemented under a plan (Fish & Game Code § 2820(f)). In its determination of the level and duration of the assurances to be afforded a permittee, CDFW takes into account the conditions specific to the plan, including such factors as:

- The level of knowledge of the status of covered species and natural communities;
- The adequacy of analysis of the impact of take on covered species;
- The use of the best available science to make assessments of the impacts of take, reliability of mitigation strategies, and appropriateness of monitoring techniques;
- The appropriateness of the size and duration of the plan with respect to quality and amount of data;
- The sufficiency of mechanisms for long-term funding of all components of the plan and contingencies;
- The degree of coordination and accessibility of centralized data for analysis and evaluation of the effectiveness of the plan;
- The degree to which a thorough range of foreseeable circumstances are considered and provided for under the adaptive management program; and
- The size and duration of the plan.

The assurances provided to the entities receiving permits under the NCCPA will ensure that if there are unforeseen circumstances, no additional financial obligations or restrictions on the use of resources will be required of the Permittees without their consent. Specifically, the NCCPA directs that,

[i]f there are unforeseen circumstances, additional land, water, or financial compensation or additional restrictions on the use of land, water, or other natural resources shall not be required without the consent of plan participants for a period of time specified in the implementation agreement, unless CDFW determines that the plan is not being implemented consistent with the substantive terms of the implementation agreement (Fish & Game Code § 2820(f)(2)).

The NCCPA requires that CDFW suspend or revoke a permit, in whole or in part, if the continued take of a Covered Species would jeopardize its continued existence.

14.3 USFWS and NMFS

14.3.1 Permittees

Pursuant to the No Surprises Rule at 50 C.F.R. §§ 17.22(b)(5), 17.32(b)(5), and 222.307(g), and provided that the BDCP is being implemented consistent with the terms of this Agreement, the Plan, and the Federal Permits, the USFWS and NMFS shall not require the Permittees to provide additional land, water or other natural resources, or financial compensation or additional restrictions on the use of land, water, or other natural resources beyond the level provided for under the BDCP, this Agreement and the Federal Permits with respect to Covered Activities without the consent of the Permittees. Adaptive management modifications and planned responses to Changed Circumstances are provided for under the BDCP, as set out in Chapter 3.6 and Chapter 6.4.2. Accordingly, the resources identified to support such modifications and planned responses, together with the other resources commitments of the Permittees reflected in the Plan, this Agreement and the associated regulatory authorizations, constitute the extent of the obligations of the Permittees pursuant to the No Surprises Rule.

14.3.2 Reclamation

The No Surprises Rule does not apply to federal agencies. In light of Reclamation's integral role in the BDCP, it is appropriate to provide to Reclamation a degree of certainty regarding its obligation to fund Conservation Measures, and to provide durability and reliability regarding BDCP implementation. In that regard, USFWS and NMFS agree that once the Integrated Biological Opinion has been issued: (1) to the maximum extent allowed by law, Reclamation's ongoing responsibilities for Associated Federal Actions under Section 7(a)(2) of the ESA will be fulfilled through Reclamation's participation in the BDCP, including through the obligations it has assumed under the adaptive management and the Changed Circumstances provisions of the Plan; and (2)

USFWS and NMFS agree that Reclamation will not be required to provide additional commitments or measures for Associated Federal Actions beyond those set forth in the BDCP without first attempting to resolve issues through the review process in Section 15.8, if invoked by an Authorized Entity, and exhausting processes set forth in Section 22.5 of this Agreement.

14.3.3 Unforeseen Circumstances

Under the ESA regulations and this Agreement, if unforeseen circumstances arise during the life of the BDCP, USFWS and/or NMFS may not require the commitment of additional land or financial compensation, or additional restrictions on the use of land, water, or other natural resources other than those agreed to in the Plan.

Within these constraints, USFWS and/or NMFS may require additional measures, but only if the following conditions apply:

- The agencies prove an unforeseen circumstance exists.
- Such measures are limited to modifications within any conserved habitat areas or to the Conservation Measures for affected Covered Species.
- The original terms of the Plan will be maintained to the maximum extent possible.
- The overall cost of implementing the BDCP is not increased by the modification.

Pursuant to 50 C.F.R. §§ 17.22(b)(5)(iii)(C), 17.32(b)(5)(iii)(C), and 222.307(g)(3)(iii), the USFWS or NMFS has the burden of demonstrating that unforeseen circumstances exist, using the best scientific and commercial data available. The USFWS and NMFS will consider input submitted by the Authorized Entities prior to making that determination. A finding of unforeseen circumstances must be made considering the following six factors: (1) size of the current range of the affected species; (2) percentage of range adversely affected by the conservation plan; (3) percentage of range conserved by the conservation plan; (4) ecological significance of that portion of the range affected by the conservation plan; (5) level of knowledge about the affected species and the degree of specificity of the species' conservation program under the conservation plan; and (6) whether failure to adopt additional Conservation Measures would appreciably reduce the likelihood of survival and recovery of the affected species in the wild. If such a finding is made and additional measures are required, the Authorized Entities will work with CDFW, USFWS and/or NMFS to appropriately redirect resources to address the unforeseen circumstances, consistent with the intent of the BDCP.

If USFWS or NMFS believe an unforeseen circumstance exists, it shall provide written notice of its proposed finding of unforeseen circumstances to the Implementation Office. The USFWS or NMFS shall clearly document the basis for the proposed finding regarding the existence of unforeseen circumstances pursuant to the requirements of 50 C.F.R. §§ 17.22(b)(5)(iii)(C), 17.32(b)(5)(iii)(C), and 222.307(g)(3)(iii). Within fifteen (15) days of receiving such notice, the Authorized Entities, the Program Manager, and the USFWS and NMFS shall meet and confer to consider the facts cited in the notice and potential changes to the Conservation Strategy.

14.4 CDFW

14.4.1 Permittees

Provided the BDCP is being implemented consistent with the substantive terms of this Agreement, the Plan, and the State Permit, CDFW agrees that it will not require from the Permittees additional land, water or financial compensation or additional restrictions on the use of land, water, or other natural resources for the 50 year term of the State Permit without the consent of Permittees. Adaptive management modifications and Plan responses to Changed Circumstances are provided for under the BDCP, as set out in Chapter 3.6, and Chapter 6.4.2. Accordingly, the resources identified to support such modifications and planned responses, together with the other resources commitments of the Permittees reflected in the Plan, constitute the extent of the obligations of the Permittees, pursuant to the assurances provided for in the NCCPA. Section 2823 of the NCCPA provides, however, that CDFW shall suspend or revoke any permit, in whole or in part, issued for the take of a species subject to Section 2835 if the continued take of the species would result in jeopardizing the continued existence of the species. Responses to a jeopardy determination are addressed in Section 22.6 of this Agreement.

14.4.2 Unforeseen Circumstances

As specified in Section 14.4.1, CDFW agrees that it will not require of the Permittees additional land, water, or financial compensation or additional restrictions on those resources without the consent of the Permittees for the 50 year term of the BDCP and this Agreement. In the event of unforeseen circumstances, CDFW shall make an unforeseen circumstances finding based on the best scientific evidence available, after considering any responses submitted by the Permittees. If such a finding is made and additional measures are required, the Authorized Entities will work with CDFW, USFWS and NMFS to appropriately redirect resources to address the unforeseen circumstances, consistent with the intent of the BDCP.

If CDFW believes an unforeseen circumstance exists, it shall provide written notice of its proposed finding of unforeseen circumstances to the Implementation Office. CDFW shall clearly document the basis for the proposed finding regarding the existence of unforeseen circumstances. Within fifteen (15) days of receiving such notice, the

Authorized Entities, the Program Manager, and CDFW shall meet and confer to consider the facts cited in the notice and potential changes to the Conservation Strategy.

14.4.2.1 Interim Obligations upon a Finding of Unforeseen Circumstances under the ESA or NCCPA

If a Fish and Wildlife Agency finds that an Unforeseen Circumstance has occurred with regard to a Covered Species and that additional measures are required for the Covered Species as a result, during the period necessary to determine the nature, scope and location of any additional measures, the Permittees will avoid causing an appreciable reduction in the likelihood of the survival and recovery of the affected species. The Permittees will not be responsible for implementing any additional measures unless the Permittees consent to do so.

15.0 IMPLEMENTATION STRUCTURE

15.1 Approach to BDCP Governance and Implementation

The implementation of the BDCP will generally be effectuated through an Implementation Office, which will be managed by a Program Manager and governed by the Authorized Entities through the “Authorized Entity Group.” The Authorized Entities shall have ultimate responsibility for the actions undertaken by the Implementation Office. The Fish and Wildlife Agencies will maintain an ongoing role in Plan implementation, including participation in a Permit Oversight Group, to ensure that such implementation proceeds in a manner consistent with the BDCP and its associated regulatory authorizations. Through the Permit Oversight Group, the Fish and Wildlife Agencies will be involved in certain specified implementation decisions and will lend technical and scientific expertise to the implementation process. In addition, a “Stakeholder Council” shall be created and regularly convened to enable public agencies, non-governmental organizations, interested parties, and the general public to provide ongoing input into the implementation process and to effectively discuss and resolve issues in dispute.

15.2 Implementation Office

15.2.1 Purpose and Function

The Program Manager will establish, organize, and direct the Implementation Office. To ensure that the commitments reflected in the BDCP are carried out in a timely and efficient manner, the Program Manager, through the Implementation Office, will institute processes and procedures to adequately address planning, budgeting, sequencing, and scheduling needs related to Plan implementation. The Implementation Office will function with a significant level of independence from its member entities. However, the Program Manager and the Implementation Office staff will work closely with these entities on a range of matters, particularly with respect to actions that affect water

operations, and will be responsive to the Authorized Entity Group, regardless of the entity through which the Program Manager and the Implementation Office staff have established employment relationships. In addition, for those activities involving functions that, under State and federal law, cannot be delegated (e.g., water operations, water contracting, procurement, expenditures of State and federal funds), the Program Manager will coordinate with the appropriate designated State or federal official to ensure that the necessary function is carried out. The Program Manager will also, to the extent appropriate, solicit input from the Stakeholder Council on a range of implementation matters.

Specifically, under the direction of the Program Manager, the Implementation Office shall assume responsibility for the implementation of a broad range of actions, as identified in Chapter 7, including:

- Oversight and coordination of administration of program funding and resources.
- Preparation of annual budgets and work plans.
- Establishment of procedures and approaches to implement Plan actions.
- Planning, oversight, and implementation of actions set out in the Conservation Measures.
- Technical and logistical support to the Adaptive Management Team with respect to the administration of the Adaptive Management and Monitoring Program.
- Coordination with Delta-wide governance entities, including the Delta Stewardship Council, the Delta Science Program, and the Delta Conservancy.
- Implementation of public outreach program.
- Fulfillment of compliance monitoring and reporting requirements, including the preparation of annual reports.
- Reporting, at least on an annual basis, to the Delta Stewardship Council on the status of Plan implementation, including on matters related to the adaptive management and monitoring activities.

The Implementation Office shall not be responsible for certain implementation actions. Specifically, the Implementation Office will have limited, if any, involvement in the following matters:

- The Implementation Office shall not be involved in the construction or operation of SWP and/or CVP facilities other than to monitor infrastructure development and water operations for the purpose of assembling the information necessary to evaluate and report on compliance with the terms and conditions of the Plan, the Implementing Agreement, and the associated regulatory authorizations, as described in Chapter 6.4. The BDCP sets out the parameters within which DWR and Reclamation will conduct SWP and CVP operations and infrastructure development. DWR and Reclamation may choose to operate the SWP and CVP and develop new project infrastructure using their current organizational capacity or by contract with other entities.
- The Implementation Office shall not administer the Adaptive Management and Monitoring Program. Rather, the program will generally be administered by the Adaptive Management Team, which will be chaired by the Science Manager (See Chapter 3.6.2.1). The Implementation Office will provide logistical and technical support to the Adaptive Management Team.

The Program Manager will also organize, convene, and provide support to the Authorized Entity Group and its proceedings, including its meetings with the Permit Oversight Group. In the event that the Program Manager position is vacant, then DWR and Reclamation will designate agency staff to serve this role until such time as the position has been filled. The Program Manager will further ensure that the Authorized Entity Group receives and reviews all proposed work plans, reports, budgets, and other relevant information generated by the Implementation Office, the Fish and Wildlife Agencies, the Adaptive Management Team, and other sources. The Program Manager will further ensure that the Authorized Entity Group has sufficient opportunity to provide input regarding these documents.

The Implementation Office shall implement a public outreach and education program to promote public awareness and provide opportunities for public input on matters concerning Plan implementation, as described in Chapter 7.5. The outreach program shall meet the following objectives.

- Promote public awareness of and understanding about the Plan's purpose, specific Conservation Measures and their implementation.
- Provide streamlined and timely access to information.
- Provide opportunities to engage with decision-makers.
- Maintain a transparent process for understanding, clarifying and addressing public input and comments.

Particular emphasis will be placed on outreach efforts focused on the following stakeholders: Delta residents, including landowners, farmers, and business owners; environmental community; agricultural community; boaters; commercial fishing interests; recreational anglers; local governments; reclamation districts; irrigation districts; public utilities; public and private landowners adjacent to BDCP conservation areas; and Native American tribes. In addition, to further facilitate access to information and promote transparency in decision-making, the Implementation Office shall maintain a public, on-line database of key documents and information, such as annual implementation reports, work plans, and budgets.

15.2.2 Legal Status

The Implementation Office will not be a legal entity and, therefore, will not be authorized to enter into contracts directly or hold property in its own name. As such, the Implementation Office will administer the implementation of the BDCP under the existing authorities of the Authorized Entities.

15.2.3 No Delegation of Authority

The assignment of responsibility to the Program Manager and the Implementation Office will not alter or modify existing authorities, mandates, and obligations of the Authorized Entities or any other State and federal agency participating in Plan implementation. No general delegation of authority by the Authorized Entities to the Implementation Office, including the Program Manager or to any employee assigned to the Implementation Office will occur, although specific delegation may occur in the event that it is considered by the delegating Authorized Entity to be beneficial to the efficient operation of the Implementation Office. Any such delegation will be conferred, in writing, by the delegating Authorized Entity to the Program Manager, and will be reviewed by that agency from time to time. No unauthorized delegation of State or federal authority to the Program Manager or the Implementation Office will occur.

15.2.4 Implementation Office Management and Other Staff

15.2.4.1 Program Manager

The Program Manager will manage, coordinate, oversee, and report on all aspects of Plan implementation, subject to the oversight of the Authorized Entity Group and consistent with certain limitations related to the development, operation, and maintenance of the SWP and CVP facilities and the administration of the Adaptive Management and Monitoring Program. The Program Manager will report to the Authorized Entity Group, and act in accordance with the Group's direction.

The Authorized Entity Group will select the Program Manager. Prior to making its selection, the Authorized Entity Group will: solicit qualified candidates for the Program Manager position; confer with the Permit Oversight Group regarding the selection

process and the qualifications of the candidates; invite the Permit Oversight Group to participate in the interview process; and confer with the Stakeholder Council regarding the selection process. The Program Manager shall meet the qualifications set out in Chapter 7.1.1.1.

15.2.4.2 BDCP Science Manager

The Program Manager will select a Science Manager. Prior to making the selection, the Program Manager will: consult with the Authorized Entity Group and the Permit Oversight Group regarding the selection process and the qualifications of the candidates; invite the Authorized Entity Group and the Permit Oversight Group to participate in the interview process; and confer with the Stakeholder Council regarding the selection process. The Science Manager must meet the qualifications set out in Chapter 7.1.1.2. The Science Manager will report to the Program Manager.

The responsibilities of the Science Manager will include:

- Serve as Chair of the Adaptive Management Team and assist the team in the development and administration of the Adaptive Management and Monitoring Program, in coordination with the Interagency Ecological Program and other science programs.
- Serve as a member of the IEP Coordinators.
- Engage in regular communication and coordination with the Delta Science Program and the Independent Science Board, in a manner consistent with Water Code § 85820, as well as other outside scientists and, with guidance from the Adaptive Management Team, coordinate or contract with the Independent Science Board, the Delta Science Program, or other scientists to obtain input and review, to support the Adaptive Management and Monitoring Program.
- Support the Program Manager in the preparation of plans, reports and other technical documents.
- Assist in building sufficient scientific capacity and resources within the Implementation Office and the IEP to advance the goals and objectives of the BDCP.
- Assist the Adaptive Management Team in synthesizing and presenting the results of studies and research, compiling the findings of monitoring efforts, and summarizing the current scientific knowledge on relevant Delta resources to the Program Manager, Authorized Entity Group, Permit Oversight Group, Stakeholder Council, and others.

15.2.4.3 Staff

The Program Manager will fulfill the staffing needs of the Implementation Office by drawing from existing personnel at DWR, Reclamation, State and Federal Water Contractors Agency (SFWCA), and from other sources, including from sources outside of agencies, if appropriate and if such personnel possess the expertise and experience necessary to carry out the tasks associated with implementation. The specific staffing needs of the Implementation Office will be determined by the Program Manager, with input from the Authorized Entity Group and the Permit Oversight Group. Staff assigned to the Implementation Office will act under the direction of the Program Manager. The engagement of personnel from DWR, Reclamation, and other entities, however, will not affect or modify the existing authorities of federal, State, and local agencies or nongovernmental organizations that pertain to personnel matters. Personnel may be retained under the Intergovernmental Personnel Act (5 U.S.C. §§ 3371–3375); through personal services contracts, or other appropriate mechanisms. The Authorized Entities and the Fish and Wildlife Agencies will each designate a representative from their respective agencies to serve as liaisons to the Implementation Office.

15.2.4.4 Conservation Measure Implementation Actions

The Implementation Office shall be responsible for planning, design and implementation of Conservation Measures, as described in more detail in Chapter 3.6.3.5.1 of the Plan. As such, these activities shall not be subject to the processes set out in Section 10.3 and will not require the approval or concurrence of the Authorized Entities, the Fish and Wildlife Agencies, or the Adaptive Management Team.

15.3 BDCP Authorized Entity Group

15.3.1 Purpose and Function

The Authorized Entity Group shall be established to provide program oversight and general guidance to the Program Manager regarding the implementation of the Plan. The Authorized Entity Group will consist of the Director of DWR, the Regional Director for Reclamation, a representative of the SWP contractors and a representative of the CVP contractors. The Authorized Entity Group will be responsible for ensuring that the management and implementation of the BDCP are carried out consistent with its provisions, this Agreement, and the associated regulatory authorizations.

The Authorized Entity Group will provide oversight and direction to the Program Manager on matters concerning the implementation of the BDCP, provide input and guidance on general policy and program-related matters, monitor and assess the effectiveness of the Implementation Office in implementing the Plan, and foster and maintain collaborative and constructive relationships with the Fish and Wildlife Agencies, other public agencies, stakeholders and other interested parties, and local government throughout the implementation of the BDCP.

The Authorized Entity Group will engage in a number of specific matters including, but not limited to, the following:

- Provide oversight of the administration and funding of implementation activities.
- Provide oversight regarding the implementation of non-water related Conservation Measures by the Implementation Office.
- Approve, jointly with the Permit Oversight Group, changes to Conservation Measures or biological objectives proposed by the Adaptive Management Team.
- Decide, jointly with the Permit Oversight Group, all other adaptive management and monitoring program matters for which concurrence has not been reached by the Adaptive Management Team.
- Approve, jointly with the Permit Oversight Group, the Annual Monitoring and Research Plan.
- Select the Program Manager and provide input into the selection of the Science Manager.
- Review and approve the Annual Work Plan and Budget.
- Review and approve Annual Progress Reports, including Annual Delta Water Operations Reports, and other compliance-related documents.
- Review and approve submission of Plan amendments to the Permit Oversight Group.

15.3.2 No Delegation of Authority

The participation of the Authorized Entities on the Authorized Entity Group will not trigger or otherwise cause a delegation of authority or responsibility for any of the implementation actions described in the BDCP from one Authorized Entity to another or to the Implementation Office. Rather, the specific roles and level of involvement in implementation actions are defined either by existing statutory or regulatory authorities or by provisions set out in the Plan and this Agreement. For many of the BDCP actions and commitments, a specific Authorized Entity will have the sole responsibility for implementation; for other actions and commitments established by the Plan, the Authorized Entities may be jointly and severally responsible for their implementation. For instance, the operation of the SWP will remain under the control and responsibility solely of DWR; likewise, the operation of the CVP will continue to be under the control

and responsibility of Reclamation. As such, while it is expected that the Authorized Entity Group will express a single position of the group regarding a matter under its consideration, the entity(ies) with vested statutory or regulatory authority over the matter will make the final determination.

15.3.3 Meetings of the Authorized Entity Group

The Authorized Entity Group will meet on a schedule of its own choosing, but at a minimum on a quarterly basis. The Authorized Entity Group may also be convened by the Program Manager, as needed, to review issues that arise during the implementation of the Plan, including proposed amendments to the Annual Work Plan and Budget. The Authorized Entity Group will also meet with the Permit Oversight Group (Chapter 7.1.3), at least on a quarterly basis to review Plan implementation issues, including those related to the adaptive management and monitoring program and the restoration and preservation of habitat.

The Authorized Entity Group shall have the responsibility to inform the public of its deliberations and decisions. As such, the Program Manager will ensure that the public receives notice of upcoming meetings of the Authorized Entity Group, that meeting agendas are posted prior to such meetings, and that any decisions of the Authorized Entity Group are made available through the BDCP website. On a periodic basis, the Authorized Entity Group will hold meetings that are open to the public. The Authorized Entity Group will institute procedures with respect to public notice of and access to these meetings and to any public meetings it holds with the Permit Oversight Group. The date, time, and location of the meetings will be posted on the BDCP website at least ten (10) days prior to such meetings. The meetings will be held at locations within the City of Sacramento or the legal Delta.

15.4 Permit Oversight Group

15.4.1 Purpose and Function

The Permit Oversight Group will consist of the Fish and Wildlife Agencies, specifically, the Regional Director of USFWS, the Regional Administrator of NMFS, and the Director of CDFW. Consistent with their authorities under the ESA and the NCCPA, the Fish and Wildlife Agencies will retain responsibility for monitoring compliance with the BDCP, approving certain actions, and enforcing the terms and conditions of their respective regulatory authorizations. In addition to fulfilling those regulatory responsibilities, the Fish and Wildlife Agencies will also provide technical input on a range of implementation actions that will be carried out by the Implementation Office.

To ensure that the BDCP is being properly implemented, the Permit Oversight Group will coordinate agency review of the actions being implemented under the Plan and assessments of compliance with the provisions of the Plan, this Agreement, and associated regulatory authorizations. The Permit Oversight Group will be involved in

certain decisions relating to the implementation of water operations and other Conservation Measures, actions proposed through the adaptive management program or in response to Changed Circumstances, approaches to monitoring and scientific research. The Implementation Office will work with the Permit Oversight Group and the Authorized Entity Group to institute mutually agreeable processes to enhance opportunities for such collaboration and engagement.

The Permit Oversight Group will have the following roles, among others, in implementation matters:

- Approve, jointly with the Authorized Entity Group, changes to Conservation Measures or biological objectives proposed by the Adaptive Management Team.
- Decide, jointly with the Authorized Entity Group, all other adaptive management and monitoring program matters for which concurrence has not been reached by the Adaptive Management Team.
- Approve, jointly with the Authorized Entity Group, the Annual Monitoring and Research Plan.
- Participate in decision-making regarding real-time operations, consistent with the criteria of *CM1 Water Facilities and Operation* and other limitations set out in the BDCP and annual Delta water operations plans.
- Provide input into the selection of the Program Manager and the Science Manager.
- Provide input and concurrence with respect to the consistency of specified sections of the Annual Work Plan and Budget with the BDCP and with certain agency decisions.
- Provide input and concur with the consistency of the Annual Delta Water Operations Plan with the BDCP.
- Provide input and accept Annual Progress Reports, including Annual Delta Water Operations Reports.
- Provide input and approve Plan amendments.

15.4.2 Positions of the Permit Oversight Group

For those actions that are regulatory in nature or require the concurrence and/or approval of the Permit Oversight Group, there will be one written communication, to the maximum extent practicable, relaying the position of the Permit Oversight Group on the

issue in question. In developing this communication, the three member agencies will coordinate with each other to evaluate interspecies conflicts and determine actions that meet the needs of all Covered Species, and they will ensure consistency among the federal agencies and, to the extent possible, among all three agencies in the application of their respective regulatory authority. Subject to the requirements for consistency above, nothing in this Agreement will limit the ability of any Permit Oversight Group agency to exercise its discretion through individual correspondence in circumstances where project operating agency action is imminent and there is not sufficient time to coordinate correspondence. Nothing in the this Agreement will limit application of authorities with respect to necessary Section 7 correspondence related to annual or seasonal operations of the CVP.

15.5 Adaptive Management Team

The Adaptive Management Team will have primary responsibility for administration of the adaptive management and monitoring program. The specific roles and responsibilities of the Adaptive Management Team are described in Chapter 3.6.2 and Section 10.3.2 of this Agreement.

15.6 BDCP Stakeholder Council

15.6.1 Purpose and Function

The Stakeholder Council will be formed to provide opportunities for interested parties to consider, discuss, and provide input on matters related to the implementation of the BDCP. The primary purpose of the Stakeholder Council is to provide a forum for the BDCP stakeholders to assess the implementation of the Plan, and to propose to the Implementation Office ways in which Plan implementation may be improved. The BDCP Stakeholder Council will be organized and convened by the Program Manager, who will also serve as a member of the Stakeholder Council.

For the benefit of the Stakeholder Council members and the general public, the Program Manager will provide information and conduct briefings regarding Plan implementation. Briefings will include presentations of drafts of the Annual Progress Report, Annual Work Plan and Budget, Annual Delta Water Operations Plan, the Annual Water Operations Report, Five Year Comprehensive Review, and the Five Year Implementation Plan, as described in Chapter 6.

The Stakeholder Council will develop its own process to consider and provide input regarding the various aspects of BDCP implementation, including matters related to work plans and budgets, the Annual Delta Water Operations Plan, implementation of Conservation Measures, adaptive management changes, monitoring and reporting activities, scientific research and review processes, and annual reports. A Technical Facilitation subgroup will be established to provide input to the Implementation Office and the Adaptive Management Team on technical and scientific matters. The

Stakeholder Council process will complement, but not substitute for, ongoing collaboration and communication between stakeholders and the Implementation Office, Authorized Entities, the Authorized Entity Group, the Permit Oversight Group, and the Fish and Wildlife Agencies. The Implementation Office will organize, help convene, and provide support to the Stakeholder Council and its proceedings.

15.6.2 Membership

The Stakeholder Council will consist of representatives from a range of entities and organizations with an interest in BDCP-related issues or otherwise engaged in BDCP matters. At a minimum, representatives of the following entities will be invited to participate on the Council:

- Representatives of DWR and Reclamation
- Representatives of SWP/CVP Contractors
- Representatives of Other Authorized Entities
- Representatives of USFWS, NMFS, and CDFW
- Representatives of other State and federal regulatory agencies, including the Army Corps of Engineers, the U.S. Environmental Protection Agency, and State Water Resources Control Board
- A representative of the Delta Stewardship Council
- A representative of the Delta Protection Commission
- A representative of the Delta Conservancy
- A representative of the Central Valley Flood Protection Board
- Representatives of the counties of San Joaquin, Sacramento, Solano, Yolo, and Contra Costa

Additional members will be selected from the following categories by the Secretary of the California Natural Resources Agency, in consultation with the directors of the relevant departments comprising the Agency, such as DWR and CDFW. The public may submit nominations to the Secretary for these additional members. Each member will serve a term of four years, and may be reappointed without limit and may serve until such time as they are replaced.

- At least three representatives from conservation groups with expertise in fish and wildlife management and/or the management of aquatic habitats and other natural lands
- At least three representatives of local government agencies within the Delta.
- At least one representative of fishing organizations
- At least one representative of hunting organizations
- At least one representative of recreational organizations
- At least two representatives of Delta reclamation districts
- At least two representatives of Delta agriculture
- At least three scientists with expertise in the management of natural lands, and native plant and animals species
- At least one representative of water agencies located in the Sacramento valley
- At least one representative of water agencies in the San Joaquin River watershed
- One representative from organized labor working in the building trades
- One representative from the exclusive representatives of State-employed scientific or engineering professionals
- Other stakeholders whose assistance will increase the likelihood of the success of Plan implementation, including Delta civic organizations and members of the general public

15.6.3 Meetings of the Stakeholder Council

The Program Manager will convene and facilitate the Stakeholder Council on at least a quarterly basis to exchange information and provide input to the Program Manager concerning the current significant issues at hand. Stakeholders will have opportunity to inquire about implementation matters, be apprised by the Program Manager of issues of interest, and make recommendations concerning pending decisions and other implementation matters. Stakeholder Council meetings will be open to the public.

15.7 Supporting Entities

15.7.1 Purpose and Function

The Implementation Office, through the Program Manager, may request that other entities, referred to as “Supporting Entities,” perform certain implementation tasks, where such entities have the authority, resources, expertise, and willingness to successfully and timely undertake and complete the task. Where specific tasks are so assigned, the Program Manager will ensure that tasks and associated responsibilities are carried out properly and in coordination with other BDCP actions. The Authorized Entities and the Fish and Wildlife Agencies may also be Supporting Entities. Other Supporting Entities may include the following entities:

- The Delta Conservancy, which has been designated by statute as a primary State agency to implement ecosystem restoration in the Delta.
- Sponsors of regional conservation planning programs, including those engaged in NCCP and/or HCP development or implementation, or of other similar conservation programs, that overlap or are adjacent to the Plan Area.
- State and federal agencies.
- Other public agencies and private entities that have authority, capacity, or expertise to implement actions described in the Conservation Strategy in a cost-effective, reliable, and timely manner.

15.7.2 Administration and Oversight

The Program Manager will oversee each Supporting Entity’s performance of its responsibility for carrying out a specific task. Decisions by the Program Manager to engage another entity in the implementation of specific Plan elements or actions will be accomplished by written contract (through the existing authorities of an Authorized Entity) and will be based on the entity’s jurisdictional authority, level of expertise, and its capacity to carry out the element or action in a timely and successful manner. The Program Manager, with the concurrence of the Authorized Entity Group, may terminate a Supporting Entity’s role in Plan implementation in the event that the Supporting Entity does not perform a task adequately. The Supporting Entity will be responsible, subject to oversight by the Program Manager, for entering into the necessary contracts and acquiring interests in real and personal property, in some cases obtaining permits or other authorizations, and taking all other steps needed to complete the implementation task.

The Take authorizations that will be issued pursuant to the BDCP will provide regulatory coverage under the ESA and the NCCPA for all activities and actions covered by the Plan. As such, no additional Take authorizations will be required to implement these

activities, regardless of whether the action is carried out by the Implementation Office or a Supporting Entity. The Permittees shall remain ultimately responsible for compliance with the Plan, this Agreement, and the associated regulatory authorizations.

15.8 Review of Disputes Regarding Implementation Matters

15.8.1 Matters Subject to Review

The Parties will be responsible for making various decisions with regard to the implementation of the BDCP. With respect to implementation matters for which the Authorized Entity Group and the Permit Oversight Group have joint decision-making authority and are unable to reach agreement, the review process described in this Section may be invoked to help resolve matters in dispute.

15.8.2 Review Process

In the event of a dispute between the Authorized Entity Group and the Permit Oversight Group, the Parties will describe the basis for the dispute and identify options that may be available to help resolve the matter. The Parties will meet and confer to consider these options and to determine whether agreement can be reached on the matter. If after the meeting the matter remains unresolved, the entity with decision-making authority, as set out in Table 7-1 of the Plan, will make a final decision.

Prior to that final decision by the entity with decision-making authority, any member of the Authorized Entity Group or the Permit Oversight Group may initiate a non-binding review process concerning the matter in dispute. A member of either group may trigger this process by providing the Authorized Entity Group and the Permit Oversight Group with a written notice of dispute that describes the nature of the dispute and a proposed approach to resolution. Such notice must be provided to the Parties within fourteen (14) days of the announcement of a tentative decision by the entity with decision-making authority. The entity with decision-making authority over the matter shall refrain from taking any actions to implement its decision until the review process has been completed.

Within fourteen (14) days of the issuance of the written notice of dispute, the Parties, with the assistance of the Implementation Office, will form a three member panel of experts. One member of the panel will be selected by the Authorized Entity Group, one member will be selected by the Permit Oversight Group, and a third member will be selected by mutual agreement of the first two panel members. Sixty (60) days after written notice of dispute, both Parties will submit letter briefs and documentary evidence. No discovery will be allowed. At its discretion, the panel may require rebuttals or responses from the Parties. If so required, the Parties will submit rebuttals or responses within thirty (30) days of the request. Also, at its discretion, the panel may meet and confer with any of the Parties regarding the matter and gather whatever available information it deems necessary and appropriate. Within sixty (60) days of the submittal of the written positions of the Parties, or rebuttals if so required, a non-binding

recommendation will be issued by a majority of the panel, in writing, which will include a statement explaining the basis for the recommendation. If the recommendation is not issued by that date, the entity with decision-making authority may make its final decision. The timely completion of the review process is important to the effective implementation of the BDCP. The schedule described above shall be adjusted as necessary to inform the decisions in a timely manner.

Within thirty (30) days of issuance of the panel's non-binding recommendation, the entity with final decision-making authority over the matter shall consider those recommendations, as well as any other relevant information concerning the issue at hand, and convey its final decision regarding the matter to the Authorized Entity Group and the Permit Oversight Group.

15.8.3 Availability of Legal Remedies

The availability of this review process will have no effect on the ability of a party to pursue legal remedies that may otherwise be available regarding a disputed matter. The recommendations of the panel are not intended to be given special deference by a reviewing court relative to the expert judgment of the agency making the final decision.

16.0 COMPLIANCE MONITORING AND REPORTING

16.1 Purpose of Compliance Monitoring

The purpose of compliance monitoring is to track progress of BDCP implementation in accordance with established timetables and to ensure compliance with terms and conditions of the BDCP and its associated regulatory authorizations. Compliance monitoring actions associated with specific Conservation Measures are set out in Chapter 3.4, and in Table 3.E-1 of Appendix 3.E of the Plan. Compliance monitoring will be conducted for all Conservation Measures, whether implemented directly by the Implementation Office or by Supporting Entities.

16.2 Responsibilities of the Implementation Office

The Implementation Office shall be responsible for ensuring that the compliance monitoring and reporting requirements of the Plan are met and for carrying out the tasks required to meet these obligations, as further described in Chapters 6 and 7. The Implementation Office may enlist the Adaptive Management Team or Supporting Entities, including the IEP and the Delta Science Program, to perform certain monitoring and reporting tasks. However, the Implementation Office shall remain solely responsible for fulfilling all monitoring and reporting requirements.

16.3 Compliance and Progress Reports

The Implementation Office shall prepare, on a periodic basis, reports documenting compliance with the provisions of the BDCP and its associated regulatory authorizations and the progress being made toward meeting the biological goals and objectives of the Plan. The Implementation Office shall, over the term of the BDCP, submit various reports and plans to the Fish and Wildlife Agencies that serve the following purposes:

- Provide the data and information sufficient to demonstrate that the BDCP is being properly implemented.
- Provide assessments regarding the effects of Plan implementation on Covered Species and the effectiveness of the Conservation Strategy at advancing the biological goals and objectives.
- Identify actions, if any, taken pursuant to the adaptive management and monitoring program and/or in response to changed or unforeseen circumstances.
- Disclose issues and challenges concerning implementation, and the potential modifications or amendments to the BDCP that may be taken to address these issue and challenges.
- Provide schedules and budget estimates associated with the implementation of Plan actions over 1-year and 5-year timeframes.

The Program Manager shall post on the BDCP website the reports and other information identified in this Section, including any subsequent revisions to those reports. As part of those postings, the Program Manager will include information, on a daily basis, about planned and actual water diversions, including updates on revisions to the Annual Delta Water Operations Plan. An accounting of actual diversions, including daily, weekly, monthly, and yearly operational levels, shall also be posted. The Program Manager will describe and explain operational changes, including departures from planned or anticipated diversion levels, in terms that are understandable to the general public.

Throughout the course of BDCP implementation and for the purpose of demonstrating compliance with the provisions of the BDCP, this Agreement, and the associated regulatory authorizations, the Implementation Office shall prepare and submit to the Fish and Wildlife Agencies the following reports.

16.3.1 Annual Progress Report

At the end of each implementation year,¹ the Implementation Office shall begin the preparation of an Annual Progress Report. The report will document the Plan actions carried out during the implementation year and provide information sufficient to demonstrate that the BDCP is being implemented consistent with the provisions of the Plan, this Agreement, and the associated regulatory authorizations. The report will include, as provided for in Chapter 6.3, information relating to the implementation of Conservation Measures, actions taken or changes to Conservation Measures or biological objectives adopted pursuant to the adaptive management and monitoring program, expenditures of funds, occurrences of any Changed Circumstances or unforeseen circumstances, and modifications or amendments to the BDCP or its associated regulatory authorizations. The Annual Progress Report shall also include an evaluation of the progress being made toward meeting the biological goals and objectives of the Plan. The Annual Progress Report shall incorporate the Annual Delta Water Operations Report.

The Program Manager shall solicit input on the draft of the Annual Progress Report from the Permit Oversight Group and the Stakeholder Council, and submit the report to the Authorized Entity Group for review and approval. The Implementation Office shall finalize and submit the Annual Progress Report to the Fish and Wildlife Agencies for their acceptance within six months of the close of the reporting year.

16.3.2 Annual Delta Water Operations Report

Beginning in the first year that the north Delta diversions and conveyance facilities become operational, and for each year thereafter, the Implementation Office shall prepare an Annual Delta Water Operations Report. The report will document the operations of the SWP and the CVP within the Plan Area over the course of the prior implementation year and provide sufficient information to demonstrate that such operations were implemented in a manner consistent with the provisions of the Plan, this Agreement, and the associated regulatory authorizations. The report will include, as described in Chapter 6.3, a summary of the prior year's operations, including a comparison of the actual operations to planned operations, and an evaluation of the effects of water operations on Covered Species and ecological processes, including the responses of those species to real-time operational changes.

The Implementation Office will seek input from the Authorized Entities, Fish and Wildlife Agencies, and the Stakeholder Council on the draft Annual Delta Water Operations Report. Within six months of the close of the reporting year, the Implementation Office shall complete the report and incorporate it into the Annual Progress Report.

16.3.3 Five-Year Comprehensive Review

¹ The Implementation Office will decide how the planning year will be bounded (e.g., calendar year, federal fiscal year, state fiscal year, or water year).

At increments of five years, the Implementation Office shall undertake a Five-Year Comprehensive Review of the BDCP. The purpose of these reviews is to assess, on a periodic, program-level basis, the overall effectiveness of the BDCP, including the progress made toward achieving the biological goals and objectives and water supply reliability targets. As such, these reviews will focus on identifying and evaluating broad ecological trends in the Delta and changes in the status of Covered Species. The scope of the Five-Year Comprehensive Review is described in Chapter 6.3.5.

The Five-Year Comprehensive Review will be carried out by the Implementation Office, in coordination with the Interagency Ecological Program, Delta Science Program, and Independent Science Board. The Implementation Office will work with the Interagency Ecological Program lead scientist and the Delta Science Program Science Manager to consolidate data and information from a range of sources. The Program Manager shall solicit input on the draft findings of the Five-Year Comprehensive Review from the Permit Oversight Group and the Stakeholder Council, and submit the review report to the Authorized Entity Group for review and approval. The Implementation Office shall complete and submit the Five-Year Comprehensive Review report to the Fish and Wildlife Agencies for their acceptance within six months of the close of the five year period subject to the review.

16.4 Inspections by Fish and Wildlife Agencies

The Fish and Wildlife Agencies may conduct inspections and monitoring of the site of any Covered Activity, and may inspect any data or records required by this Agreement, the BDCP or the Permits, in accordance with applicable law and regulations. The USFWS and NMFS may also inspect and monitor the site of any Associated Federal Action for the purpose of verifying Reclamation's compliance with the Integrated Biological Opinion and Incidental Take Statement.

17.0 PLANNING DOCUMENTS

17.1 Purpose of Planning Documents

The Authorized Entities intend for several types of plans to be developed throughout the course of BDCP implementation. Although not a mandatory element of the BDCP, the Parties acknowledge that such plans will improve coordination, enhance the effectiveness of Plan implementation, and increase transparency regarding the administration and implementation of the Plan. Accordingly, the Authorized Entities commit to the development of such plans.

17.2 Types of Planning Documents

17.2.1 Annual Work Plan and Budget

On an annual basis, the Implementation Office will prepare an Annual Work Plan and Budget for the upcoming implementation year. The work plan will describe the activities, including those related to the implementation of Conservation Measures and the Adaptive Management and Monitoring program, which are expected to be implemented. The budget will set out projected expenditures and identify the sources of funding for those expenditures.

The Program Manager shall solicit input on the draft Annual Work Plan and Budget from the Permit Oversight Group and the Stakeholder Council, and submit the Annual Work Plan and Budget to the Authorized Entity Group for review and approval. As part of this process, the Permit Oversight Group will review the draft plan and provide written concurrence, within thirty (30) days, or as soon as practicable thereafter, that the draft plan accurately sets forth and makes adequate provision for the implementation of the applicable joint decisions of the Authorized Entity Group and the Permit Oversight Group or decisions of an agency with authority over the matter.

If the Permit Oversight Group concludes that the draft plan does not do so, it will provide written notification to the Program Manager and the Authorized Entity Group, within the 30 day timeframe, or as soon as practicable thereafter, of the specific reasons for its conclusion. In such event, the Authorized Entity Group may direct the Program Manager to modify the draft plan to the satisfaction of the Permit Oversight Group. If the Authorized Entity Group does not, the Program Manager, Authorized Entity Group and the Permit Oversight Group will, in a timely manner, meet and confer in an effort to resolve the matter in dispute. If the Parties are unable to reach resolution, the review process described in Chapter 7.1.7 and Section 15.8 of this Agreement may be invoked by any member of the Authorized Entity Group or the Permit Oversight Group.

The draft Annual Work Plan and Budget will be submitted for review and comments to the Authorized Entity Group no later than three months, and the Permit Oversight Group and the Stakeholder Council no later than two months, prior to the release of the final Annual Work Plan and Budget. A final Annual Work Plan and Budget will be completed no later than one month prior to the beginning of the implementation year. The Program Manager will utilize the foregoing process with respect to any proposed amendments to the Annual Work Plan and Budget.

17.2.2 Annual Delta Water Operations Plan

On an annual basis, DWR and Reclamation will jointly develop an Annual Delta Water Operations Plan. The Annual Delta Water Operations Plan will set out the operational priorities and strategies to address biological objectives and water supply targets for the upcoming year, and include other information as set forth in Chapter 6.3. The first of such plans will be prepared in the year prior to the initiation of operations of the north Delta diversion and conveyance facilities (assumed to be year nine). Subsequent plans will be prepared and finalized no later than one month prior to each implementation year.

DWR and Reclamation will seek input from other members of the Authorized Entity Group, the Implementation Office, Permit Oversight Group, Adaptive Management Team, and the Stakeholder Council regarding the draft Annual Delta Water Operations Plan. The Annual Delta Water Operations Plan will include: 1) operational priorities for both fisheries and water supply for the upcoming year for the purpose of maximizing conservation benefits to covered fish species and maximizing water supplies; 2) expected operations, including consideration of real time operational adjustments, consistent with the criteria established in CM1 and CM2; 3) monitoring, data collection, research efforts, and potential adaptive management actions associated with water operations for the upcoming year and 4) the potential need for the Supplemental Resources Fund to assist in achieving the overall goals of the BDCP for the coming year due to anticipated operating conditions. DWR and Reclamation will retain final approval authority over the plan; however, the Permit Oversight Group will, within thirty (30) days of receipt of the draft plan, or as soon as practicable thereafter, review the draft plan and provide written concurrence that the draft plan is consistent with the provisions of the BDCP, this Agreement, and the associated regulatory authorizations.

If the Permit Oversight Group concludes that the draft plan is not consistent, it will notify DWR and Reclamation in writing within the 30-day timeframe, or as soon as practicable thereafter, of the specific reasons for its conclusion. In such event, DWR and Reclamation may modify the plan to the satisfaction of the Permit Oversight Group. If they do not, DWR, Reclamation and the Permit Oversight Group will, in a timely manner, meet and confer in an effort to resolve the matter in dispute. If these Parties are unable to reach resolution, the review process in Chapter 7.1.7 and Section 15.8 of this Agreement may be invoked by any of these parties. In the event that the Permit Oversight Group invokes the elevation process, DWR and Reclamation may nonetheless begin to implement the plan, provided that their operations do not substantially preclude a potential resolution of the issue in dispute. The Implementation Office will incorporate the final Annual Delta Water Operations Plan into the Annual Work Plan and Budget (Chapter 6.3).

17.2.3 Five-Year Implementation Plan

Based on the Five-Year Comprehensive Review, the Implementation Office will prepare a Five-Year Implementation Plan that identifies and assesses prospective issues likely to arise over the upcoming five-year period. The Five-Year Implementation Plan will contain, among other things, a summary of the planned actions and timeframe for those actions, including potential revisions to those actions and timeframes, related to the implementation of the Conservation Strategy; a description of expected long-term and system-wide monitoring actions and anticipated research efforts; and budget projections reflecting the estimated costs of implementing future actions.

The Program Manager shall solicit input on the draft Five-Year Implementation Plan from the Permit Oversight Group and the Stakeholder Council, and submit the draft plan to the Authorized Entity Group for review and approval. As part of this process, the

Permit Oversight Group will review the draft plan and provide written concurrence, within thirty (30) days, or as soon as practicable thereafter, that the draft plan accurately sets forth and makes adequate provision for the implementation of the applicable joint decisions of the Authorized Entity Group and the Permit Oversight Group or decisions of an agency with authority over the matter.

In years when Five-Year Implementation Plans are prepared, the Annual Work Plan and Budget may be included with or prepared separately from the Five-Year Implementation Plan.

18.0 RELATIONSHIP OF THE BDCP TO OTHER REGIONAL CONSERVATION PLANS

The Plan Area adjoins or overlaps with six other regional conservation plans that are being implemented or are under development. The Parties expect that implementation of the BDCP will not adversely affect or be incompatible with overlapping and adjoining plans that have been approved or are under development. To ensure the successful implementation of the BDCP and these other regional conservation plans, the Implementation Office will undertake the following efforts:

- Encourage local government participation on the Stakeholder Council.
- Establish processes to enhance opportunities for collaboration and coordination between the Implementation Office and the regional plan sponsors on matters relating to, among other things, the acquisition and management of lands preserved as habitat within areas common to both plans.
- Enlist local governments to serve as Supporting Entities to assist in the acquisition and management of habitat lands.
- Encourage joint acquisitions of land to realize economies of scale and to secure large, contiguous blocks of habitat.
- Explore opportunities to identify the range of easement values serving one or more conservation objectives of the BDCP and other regional plans.
- Identify key acquisition areas that meet the full complement of conservation objectives (e.g., intrinsic habitat value, connectivity, reducing exposure to the effects of climate change) and that may be available for support of existing plans in conjunction with the BDCP.
- Explore opportunities for the Implementation Office to facilitate funding for “advance” conservation actions (i.e., habitat acquisition and

restoration) that may benefit both the BDCP and other regional conservation plans.

- Work with the sponsors of the regional conservation plans in California to encourage an increase in federal appropriations to support HCP implementation through existing federal grant programs and to help ensure that sufficient funds are available to all eligible plans in California.

19.0 RELATIONSHIP OF THE BDCP TO THE DELTA PLAN

The Sacramento–San Joaquin Delta Reform Act of 2009 (Act) (Water Code §§ 85300 *et seq.*), provides for the establishment of an independent State agency, the Delta Stewardship Council, which is charged with the development and implementation of a comprehensive Delta Plan, and is vested with the authority to review actions of State and local agencies and advise on their consistency with the Delta Plan.

The Act sets out conditions for the inclusion of the BDCP into the Delta Plan. To ensure that the BDCP is incorporated into the Delta Plan in a timely manner, CDFW, upon execution of this Agreement and issuance of Permits, shall immediately notify the Delta Stewardship Council that the BDCP meets the requirements of the NCCPA. USFWS and NMFS shall similarly provide timely notification to the Delta Stewardship Council that the BDCP has been permitted under ESA Section (10)(a)(1)(B).

20.0 SPECIFIC OBLIGATIONS OF THE FISH AND WILDLIFE AGENCIES

20.1 Obligations of USFWS and NMFS

20.1.1 Future Section 7 Consultations for Covered Activities and Associated Federal Actions

The BDCP is intended to meet the requirements of the ESA and provide the basis for regulatory coverage for a range of activities identified in the Plan. Some of the Covered Activities and Associated Federal Actions may require funding or regulatory authorizations or approvals from other federal agencies. In such instances, these federal agencies may need to consult with USFWS and/or NMFS under Section 7 of the ESA with respect to the effect of the activity on listed species and critical habitat.

Unless otherwise required by law or regulation, in any future Section 7 consultation on a Covered Activity or Associated Federal Action, USFWS and NMFS will each ensure that the Section 7 consultation(s) is(are) consistent with the Integrated Biological Opinion provided that the action as proposed in the consultation is consistent, and will be implemented in accordance with the Plan, and this Agreement. Unless otherwise required by law or regulation, USFWS and NMFS will not require through the Section 7 consultation additional land, water or other natural resources, or financial compensation

or additional restrictions on the use of land, water, or other natural resources for Covered Activities and Associated Federal Actions beyond the measures provided for under the BDCP, the Implementing Agreement, the Permits, and the Integrated Biological Opinion.

20.1.2 Section 7 Consultations for Other Activities

In any Section 7 consultation that occurs subsequent to the issuance of take authorizations under the BDCP and involves actions other than Covered Activities and Associated Federal Actions that may have an effect upon Covered Species and their habitats within the Plan Area, USFWS and NMFS shall give notice thereof to the Authorized Entities, Implementation Office, and the Authorized Entity Group. For these biological opinions issued in connection with projects that are independent of the Covered Activities and Associated Federal Actions, USFWS and NMFS agree to make every effort to avoid rendering opinions or taking actions that would cause additional restrictions on the use of land, money, or water for the Authorized Entities with respect to their obligations under the BDCP or this Agreement.

20.1.3 Reinitiation of Consultation on Integrated Biological Opinion

The Parties acknowledge that circumstances may arise under which Reclamation and USFWS and NMFS determine that it is necessary to reinitiate Section 7 consultation with regard to the Integrated Biological Opinion. Reinitiation of Section 7 consultation on the Integrated Biological Opinion shall occur in accordance with the criteria set forth at 50 C.F.R. § 402.16. The Parties agree the BDCP includes provisions that provide for adjustments to Conservation Measures and Plan implementation through adaptive management and through planned responses to Changed Circumstances if new information reveals the Covered Activities and Associated Federal Actions may affect Covered Species in a manner or to an extent not previously considered. Therefore, Reclamation, USFWS and NMFS will not re-initiate consultation on the Integrated Biological Opinion without first evaluating the BDCP provisions that provide for a response to these newly identified effects, and making a determination that the BDCP provisions are not sufficient to address those effects. Prior to any reinitiation of consultation regarding the Integrated Biological Opinion, the Authorized Entities and USFWS and NMFS shall meet and confer and attempt to resolve any disagreements regarding whether such reinitiation of consultation is warranted.

20.1.4 Reinitiation of Consultation on Other CVP/SWP-Related Biological Opinions

Prior to the reinitiation of consultation regarding a biological opinion involving CVP or coordinated CVP/SWP operations other than those addressed in the BDCP and the Integrated Biological Opinion, the Authorized Entities and USFWS and NMFS will meet and confer regarding any disagreements over the need to reinitiate consultation. If Reclamation or FWS and/or NMFS reinitiates consultation on a Biological Opinion involving CVP or coordinated CVP/SWP operations, to the maximum extent allowed by

law, Reclamation will prepare the Biological Assessment and the USFWS and/or NMFS, as applicable, will prepare the Biological Opinion consistent with the BDCP, the permits, the Integrated Biological Opinion and this Agreement including the Assurances and Protections.

20.1.5 Process for Review of Draft Biological Assessments and Draft Biological Opinions Prepared During Reinitiation of Consultation on the Integrated Biological Opinion or Other CVP/SWR-Related Biological Opinions

In the event of reinitiation of consultation on actions addressed in the Integrated Biological Opinion or on actions related to the CVP operations or coordinated CVP/SWP operations that may substantially affect the BDCP, the Permittees, as well as other affected parties as determined by the action agency, shall be given the opportunity to participate, within the timeframes required by the action agency, in such consultation, and allowed to (i) submit information for consideration during consultation, (ii) review and comment on draft biological assessments and draft biological opinions prepared for such consultation, and, (iii) participate in the development of reasonable and prudent alternatives that would substantially affect BDCP, in the event a jeopardy or adverse modification determination is made.

20.1.6 Critical Habitat Designation for Covered Species

The BDCP and this Agreement provide a comprehensive, habitat-based approach to the protection of Covered Species by focusing on the land and water necessary to provide for the long-term conservation and management of the Covered Species. This approach is consistent with the overall purposes of the ESA to provide a means whereby the ecosystems upon which endangered and threatened species depend may be conserved. At the time critical habitat is considered for a species proposed for listing under the ESA or currently listed under the ESA, the Services will consider whether habitat protections under the BDCP adequately protect habitat that would be deemed essential to the species' recovery and survival. If the finding is that the habitat is adequately protected, and the benefits of exclusion outweigh the benefits of inclusion, such critical habitat would not be designated in BDCP Plan Area. If critical habitat is designated within the BDCP Plan Area subsequent to issuance of the permits, no compensation, mitigation, or minimization measures will be required of the Permittees as a result of the designation.

20.1.7 Future Recovery Plans for Covered Species

Recovery plans under the ESA delineate actions necessary to recover and protect federally listed species. During the preparation of the BDCP, these plans provided useful information and recommendations that informed the development of the Conservation Strategy. Recovery plans are not, however, intended to establish or define the obligations of permit applicants under the ESA.

The Parties acknowledge that ESA recovery plans have no effect on the implementation of the BDCP, except to the extent that they may contribute information that supports the Adaptive Management and Monitoring Program. With respect to any recovery plan applicable to any Covered Species within the Plan Area that is developed after the approval of the BDCP the parties agree that:

- Recovery plans cannot require any additional land or financial compensation or otherwise diminish the take authorization for Covered Species granted to the Authorized Entities pursuant to the Federal Permits or the Integrated Biological Opinion.
- Be finalized only after USFWS and NMFS will provide an opportunity for input from the Authorized Entity Group on the draft recovery plan.

20.1.8 Agencies Responsible for Conducting the NEPA Analysis

Reclamation, USFWS, and NMFS have served as federal lead agencies under NEPA regarding the preparation of the joint EIR/Environmental Impact Statement (EIS) for the BDCP. Prior to the Effective Date, the lead agencies prepared an EIS that fully analyzed the actions proposed in the BDCP and a full range of alternatives to ensure that decision makers and the public were fully informed of the potentially significant effects of the proposed BDCP, and the alternatives to the Plan, on the quality of the human environment.

20.1.9 Future Environmental Review Under NEPA

To the maximum extent possible in accordance with NEPA and applicable law, Reclamation, USFWS, and NMFS shall rely on and use relevant portions of the EIS and NEPA findings when conducting future environmental review of Covered Activities and Associated Federal Actions. In the event that USFWS or NMFS participate as a lead or cooperating agency under NEPA with respect to subsequent environmental review related to the implementation of a Covered Activity or Associated Federal Action, USFWS or NMFS will not recommend or request the imposition of any additional or more stringent minimization or mitigation measures related to the protection or conservation of Covered Species or their habitat unless required by applicable law. Except in those instances, USFWS and NMFS will notify the lead NEPA agency that the Conservation Measures in the BDCP fully address any impact to or incidental take of any Covered Species or habitat resulting from Covered Activities or Associated Federal Actions.

20.2 Obligations of CDFW

20.2.1 CEQA

20.2.1.1 Agencies Responsible for CEQA Analysis

CDFW has served as a responsible agency under CEQA regarding the development of the joint EIR/EIS for the BDCP. Prior to or concurrent with the Effective Date, DWR and CDFW each evaluated the BDCP pursuant to CEQA and issued findings addressing whether the implementation of the BDCP would cause significant adverse impacts to the environment.

20.2.1.2 Future Environmental Review Under CEQA

Unless otherwise required by CEQA or other applicable law, the Permittees and CDFW shall rely on and use relevant portions of the EIS/EIR and the CEQA findings when conducting future environmental review of Covered Activities. In the event that CDFW participates as a lead, responsible, or trustee agency under CEQA with respect to the implementation of Covered Activities, CDFW will not require, recommend, or request the imposition of any additional or more stringent minimization or mitigation measures directed at the protection or conservation of Covered Species or their habitats. As a responsible or trustee agency under CEQA, CDFW will further notify the lead CEQA agency that any avoidance, minimization, and mitigation measures otherwise required for any impact to or take of any Covered Species or habitat resulting from Covered Activities will be satisfied through the implementation of the BDCP.

20.2.2 Lake and Streambed Alteration Agreements for Covered Activities

CDFW acknowledges and agrees that the BDCP, this Agreement, and the State Permit shall be deemed to provide an equivalent level of protection for wildlife, habitat, or other biological resources as the measures that would otherwise be required or recommended to address the impacts of Covered Activities on Covered Species pursuant to Fish & Game Code §§ 1600–1616.

In any future notification provided to CDFW under Section 1602 related to a Covered Activity, CDFW will ensure that any Streambed Alteration Agreement issued in response to the notification is consistent with the BDCP, this Agreement, and the State Permit. Unless otherwise required by law or regulation, CDFW will not require through the Streambed Alteration Agreement additional land, water or other natural resources, or financial compensation or additional restrictions on the use of land, water, or other natural resources to address impacts of Covered Activities on Covered Species beyond the measures provided for under the BDCP, this Agreement, and the State Permit.

21.0 TERM

21.1 Effective Date

This Agreement shall be effective upon execution by all Parties and issuance of all Permits.

21.2 Term of the Permits

The Permits will be in effect for a term of fifty (50) years, unless extended pursuant to Section 21.3. The terms of the Permits will begin from the Effective Date.

21.3 Extension of Permit Duration

Prior to expiration of the Permits, the Permittees may apply to the Fish and Wildlife Agencies to renew the Permits. The Permittees will initiate the Permit renewal process prior to the expiration of the initial 50-year period and with sufficient time to allow for the review and processing of the Permit renewal.

21.4 Withdrawal

Upon ninety (90) days written notice to the Parties, any Permittee may unilaterally withdraw from the BDCP and this Agreement. Such withdrawal of a Permittee from this Agreement shall be deemed to constitute a surrender of the Permittee's authorization under the Permits. In the event of withdrawal by any Permittee other than DWR, the remaining Permittees would remain obligated to meet all Permittee requirements under the Plan and this Agreement. In the event of withdrawal by DWR, the Permits will be terminated.

21.4.1 Obligations in the Event of Withdrawal

As a condition of withdrawal, the withdrawing Party(ies) shall remain obligated to ensure implementation of all existing and outstanding Conservation Measures required under this Agreement, the BDCP and the Permits to address all impacts of any take caused by the withdrawing Party(ies) that occurred prior to such withdrawal. Such obligations would include long-term management of Reserve Lands established prior to withdrawal.

21.4.2 Mitigation Credit in the Event of Withdrawal

In the event of withdrawal, the withdrawing Party(ies) shall receive mitigation credit for any mitigation attributable to the withdrawing Party(ies) that occurs prior to withdrawal and that is not required to offset take that occurred prior to withdrawal.

22.0 REMEDIES AND COMPLIANCE

Each Party will have all of the remedies available in equity (including specific performance and injunctive relief) and at law to enforce the terms of this Agreement, the BDCP and the Permits, and to seek redress for any breach or violation thereof; except to the extent that equitable relief in contract (including specific performance) is not available against the United States, and except that:

- none of the Parties will be liable in damages to any other Party or to any other person or entity for any breach of this Agreement, any performance or failure to perform a mandatory or discretionary obligation imposed by this Agreement, or any other cause of action arising from this Agreement;
- in the event that the Authorized Entities are wholly or partially prevented from performing obligations under this Agreement because of causes beyond their reasonable control and without their fault or negligence (force majeure), including, but not limited to, acts of God, labor disputes, sudden actions of the elements not identified as Changed Circumstances, or actions of non-participating federal or State agencies or local jurisdictions, the Authorized Entities, as applicable, will be excused from whatever performance is affected by such cause to the extent so affected, and such failure to perform will not be considered a material violation or breach, provided that nothing in this Section will be deemed to authorize any Authorized Entities to violate the ESA, CESA or NCCPA, and provided further that:
 - The suspension of performance is of no greater scope and no longer duration than is required by the force majeure;
 - Within fifteen (15) days after the occurrence of the force majeure, the Authorized Entities, as applicable, provide the Fish and Wildlife Agencies written notice describing the particulars of the occurrence;
 - The Authorized Entities use their best efforts to remedy their inability to; and
 - When the Authorized Entities are able to resume performance of their obligations, the Authorized Entities, as applicable, shall give the Fish and Wildlife Agencies written notice to that effect.

Nothing in this Agreement is intended to limit the authority of the federal and State government to seek civil or criminal penalties, equitable relief, or otherwise fulfill enforcement responsibilities under the ESA, NCCPA or other applicable law.

22.1 Suspension of Federal Permits

USFWS or NMFS may suspend the Federal Permits, in whole or in part, for cause in accordance with 50 C.F.R. § 13.27 and 222.306(e) and other applicable laws and regulations in force at the time of such suspension. Unless emergency suspension is necessary to avoid jeopardy to a Covered Species, USFWS or NMFS shall not issue a notice of proposed suspension in accordance with 50 C.F.R. § 13.27(b) without first (1) attempting to resolve, in accordance with Section 15.8, any disagreements regarding the implementation or interpretation of the BDCP, this Agreement or the Permits; and (2)

identifying the facts or conduct which may warrant the suspension and requesting the Implementation Office to take appropriate remedial actions. Unless emergency suspension is necessary, USFWS and NMFS shall not suspend a Federal Permit, in whole or in part, to avoid the likelihood of jeopardy to a Covered Species, without first following the dispute resolution process in Section 22.5 of this Agreement. Any proposed decision to suspend the USFWS permit must be reviewed and approved in writing by the Assistant Secretary for Water and Science and the Assistant Secretary for Fish Wildlife and Parks, before it is effective. Any proposed decision to suspend the NMFS permit must be reviewed and approved in writing by the appropriate Under Secretary at the Department of Commerce. This responsibility shall not be delegated.

22.2 Reinstatement of Suspended Federal Permits

In the event USFWS or NMFS suspends a Federal Permit, in whole or in part, as soon as possible but no later than ten (10) days after such suspension, USFWS or NMFS, as applicable, will meet and confer with the Implementation Office concerning how the suspension can be ended. At the conclusion of any such conference, USFWS or NMFS will identify reasonable, specific actions, if any, necessary to effectively redress the suspension. In making this determination, USFWS or NMFS will consider the requirements of the ESA and its regulations, the conservation needs of the Covered Species, the terms of the Federal Permit and of this Agreement and any comments or recommendations received from the Implementation Office. As soon as possible, but not later than thirty (30) days after the conference, USFWS/NMFS will send the Implementation Office written notice of any available, reasonable actions necessary to effectively redress the deficiencies giving rise to the suspension. Upon performance or completion, as appropriate, of such actions, USFWS/NMFS will immediately reinstate the Federal Permit. It is the intent of the Parties that in the event of any total or partial suspension of a Federal Permit, all Parties will act expeditiously and cooperatively to reinstate the Federal Permit.

22.3 Revocation of Federal Permits

USFWS and NMFS each agree that it will not revoke or terminate a Federal Permit, in whole or in part, pursuant to 50 C.F.R. §§ 13.28–13.29 and 50 C.F.R. §§ 17.22(b)(8) and 17.32(b)(8) unless the Permittees fail to fulfill their obligations under the BDCP, this Agreement, or the Federal Permits, and only after identifying the facts or conduct which may warrant the revocation and requesting the Implementation Office to take appropriate remedial actions, and following the review process in Section 15.8 if invoked by a Permittee, unless immediate revocation is necessary to avoid the likelihood of jeopardy to a Covered Species. USFWS and NMFS each agree that it will not revoke or terminate a Federal Permit, in whole or in part, to avoid the likelihood of jeopardy to a Covered Species, without first following the dispute resolution process in Section 22.5 of this Agreement.

Any proposed decision to revoke the USFWS permit must be reviewed and approved in writing by the Assistant Secretary for Water and Science and the Assistant Secretary for Fish Wildlife and Parks, before it is effective. Any proposed decision to revoke the NMFS permit must be reviewed and approved in writing by the appropriate Under Secretary at the Department of Commerce. This responsibility shall not be delegated.

22.4 Suspension or Revocation of the State Permit

CDFW may suspend or revoke, in whole or in part, the State Permit in the event that it determines that the Permittees have failed to fulfill their obligations under the BDCP, this Agreement, or the State Permit. Unless an immediate suspension is necessary to avoid jeopardy, CDFW shall not suspend or revoke the State Permit without first notifying in writing the Implementation Office and Permittees of the basis for its determination and the proposed action to revoke or suspend and meeting and conferring with the Program Manager and the Permittees regarding the matter. The Parties shall meet and confer within fifteen (15) days of issuance of such notice to assess the action or inaction that warranted CDFW's determination and to identify any appropriate responsive measures that may be taken. Within forty-five (45) days of receiving notice from CDFW, Permittees shall either satisfy CDFW that they are in compliance with the State Permit or reach an agreement with CDFW to expeditiously obtain compliance.

Following this forty-five (45) day period, CDFW may suspend, but shall not revoke the State Permit until such time as the review process set forth in Section 15.8 of this Agreement has been completed, provided the process has been invoked by a Permittee. Any decision to suspend or revoke the State Permit must be in writing and must be signed by the Director of CDFW. This responsibility shall not be delegated. Situations related to a jeopardy determination are addressed under Section 22.6 of this Agreement.

22.5 Dispute Resolution Process for Revocation or Suspension of the Federal Permits or Invalidation of the Incidental Take Statement Related to a Jeopardy Determination

In the event that USFWS or NMFS determine, after following the process to address unforeseen circumstances set forth in Section 14.3.3 of this Agreement, that circumstances warrant suspension or revocation of one or both of the Federal Permits or invalidation of the Incidental Take Statement to avoid jeopardy to a Covered Species, USFWS and/or NMFS, as applicable, shall meet and confer with the Program Manager and the Authorized Entity Group within thirty (30) days of such determination to identify potential actions that may be available to forestall the suspension or revocation. Such actions that may include, but would not be limited to, the following:

- Identify and secure other State and/or federal resources that had not been previously identified.

- Identify voluntary implementation actions that the Authorized Entities may undertake to remedy the situation. Such measures may include (1) adjustments of project operations to reduce or avoid impacts; (2) operational changes at the points of diversions; (3) water transfers or purchase of water rights involving third parties; (4) new water storage or banking arrangements; (5) payments from the federal and State governments to the Authorized Entities for reduced allocations; and (6) additional funding for wildlife agency staff to increase enforcement against third party activities causing unlawful take.

If no such remedies are identified, and USFWS and/or NMFS determine that the continuation of a Covered Activity or Associated Federal Action will result in jeopardy to a Covered Species, any member of the Authorized Entity Group may invoke the review process in Section 15.8 of this Agreement.

22.6 Dispute Resolution Process for Revocation or Suspension of the State Permit Related to a Jeopardy Determination

Section 2823 of the NCCPA provides that CDFW shall suspend or revoke any permit, in whole or in part, issued for the take of a species subject to Section 2835 if the continued take of the species would result in jeopardizing the continued existence of the species. CDFW agrees that it will not revoke the State Permit pursuant to Section 2823 without first (a) requesting that the Permittees take appropriate remedial action, and (b) providing the Permittees with notice in writing of the facts or conduct which warrant the revocation and a reasonable opportunity (but not less than forty-five (45) days) to take remedial action. CDFW shall meet and confer with the Program Manager and the Permittees within fifteen (15) days of such notice to identify potential actions that may be available to forestall the revocation. Such actions may include, but would not be limited to, the following:

- Identify and secure other State and/or federal resources that had not been previously identified.
- Identify voluntary implementation actions that the Permittees may undertake to remedy the situation. Such measures may include (1) adjustments of project operations to reduce or avoid impacts; (2) operational changes at the points of diversions; (3) water transfers or purchase of water rights involving third parties; (4) new water storage or banking arrangements; (5) payments from the federal and State governments to the Authorized Entities for reduced allocations; and (6) additional funding for wildlife agency staff to increase enforcement against third party activities causing unlawful take.

If no such remedies are identified, and CDFW determines that continued take of a Covered Species would result in jeopardizing the continued existence of the species, CDFW shall suspend or revoke the State Permit, in whole or in part, under Fish & Game Code Section 2823. CDFW shall not revoke the State Permit, however, until such time as the review process set forth in Section 15.8 of this Agreement has been completed, provided the process has been invoked by a Permittee.

22.7 Obligations in the Event of Permit Suspension or Revocation

In the event of suspension or revocation of the Permits, the Permittees will remain obligated to fulfill any existing and outstanding minimization and mitigation measures required of them under this Agreement or the BDCP related to any Take that occurs prior to such suspension, revocation, or termination. Such obligations would include the obligation to provide for the long-term management or Reserve System Lands that were established prior to suspension or termination of the Permits or that would otherwise be required under the Plan for impacts of any act that would cause the permitted Take.

23.0 MODIFICATIONS AND AMENDMENTS

The BDCP may be modified during implementation in accordance with CDFW, USFWS, and NMFS regulations, the Plan, and the terms of this Agreement. Plan modifications may be needed periodically to clarify provisions or correct unanticipated inconsistencies in the documents. Plan changes fall into three broad categories: administrative changes, minor modifications, and formal amendments. Certain changes to the BDCP will also require an amendment to the Permits.

23.1 BDCP Administrative Changes

The administration and implementation of the BDCP will require frequent and ongoing interpretation of its provisions by the Implementation Office and the Parties. Actions taken on the basis of these interpretations that do not substantively change the purpose, intent, or terms of the Plan or this Agreement will not require modification or amendment of the Plan, this Agreement, or its associated authorizations. Such actions related to the ordinary administration and implementation of the Plan may include, but are not limited to, the following:

- Clerical corrections to typographical, grammatical, and similar editing errors that do not change the intended meaning; or to maps or other exhibits to address insignificant errors.
- Variations in the day-to-day management of reserve system lands.

- Adjustments to monitoring protocols to incorporate new protocols approved by the Fish and Wildlife Agencies.
- Administration of the Implementation Office.
- Changes in the representatives of member entities of the Stakeholder Council.
- Minor corrections to land ownership descriptions.
- Changes to survey, monitoring, reporting, restoration, and/or management protocols or techniques that do not adversely affect Covered Species or habitat functions and values.
- Updates or corrections to the land cover or other resource maps or species occurrence data.

23.2 Minor Modifications or Revisions

As part of the process of Plan implementation, the Implementation Office may need to make minor modifications or revisions to the Plan and/or this Agreement from time to time to respond appropriately to new information, scientific understanding, technological advances, and other such circumstances. Minor modifications or revisions are likely to be technical in nature and will not involve changes that will adversely affect Covered Species, the level of take, or the obligations of Authorized Entities.

Minor modifications or revisions may include, but are not limited to, the following circumstances:

- Transfers of targeted acreages between Resource Opportunity Areas consistent with criteria set out in Chapter 3.
- Transfers of targeted natural community acreages among Conservation Zones, provided such change does not preclude meeting preserve assembly requirements, significantly increase the cost of Plan management, or preclude achieving biological goals and objectives.
- Adjustments of Conservation Measures or biological objectives developed through and consistent with the adaptive management program, as described in Chapter 3.6.
- Extensions of earth-moving or ground disturbance outside the right-of-way limits analyzed in the effects analysis for the Plan regarding Covered

Activities and Associated Federal Actions involving infrastructure development or natural community restoration.

- Other proposed changes to the Plan that the Fish and Wildlife Agencies have determined to be insubstantial and appropriate for implementation as a minor modification.

23.2.1 Procedures for Minor Modifications

The Implementation Office, the Authorized Entities, or the Fish and Wildlife Agencies may propose minor modifications or revisions by providing written notice to the other Parties. Such notice will include a description of the proposed minor modifications or revisions, an explanation of the reason for the proposed minor modifications or revisions, an analysis of their environmental effects including any impacts on Covered Species, and an explanation of why the effects of the proposed minor modifications or revisions will have the following characteristics.

- They will not significantly differ from, and will be biologically equivalent or superior to, the effects described in the Plan.
- They will not conflict with the terms and conditions of the Plan.
- They will not significantly impair implementation of the Conservation Strategy.

The Fish and Wildlife Agencies and/or the Authorized Entities may submit comments on the proposed minor modification or revision in writing within sixty (60) days of receipt of notice. The Authorized Entities must agree to any proposed minor modification.

If the Fish and Wildlife Agencies do not concur that the proposed minor modification or revision meets the requirements for a minor modification or revision, the proposal must be processed as a formal amendment as described in Section 23.3. Any Authorized Entity or Fish and Wildlife Agency may invoke the review process set forth in Section 15.8 of this Agreement to resolve disagreements concerning a proposed minor modification or revision.

If the Fish and Wildlife Agencies concur that the requirements for a minor modification or revision have been met and the modification or revision should be incorporated into the Plan, the BDCP shall be modified accordingly. If any Fish and Wildlife Agency fails to respond to the written notice within the 60-day period, the agency will be deemed to have approved the proposed minor modification or revision.

Notwithstanding the foregoing, agreement of the Authorized Entities shall not be required for minor modifications that involve changes to Conservation Measures or biological

objectives adopted through the adaptive management process, as described in Chapter 3.6.

23.3 Formal Amendment

Under some circumstances, it may be necessary to substantially amend the Plan and this Agreement. Any proposed changes to the Plan that do not qualify for treatment as described in Chapters 6.5.1 or 6.5.2 will require a formal amendment. Formal amendment to the Plan and this Agreement also will require corresponding amendment to the authorizations/Permits, in accordance with applicable laws and regulations regarding permit amendments. The Implementation Office will be responsible for submitting any proposed amendments to the Permit Oversight Group.

Amendments to the Plan likely will occur infrequently and will follow the process set forth in Chapter 6.5.3. Formal amendments include, but are not limited to, the following changes.

- Substantive changes to the boundary of the Plan Area, other than those associated with the acquisition of terrestrial natural communities in the surrounding Delta counties, as described in Chapter 1.4.1.
- Addition of species to the Covered Species list.
- Increase in the take of Covered Species beyond that authorized.
- Adding new Covered Activities and Associated Federal Actions to the Plan.
- Substantial changes in implementation schedules that are likely to have significant adverse effects on the Covered Species.
- Changes in Conservation Measures that would require additional obligations of the Authorized Entities beyond those provided for within the adaptive resources established under the Plan and this Agreement.
- Changes to Biological Goals.

23.3.1 Process for Formal Amendment

Formal amendments will involve the same process that was required for the original approval of the Plan. In most cases, an amendment will require public review and comment, CEQA and NEPA compliance, and intra-Service Section 7 consultation. Amendments will be prepared by the Implementation Office, subject to review and approval of the Authorized Entity Group prior to submission to the Permit Oversight Group. Each Fish and Wildlife Agency, for which the proposed amendment is

applicable, will use reasonable efforts to process proposed amendments within one-hundred eighty (180) days.

23.3.2 Additions to Covered Species List

In the event the Authorized Entities desire to add species to the list of Covered Species, the Authorized Entities will propose an amendment to the BDCP and request an amendment to the Permits and the Integrated Biological Opinion. Any such request will be supported by sufficient evidence to meet the requirements of the ESA and the NCCPA. The Fish and Wildlife Agencies shall give due consideration to, and full credit for, Conservation Measures previously implemented as part of the Plan that benefit such species.

24.0 MISCELLANEOUS PROVISIONS

24.1 No Delegation of Authority

Nothing in this Agreement shall cause, or shall be deemed to cause, any delegation of authority from any Party to this Agreement to any other Party.

24.2 Relationship to Other Regulatory Requirements

The terms of this Agreement are consistent with and will be governed by and construed in accordance with the ESA, the NCCPA and other applicable State and federal laws. In particular, nothing in this Agreement is intended to limit the authority of USFWS, NMFS and CDFW to seek penalties for violations of, or otherwise fulfill its responsibilities under, the ESA, CESA and NCCPA. Moreover, nothing in this Agreement is intended to limit or diminish the legal obligations and responsibilities of USFWS or NMFS as agencies of the federal government or CDFW as an agency of the State of California.

24.3 Changes in Environmental Laws

It is acknowledged and agreed by the Fish and Wildlife Agencies that the Authorized Entities are agreeing to perform substantial avoidance, minimization, mitigation, conservation, and management measures as set forth in this Agreement. If a change in, or an addition to, any federal or State law governing or regulating the impacts of development on land, water or biological resources as they relate to Covered Species, including, but not limited to, the ESA, NEPA, NCCPA, CESA, and CEQA, the Fish and Wildlife Agencies shall give due consideration to the measures required under the BDCP in applying the new laws and regulations to the Authorized Entities.

24.4 References to Regulations

Any reference in this Agreement, the BDCP, or the Permits to any regulation or rule of the Fish and Wildlife Agencies will be deemed to be a reference to such regulation or rule in existence at the time an action is taken.

24.5 Applicable Laws

All activities undertaken pursuant to this Agreement, the BDCP, or the Permits must be in compliance with all applicable local, State and federal laws and regulations.

24.6 Notices

The Implementation Office will maintain a list of individuals responsible for ensuring BDCP compliance for each of the Parties, along with addresses at which those individuals may be notified (Notice List). The Notice List as of the Effective Date is provided in Exhibit G. Each Party will report any changes of names or addresses to the Implementation Office and the other Parties in writing.

Any notice permitted or required by this Agreement will be in writing, and delivered personally, by overnight mail, or by United States mail, postage prepaid. Notices may be delivered by facsimile or electronic mail, provided they are also delivered by one of the means listed above. Delivery will be to the name and address of the individual responsible for each of the Parties, as stated on the most current Notice List.

Notices will be transmitted so that they are received within deadlines specified in this Agreement, where any such deadlines are specified. Notices delivered personally will be deemed received on the date they are delivered. Notices delivered via overnight delivery will be deemed received on the next business day after deposit with the overnight mail delivery service. Notices delivered via non-certified mail will be deemed received seven (7) days after deposit in the United States mail. Notices delivered by facsimile or other electronic means will be deemed received on the date they are received.

24.7 Entire Agreement

This Agreement, together with the BDCP, the Permits, the Integrated Biological Opinion, and the Memorandum, constitutes the entire agreement among the Parties, supersedes any and all other agreements, either oral or in writing, among the Parties with respect to the subject matter hereof, and contains all of the covenants and agreements among them with respect to said matters. Each Party acknowledges that no representation, inducement, promise of agreement, oral or otherwise, has been made by any other Party or anyone acting on behalf of any other Party that is not embodied in this Agreement, the BDCP, the Permits, the Integrated Biological Opinion, or the Memorandum.

24.8 Severability

In the event one or more of the provisions contained in this Agreement is held to be invalid, illegal or unenforceable by any court of competent jurisdiction, the Parties will meet and confer to determine whether such portion will be deemed severed from this Agreement and the remaining parts of this Agreement will remain in full force and effect as though such invalid, illegal, or unenforceable portion had never been a part of this Agreement.

24.9 Independent State and Federal Permits

The State and Federal Permits are independent such that revocation of the State Permit or one of the Federal Permits does not automatically cause revocation of the other Permits.

24.10 Assignment or Transfer

This Agreement will be binding on and inure to the benefit of the Parties and their respective successors and assigns. Assignment or other transfer of the Permits or any rights or authorities granted thereunder will be governed by provisions of the ESA, and the NCCPA pertaining to the assignment or transfer of Permits.

Any obligation of an Authorized Entity may be assigned to any other Authorized Entity consistent with applicable law and upon written execution of an agreement of assignment. Such an assignment shall relieve these respective Parties of their pre-existing obligations under this Agreement only to the extent consistent herewith. Any assignment or other transfer of the Permits must be approved by the applicable Fish and Wildlife Agency.

24.11 Amendments

This Agreement may be amended only by the written agreement of all of the Parties.

24.12 No Partnership

Neither this Agreement nor the BDCP shall make or be deemed to make any Party to this Agreement the agent for or the partner of any other Party.

24.13 No Third Party Beneficiaries

Without limiting the applicability of rights granted to the public pursuant to the ESA, CESA, NCCPA or other applicable law, this Agreement will not create any right or interest in the public, or any member thereof, as a third party beneficiary thereof, nor will it authorize anyone not a Party to this Agreement to maintain a suit for personal injuries or property damages under the provisions of this Agreement. The duties, obligations, and responsibilities of the Parties to this Agreement with respect to third party beneficiaries will remain as imposed under existing State and federal law.

24.14 Elected Officials not to Benefit

No member of, or delegate to, the California State Legislature or the United States Congress will be entitled to any share or part of this Agreement or to any benefit that may arise from it.

24.15 Availability of Funds

All Actions required of the United States or its agencies in implementing this Agreement are subject to appropriations by Congress. Nothing in this Agreement shall be interpreted as or constitute a commitment or requirement that the United States or its agencies obligate or pay funds in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341, or other applicable law. Nothing in this Agreement is intended or shall be construed to commit a Federal official to expend Federal funds not appropriated for that purpose by Congress. To the extent that the expenditure or advance of any money or the performance of any obligation of the United States or its agencies, or any Secretary under this Agreement is to be funded by appropriation of funds by Congress, the expenditure, advance, or performance shall be contingent upon the appropriation of funds by Congress that are available for this purpose and the apportionment of such funds by the Office of Management and Budget. No breach of this Agreement shall result and no liability shall accrue to the United States or its agencies or any Secretary in the event such funds are not appropriated or apportioned. Nothing in this Agreement is intended or shall be construed to require the obligation, appropriation, reprogramming, or expenditure of any funds by the United States or its agencies, except as otherwise permitted by applicable law.

Implementation of this Agreement and the BDCP by DWR and CDFW is subject to the availability of appropriated funds. Nothing in this Agreement will be construed by the Parties to require the obligation, appropriation, or expenditure of any money from the Treasury of the State of California. The Parties acknowledge and agree that DWR and CDFW will not be required under this Agreement to expend any State-appropriated funds unless and until an authorized official of that agency affirmatively acts to commit such expenditure as evidenced in writing.

24.16 Duplicate Originals

This Agreement may be executed in any number of duplicate originals. A complete original of this Agreement will be maintained in the official records of each of the Parties hereto.

24.17 Calendar Days

Throughout this Agreement and the BDCP, the use of the term “day” or “days” means calendar days, unless otherwise specified.

24.18 Response Times

Except as otherwise set forth herein or as statutorily required by CEQA, NEPA, CESA, the ESA, NCCPA or any other laws or regulations, the Parties will use reasonable efforts to respond to written requests from any Party within a forty-five (45) day time period.

24.19 Attorney’s Fees

If any action at law or equity, including any action for declaratory relief, is brought to enforce or interpret the provisions of this Agreement, each Party to the litigation will bear its own attorneys’ fees and costs. Notwithstanding the foregoing, attorneys’ fees and costs that may be recoverable against the United States may be sought as provided by applicable federal law.

24.20 Governing Law

This Agreement will be governed by and construed in accordance with the laws of the United States and the State of California, as applicable.

24.21 Headings

Headings are used in this Agreement for convenience only and do not affect or define the Agreement’s terms and conditions.

24.22 Defense

Upon request by any Party, other Parties hereto shall reasonably cooperate in defending lawsuits regarding the BDCP, this Agreement, or the Permits. Such cooperation may include, but is not limited to, entering into a joint defense agreement and cooperation among the DWR, SWP/CVP Contractors, CDFW, USFWS and NMFS in the preparation of an administrative record.

24.23 Due Authorization

Each Party represents and warrants that (1) the execution and delivery of this Agreement has been duly authorized and approved by all requisite action, (2) no other authorization or approval, whether of governmental bodies or otherwise, will be necessary in order to enable it to enter into and comply with the terms of this Agreement, and (3) the person executing this Agreement on behalf of each Party has the authority to bind that Party.



INFORMATION ITEM

July 14, 2014

TO: Planning & Operations Committee
(Directors Osborne, Barbre, Hinman)

FROM: Robert Hunter, General Manager Staff Contact: Karl Seckel/Richard Bell

SUBJECT: DRAFT Discussion Request for Proposal – OC Water Reliability Study 2015

COMMITTEE RECOMMENDATION

Staff recommends the Committee provide input into the study effort.

SUMMARY

MWDOC has included as part of its budget for this year, funding for several efforts on water reliability improvements for Orange County. Staff would like to seek input, complete and send out a Request for Proposals (RFP) to a number of engineering/planning firms who would be qualified to complete this work with us. Staff has already done quite a bit of work in a number of areas. The consulting assistance will be used to help bring all of the information together into a decision-making process and to utilize statistical modeling techniques to help us better understand potential water supply and system gaps that might exist in Orange County under several scenarios. The scope of work also outlines a number of policy issues that impact decision-making. Staff's intent is to work with Orange County Water District, our member agencies and the Three Cities on the Scope of Work and then issue it in the form of an RFP. Based on how quickly these efforts can be initiated, it is possible the contract could be awarded in August. Staff has moved up the schedule for this initial effort to be prepared to address decisions regarding the Huntington Beach Ocean Desalination Project and others that might move forward this year and to provide input into a number of upcoming MET efforts. The existing drought conditions have helped to highlight our short term needs and set the stage for longer term planning.

Budgeted (Y/N):	Budgeted amount:	Core __	Choice __
Action item amount:		Line item:	
Fiscal Impact (explain if unbudgeted):			

Discussion DRAFT Scope of Services OC Water Reliability Study 2015

The OC Water Reliability Investigation 2015 will consist of eight major tasks as described below.

Task 1: Project Management – The Consultant shall include in the scope of work sufficient time and budget to manage the project work within the proposed schedule of work. Project Management shall include, but not be limited to, project kick-off meeting, monthly status meetings and preparation of meeting agendas and minutes of each meeting. Project Management shall also include collection and compilation of relevant existing information and preparation for and participation in project workshops at key milestones.

1.1 Existing Information – MWDOC will provide related information on various OC water demand projections, projects and water supply issues, including local, regional and State water supply and delivery issues, in order to characterize the demands, supplies, projects, potential outages and other pertinent information necessary to perform the analysis. The consultant shall utilize the attached Appendix A and B [BEING PREPARED AT THIS TIME] information as a starting point in this work. Specific reports that MWDOC will make available include but are not limited to:

- a) WUE Master Plan
- b) Water Alliance Model for estimating future WUE opportunities
- c) MET estimates of passive conservation impacts on demands
- d) MET Integrated Resources Plan
- e) MET Water Surplus and Drought Management Plan (WSDM)
- f) South Orange County Reliability study update 2013
- g) OCWD Long Term Facilities Plan
- h) IRWD and MNWD (still under preparation) Water Reliability Plans
- i) OC Business Council Economic Value of Water Reliability (2003)
- j) Appendix 9.A. Economic Benefits of the BDCP and Take Alternatives
- k) DWR – Delivery Capacity of the State Water Project
- l) BUREC and SAWPA Climate Change Impacts for the Santa Ana River Watershed
- m) Other

1.2 Project Meetings and Workshops – MWDOC will identify the meetings and/or workshops to achieve the necessary input from the water community on water supply mix and reliability goals amongst the MWDOC member agencies and the Cities of Anaheim, Fullerton and Santa Ana. MWDOC will identify the stakeholders for each meeting or workshop (e.g., demand analysis workshop, supply and gap analysis workshop, decision model methodology, presentation of results and recommendations, draft report review, member agency manager's briefing, and a joint MWDOC/OCWD Board Planning Committee meeting briefing, etc.). The Consultant will provide technical support to MWDOC staff for these meetings.

1.3 Draft and Final Reports – The consultant shall prepare a draft and final report.

Task 2. Review and Projection of Demands – The Consultant shall review demand projections provided by MWDOC as described in Appendix A that include (a) the sum of the local agencies demands in OC and (b) those recently provided by MET that are based on their MWD Main Forecast model. Using regression or other statistical or modeling processes, develop a defensible high and low demand scenario (or projection with a plausible normalized bandwidth) for OC water demands from 2015 to 2035 in five-year increments, including an estimate of the potential active and passive conservation program measures water savings.

MWDOC will provide input and assistance regarding estimating the active and passive conservation elements. MWDOC's WUE Master Plan is a source of information on active conservation opportunities. MWDOC also has access to the Water Alliance Model for estimating future water use efficiency opportunities. MET has also provided estimates of passive conservation impacts on demands. The consultant shall review and comment on the analysis of projected climate change impacts on demands prepared by MWDOC (Appendix B). Subtasks shall include:

2.1 Historical Demands Analysis. Review historical demands back to 1990, including water conservation savings. Analyze OC demands post-2008 to determine the relative effect of various major factors (recession and economy, water rates and relative pricing, dry and warm weather, and conservation programs) that led to the decline and recent rebound in water demands.

- a. Segregate out the impact from active and passive water use efficiency.
- b. Estimate the appropriate factors for estimating the variability of future annual demands between wet and dry periods.
- c. Develop/confirm a reasonable manner of addressing climate change impacts on the demand estimates over the projections period (See Appendix B).

Task 3. Review Existing OC Local Supplies – Review and update as appropriate existing supply estimates for average and dry year conditions as shown in Appendix A (preliminary data from MWDOC, OCWD and local agencies). The Consultant shall review and comment on those estimates for utilization in long range planning and refine, if necessary. Subtasks shall include:

3.1 SAR Watershed Supply Analysis – This task shall be conducted working with OCWD, MWDOC and others to develop an estimate of the future watershed supplies available for replenishing the OCWD groundwater basin. OCWD has conducted numerous studies and analyses on their supply sources which shall be reviewed by the Consultant in carrying out this task. The analysis shall reflect OCWD's understanding of the historical and prospective base flow and storm water available to OCWD for recharge and the range of estimates between wet, average and dry periods (See Appendix A and B). OCWD shall be given a draft of the

Consultant's report on this section for review prior to completion of the draft report. The projections should account for the following based on OCWD's operations and Long Range Facilities Plan:

- a. Increased capture of Santa Ana River (SAR) flows at Prado due to improvements of the conservation pool and operating rules. The Consultant shall work with OCWD and receive their analysis of the potential gains from the final completion of the enlargement of Prado Dam and Reservoir and change in the conservation pool operation.
- b. Loss of SAR flows due to expanded upstream conservation and recycling. OCWD has made an evaluation of the potential SAR base flows which shall be reviewed for this task.
- c. Opportunities for purchase of Upper Watershed water for downstream use.
- d. The 1969 judgment on SAR water rights.
- e. Impacts due to Climate Change. Please note the BUREC and SAWPA completed a study of Climate Change and the impacts on the watershed (See Appendix B).
- f. OCWD operations and ability to capture and percolate the supplies.
- g. The supply projection should also account for the potential for recovery of groundwater losses to LA County.
- h. The Consultant shall review the historical operational storage range of the OCWD basin and shall work with OCWD to describe potential future operational strategies for groundwater basin storage utilization. A key aspect of this will be evaluating the availability and cost of supplies from MET over the long run for groundwater replenishment purposes to facilitate the groundwater basin operations.

3.2 Non-OCWD Local Surface and Groundwater Supplies - The Consultant shall review the historical and projected non-OCWD local surface water and groundwater supplies shown in Appendix A and discuss any additional factors that should be taken into account with respect to long range planning.

3.3 Recycled Water. The Consultant shall review and comment on the historical and projected plans for recycled water supply in OC considering current and planned non-potable and indirect potable reuse projects and discuss any factors that should be taken into account, especially with regard to potential new IPR and DPR projects in OC (how would these efforts appropriately fit into OC's water future).

Task 4. Estimate of Supplies Available from MET - The Consultant, with input from MWDOC staff, shall complete an evaluation of current and projected supplies from MET. Consultant

shall utilize statistical modeling including information from MET and DWR and recent paleoclimatology studies to quantify the variability of MET's supplies under the scenarios below including estimating the portion of MET supplies available to OC. Methodologies of apportioning MET supplies to OC shall include (1) Preferential Rights, (2) MET shortages (percent reduction) applied directly to import water to OC, (3) percentage of recent purchases from MET, and (4) others to be developed (including the current Water Shortage Allocation Plan). This important task is critical to understanding potential shortages and decisions to develop additional local or local/regional water supply projects.

4.1 Base Case Scenario – Assume historical period of record hydrology and assume the BDCP is completed and operational by 2030 (this would essentially be the MET IRP case).

4.2 BDCP is Not Implemented Scenario – This scenario is provided to show the importance of supply protection accorded by the BDCP. Use DWR projections and appropriate assumptions to evaluate the decline of supplies over time from the State Water Project due to current and future endangered species listings, climate change effects on water supply from the Sacramento River watershed, including sea level rise and repulsion of salinity intrusion, without make-up of these supplies, to demonstrate potential shortages that could occur into the future.

4.3 Extended Drought Scenarios – This scenario would be applied to both 4.1 and 4.2 to examine the potential impact and storage/supply needs under longer duration droughts, including the predictions for increasing severity and frequency of droughts, and considering paleoclimatology Sacramento River flow reconstructions, and other potential climate change impacts on MET's supplies (e.g. reduced snowpack and challenge of capturing and storing earlier runoff).

4.4 Extended Outage of the SWP Due to Earthquake – This scenario would evaluate the impact on supplies due to either an earthquake in the Delta or on the San Andreas Fault that would knock out both the Colorado River Aqueduct and California Aqueduct (Porter Tunnel, Edmonston Pumping Plant over the Tehachapis and the East Branch Aqueduct). Recovery times should be based on current MET estimates.

4.5 Others as Suggested

Task 5. Develop a Supply Gap Analysis Between Projected Demands and Local Supplies – Consultant shall develop a gap analysis comparing projected demands to projected local and MET supplies under various local supply scenarios developed and the imported supply scenarios above for all of OC and subdivided by OCWD, South Orange County, Brea/La Habra, MWDOD and Total OC.

Task 6. Develop a System Gap Analysis (Amount and Days of Available Local Supply) –

MWDOC will take the lead in completing a system gap analysis for OCWD, Brea/La Habra and South Orange County areas of Orange County assuming that earthquakes could result in outages of local facilities and assuming that delivery of MET water into OC may not be available for up to 60 days. The Consultant shall assist and comment on the analysis. The three areas of OC rely on MET water for a different percentage of their supplies and hence would be impacted differentially by an outage of the MET supplies. MWDOC staff will provide a listing of the capabilities of local water production for each of the three areas. The maximum considered earthquake and potential larger earthquake scenarios on the major faults in OC shall be described and used in this assessment.

Task 7. Review Options for NEW Local Supplies and NEW System Capabilities/Supplies – The Consultant shall identify and help MWDOC staff assess options for new local supplies and system improvements for, but not be limited to the following:

7.1 OCWD Basin Options (Working with OCWD)

- a. Expansion of GWRS beyond 130,000 AF per year (Phase 4)
- b. Increase Conservation at Prado (Fully enlarged reservoir/dam)
- c. Purchase upstream SAR water (groundwater, recycled or storm water)
- d. Lower outflow to LA County (groundwater pumping patterns and recovery to reduce losses)

7.2 Ocean Desalination

- a. Poseidon Resources Proposed Huntington Beach Project
- b. Doheny Ocean Desalination Project
- c. Camp Pendleton (Joint with SDCWA)
- d. Other OC public developed project

7.3 Other Recycling Projects

- a. Non-Potable Dual Distribution “Purple Pipe” Systems
- b. Indirect Potable Reuse (San Juan Basin augmentation, other)
- c. Surface Water Augmentation (Irvine Lake)
- d. Direct Potable Reuse (excluding “pipe-to-pipe”)

7.4 San Juan Basin Storm Water Conservation

7.5 Water Exchanges and Transfers

- a. Strand Ranch
- b. Cadiz
- c. Other

7.6 Contract for a Higher Reliability from MET – This concept involves working with MET to secure additional supplies/transfers or dedicate storage in their system for drought or other reliability purposes, as contracted by their member agencies. These supplies would be paid for on a reimbursement basis and would be counted as “extraordinary water supplies” when needed by the MET member agencies contracting for these supplies.

7.7 Conjunctive Use Storage of Imported Water in OCWD Basin MET CUP Account for South Orange County – This option would evaluate concepts and arrangements for providing system reliability improvements for the South Orange County area from imported water stored within the OCWD basin. Opportunities for mutual benefits between the basin agencies and the SOC area would be key to the analysis.

7.8 Expansion of the Existing Emergency Services Concept from 2006 – The 2006 Emergency Supply Project (The Irvine Interconnection Project) that involved agreements between MWD, OCWD, IRWD and others would be examined for expansion opportunities. The provisions allowed imported water to be exchanged with groundwater via the IRWD system to provide up to 50 cfs of system supplies to South Orange County. To date, only 30 cfs of supplies have been implemented, leaving room for expansion of the existing agreement. In addition, per the terms of the IRWD Agreement, their system capacity to provide these supplies to others diminishes over time. An updated evaluation of their system capacity needs to be undertaken to evaluate the potential for extensions to this agreement for 2030 and beyond.

Task 8. Analysis of Policy Issues or Changes Needed for Implementation of NEW Projects –

There are many policy issues that can influence the decision-making process for investments in future supplies for OC. The Consultant should develop recommendations on how to best address these policies for the benefit of OC and the region. These types of policies include:

8.1 MET Water Supply and Drought Management Plan (WSDM) – MET’s method of allocating water during shortages is covered in its WSDM. The methodology is based on allocating MET’s available water across the MET service area based on “the need for imported water”. This can be viewed as a disincentive for certain types of projects when developed and paid for locally. With allocations, the local agency would receive a lower allocation from MET and hence a significant portion of the project reliability benefit is transferred to the region. This occurs whether or not MET has provided an incentive to the project and limits the ability of a local area to substantially change its reliability under this current policy.

8.2 Extraordinary Water Supplies – Unlike other local projects, local projects developed to provide NEW supplies ONLY in the event of an allocation scenario are not discounted as noted in (8.1) above. These types of supplies essentially provide a 1:1 benefit for the local agency making this investment. These include groundwater storage banks that would be dedicated during periods of shortage allocations, reducing their overall supply benefit (e.g., not being used to reduce risk of going into a shortage, but used only after a shortage is declared).

8.3 Regional vs Local Benefits – Various types of water supply projects carry with them different local and regional benefits. For example, an ocean desalination project provides a constant supply into the region under any type of hydrology. The water may not be needed to balance water supplies each and every year from a local basis, but operationally, it may offset the sale of MET water in average and wet years but may be critically important in dry years. How can these types of benefits be accounted for and valued in looking at the regional system? What is the value created by offsetting MET water, in certain amounts, and allowing MET to be able to store that water for future use during dry periods when water has a much higher value, approximating the value of the cost of ocean desalination? One of the trade-offs is MET loses a sale of water during normal periods and their financial integrity is partially affected, but if they have storage capacity to allow storage of that water, it becomes higher valued for later use in a dry period – how should this be accounted for in the regional system? If MET is restricted in its ability to export SWP during above normal and wet periods in order to increase outflows, will MET have sufficient wet period supplies to fill cyclical storage accounts?

8.4 MET as the Regional Supplier – MET is the regional provider and provides the underpinnings of water supply reliability in Southern California – if MET is reliable, we all are reliable (in the MET family) and the opposite is also true. How can decision-making be applied to avoid collective regional over or under investing? How should the MET Integrated Resources Plan coordinate these types of decisions while allowing flexibility for local control to adjust reliability while maintaining MET and local agency financial integrity?

8.5 Level and Extent of MET Storage for Managing Supplies – With increasing variability and uncertainty in supplies from both the CRA and SWP due to restrictive regulations that have decreased the developed supply, future major floods and earthquakes that could disrupt the imported water supply for long periods, combined with population and economic driven water demand growth and climate change impacts, the overall future variability and uncertainty in supplies for the region needs to be evaluated and the system enhanced to accommodate these future impacts. MET has substantially increased their storage capacity over the years which was thought capable of handling a repeat of a six year drought, but that is not certain in this third year of drought we are currently experiencing. Does MET have sufficient storage and access to storage to deal with all of these variations, uncertainties and their combinations? Given the difficulty of dealing with a substantial outage of the SWP or Bay-Delta due to a major earthquake, should MET be pursuing additional surface and groundwater storage south of the

Tehachapi Mountains? How would this storage provide benefits in conjunction with the Bay Delta Conservation Plan? How much storage should be developed and how much should be surface and groundwater?

8.6 Incentives Provided by MET – MET’s financial strength helps stabilize the State and Southern California. MET compensating agencies for developing more local supplies can cut into MET’s sales base and financial integrity, driving up rates. What types of partnership or policy arrangements can be developed for the region to grow more reliable together? Where do we draw the line between the regional and local system, investments and responsibilities and who is best suited to address these issues? MET’s contribution of \$250 per AF for local projects and ocean desalination has not been adjusted in many years, however, MET’s rate increases over the past 10 years have incorporated funds to support local project development at or below the cost of MET water. The rationale MET used in establishing the \$250 per AF for groundwater desalters was based on a study of the costs/economics of groundwater desalters compared to MET’s projected rates. Is this still the appropriate approach or is there a better way, such as MET/Member Agency partnerships in new southern California supply development? What are possible next steps in evaluating or modifying the level of incentive provided by MET?

8.7 Extended Drought Planning Criteria – What is the appropriate extended drought sequence to hedge against?

8.8 Water Supply and Storage Reserve - How large should a water supply and storage reserve or “contingency” be planned for regionally? What are the risks associated with such a reserve supply? The Consultant is encouraged to identify other or new policies that represent obstacles to supply development or that would further the development of local water supplies for benefit of the region.

8.9 How can these policy issues be evaluated or included in the Task 9 decision-making process?

Task 9 Develop and Apply a Decision-Process Regarding Selection of Recommended Projects Including Ranking and Prioritization – Consultant shall develop and utilize a project evaluation process for decision-making to assist in the process of ranking and prioritizing projects for consideration for future implementation. Decision-making factors could include the following:

- 1) Project location
- 2) Conveyance and treatment options
- 3) Supply Yield (average and dry year)
- 4) System Yield (cfs)
- 5) Vulnerability to disruption from earthquakes
- 6) Implementation Difficulty or Ease (including up-front planning through permitting funding, permitting, schedule, etc.)
- 7) Capital and O&M Costs and Unit Costs (\$/AF)
- 8) Dependence on MET system (e.g. groundwater basin replenishment needs)
- 9) Institutional and regulatory issues
- 10) Other

Consultant should identify any events (or triggers) that should be carefully tracked to signal the need to initiate additional supply development. The policy issues identified in Section 8 shall also be included or accounted for in the decision-making process in an appropriate manner.



INFORMATION ITEM

July 14, 2014

TO: **Planning & Operations Committee**
(Directors Osborne, Barbre, Hinman)

FROM: **Robert Hunter, General Manager**

Staff Contact: Karl Seckel, Joe Berg, and Richard Bell

SUBJECT: State Water Resources Control Board Proposed Emergency Regulations to Promote Water Conservation

STAFF RECOMMENDATION

Staff recommends the Planning & Operations Committee receive and file the report and provide input as appropriate. On July 8, the State Water Resources Control Board (State Water Board) released proposed “Emergency Regulations to Promote Water Conservation” that will be considered for adoption at their July 15 meeting with implementation to be required by August 1 subject to Office of Administrative Law approval by that date. Written comments are due by noon on Monday, July 14. Staff is requesting Board direction regarding comments and submittal. Due to the significance impact these regulations can have on Orange County water agencies, staff with the assistance of legal counsel, will be preparing written comments. The Board may also want to consider having comments presented in person at the July 15 State Water Board Meeting.

COMMITTEE RECOMMENDATION

Committee recommends (To be determined at Committee Meeting)

SUMMARY

During the evening of July 8, the State Water Board released proposed “Emergency Regulations to Promote Water Conservation” that will be considered for adoption at their July 15 meeting with implementation to be required by August 1 subject to Office of Administrative Law approval by that date. Due to the current extreme drought and potential

Budgeted (Y/N):	Budgeted amount:	Core __	Choice __
Action item amount:	Line item:		
Fiscal Impact (explain if unbudgeted):			

for continued drought next year, it is prudent to increase levels of conservation to reduce use of stored water. The proposed regulations require that all water agencies throughout the State move from voluntary conservation to prohibitions on reducing waste with mandatory restrictions on outdoor irrigation. The State Water Board notes that if the drought continues through next year additional actions by the State Water Board and local water agencies would be required.

However, it is not clear what is specifically required from wholesale water agencies, but it appears that MWDOC will be required at minimum to provide monthly reporting of wholesale deliveries to the State Water Board. The burden of compliance falls on each of our member agencies and their customers. The State Water Board will use the data to track progress in meeting the Governor's Executive Order requirement of 20 percent reduction from 2013 levels. The State Water Board in their digest estimates that the proposed emergency regulations will be able to achieve the 20 percent reduction target.

The intent of the proposed emergency regulations is reasonable, but the execution for achieving that intent is not adequately specified. Specifically, the prohibitions on waste lack definitions, enforceable thresholds and would impose what we believe are overly harsh fines. In addition, the requirement for activating the first stage of mandatory restrictions on outdoor irrigation do not recognize nor credit agencies for prior investments in water conservation programs, such as budget/allocation based water rates, local water use efficiency incentive programs, use of drip irrigation systems, etc.

Written comments are due by noon on July 14. Staff is requesting Board direction for submittal of comments. Staff with the assistance of legal counsel, will be preparing written comments. The Board may also want to consider having comments presented in person at the July 15 State Water Board meeting to be held in Sacramento, discussing the role of wholesale water agencies, what we can do, and our ongoing leadership in water stewardship programs in water use efficiency and local resource development.

DETAILED REPORT

During the evening of July 8, the State Water Resources Control Board (State Water Board) released proposed "Emergency Regulations to Promote Water Conservation" that would apply to all "Urban Water Suppliers" and other water suppliers in the State. By definition, MWDOC is an "Urban Water Supplier" (See Attachment 1) as we sell more than 3,000 acre feet per year.

From these regulations, we find that MWDOC will be required at minimum to provide monthly monitoring reports of wholesale deliveries and possibly estimates of per capita water use to the State Water Board. Member Agencies will be required to report monthly on estimated gallons of water per persons per day used by its customers and compare those to the prior year monthly water usage. The State Water Board will use the data to track progress in meeting the Governor's Executive Order requirement of 20 percent reduction from 2013 levels. The State Water Board in their digest has estimated that the proposed emergency regulations will be able to achieve the 20 percent reduction target.

The intent of the proposed emergency regulations is reasonable, but the execution for achieving that intent is not adequately specified. Below are key areas that staff identified that need further clarification or revisions from the State Water Board to be properly and fairly implemented among different water agencies throughout the state:

- The prohibitions on waste lack definitions and the enforceable thresholds would impose what we believe are overly harsh fines. As proposed, the regulation measures lack definition of terms and enforceable thresholds that would trigger fines for water customers up to a \$500 per day per violation. Recognized “Landscape Irrigation Best Management Practices”, established by the Irrigation Association, should be part of the definition of efficient irrigation practices and referenced under the prohibition section. Some definitions are limited, insufficient, and require further work. For example, as generally written, any amount of runoff from overwatering beyond landscape plantings or application of water to hard surfaces would be deemed an infraction, punishable by excessive fines of up to \$500 per day per violation. Almost all irrigation, no matter how efficient, involves some level of overspray. Enforcement should not be required where efficient irrigation and water use efficiency practices are being practiced.
- The prohibitions will also require that all agencies implement their Water Shortage Contingency Plan and relevant ordinance that invoke mandatory restrictions on outdoor irrigation. By requiring local agencies to implement all the requirements and actions of the water conservation stage that includes mandatory restrictions on outdoor irrigation, it sets up a situation where some agencies may have more stringent mandatory restrictions in place than others, and conservation requirements that are more comprehensive than what is being required or is needed at this time. This could result in unfair requirements on those agencies and their customers.
- The “one size fits all” approach does not credit ongoing leadership in water stewardship programs in water use efficiency and local resource development and may create unintended disincentives. The proposed regulations should be modified to credit agencies for their ongoing water stewardship programs by removing the requirement for mandatory outdoor irrigation restrictions if the agency has in place active outdoor irrigation water use efficiency programs, such as budget based water rates, smart timers or weather data information programs, promotion and assistance in the use of efficient irrigation systems, exemption for drip irrigation systems, an active water use efficiency education and incentive program, etc.

The State Water Board is particularly interested in hearing comments on the applicability of the proposed regulations to wholesale water suppliers, as well as comments pertaining to other aspects of the proposed regulations. Legal counsel concurs with MWDOC staff that we would have to provide monthly monitoring reports and possibly estimates of per capita water use. Legal counsel is reviewing the proposed regulations and requirements being placed on wholesale agencies and will be assisting staff in crafting our letter and suggested revisions to the proposed emergency regulation.

Attached is the water code definition of an “Urban Water Supplier” and the Notice of Proposed Rulemaking, Proposed Text of Emergency Regulations, Digest and Fact Sheet.

Attachment 1
Definition of Urban Water Supplier

California Water Code Section 10617 - "Urban water supplier" means a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

State Water Resources Control Board

NOTICE OF PROPOSED EMERGENCY RULEMAKING July 8, 2014

Prohibition of Activities and Mandatory Actions During Drought Emergency

Required Notice of Proposed Emergency Action

Government Code section 11346.1, subdivision (a)(2) requires that, at least five working days prior to submission of a proposed emergency regulation to the Office of Administrative Law (OAL), the adopting agency must provide a notice of the proposed emergency action to every person who has filed a request for notice of regulatory action with the agency. After the submission of the proposed emergency action to OAL, OAL shall allow interested persons five calendar days to submit comments on the proposed emergency regulations as set forth in Government Code section 11349.6. This document and the accompanying information provide the required notice.

Proposed Emergency Action

On January 17, 2014, Governor Brown declared a drought state of emergency. On April 25, 2014 the Governor signed an Executive Order calling on the State to redouble state drought actions. Among other things, the Executive Order provides that: "The Water Board shall direct urban water suppliers that are not already implementing drought response plans to limit outdoor irrigation and other wasteful water practices such as those identified in this Executive Order. The Water Board will request by June 15 an update from urban water agencies on their actions to reduce water usage and the effectiveness of these efforts. The Water Board is directed to adopt emergency regulations as it deems necessary, pursuant to Water Code section 1058.5, to implement this directive."

On May 23, 2014 the State Water Board issued a survey to more than 400 urban water suppliers inquiring on the implementation of their urban water conservation actions and the effectiveness of those actions. The State Water Board's June 17, 2014 meeting included an informational update on the survey results and a description of urban water conservation efforts being carried out by certain urban water suppliers.

Water Code section 1058.5 grants the State Water Board the authority to adopt emergency regulations in certain drought years in order to: "prevent the waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion, of water, to promote water recycling or water conservation, to require curtailment of diversions when water is not available under the diverter's priority of right, or in furtherance of any of the foregoing, to require reporting of diversion or use or the preparation of monitoring reports."

On July 15, 2014, the State Water Board will consider a proposed resolution adopting emergency regulations adding new sections to Title 23 of the California Code of Regulations. The proposed emergency regulations include a prohibition on certain classes of water use, an order for all urban water suppliers to implement mandatory conservation measures, and an order for water suppliers with 3,000 or more service connections to provide monthly data on water production.

Proposed Text of Emergency Regulations

See the attached proposed text of the emergency regulations.

Finding of Emergency (Gov. Code, § 11346.1, subd. (b))

The State Water Board finds that an emergency exists due to severe drought conditions, as identified in the Governor's drought emergency proclamations. Immediate action is needed to effectively increase water conservation so that remaining supplies are maintained to address the present drought emergency. The State Water Board's May 2014 Drought Survey results demonstrated that urban water conservation efforts could be augmented to minimize the potential risks of threatened severe supply shortages. In addition, the current extent of voluntary conservation goals established by many urban water suppliers will not provide for timely and effective attainment of the State's conservation needs, which include the maintenance of remaining supplies. Without adequate reserves, water suppliers will be unable to address the drought emergency. The emergency regulation improves the State Water Board's and local agencies' abilities to quickly and effectively implement and enforce mandatory water conservation measures during the current drought to help preserve the State's supplies during the drought emergency.

The State Water Board is unable to address the situation through non-emergency regulations because the standard rulemaking process cannot timely address the current severe drought emergency that is the focus of these regulations. Furthermore, the Governor's April 25, 2014 Executive Order orders the State Water Board to adopt emergency regulations pursuant to Water Code section 1058.5 to address the issues that are the focus of these regulations.

Authority and Reference (Gov. Code, § 11346.5, subd. (a)(2))

Water Code sections 1058 and 1058.5 provide authority for the emergency regulations. The revised emergency regulations implement, interpret, or make specific Water Code sections 102, 104, 105, 350, 10617, and 10632.

Informative Digest (Gov. Code, § 11346.5, subd. (a)(3))

At present, there is no statewide prohibition on individual activities to promote conservation. There is also no law or regulation requiring urban water suppliers to affirmatively adopt drought shortage contingency plans, implement specific stages of their drought shortage contingency plans, or report the amount of water they produce to the state. There is also no law or regulation requiring distributors of public water supplies who are not urban water suppliers to adopt water shortage contingency plans, limit outdoor irrigation by their customers, or implement other mandatory conservation measures. The proposed regulation constitutes the first statewide directive to individuals and to urban water suppliers to undertake specific actions to respond to the drought emergency; consequently, the proposed regulation is consistent and compatible with existing regulations on this subject. The proposed regulation neither differs from nor conflicts with an existing comparable federal statute or regulation.

The proposed regulation is intended to safeguard urban water supplies in the event of another dry year. It is both reasonable and prudent to maintain urban water supplies to the maximum extent feasible to provide local agencies with the necessary flexibility to meet the health and safety needs of Californians during the drought emergency. California has been subject to multi-year droughts in the past and there is no guarantee that precipitation this winter will lift the State out of the current drought conditions. Moreover, climate change science indicates that the Southwestern United States are becoming drier, increasing the likelihood of prolonged droughts. In addition, drought conditions have already forced the State Water Board to curtail surface water diversions, and many groundwater basins around the state are already in overdraft conditions that will likely worsen due to groundwater pumping this summer. Many water supply systems face a present or threatened risk of inadequate supply. Should drought conditions

persist into 2015, more water supply systems will be at risk of depleting supplies, presenting a great risk to the health and safety of the people supplied by those systems. Maintaining urban water supplies through enhanced conservation will reduce the risks to health and safety and reduce negative impacts to the State's economy.

Each of the specific prohibitions on water uses is necessary to promote water conservation to maintain an adequate supply during the drought emergency, which cannot be done if water is being used in an excessive or wasteful manner. These prohibitions affect practices that use excessive amounts of water or where more efficient and less wasteful alternatives are available. These practices are particularly unreasonable during a drought due to the need to conserve limited water supplies to meet health and safety needs. Consequently, the proposed regulation will further protection of the environment.

Additional benefits will be realized should the Board adopt the proposed regulations. These benefits include the following:

- Reduced water bills for customers that reduce water use (some of these savings will generate additional economic activity, such as investments in drought-tolerant landscaping);
- Increased water quality in receiving waters due to lower runoff volumes;
- Increased drought awareness and shared sense of responsibility among urban water users;
- More effective tracking of total urban water use; and
- Reduced potential for severe economic disruption if 2015 is another dry year.

The proposed emergency adoption of section X sets forth the State Water Resources Control Board's findings of drought emergency. The proposed emergency adoption of section X.1 directs individuals statewide to refrain from engaging in certain activities to promote conservation to meet the drought emergency. The proposed emergency adoption of section X.2 directs urban water suppliers to report information to the Board and to take actions to promote conservation and directs all other water suppliers to take actions to promote conservation.

Proposed Section X sets forth the Board's findings of drought emergency, noting the Governor's adoption of two emergency proclamations pertaining to drought conditions, the persistence of drought conditions, the dry nature of the preceding two years, and the likelihood that drought conditions will continue.

Proposed Section X.1 prohibits several activities, except where necessary to address an immediate health and safety need or to comply with a term or condition in a permit issued by a state or federal agency, to promote conservation. The section prohibits the application of water to outdoor landscapes in a manner that causes visible runoff, the use of a hose to wash an automobile except where the hose is equipped with a shut-off nozzle, the application of water to hardscapes, and the use of potable water in non-recirculating ornamental fountains.

Proposed Section X.2 directs urban water suppliers to implement the stage of their water shortage contingency plans that impose mandatory restrictions on outdoor irrigation, requires those urban water suppliers without adequate drought shortage contingency plans to adopt them or other measures to promote conservation within thirty days, and report monthly water production information to the Board. The section also directs distributors of public water supplies that are not urban water suppliers to either limit outdoor irrigation or implement another mandatory conservation measure or measures to achieve conservation.

Other Matters Prescribed by Statute (Gov. Code, § 11346.5, subd. (a)(4))

The proposed emergency regulation would be adopted in response to conditions which exist, or are threatened, in a critically dry year immediately preceded by two or more consecutive below normal, dry, or critically dry years or during a period for which the Governor has issued a proclamation of a state of emergency under the California Emergency Services Act (Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Government Code) based on drought conditions.

Local Mandate (Gov. Code, § 11346.5, subd. (a)(5))

The State Water Resources Control Board has determined that adoption of proposed sections X and X.1 does not impose a new mandate on local agencies or school districts. The sections are generally applicable law.

The State Water Resources Control Board has further determined that adoption of proposed section X.2 does not impose a new mandate on local agencies or school districts, because the local agencies affected by the section have the authority to levy service charges, fees, or assessments sufficient to pay for the mandate program or increased level of service. (See Gov. Code, § 17556.)

Estimate of Cost or Savings (Gov. Code, § 11346.5, subd. (a)(6))

Increased urban water conservation will result in reduced water use, which in turn will result in reduced water sales and lost revenue for urban water suppliers. This loss in revenue will be a function of the amount of water conserved (and therefore not sold) and the unit price that water would have sold for. In addition to lost revenue from reduced water sales, urban water suppliers will also incur costs associated with water production reporting as required by the proposed emergency regulations. The State Water Board estimates that local agencies that are urban water suppliers could collectively realize as much as \$438,185,664 in lost revenue as a result of implementing the proposed regulations. Additionally, the reporting costs to local government are estimated to be \$1,029,600. The total costs to local government are therefore estimated to be \$439,215,264, which is the sum of estimated lost revenues and the estimated reporting costs.

Implementation of the proposed emergency regulations will result in additional workload for the State Water Board and possibly for the Department of Water Resources, however, this work will be accomplished through redirection of resources within existing agency budgets. Significant costs or saving for State agencies are therefore not anticipated.

The above summary information is explained in greater detail in the State Water Board's Emergency Regulations Digest, which is attached.

PROPOSED TEXT OF EMERGENCY REGULATIONS

Article X. Prohibition of Activities and Mandatory Actions During Drought Emergency

Sec. X Findings of Drought Emergency

(a) The State Water Resources Control Board finds as follows:

- (1) On January 17, 2014, the Governor issued a proclamation of a state of emergency under the California Emergency Services Act based on drought conditions;
- (2) On April 25, 2014, the Governor issued a proclamation of a continued state of emergency under the California Emergency Services Act based on continued drought conditions;
- (3) The drought conditions that formed the basis of the Governor's emergency proclamations continue to exist;
- (4) The present year is critically dry and has been immediately preceded by two or more consecutive below normal, dry, or critically dry years; and
- (5) The drought conditions will likely continue for the foreseeable future and additional action by both the State Water Resources Control Board and local water suppliers will likely be necessary to further promote conservation.

Authority: Wat. Code, § 1058.5.

References: Wat. Code, §§ 102, 104, 105.

Sec. X.1 Prohibited Activities in Promotion of Water Conservation

(a) To promote water conservation, each of the following actions is prohibited, except where necessary to address an immediate health and safety need or to comply with a term or condition in a permit issued by a state or federal agency:

- (1) The application of water to outdoor landscapes in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or structures;
 - (2) The use of a hose to wash an automobile, except where the hose is fitted with a shut-off nozzle or device attached to it that causes it to cease dispensing water immediately when not in use;
 - (3) The application of water to any hard surface, including but not limited to driveways, sidewalks, and asphalt; and
 - (4) The use of potable water in a fountain or other decorative water feature, except where the water is part of a recirculating system.
- (b) The taking of any action prohibited in subdivision (a) of this section is an infraction, punishable by a fine of up to five hundred dollars (\$500) for each day in which the violation occurs.

Authority: Wat. Code, § 1058.5.

References: Wat. Code, §§ 102, 104, 105.

PROPOSED TEXT OF EMERGENCY REGULATIONS

Sec. X.2 Mandatory Actions by Water Suppliers

(a) The term “urban water supplier,” when used in this section, refers to a supplier that meets the definition set forth in Water Code section 10617.

(b) To promote water conservation, each urban water supplier shall implement all requirements and actions of the stage of its water shortage contingency plan that imposes mandatory restrictions on outdoor irrigation.

(c) To promote water conservation, each urban water supplier that does not have a water shortage contingency plan or has been notified by the Department of Water Resources that its water shortage contingency plan does not meet the requirements of Water Code section 10632 shall, within thirty (30) days, limit outdoor irrigation by the persons it serves to no more than two days per week or shall implement another mandatory conservation measure or measures intended to achieve a comparable reduction in water consumption by the persons it serves relative to the amount consumed in 2013.

(d) In furtherance of the promotion of water conservation each urban water supplier shall prepare and submit to the State Water Resources Control Board by the 15th of each month a monitoring report on forms provided by the Board. The monitoring report shall include the amount of potable water the urban water supplier produced, including treated water provided by a wholesaler, in the preceding calendar month. The monitoring report shall also estimate the gallons of water per person per day used by the persons it serves. In its initial monitoring report, each urban water supplier shall state the number of persons it serves.

(e) To promote water conservation, each distributor of a public water supply, as defined in Water Code section 350, that is not an urban water supplier shall, within thirty (30) days, take one or more of the following actions:

(1) Limit outdoor irrigation by the persons it serves to no more than two days per week; or

(2) Implement another mandatory conservation measure or measures intended to achieve a comparable reduction in water consumption by the persons it serves relative to the amount consumed in 2013.

Authority: Wat. Code, § 1058.5.

References: Wat. Code, §§ 102, 104, 105; 350; 10617; 10632.

Prohibition of Activities and Mandatory Actions During Drought Emergency

FINDING OF EMERGENCY

The State Water Resources Control Board (State Water Board or Board) finds that an emergency exists due to severe drought conditions and that adoption of the proposed emergency regulation is necessary to address the emergency. California is currently in the third year of a significant drought resulting in severe impacts to California's water supplies and its ability to meet all of the demands for water in the State. On January 17, 2014, Governor Edmund G. Brown, Jr. declared a drought state of emergency. On April 25, 2014 the Governor signed an Executive Order stating, among things, "*...that severe drought conditions continue to present urgent challenges: water shortages in communities across the state, greatly increased wildfire activity, diminished water for agricultural production, degraded habitat for many fish and wildlife species, threat of saltwater contamination of large fresh water supplies conveyed through the Sacramento-San Joaquin Bay Delta, and additional water scarcity if drought conditions continue into 2015.*" Immediate action is needed to ensure water suppliers and all Californians are taking sufficient actions to conserve water and preserve the State's water supply. Due to these concerns, the April 25, 2014 Executive Order, directs the State Water Board to adopt emergency regulations as it deems necessary, pursuant to Water Code section 1058.5, to ensure that urban water suppliers implement drought response plans to limit outdoor irrigation and other wasteful water practices.

Authority for Emergency Regulations

Water Code section 1058.5 grants the State Water Board the authority to adopt emergency regulations in years when the Governor has issued a proclamation of emergency based upon drought conditions or when in response to drought conditions that exist, or are threatened, in a critically dry year immediately preceded by two or more consecutive below normal, dry, or critically dry years. The Board may adopt regulations under such circumstances to: "prevent the waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion, of water, to promote water recycling or water conservation, to require curtailment of diversions when water is not available under the diverter's priority of right, or in furtherance of any of the foregoing, to require reporting of diversion or use or the preparation of monitoring reports."

Emergency regulations adopted under Water Code section 1058.5 may remain in effect for up to 270 days. Per Water Code section 1058.5, subdivision (b), any findings of emergency the Board makes in connection with the adoption of an emergency regulation under the section are not subject to review by the Office of Administrative Law.

Government Code section 11346.1, subdivision (a)(2) requires that, at least five working days prior to submission of the proposed emergency action to the Office of Administrative Law, the adopting agency provide a notice of the proposed emergency action to every person who has filed a request for notice of regulatory action with the agency. After submission of the proposed emergency regulations to the Office of Administrative Law, the Office of Administrative Law shall allow interested persons five calendar days to submit comments on the proposed emergency regulations as set forth in Government Code Section 11349.6.

The information contained within this finding of emergency provides the information necessary to support the State Water Board's emergency rulemaking under Water Code section 1058.5 and also meets the emergency regulation criteria of Government Code section 11346.1 and the applicable requirements of section 11346.5.

Evidence of Emergency

The U.S. Drought Monitor currently classifies the entire state of California as experiencing severe to exceptional drought conditions. In most years, California receives about half of its precipitation in the months of December, January and February, with much of that precipitation falling as snow in the Sierra. A handful of large winter storms can make the difference between a wet year and a dry one. In normal years, the snowpack stores water during the winter months and releases it through melting in the spring and summer to replenish rivers and reservoirs and recharge aquifers. However, relatively dry weather conditions this year have reduced the amount of snowpack in California's mountains. Each of this season's first four snow surveys – conducted in early January, late January, late February and early April – found a statewide snowpack water equivalent far below average for the dates of the surveys. The 2014 statewide snowpack began melting and running into the state's watercourses in early April. After reaching a peak of 10.1 inches, the snowpack had almost completely melted away by late May.

Rainfall also has been far below normal during this water year as recorded by weather stations throughout the state. Despite a few storms that brought rain in February and March, electronic readings indicate that precipitation at eight Northern California stations was only about 60 percent of normal for late April. The electronic readings for San Joaquin stations show even drier conditions there – less than 50 percent of normal precipitation from October 1 to late May. As of May 31, statewide precipitation was 55 percent of average to date; runoff was 35 percent of average to date; and snow water equivalent was three percent of average for the date (one percent of the April 1 average).

Due to these drought conditions and dry conditions for the past several years, storage in California's reservoirs is also at below average levels, at 65 percent of average for the state at the end of May. Current storage levels in key reservoirs reflect this trend. Shasta Lake, California's and the Central Valley Project's (CVP) largest reservoir, is at 45 percent of its 4.5 million acre-feet (MAF) capacity (54 percent of its historical average for this date). Lake Oroville, the State Water Project's (SWP) principal reservoir, is at 47 percent of its 3.5 MAF capacity (57 percent of its historical average for the date). Trinity Reservoir is at 47 percent of its 2.4 MAF capacity (54 percent of historical average). San Luis Reservoir, a critical south-of-Delta reservoir for both the SWP and CVP, is at 38 percent of its 2 MAF capacity (52 percent of average for this date). Folsom Reservoir is at 53 percent of its 1 MAF capacity (64 percent of average for this date). New Melones Reservoir is at 32 percent of its 2.4 MAF capacity (50 percent of average for this date). New Don Pedro Reservoir is at 52 percent of its 2 MAF capacity (67 percent of average for this date) and Lake McClure is at 29 percent of its 1 MAF (42 percent of average for this date).

Emergency Regulations Digest (Gov. Code , § 11346.1, subd. (b))

Local, state and federal water agencies across California have limited supplies due to the drought. In response, those agencies have taken various actions, including reducing or eliminating contract water deliveries and implementing mandatory and voluntary conservation efforts. A total of 46 Emergency Proclamations addressing the drought are known to have been issued by city, county, special districts, and tribal governments. The State's two major water supply projects, the CVP and SWP, have also announced severe reductions in contract deliveries. The United States Bureau of Reclamation (Reclamation) has announced that its regular CVP agricultural contractors will receive no deliveries in 2014 and its municipal and industrial contractors will receive 50 percent of their historic use. The Department of Water Resources (DWR) has announced that its deliveries to its regular SWP contractors will be reduced to five percent for both municipal and agricultural contractors. Senior SWP contractors have also received less than their full contract amounts. In addition to water supply reductions and conservation efforts, many water users have requested and received approvals for changes to regulatory requirements, including water right requirements, to extend limited supplies. Many water users have also pursued water transfers and purchases from willing sellers to make up for reduced supplies.

Need for the Regulation

Immediate action is needed to effectively increase water conservation so that remaining supplies are maintained to address the ongoing drought emergency. The State Water Board's May 2014 Drought Survey results demonstrated that urban water conservation efforts could be augmented to minimize the potential risks of threatened severe supply shortages. In addition, current voluntary conservation goals established by many urban water suppliers will not provide for timely and effective attainment of the State's conservation needs, which include the maintenance of remaining supplies. Without adequate reserves, water suppliers will be unable to address the drought emergency. The emergency regulation improves the State Water Board's and local agencies' abilities to quickly and effectively implement and enforce mandatory water conservation measures during the current drought emergency to help preserve the State's supplies throughout a continuing drought that could last through 2015 or beyond.

Description and Effect of Proposed Regulation

The proposed regulation consists of three requirements: a prohibition on certain types of water use, an order for all urban water suppliers to implement mandatory conservation measures, and an order for water suppliers with 3,000 or more service connections to provide monthly data on water production. These requirements are intended to preserve urban water supplies. It is both reasonable and prudent to preserve urban water supplies to the maximum extent feasible to provide local agencies with the necessary flexibility to meet the health and safety needs of Californians during the drought emergency. California has been subject to multi-year droughts in the past and there is no guarantee that precipitation this winter will lift the State out of the current drought conditions. Moreover, climate change science indicates that the Southwestern United States are becoming drier, increasing the likelihood of prolonged droughts. In addition, drought conditions have already forced the State Water Board to curtail surface water diversions, and many groundwater basins around the state are already in overdraft conditions.

that will likely worsen due to groundwater pumping this summer. Many water supply systems face a present or threatened risk of inadequate supply. Should drought conditions persist into 2015, more water supply systems will be at risk of depleting supplies, presenting a great risk to the health and safety of the people supplied by those systems. Maintaining urban water supplies through enhanced conservation will reduce the risks to health and safety and reduce negative impacts to the State's economy.

Each of the specific prohibitions on water uses is necessary to promote water conservation to maintain an adequate supply during the drought emergency, which cannot be done if water is being used in an excessive or wasteful manner. These prohibitions affect practices that use excessive amounts of water or where more efficient and less wasteful alternatives are available. These practices are particularly unreasonable during a drought due to the need to conserve limited water supplies to meet health and safety needs. Exceptions to meet immediate health and safety concerns or to comply with state or federal permit requirements are available, however.

A prohibition on runoff of outdoor irrigation water is necessary to promote water conservation to address the drought emergency. Irrigating residential, commercial, industrial, and recreational landscapes to the point of visible runoff is an excessive use of water and more efficient alternatives are available. This practice depletes water supplies, whose maintenance is critical during a drought for health, safety, and, in some cases, operational flexibility. Runoff enters the storm drain system or evaporates, and does not provide for domestic use, sanitation, or fire protection, which are the primary needs that public water supply distributors must meet during drought periods. (Wat. Code, § 354.)

A prohibition on vehicle washing with a running hose (a hose that is not equipped with a shut-off nozzle) promotes water conservation to address the drought emergency through the use of more efficient and effective washing techniques and options. Washing cars at commercial car wash establishments—which are widely distributed throughout the state—or manual washing with a small amount of water in a bucket or with a hose equipped with a shut-off nozzle are efficient and reasonable techniques for those with a need to wash a vehicles.

A prohibition on watering of hardscapes, such as driveways, sidewalks, and asphalt, promotes water conservation to address the drought emergency through the use of more efficient and effective cleaning methods for hardscapes. For example, many hardscapes can be cleaned with a broom, thus conserving water for other uses during a time of extreme scarcity.

A prohibition on the use of potable water without recirculation pumps for fountains and other decorative water fixtures promotes water conservation to address the drought emergency through saving water that would evaporate, leak, or not be reused. In addition, ornamental water fixtures do not provide for domestic use, sanitation, or fire protection, and therefore do not promote a use of paramount importance during the drought emergency.

The proposed regulation to require urban water suppliers with 3,000 or more service connections to implement their Water Shortage Contingency Plans (WSCPs) at a level that includes mandatory use restrictions, and water suppliers without WSCPs and water suppliers

which have fewer than 3,000 service connections to implement mandatory restrictions, is necessary to promote conservation to address the drought emergency because mandatory restrictions have proven to be effective at reducing water use. Data collected from the State Water Board's May 2014 Urban Water Conservation Survey indicates that 53 of the 268 urban water suppliers who responded to the survey (representing approximately 10 million retail customers) have already formally invoked their drought shortage contingency plans and have implemented both mandatory restrictions on outdoor water use and prohibitions on runoff into streets and gutters. Requiring mandatory use restrictions for the rest of the water suppliers (representing approximately 28 million retail customers) will ensure that water use restrictions are applied equitably and to the greatest effect statewide.

One of the options for mandatory use restrictions is limiting outdoor irrigation to no more than two days per week. This limit is necessary to promote conservation to address the drought emergency because outdoor irrigation accounts for 44 percent of urban water use (see Table 1 below), outdoor irrigation is generally more discretionary than other types of use, and because studies have shown that urban landscapes are often over-watered. Two days per week of outdoor irrigation increases conservation and reduces the likelihood of over-irrigation and visible runoff.

The proposed regulation to require urban water suppliers with 3,000 or more service connections to provide the Board with monthly potable water production figures along with a calculation of gallons per capita per day (GPCD) is necessary so that the Board can track the effectiveness of the proposed regulations and urban water conservation actions. Such monitoring reports will promote the conservation necessary to address the drought emergency.

Estimate of Water Savings from Proposed Regulation

According to the Department of Water Resource's Public Review Draft Water Plan Update 2013, total urban water use between 1998 and 2005 was 8.8million acre-feet. The breakdown of the urban use by customer class is provided in the Table 1.

Table 1: Urban Water Use by Sector in Million Acre-Feet (MAF)

Sector	Volume (MAF)
Residential landscape	3
Large landscape	0.9
Indoor residential	2.7
Commercial, institutional, and industrial	1.7
Other	0.5
Total	8.8

Source: DWR Public Review Draft Water Plan Update 2013

Outdoor irrigation represents 44 percent of the total urban water use (3 MAF for residential landscape and 0.9 MAF for large landscapes). The proposed regulation prohibiting visible runoff affects the 44 percent of statewide urban use dedicated to outdoor irrigation. The

proposed regulation to require implementation of WSCPs at a mandatory level by urban water suppliers would, in some cases, entail restrictions on use by other customer classes, including residential indoor use in instances where mandatory restrictions include rationing of residential use. However, a review of the State Water Board's May 2014 Urban Water Conservation Survey results and a select group of WSCPs indicates that water suppliers with significant supply shortages have already implemented mandatory restrictions and are therefore already in compliance with the proposed regulation, while those that will need to invoke their WSCPs at a mandatory level to comply do not include restrictions on water use by the non-residential classes at the first level of mandatory restrictions. Thus, the Board estimates that the proposed regulations will have a minimal impact on the 56 percent of water used for purposes other than outdoor irrigation.

Many California Urban water suppliers are already implementing water conservation measures commensurate with those required by the proposed regulations and therefore conservation savings attained by their customers are not attributable to the proposed regulations. As described above, 53 of the 268 urban water suppliers who responded to the survey indicated that they had already formally invoked their drought shortage contingency plans and have implemented both mandatory restrictions on outdoor water use and prohibitions on runoff into streets and gutters. Therefore, these 53 urban water suppliers are already implementing conservation measures that are commensurate with the requirements of the proposed emergency regulation. These 53 urban water suppliers represent approximately 10 million retail customers, which accounts for about 38 percent of the survey response by retail population. The Board estimates that all 268 of the survey respondents collectively are representative of the urban water conservation actions being taken statewide. Based upon these assumptions, 62 percent of urban water use would be affected by adoption of the proposed regulations while 38 percent of urban water use would not be affected by adoption of the proposed regulations (i.e, they are already implementing the required conservation measures).

Various studies have analyzed the response of urban populations to mandatory use restrictions imposed during drought conditions. Multiple studies conclude that mandatory use restrictions are more effective than voluntary conservation measures because areas that have imposed mandatory use restrictions have achieved greater use reductions than areas that imposed only voluntary measures, controlling for other variables. The amount of conservation achievable through mandatory restrictions varies. Conservation savings of up to 29 percent have been observed. For example, a study conducted on the effects of water demand management policies of eight California water agencies during the period from 1989-1996, which included 3 years of drought (1989-1991), found that rationing and use restrictions were correlated with use reductions of 19 percent and 29 percent, respectively. The study's authors concluded:

In general, relatively moderate (5-15%) reductions in aggregate demand can be achieved through modest price increases and "voluntary" alternative [Demand-Side Management] policy instruments, such as public information campaigns. However, to achieve larger reductions in demand (greater than 15%), policymakers will likely need to consider either relatively large price increases, more stringent mandatory policy instruments (such as use restrictions), or a package of policy instruments. (Dixon & Moore, 1996).

Emergency Regulations Digest (Gov. Code , § 11346.1, subd. (b))

A recent study from UCLA on use reductions in Los Angeles during the 2007-2009 drought reached similar conclusions:

Our results indicate that mandatory restrictions are most effective at reducing water consumption for [Single-Family Residential] households. The greatest impact of measures resulted from the combination of mandatory watering restrictions and the price increase, which led to a water reduction of 23% in July/August 2009, while voluntary restrictions led to only a 6% reduction in water use. (Mini, 2013).

In addition, a study of Virginia's severe 2002 drought found that mandatory use restrictions coupled with an aggressive information and enforcement campaign led to a 22 percent reduction in use. (Halich & Stephenson, 2006). Thus, given the severity of the current drought and the level of resources already devoted to attaining the state's conservation goals, the Board anticipates the proposed regulations can result in up to a 20 percent reduction in outdoor water use, totaling 0.48 million acre-feet, as calculated below.

Total urban water use for outdoor irrigation: 3.9 MAF

Urban water use for outdoor irrigation affected by the proposed regulations: $3.9 \times 0.62 = 2.4$ MAF

Estimated conservation savings from adoption of the proposed regulations: $2.4 \times 0.2 = 0.48$ MAF

Additional Benefits to Proposed Regulations

Staff has determined that additional benefits will be realized should the Board adopt the proposed regulations. These benefits include the following:

- Reduced water bills for customers that reduce water use (some of these savings will generate additional economic activity, such as investments in drought-tolerant landscaping)
- Increased water quality in receiving waters due to lower runoff volumes
- Increased drought awareness and shared sense of responsibility among urban water users
- More effective tracking of total urban water use
- Reduced potential for severe economic disruption if 2015 is another dry year

These benefits will offset some of the fiscal impacts to water suppliers when benefits and costs are viewed from a statewide perspective. Therefore, these benefits provide additional justification for adopting the proposed regulations.

References:

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Informative Digest

Summary of Existing Laws and Regulations

At present, there is no statewide prohibition on individual activities to promote conservation. There is also no law or regulation requiring urban water suppliers to affirmatively adopt drought shortage contingency plans, implement specific stages of their drought shortage contingency plans, or report the amount of water they produce to the state. There is also no law or regulation requiring distributors of public water supplies who are not urban water suppliers to adopt water shortage contingency plans, limit outdoor irrigation by their customers, or implement other mandatory conservation measures. The proposed regulation constitutes the first statewide directive to individuals and to urban water suppliers to undertake specific actions to respond to the drought emergency; consequently, the proposed regulation is consistent and compatible with existing regulations on this subject. The proposed regulation neither differs from nor conflicts with an existing comparable federal statute or regulation.

Description and Effect of Proposed Regulations

The proposed emergency adoption of section X sets forth the State Water Resources Control Board's findings of drought emergency. The proposed emergency adoption of section X.1 directs individuals statewide to refrain from engaging in certain activities to promote conservation to meet the drought emergency. The proposed emergency adoption of section X.2 directs urban water suppliers to report information to the Board and to take actions to promote conservation and directs all other water suppliers to take actions to promote conservation.

Emergency Regulations Digest (Gov. Code , § 11346.1, subd. (b))

Proposed Emergency Regulation Section X

Proposed Section X sets forth the Board's findings of drought emergency, noting the Governor's adoption of two emergency proclamations pertaining to drought conditions, the persistence of drought conditions, the dry nature of the preceding two years, and the likelihood that drought conditions will continue.

Proposed Emergency Regulation Section X.1

Proposed Section X.1 prohibits several activities, except where necessary to address an immediate health and safety need or to comply with a term or condition in a permit issued by a state or federal agency, to promote conservation. The section prohibits the application of water to outdoor landscapes in a manner that causes visible runoff, the use of a hose to wash an automobile except where the hose is equipped with a shut-off nozzle, the application of water to hardscapes, and the use of potable water in non-recirculating ornamental fountains.

Proposed Emergency Regulation Section X.2

Proposed Section X.2 directs urban water suppliers to implement the stage of their water shortage contingency plans that impose mandatory restrictions on outdoor irrigation, requires those urban water suppliers without adequate drought shortage contingency plans to adopt them or other measures to promote conservation within thirty days, and report monthly water production information to the Board. The section also directs distributors of public water supplies that are not urban water suppliers to either limit outdoor irrigation, or implement another mandatory conservation measure or measures to achieve conservation.

Authority and Reference Citations

For Section X

Authority: Wat. Code, § 1058.5.

References: Wat. Code, §§ 102, 104, 105.

For Section X.1

Authority: Wat. Code, § 1058.5.

References: Wat. Code, §§ 102, 104, 105.

For Section X.2

Authority: Wat. Code, § 1058.5.

References: Wat. Code, §§ 102, 104, 105; 350; 10617; 10632.

Mandate on Local Agencies or School Districts

The State Water Resources Control Board has determined that adoption of sections X and X.1 does not impose a new mandate on local agencies or school districts. The sections are generally applicable law.

The State Water Resources Control Board has further determined that adoption of section X.2 does not impose a new mandate on local agencies or school districts, because the local agencies affected by the section have the authority to levy service charges, fees, or assessments sufficient to pay for the mandate program or increased level of service. (See Gov. Code, § 17556.)

Suspension of California Environmental Quality Act

On April 24, 2014, the Governor issued an executive order addressing the drought emergency, which, among other things, suspended the California Environmental Quality Act (CEQA) as applied to the State Water Resources Control Board's adoption of emergency regulations to "prevent the waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of water, to promote water recycling or water conservation, and to require curtailment of diversions when water is not available under the diverter's priority of right." The proposed emergency regulation falls under this suspension.

Public Agency and Government Fiscal Impact Analysis

Summary

Increased urban water conservation will result in reduced water use by the customer, which in turn will result in reduced water sales and lost revenue for urban water suppliers. This loss in revenue will be a function of the amount of water conserved (and therefore not sold) and the unit price that water would have sold for. California Urban Water Supplier water rates are primarily comprised of a fixed and a variable component. The variable portion of the rate is based on the volume of water used by the customer and generally the fixed portion does not change with use. The variable portion of the rate therefore represents the unit cost of lost revenue.

In addition to lost revenue from reduced water sales, urban water suppliers will also incur costs associated with water production reporting as required by the proposed emergency regulations.

Implementation of the proposed emergency regulations will result in additional workload for the State Water Board and possibly for the Department of Water Resources, however, this work will be accomplished through redirection of resources within existing agency budgets. Significant costs or saving for State agencies are therefore not anticipated.

Fiscal Impacts to Public Water Supply Agencies

Fiscal impacts to urban water agencies are assumed to result primarily from changes in water sale revenues. These are calculated below by developing a statewide average variable rate for water and multiplying it by the estimate of water sales reduction resulting from the proposed regulation.

Determination of Average Water Rates

Data was compiled from a 2013 Water Rate Survey prepared by published by Raftelis Financial Consultants, Inc. and the California-Nevada Section of the American Water Works Association to develop a statewide average estimate for the variable portion of urban water rates. The 2013 Rate Survey included information on the average fixed and variable water rates for 46 California Counties based on survey responses from 216 urban water suppliers statewide. The average rate (variable portion only) for each represented county was weighted by county population to determine a statewide average rate of \$ 1,086.77 per acre foot of water sold.

Estimate of Water Savings from the Proposed Emergency Regulation

According to the Department of Water Resources' Public Review Draft Water Plan Update 2013, total urban water use between 1998 and 2005 was 8.8 million acre-feet (MAF). Outdoor irrigation represents 44 percent of the total urban water use (3 MAF for residential landscape and 0.9 MAF for large landscapes). The proposed regulation prohibiting visible runoff therefore affects the 44 percent of statewide urban use dedicated to outdoor irrigation. The proposed regulation to require implementation of WSCPs at a mandatory level by urban water suppliers would, in some cases, entail restrictions on use by other customer classes, including residential indoor use in instances where mandatory restrictions include rationing of residential use. However, a review of the State Water Board's May 2014 survey results and a select group of WSCPs indicates that water suppliers with significant supply shortages have already implemented mandatory restrictions and are therefore already in compliance with the proposed regulation, while those that will need to invoke their WSCPs at a mandatory level to comply do not include restrictions on water use by the non-residential classes at the first level of mandatory restrictions. Thus, the Board estimates that the proposed regulations will have a minimal impact on the 56 percent of water used for purposes other than outdoor irrigation.

Many California Urban water suppliers are already implementing water conservation measures commensurate with those required by the proposed regulations and therefore conservation savings attained by their customers are not attributable to the proposed regulations. Fifty-three of the 268 urban water suppliers who responded to the State Water Board's survey indicated that they had already formally invoked their drought shortage contingency plans and have implemented both mandatory restrictions on outdoor water use and prohibitions on runoff into streets and gutters. These 53 urban water suppliers represent approximately 10 million retail customers, which accounts for about 38 percent of the survey response by retail population. The Board assumes that these 53 urban water suppliers are already implementing conservation measures that are commensurate with the requirements of the proposed emergency regulation. The Board also assumes that all 268 of the survey respondents collectively are representative

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of the urban water conservation actions being taken statewide. Based upon these assumptions, 62 percent of urban water use would be affected by adoption of the proposed regulations while 38 percent of urban water use would not be affected by adoption of the proposed regulations.

Various studies have analyzed the response of urban populations to mandatory use restrictions imposed during drought conditions. Multiple studies conclude that mandatory use restrictions are more effective than voluntary conservation measures because areas that have imposed mandatory use restrictions have achieved greater use reductions than areas that imposed only voluntary measures, controlling for other variables. The amount of conservation achievable through mandatory restrictions varies. Conservation savings of up to 29 percent have been observed. For example, a study conducted on the effects of water demand management policies of eight California water agencies during the period from 1989-1996, which included 3 years of drought (1989-1991), found that rationing and use restrictions were correlated with use reductions of 19 percent and 29 percent, respectively. The study's authors concluded:

In general, relatively moderate (5-15%) reductions in aggregate demand can be achieved through modest price increases and "voluntary" alternative [Demand-Side Management] policy instruments, such as public information campaigns. However, to achieve larger reductions in demand (greater than 15%), policymakers will likely need to consider either relatively large price increases, more stringent mandatory policy instruments (such as use restrictions), or a package of policy instruments. (Dixon & Moore, 1996).

A recent study from UCLA on use reductions in Los Angeles during the 2007-2009 drought reached similar conclusions:

Our results indicate that mandatory restrictions are most effective at reducing water consumption for [Single-Family Residential] households. The greatest impact of measures resulted from the combination of mandatory watering restrictions and the price increase, which led to a water reduction of 23% in July/August 2009, while voluntary restrictions led to only a 6% reduction in water use. (Mini, 2013).

In addition, a study of Virginia's severe 2002 drought found that mandatory use restrictions coupled with an aggressive information and enforcement campaign led to a 22 percent reduction in use. (Halich & Stephenson, 2006).

In many cases, mandatory use restrictions are instituted jointly with price increases. Although the proposed regulations do not mandate price increases, we anticipate that many water suppliers will implement rate design changes as part of implementing their WSCP and in order to ameliorate the impacts of reduced revenues as sales decrease due to conservation.

Thus, given the severity of the current drought and the level of resources already devoted to attaining the state's conservation goals, the Board anticipates the proposed regulations can result in up to a 20 percent reduction in outdoor water use, totaling 0.48 million acre-feet, as calculated below.

Total urban water use for outdoor irrigation: 3.9 MAF

Urban water use for outdoor irrigation affected by the proposed regulations: $3.9 \times 0.62 = 2.4$ MAF

Estimated conservation savings from adoption of the proposed regulations: $2.4 \times 0.2 = 0.48$ MAF

Reduction in Public Water Supplier Water Sales Volume

As described above, urban water use for outdoor irrigation affected by the proposed regulations is estimated to be up to 2.4 MAF per year. Urban Water suppliers in California, however, are comprised of both governmental agencies and investor owned utilities that are regulated by the California Public Utilities Commission (CPUC). Costs to investor owned utilities need not be considered for the purposes of estimating the costs of the proposed regulations on local agencies. The CPUC indicates that “there are 116 investor-owned water utilities under the CPUC’s jurisdiction providing water service to about 16 percent of California’s residents”. The estimated 2.4 MAF per year of water used for outdoor irrigation can therefore be reduced by 16 percent for the purpose of determining the amount of conservation and corresponding revenue impact to local government resulting from adoption of the proposed regulation. This brings the total volume of outdoor irrigation water use down to approximately 2.016 MAF per year. Since the proposed regulations are estimated to achieve in as much as a 20 percent reduction in water use it follows that the proposed regulations could result in a reduction in water sales by local government agencies of 403,200 acre-feet per year (i.e, 20% of 2.016 MAF).

Calculation of Decreased Public Water Supplier Sales Revenues

The estimated decreased sales revenues are a function of the average variable water rate and the amount of decreased sales volume. The estimate of decreased sales revenues due to the proposed regulations is \$438,185,664, as calculated below.

Average statewide variable water rate: \$1,086.77 per acre-foot

Estimated conservation savings (local government portion) from proposed regulations: 403,200 acre-feet

Total revenue impact: $\$1086.77 \times 403,200 = \$438,185,664$

Note on calculation methodology

This methodology likely overstates the fiscal impact of decreased revenues for several reasons. First, it does not account for the savings in energy and chemical costs water suppliers will realize due to decreased water production. Second, it does not account for the avoided cost of supply augmentation that could be necessary if not for the conservation savings generated by the proposed regulations.

Reporting Costs

The estimated cost of reporting as would be required by the proposed emergency regulations were determined by multiplying the total number of urban water supplies that would be required to submit monthly water production reports by the estimated average time to compile and submit water production information and by an average staff cost per hour. Based on information provided by the Department of Water Resources there are 440 urban water suppliers that are subject to Urban Water Management Planning Act requirement to prepare an Urban Water Management Plan and therefore subject to the proposed reporting requirements.

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The maximum amount of time to prepare and submit the water production data is estimated to be 4 hours per urban water supplier per month. The estimated average total hourly staff costs of urban water supplier staff required to complete the certification form is \$65 per hour or \$260 per monthly report. If adopted, the term of the proposed emergency regulations would be 270 days or almost 9 months. Therefore, the total maximum reporting costs to urban water suppliers as a result of the proposed regulations is estimated at \$1,029,600 (440 urban water suppliers multiplied by the \$260 cost per monthly report multiplied by 9 months).

Total Implementation Cost

The total estimated cost of implementing the proposed regulations is \$439,215,264, which is the sum of estimated lost revenues to urban water suppliers and the estimated reporting costs as described above.

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The State Water Board to Consider Proposed Emergency Water Conservation Regulations

On January 17 Governor Edmund G. Brown Jr. issued a drought emergency proclamation following three dry or critically dry years in California. [Extreme drought now covers nearly 80 percent of the state](#) and these conditions will likely continue into the foreseeable future.

More than, 400,000 acres of farmland are expected to be fallowed, thousands of people may be out of work, communities risk running out of drinking water and fish and wildlife species are in jeopardy. Many communities are down to 50 gallons a day or less per person for basic sanitation needs. With our inability to predict the effect of the next rainy season, water saved today can improve a region's water security and add flexibility to systems that may need to withstand another year or more with precipitation below average.

There are many ways to boost local water supplies such as recycling treated wastewater and reusing some household or industrial water onsite. However, conservation is the easiest, most efficient and most cost effective way to quickly reduce water demand and extend supplies into the next year, providing flexibility for all California communities. In a survey conducted by the State Water Board in June, while many communities have significantly reduced their water demand over time, it is clear that more can be done.

Conservation Actions Needed

Because of these dire conditions and the need to conserve more, the State Water Resources Control Board (State Water Board) is proposing that individuals and water agencies take necessary steps to conserve water supplies both for this year and into 2015, and is recommending that individuals and water agencies do even more voluntarily to manage our precious water resources.

Most Californians use more water outdoors than indoors. In some areas, 50 percent or more of our daily water use is for lawns and outdoor landscaping. Some urban communities have been investing in conservation, particularly indoors, for years, but reducing the amount of water used outdoors can make the biggest difference of all.

The proposed emergency conservation regulations are primarily directed at reducing outdoor urban water use.

These emergency conservation measures target both individual water use, by identifying the practices from which every Californian should abstain during this drought emergency, as well as the steps that local water suppliers should be taking to reduce water demand in their service areas. These restrictions set a minimum level of effort in this time of emergency and everyone should do more voluntarily. As the drought wears on, the State Water Board may revisit these regulations and consider other measures.

Temporary Water Restrictions

All Californians will be affected by the ongoing drought conditions in one form or another, especially if these conditions persist or worsen in 2015. To promote water conservation statewide, the emergency regulations would prohibit each of the following, except in case of health or safety needs or to comply with a term or condition in a permit issued by a state or federal agency:

- The direct application of water to any hard surface for washing.
- Watering of outdoor landscapes that cause runoff to adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots or structures.
- Using a hose to wash an automobile, unless the hose is fitted with a shut-off nozzle.
- Using potable water in a fountain or decorative water feature, unless the water is recirculated.

Violations of prohibited activities are considered infractions and are punishable by fines of \$500 for each day in which the violation occurs. Any employee of a public agency charged with enforcing laws may write and issue a ticket to the violator.

Action by Urban Water Suppliers Required

To reduce water demand, the regulations would require urban water suppliers to implement their Water Shortage Contingency Plans at a level that triggers mandatory restrictions on outdoor water use. Almost all urban water suppliers (those with more than 3,000 water connections) have these plans; about 40 of these larger agencies do not.

If an urban water supplier does not have a Water Shortage Contingency Plan or its Plan does not meet the requirements of the water code, the supplier must, within 30 days, require customers to limit outdoor irrigation to no more than two days per week or implement another mandatory conservation measure to achieve a comparable reduction in water consumption by the people it serves relative to the amount consumed in 2013.

Water suppliers serving fewer than 3,000 connections must also, within 30 days, require customers to limit outdoor irrigation to no more than two days per week or implement another mandatory conservation measure to achieve a comparable reduction in water consumption by the people it serves relative to the amount consumed in 2013.

Urban water suppliers that violate mandatory actions could be subject to cease and desist orders for violating emergency regulations with fines up to \$10,000 per day per violation. Or, the matter could be referred to the Attorney General's office for further action.

Keeping Track of Urban Water Use

Each urban water supplier will keep track of its water use and compare it to the same period last year. Reports that include the amount of potable water the supplier produced in the preceding month and an estimate of gallons of water per person per day used by its customers will be submitted to the State Water Board by the 15th of each month.

Looking Forward

The State Water Board is providing the following tips to water suppliers to educate their customers about the new requirements:

- Retail water suppliers should provide notice of the regulations in English and Spanish in one or more of the following ways: newspaper advertisements, bill inserts, website homepage, social media, notices in public libraries;
- Wholesale suppliers should include reference to the regulations in all of their customer communications;
- All water suppliers should provide signage where recycled or reclaimed water is being used for activities that the emergency regulations prohibit with the use of potable water, such as operation of fountains and other water features;
- All water suppliers should train personnel on the regulations; and
- All water suppliers should set conservation targets, measure their service area's progress and make this information available to their customers.

In addition to letting customers know about the new requirements, water suppliers should also:

- Have an easy way for customers to report leaks and water waste via phone or electronic submittal (website form, or email); and
- Request that police and fire departments and other local government personnel report leaks and water waste they encounter during their routine duties/patrols

If drought conditions continue, additional actions by the State Water Board and local water suppliers will likely be necessary to further increase conservation. All water suppliers are encouraged to be prepared and plan for a possible dry 2015 now.

Next Steps

The proposed emergency regulations will be considered by the State Water Board at its July 15th meeting. Written comments are due by 12 noon on July 14, 2014. If adopted and subsequently approved by the Office of Administrative Law, they would go into effect on or about August 1st.

Status of Ongoing MWDOC Reliability and Engineering and Planning Projects

July 9, 2014

Description	Lead Agency	Status % Complete	Scheduled Completion Date	Comments
Baker Treatment Plant or Expansion of Baker Water Treatment Plant	IRWD, MNWD, SMWD, ETWD Trabuco CWD		On line date is late 2016	MWDOC has been asked to help secure MET's concurrence on the quality of water being introduced into the South County Pipeline. Staff is awaiting a draft of an amendment from MET staff and legal counsel.
Doheny Desalination Project	MWDOC			Rob Hunter and Karl Seckel met with Director Wayne Osborne to discuss options for getting MET more interested in Ocean Desalination. Staff is following up with Director Osborne.
Poseidon Resources Ocean Desalination Project in Huntington Beach				Karl Seckel participated in the kick-off meeting with OCWD's Financial Consultant, Clean Energy Capital. MWDOC is assisting in the efforts in developing information on MET's future water rates and in helping to evaluate the reliability benefits of the project. The work is scheduled to be completed in September.
OC-88 Metering Issue on the South County Pipeline				A full report is included in the P&O packet this month.
Other Meetings/Work				

Description	Lead Agency	Status % Complete	Scheduled Completion Date	Comments
				MWDOC and EOCWD have requested MET to proceed with installation of a transfer switch at service connection OC-70 to allow a trailer mounted generator to power the pumps at the service connection in the event of a power outage of the local power grid. MET has received the electrical equipment and will be proceeding with the installation.
				Karl Seckel was invited by MNWD to participate with their consultant in reviewing work on their reliability plan. A draft of the plan is scheduled for July or August and will be helpful towards upcoming work on the Orange County Reliability Plan.
				Karl Seckel and Richard Bell have been working on the first draft for the Scope of Work for the Orange County Reliability Study 2015. The draft scope is included in the P&O Committee this month.
				Karl Seckel and Kelly Hubbard met with AQMD staff to gather additional information on the emergency use of generators. Upon confirmation of the information collected, a report will be provided to the PAL Committee.
				<p>Richard Bell has been reviewing BDCP and other state planning documents and will provide three updates at the upcoming P&O Committee meeting, including:</p> <ul style="list-style-type: none"> • Western Delta Intake Concept (discussed at the OC Summit) that uses Sherman Island as a forebay reservoir for a BDCP alternative by Robert Pyke. The alternative has a number of problems.

Description	Lead Agency	Status % Complete	Scheduled Completion Date	Comments
				<ul style="list-style-type: none"> Recently released BDCP Science Program Report that concludes that “the science in this BDCP effort falls short of what the project requires”. BDCP Implementation Agreement which includes the roles and responsibilities and the terms and conditions for the various aspects of the BDCP.
				<p>Richard Bell attended the SJBA meeting where discussions were held on the EPA definition of the “Waters of the United States”. The SJBA is concerned about upcoming interpretations and how management of the basin might be impacted. SJBA has asked MWDOC to consider signing onto a letter to be submitted to the EPA. The meeting discussions also included the drawdown of the basin and the increase of the sampling program to look for indications of seawater intrusion by sampling for specific constituents. MWDOC has offered up its monitoring wells for the Doheny Project as potential sampling locations.</p>
				<p>Karl Seckel and Richard Bell met with George Sutherland from Trout Unlimited and Andy Brunhart from South Coast Water District to help bring Andy up to speed on the work involved with Trout Unlimited over the years. This information should be useful to South Coast Water District.</p>
				<p>Karl Seckel attended the kick-off meeting with SMWD and the SJBA Technical Advisory Committee with Todd Groundwater for the Peer Review of the groundwater modeling and the groundwater management plan. The work will take about 3</p>

Description	Lead Agency	Status % Complete	Scheduled Completion Date	Comments
				months to complete.
				Karl Seckel, Darcy Burke and Director Susan Hinman met Maurice Lyles from Senator Boxer's LA office at the Doheny Desal Pilot Plant site for a tour. Staff and directors from South Coast Water District and Laguna Beach County Water District participated.
				Karl Seckel met with and talked to a number of firms involved with providing Energy Efficiency Opportunities for free to our member agencies. Based on discussions at our Manager's meetings, about five of our agencies expressed an interest in additional meetings. A number of our member agencies have already investigated and/or implemented energy efficiency projects through SCE or other vendors.
				Karl Seckel made a presentation on the BDCP to the South Coast Water District Board.
				Karl Seckel and Rob Hunter met with the City of Orange staff and the Mayor to provide a briefing on BDCP. Subsequently, Karl, Rob and Director Dick attended the City of Orange Council meeting where they provide a Comment letter and adopted a resolution of support for the BDCP and alternative No. 4, the 9,000 cfs two tunnel alternative.

**Status of Ongoing WEROC Projects
June 2014**

Description	Comments
General Activities	<p>Kelly Hubbard provided staffing support to the Orange County Water District (OCWA) Annual Golf Tournament. The tournament is an excellent opportunity to connect with member agencies and contractors for EOC volunteers.</p> <p>Kelly provided a phone interview with Reporter Chris Sedens of KNX Radio on protecting California's water infrastructure and water quality. The interview will be part of a series of topics and interviews on California's Water Supply and the drought. It will air in July sometime.</p> <p>Kelly attended the OCWA luncheon on the Freeway Complex Fire. The presentation's focus was on the legal outcomes of law suits filed against Yorba Linda Water District. The district was held liable for inverse condemnation of 12 homes and a settlement of approximately \$69 million was paid by insurance. The details of this decision are complex and have the potential to negatively impact water utilities for all future fires. Los Angeles Department of Power and Water are currently facing a similar lawsuit.</p>
Member Agency Coordination	<p>Kelly hosted the June MET Exercise Design meeting at the WEROC North Emergency Operations Center (EOC) for a disaster exercise that will be coordinated between MET, the three MET cities, WEROC and its member agencies. The group was provided an overview of the WEROC EOC and how we utilize the facility. The group agreed on the exercise objectives with a focus on inter-agency communications, emergency public information, jurisdictional roles and responsibilities, and common operating picture. The exercise will more than likely be based on an El Nino event, which can be particularly damaging following drought conditions, and will likely be scheduled for early November. There will be monthly planning meetings with MET. Kelly will start a planning process with the WEROC member agencies once the exercise date is set.</p> <p>Louay Toma, WEROC Program Assistant, has been diligently working on making sure the WEROC member agencies that are participating in Alert OC are correctly set up within Alert OC</p>

Description	Comments
	<p>for maps and users. Staff has been working with Blackboard Connect (software developer of Alert OC) for almost a year to develop greater functionality for the water/wastewater utilities. This process is mostly complete. In addition, two Alert OC trainings were hosted this month to refresh users on the system, as well as share lessons learned from MWDOC's use of the system for the La Habra earthquake.</p> <p>Kelly presented to the South Orange County Operations Manager meeting regarding WEROC, response coordination and future projects. The meeting provided a good opportunity for dialog on response coordination and protocols.</p>
<p>Coordination with the County of Orange</p>	<p>Kelly attended the June Orange County Emergency Management Organization (OCEMO) meeting at Santa Margarita Water District. The group continues to review the OC Operational Area Emergency Plan a chapter or two at each meeting. This process is to ensure participation and feedback from all OC agencies. Additionally, Kelly Hubbard with Tony Gaetano (SMWD) provided a presentation on the potable water trailers, their functionality, how they would be utilized as mutual aid, and a demonstration of SMWD's trailer.</p> <p>Kelly participated in the quarterly Ready OC & See Something Say Something (S4) Steering Committee Meeting. The committee meetings review the efforts of the Communications Consultant that the Anaheim/Santa Ana Urban Area Security Initiative (UASI) contracts with for the Ready OC and S4 outreach campaigns. The group provides feedback and input on ongoing campaigns, as well as proposed campaigns. Next year's communication focus is to move both campaigns from an individual and family preparedness message, into a "Ready Together" message. The focus is to encourage community preparedness, participation and safety.</p> <p>Kelly attended the OC Drought Task Force as the representative from water utilities. The task force recognizes that OC is not currently in a "response mode" for drought, but feels that a drought plan should be written now while the group can learn from those areas that are significantly impacted currently. This is a small group meeting that is mostly composed of county departments and is strictly for emergency planning purposes.</p>

Description	Comments
<p>Coordination with Outside Agencies</p>	<p>Ongoing (last month's report as reference): Kelly was asked to join the California Office of Emergency Services Southern Region Drought Conference Calls as the Region 1 Mutual Aid Coordinator for the California Water and Wastewater Agency Response Network (CalWARN). This is a weekly conference call to provide an update to the Southern Region and the State Operations Center (SOC) on drought impacts, activities and needs.</p> <p>Kelly is the Operations Section Chief for the California Emergency Services Association (CESA) Annual Training and Conference. As the Operations Chief she is responsible for all the educational content of the conference. In coordination with a team of volunteers she has booked 3 pre-conference training sessions, four paid keynote speakers, and 25 breakout session speakers. Kelly will continue to oversee the volunteer team responsible for pulling together all the speaker materials and agreements for the conference program and will coordinate all the speakers at the conference in September.</p> <p>Karl Seckel and Kelly meet with the Senior Engineer for Permitting (specifically responsible for water and wastewater utilities in OC) and the Deputy Executive Officer of Engineering & Compliance for the South Coast Air Quality Management District (AQMD) to discuss concerns regarding energy, backup power and emergency response needs. For more information a full staff report will be provided at the next Public Affairs and Legislation Board Committee meeting.</p> <p>Kelly participates in the monthly California Water/Wastewater Agency Response Network (Cal WARN) conference call as the Region 1 Chair. Cal WARN has been working on updating its website for many years now, and has finally implemented a new website. The Steering Committee is still working on cleaning up some functionality of the new website, but is very excited to push this new resource out to its member utilities. Additionally, the Steering Committee is working on a follow-up to its Fuel Planning session held this past Spring. The follow-up is likely to be a tabletop exercise utilizing the fuel plan at the Fall AWWA Conference in Reno, NV.</p>
<p>WEROC Emergency</p>	<p>Updated contact information is an ongoing dilemma for most emergency management programs.</p>

Description	Comments
<p>Operations Center (EOC) Readiness</p>	<p>Many times the emergency manager has the most current contact information for an agencies response partners, but has not yet printed new copies for the EOC or resource documents as it is time and resource intensive. This was the case following the La Habra Earthquake for the WEROC staff responding. Despite recent updates to the EOC resources, many contacts had recently changed. Louay and Kelly have spent several months researching products that may help resolve this issue. Five products, including add-on options for current systems being utilized by MWDOC, were researched and compared. Staff selected In Case of Crisis and was able to negotiate a 14 month contract that was funded with budget savings from FY 2013/2014. In Case of Crisis will allow for WEROC staff to maintain emergency contacts and emergency response plans from one location. Then each MWDOC employee, WEROC volunteer and Member Agency representative can download a mobile application that allows for the appropriate plans and contacts to be automatically updated from WEROC. The information once updated lives on the phone and does not require an internet connection for access. It is an impressive platform that will be a huge resource to staff and member agencies. Once initiated staff will provide a short demonstration and training for the Board.</p> <p>Ongoing: Louay Toma met with the County Emergency Management staff last month to continue to troubleshoot database problems with the county's reverse notification system, Alert OC. The database issues are minor, but do create potential hiccups in the delivery of messages to WEROC EOC staff. Louay has identified the issue in how the contacts were inputted and is continuing a significant effort to clean up the database to resolve this issue. WEROC has hundreds of contacts, so this will be an ongoing effort.</p> <p>Louay successfully participated in the scheduled OA Radio test this month. Louay and Kelly missed the scheduled MARS radio test due to a meeting conflict, however conducted a check-in at a later time to ensure the radio is in working order.</p>

Status of Water Use Efficiency Projects

July 2014

Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
Smart Timer Rebate Program	MWDSC	Ongoing	September 2015	For May 2014, 7 smart timers were installed in the residential sector and 1 in the commercial sector. For program water savings and implementation information, please see MWDSC Water Use Efficiency Program Savings and Implementation Report.
Rotating Nozzles Rebate Program	MWDSC	Ongoing	June 2015	For May 2014, 15 residential and 120 commercial rotating nozzles were installed in Orange County. For program savings and implementation information, please see MWDSC Water Use Efficiency Program Savings and Implementation Report.
Water Smart Landscape Program	MWDSC	Ongoing	September 2014	In May 2014, a total of 12,385 meters received monthly irrigation performance reports comparing actual water use to a landscape irrigation budget customized to each meter. For program savings and implementation information, please see MWDSC Water Use Efficiency Program Savings and Implementation Report.
SoCal Water\$mart Residential Indoor Rebate Program	MWDSC	Ongoing	June 2015	In May 2014, 618 high efficiency clothes washers and 565 high efficiency toilets were installed through this program. For program savings and implementation information, please see MWDSC Water Use Efficiency Program Savings and Implementation Report.
SoCal Water\$mart Commercial Rebate Program	MWDSC	Ongoing	On-going	In May 2014, 39 high efficiency toilets, 30 zero water urinals, and 1 ultra low water urinal were installed through this program.

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Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
SoCal Water\$mart Commercial Rebate Program (cont.)				For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.
Industrial Process Water Use Reduction Program	MWDOC	84%	December 2014	<p>Survey scheduling is ongoing. A total of 40 Focused Surveys and 19 Comprehensive Surveys have been completed or are in progress. To date, 12 companies have signed Incentive Agreements. Updated discharger lists have been obtained, and outreach is continuing to sites with feasible water savings potential.</p> <p>Fabrica Fine Carpets has signed an Implementation Agreement for a water reuse project. Additionally, UCI Medical Center in Orange is in the process of signing an Implementation Agreement for water reduction devices.</p>
MWDOC Conservation Meeting	MWDOC	On-going	Monthly	This month's meeting was held on June 5, 2014 at MWDOC. The next meeting will be on August 7, 2014 at the City of San Clemente.
Metropolitan Conservation Meeting	MWDSC	On-going	Monthly	This month's meeting was held on June 19, 2014. The next meeting will be July 17, 2014 at Metropolitan.
Water Smart Hotel Program	MWDOC	75%	June 2015	<p>MWDOC was awarded a Bureau of Reclamation grant, to be matched with Metropolitan funds, to conduct up to 30 commercial and landscape audits of hotels. Enhanced financial incentives will be provided to augment the current SoCal Water\$mart rebates.</p> <p>A survey was conducted at the Hyatt Regency Orange County, located in Garden Grove, on June 24, 2014. Additionally, MWDOC's request for a one-year term extension was granted by the Bureau.</p>
Turf Removal Program	MWDOC	On-going	Ongoing	In May 2014, 51 rebates were paid, representing 94,879 square feet of turf removed in Orange County. To date, the Turf Removal Program has removed approximately 1,537,417 square feet of turf.

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Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
Turf Removal Program (cont.)				For program savings and implementation information, please see MWDOC Water Use Efficiency Program Savings and Implementation Report.
California Sprinkler Adjustment Notification System	MWDOC	95%	September 2014	MWDOC was awarded a grant from the Bureau of Reclamation to develop the California Sprinkler Adjustment Notification System (CSANS). This system will e-mail or “push” an irrigation index to assist property owners with making global irrigation scheduling adjustments. Participants will voluntarily register to receive this e-mail and can unsubscribe at any time. Pilot implementation is scheduled to conclude in August 2014, with broad implementation to begin throughout Orange County in September 2014.
Public Spaces Program	MWDOC	10%	December 2015	Through the Integrated Regional Watershed Management (IRWM) process, MWDOC is implementing a Proposition 84 grant to target the installation of comprehensive landscape improvements for publicly owned landscape properties throughout the South Orange County IRWM Plan area. The program encourages the removal of non-functional turfgrass, the upgrade of antiquated irrigation timers, and the conversion of high-precipitation-rate fixed spray irrigation to low-precipitation-rate rotating nozzles and/or drip irrigation. To date, 10 cities, water districts, or other special districts (i.e., school districts) have applied for funding through this program, and 4 project proposals have been received.

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Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
Home Certification Program	MWDOC	3%	July 2015	<p>This program will provide single-family sites with indoor and outdoor audits to identify areas for water savings improvements and opportunities. The program will also provide rebates for the installation of residential water efficiency devices, including smart timers and high efficiency rotating nozzles.</p> <p>In May 2014, MWDOC received one (1) application for the Home Certification Program. Eight surveys were conducted, and survey results are pending.</p>
Landscape Irrigation Survey Program	MWDSC	Ongoing	June 2016	<p>Through this program, Metropolitan offers, at no cost, the services of a certified landscape irrigation auditor who will survey and provide written recommendations for qualifying non-residential properties within Metropolitan's service area. Eligible landscapes include commercial and industrial sites, homeowner association common areas, and institutional sites such as schools, parks, and government facilities.</p> <p>To date, 104 sites in the MWDOC service area have contacted Metropolitan to request surveys.</p>
Spray to Drip Conversion Pilot Program	MWDOC	15%	October 2014	<p>This is a pilot program designed to test the efficacy of replacing conventional spray heads in shrub beds with low-volume, low-precipitation drip technology. Through a rebate program format, residential sites will be encouraged to convert their existing spray nozzles to drip.</p> <p>To date, 11 applications have been received.</p>
Commercial, Industrial, and Institutional Performance-Based Water Use Efficiency Program	MWDOC	2%	December 2015	<p>This program will provide enhanced rebate incentives to commercial, industrial, and institutional sites and large-landscape properties (landscapes ≥ 1 acre). The program is scheduled to launch during the second Quarter of 2014.</p>

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Description	Lead Agency	Status % Complete	Scheduled Completion or Renewal Date	Comments
Landscape Training and Outreach	MWDOC	5%	Ongoing	<p>The Orange County Garden Friendly (OCGF) Pilot Program promotes the use of climate appropriate plants and water efficient irrigation practices, with the overall goals of reducing water runoff and improving outdoor water use efficiency. The OCGF Pilot Program is a collaborative effort of the Orange County Stormwater Program (OCSP) and the University of California Cooperative Extension (UCCE). Each partner plays a role in planning and implementing the Program. Various water-related organizations also provide program support and assist with implementation.</p> <p>After the completion of the Pilot Program, the steering committee met to review the Program's successes and lessons learned. An information item will be presented to the MWDOC P&O Committee in August. The Program is expected to continue with events in Fall 2014.</p>

Orange County

Water Use Efficiency Programs Savings and Implementation Report

Retrofits and Acre-Feet Water Savings for Program Activity

Program	Program Start Date	Retrofits Installed in	Month Indicated		Current Fiscal Year		Overall Program		
			Interventions	Water Savings	Interventions	Water Savings	Interventions	Annual Water Savings[4]	Cumulative Water Savings[4]
High Efficiency Clothes Washer Program	2001	May-14	618	1.42	5,233	76.20	96,264	2,659	15,089
Smart Timer Program - Irrigation Timers	2004	May-14	8	0.09	909	151.40	11,110	3,753	19,671
Rotating Nozzles Rebate Program	2007	May-14	135	0.04	60,534	147.50	371,581	1,993	7,862
SoCal WaterSmart Commercial Plumbing Fixture Rebate Program	2002	May-14	70	0.45	1,530	32.17	45,358	3,413	26,989
Water Smart Landscape Program [1]	1997	May-14	12,385	883.79	12,385	9,641.00	12,385	10,377	56,942
Industrial Process Water Use Reduction Program	2006	May-14	0	0.00	1	0.00	11	252	920
Turf Removal Program ^[3]	2010	May-14	94,879	1.11	460,231	64	1,537,417	215	463
High Efficiency Toilet (HET) Program	2005	May-14	565	2.00	2,993	126.45	31,566	1,167	7,130
Home Water Certification Program	2013	May-14	8	0.016	53	0.453	53	1,247	1,247
Synthetic Turf Rebate Program	2007		0	0	0	0	685,438	96	469
Ultra-Low-Flush-Toilet Programs ^[2]	1992		0	0	0	0	363,926	13,452	150,509
Home Water Surveys ^[2]	1995		0	0	0	0	11,867	160	1,708
Showerhead Replacements ^[2]	1991		0	0	0	0	270,604	1,667	19,083
Total Water Savings All Programs				889	543,869	10,240	3,437,580	39,204	306,837

^[1] Water Smart Landscape Program participation is based on the number of water meters receiving monthly Irrigation Performance Reports.

^[2] Cumulative Water Savings Program To Date totals are from a previous Water Use Efficiency Program Effort.

^[3] Turf Removal Interventions are listed as square feet.

^[4] Cumulative & annual water savings represents both active program savings and passive savings that continues to be realized due to plumbing code changes over time.

HIGH EFFICIENCY CLOTHES WASHERS INSTALLED BY AGENCY through MWDOC and Local Agency Conservation Programs

Agency	FY 01/02	FY 02/03	FY 03/04	FY 04/05	FY 05/06	FY 06/07	FY 07/08	FY 08/09	FY 09/10	FY 10/11	FY 11/12	FY 12/13	FY13/14	Total	Current FY Water Savings Ac/Ft (Cumulative)	Cumulative Water Savings across all Fiscal Years
Brea	17	107	178	132	143	132	175	156	42	186	144	93	107	1,612	1.48	251.82
Buena Park	9	45	88	81	84	85	114	146	59	230	145	105	102	1,293	1.61	183.38
East Orange CWD RZ	3	8	20	20	11	18	22	17	3	23	10	10	8	173	0.13	28.43
El Toro WD	21	88	108	103	83	91	113	130	32	162	112	134	105	1,282	1.68	186.89
Mountain Valley	36	127	209	196	178	205	219	243	72	289	158	115	93	2,140	1.34	345.43
Garden Grove	39	173	278	243	243	238	304	332	101	481	236	190	147	3,005	2.23	467.74
Golden State WC	37	195	339	374	342	339	401	447	168	583	485	265	261	4,236	3.67	648.80
Huntington Beach	114	486	857	738	680	761	750	751	211	963	582	334	267	7,494	3.80	1,235.63
Irvine Ranch WD	159	626	1,087	1,093	1,445	1,972	2,052	1,844	1,394	2,621	2,170	1,763	1,531	19,757	22.94	2,877.94
La Habra	8	40	86	81	66	96	136	83	22	179	128	82	105	1,112	1.47	160.59
La Palma	3	5	13	21	18	33	35	51	25	76	46	34	24	384	0.38	54.10
Laguna Beach CWD	17	88	119	84	68	57	77	77	27	96	57	38	33	838	0.41	135.72
Mesa Water District	24	117	228	240	212	239	249	246	73	232	176	114	80	2,230	1.10	373.90
Moulton Niguel WD	158	630	841	640	570	652	716	742	250	1,127	679	442	394	7,841	5.70	1,217.44
Newport Beach	17	144	343	277	243	245	270	259	57	197	142	116	86	2,396	1.26	410.04
Orange	58	247	304	358	330	366	365	403	111	349	262	218	149	3,520	2.20	581.82
Orange Park Acres	-	-	-	-	-	4	8	-	-	-	-	-	-	12	0.00	2.43
San Juan Capistrano	16	95	120	107	102	109	103	127	43	190	110	76	69	1,267	0.91	196.46
San Clemente	32	182	235	170	136	204	261	278	63	333	206	140	83	2,323	1.29	361.72
Santa Margarita WD	140	510	743	573	592	654	683	740	257	1,105	679	553	601	7,830	8.46	1,173.08
Seal Beach	13	28	57	39	46	47	46	57	7	81	51	31	27	530	0.44	82.11
Serrano WD	9	16	54	39	39	30	31	23	7	21	20	13	10	312	0.19	54.47
South Coast WD	35	138	165	97	103	107	130	148	43	183	112	89	75	1,425	1.21	218.68
Trabuco Canyon WD	10	63	76	58	44	69	60	62	28	82	62	30	44	688	0.66	107.19
Tustin	21	89	152	138	127	152	146	144	45	174	97	78	56	1,419	0.76	233.49
Westminster	37	159	235	196	186	213	171	233	74	329	208	121	75	2,237	0.96	355.72
Yorba Linda	36	214	342	355	333	288	350	367	117	394	273	181	149	3,399	2.08	556.91
MWDOC Totals	1,069	4,620	7,277	6,453	6,424	7,406	7,987	8,106	3,331	10,686	7,350	5,365	4,681	80,755	68.37	12,501.92
Anaheim	917	677	904	1,364	701	854	847	781	860	910	477	331	261	9,884	3.57	1,685.26
Fullerton	40	196	369	289	263	269	334	330	69	397	270	200	172	3,198	2.58	494.64
Santa Ana	15	69	188	269	244	236	235	257	87	355	190	163	119	2,427	1.67	406.88
Non-MWDOC Totals	972	942	1,461	1,922	1,208	1,359	1,416	1,368	1,016	1,662	937	694	552	15,509	7.82	2,586.78
Orange County Totals	2,041	5,562	8,738	8,375	7,632	8,765	9,403	9,474	4,347	12,348	8,287	6,059	5,233	96,264	76.20	15,088.70

SMART TIMERS INSTALLED BY AGENCY through MWDOC and Local Agency Conservation Programs

Agency	FY 08/09		FY 09/10		FY 10/11		FY 11/12		FY 12/13		FY 13/14		Total Program		Cumulative Water Savings across all Fiscal Years
	Res	Comm	Res	Comm	Res	Comm	Res	Comm	Res	Comm	Res	Comm	Res	Comm.	
Brea	3	9	0	0	2	0	8	0	9	8	4	0	37	66	293.68
Buena Park	3	1	0	0	0	0	4	19	3	0	0	0	10	20	44.07
East Orange CWD RZ	0	0	0	0	1	0	5	0	2	0	0	0	11	0	2.35
El Toro WD	0	25	2	18	5	5	26	2	7	2	8	0	62	321	1,524.72
Fountain Valley	1	0	0	6	2	2	8	2	3	2	2	0	36	17	74.31
Garden Grove	2	1	6	0	5	4	7	0	5	2	5	0	46	13	62.23
Golden State WC	1	2	9	22	7	4	13	3	9	49	5	25	91	127	320.35
Huntington Beach	13	1	6	27	6	36	15	4	18	33	14	35	117	160	433.40
Irvine Ranch WD	29	56	14	145	28	153	267	71	414	135	57	48	1,105	1,338	5,572.45
La Habra	0	0	0	21	0	0	3	0	4	7	2	0	17	29	89.27
La Palma	0	0	0	0	0	0	1	0	1	0	1	0	3	0	0.28
Laguna Beach CWD	2	0	2	14	4	1	109	2	76	2	70	0	297	19	96.45
Mesa Water District	6	7	13	7	7	22	21	0	10	2	12	2	113	73	338.06
Moulton Niguel WD	21	23	17	162	36	60	179	31	51	74	35	38	464	470	1,514.51
Newport Beach	10	27	7	58	6	0	275	12	242	26	168	74	969	344	1,370.87
Orange	5	2	2	13	5	8	25	0	20	24	11	9	145	111	461.30
San Juan Capistrano	10	0	7	49	13	1	103	2	14	18	5	0	173	79	276.40
San Clemente	81	20	13	209	46	11	212	17	26	7	18	2	950	334	1,478.02
Santa Margarita WD	25	44	10	152	61	53	262	7	53	171	51	83	573	684	2,130.89
Santiago CWD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Seal Beach	0	0	0	1	0	0	0	3	1	0	1	36	2	40	33.79
Serrano WD	0	0	11	0	4	0	3	0	1	0	0	0	19	0	3.78
South Coast WD	11	6	3	10	13	3	78	10	13	16	5	4	155	128	533.80
Trabuco Canyon WD	1	0	2	0	2	10	12	0	6	0	2	0	68	103	548.16
Tustin	7	9	10	14	10	0	11	0	8	4	9	1	59	35	138.18
Westminster	3	0	3	0	1	1	2	0	1	1	1	0	27	14	85.18
Yorba Linda	8	5	5	21	25	0	22	0	20	0	11	5	172	83	394.43
MWDOC Totals	242	238	142	949	289	374	1,671	185	1,017	583	497	362	5,721	4,608	17,820.95

Anaheim	9	59	5	46	12	11	23	60	19	10	8	26	119	361	1,376.31
Fullerton	2	2	2	39	9	33	22	51	9	29	6	0	72	154	384.79
Santa Ana	2	4	1	8	8	0	6	5	8	19	2	8	31	44	89.40
Non-MWDOC Totals	13	65	8	93	29	44	51	116	36	58	16	34	222	559	1,850.50
Orange County Totals	255	303	150	1,042	318	418	1,722	301	1,053	641	513	396	5,943	5,167	19,671

**ROTATING NOZZLES INSTALLED BY AGENCY
through MWDOC and Local Agency Conservation Programs**

Agency	FY 09/10			FY 10/11			FY 11/12			FY 12/13			FY 13/14			Total Program			Cumulative Water Savings across all Fiscal Years
	Small		Large	Small		Large	Small		Large	Small		Large	Small		Large	Small		Large	
	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	Res	Comm.	Comm.	
Brea	8	100	0	32	0	0	130	0	0	65	120	0	84	0	0	341	220	0	6.57
Buena Park	0	0	2,535	29	0	0	32	0	0	65	0	0	53	0	0	216	75	2,535	447.88
East Orange	0	0	0	0	0	0	340	0	0	55	0	0	30	0	0	530	0	0	7.16
El Toro	145	2,874	890	174	0	0	357	76	0	23	6,281	0	36	3,288	0	823	12,809	890	296.85
Fountain Valley	21	0	0	83	0	0	108	0	0	35	0	0	0	0	0	381	0	0	6.74
Garden Grove	151	45	0	38	0	0	119	0	0	95	0	0	61	0	0	661	151	0	14.40
Golden State	280	29	0	303	943	0	294	0	0	257	2,595	0	165	0	0	1,543	3,567	0	59.59
Huntington Beach	39	3,420	305	203	625	0	458	0	0	270	0	0	120	0	0	1,505	4,909	2,681	719.35
Irvine Ranch	1,034	54,441	1,479	2,411	2,861	0	1,715	4,255	0	25,018	1,014	0	10,939	4,257	0	43,321	79,371	2,004	2304.30
La Habra	0	273	0	0	0	0	33	90	0	0	0	0	15	0	0	72	898	900	213.71
La Palma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0.24
Laguna Beach	191	0	0	156	0	0	763	0	0	3,596	0	0	2,948	878	0	7,870	925	0	66.29
Mesa Water District	195	83	0	118	0	0	297	277	0	270	0	0	361	0	0	1,522	385	343	110.07
Moulton Niguel	234	0	959	1,578	0	0	1,225	0	0	512	1,385	0	272	227	0	4,544	8,615	2,945	833.66
Newport Beach	92	4,781	0	337	1,208	0	640	3,273	0	25,365	50	0	19,349	6,835	0	45,870	16,886	0	499.17
Orange	129	0	0	135	30	0	343	0	0	264	0	0	165	120	0	2,155	313	0	43.97
San Clemente	729	1,299	0	2,612	851	0	4,266	117	1,343	631	172	0	265	5,074	0	9,087	7,538	1,343	332.36
San Juan Capistrano	656	5,709	0	1,452	0	0	949	0	0	684	30	0	370	0	0	4,615	7,399	0	221.23
Santa Margarita	1,731	937	611	3,959	3,566	0	4,817	0	0	983	0	0	318	0	0	13,052	4,571	611	379.66
Seal Beach	0	291	0	0	0	0	0	0	0	0	0	0	0	0	0	115	291	0	8.58
Serrano	1,498	0	0	364	0	0	58	0	0	190	0	0	105	0	0	2,333	0	0	41.61
South Coast	0	0	0	318	1,772	0	688	359	0	435	0	0	70	0	0	1,700	2,264	0	58.30
Trabuco Canyon	1,357	791	0	0	0	0	379	0	0	34	0	0	0	0	0	1,900	791	0	51.40
Tustin	314	0	0	512	0	0	476	1,013	0	378	0	0	329	0	0	2,581	1,013	0	50.48
Westminster	80	0	0	0	0	0	26	0	0	15	0	0	0	0	0	232	0	0	4.69
Yorba Linda	371	3,256	0	529	0	0	559	0	0	730	0	0	40	940	0	3,232	4,309	500	231.45
MWDOC Totals	9,255	78,329	6,779	15,343	11,856	0	19,072	9,460	1,343	59,970	11,647	0	36,095	21,619	0	150,211	157,300	14,752	7009.71

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Aguaheine	273	164	105	372	382	0	742	38,554	0	459	813	0	162	0	0	2,405	39,913	105	531.14
Fullerton	48	0	1,484	416	0	0	409	0	0	119	0	0	107	0	0	1,640	64	1,484	288.49
Santa Ana	48	572	0	53	0	0	22	65	0	99	0	0	18	2,533	0	481	3,226	0	32.98
Non-MWDOC Totals	369	736	1,589	841	382	0	1,173	38,619	0	677	813	0	287	2,533	0	4,526	43,203	1,589	852.61
Orange County Totals	9,624	79,065	8,368	16,184	12,238	0	20,245	48,079	1,343	60,647	12,460	0	36,382	24,152	0	154,737	200,503	16,341	7862.32

SOCAL WATER\$MART COMMERCIAL PLUMBING FIXTURES REBATE PROGRAM^[1]

INSTALLED BY AGENCY

through MWDOC and Local Agency Conservation Programs

Agency	FY 01/02	FY 02/03	FY 03/04	FY 04/05	FY 05/06	FY 06/07	FY 07/08	FY 08/09	FY 09/10	FY 10/11	FY 11/12	FY 12/13	FY 13/14	Totals	Cumulative Water Savings across all Fiscal Years
Brea	0	51	0	22	52	2	27	113	24	4	1	234	0	530	263
Buena Park	10	83	28	55	64	65	153	432	122	379	290	5	22	1,708	691
East Orange CWD RZ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
El Toro WD	23	23	73	42	5	2	0	92	143	1	137	0	212	753	393
Fountain Valley	1	94	2	59	35	63	17	35	0	2	314	0	0	622	409
Garden Grove	21	199	51	297	34	136	5	298	130	22	0	4	1	1,198	1,058
Golden State WC	11	197	34	232	80	531	46	414	55	68	135	0	1	1,804	1,367
Huntington Beach	5	191	73	185	82	209	48	104	126	96	156	104	144	1,523	1,076
Irvine Ranch WD	306	1,085	87	325	1,044	429	121	789	2,708	1,002	646	1,090	451	10,083	4,500
La Habra	10	37	52	45	60	16	191	75	53	4	0	0	0	543	385
La Palma	0	0	0	0	5	0	0	140	21	0	0	0	0	166	56
Laguna Beach CWD	2	30	2	18	9	12	20	137	189	0	0	0	27	446	219
Mesa Water District	424	155	22	130	241	141	141	543	219	669	41	6	0	2,732	1,438
Moulton Niguel WD	31	74	65	172	3	0	9	69	151	6	0	0	0	580	595
Newport Beach	4	230	9	77	24	94	98	27	245	425	35	0	0	1,268	873
Orange	84	144	22	553	127	88	18	374	67	1	73	1	271	1,823	1,250
San Juan Capistrano	0	34	21	181	0	6	2	1	1	0	0	0	14	260	306
San Clemente	0	36	5	95	40	173	2	18	43	0	19	0	0	431	287
Santa Margarita WD	0	16	3	56	0	0	6	23	11	0	0	0	0	115	149
Santiago CWD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Seal Beach	3	34	44	40	61	45	1	2	124	0	0	0	0	354	309
Serrano WD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Coast WD	0	31	8	54	8	4	9	114	56	422	84	148	0	938	304
Trabuco Canyon WD	0	1	0	6	0	0	0	4	0	0	0	0	0	11	11
Tustin	9	114	16	82	14	7	115	145	25	230	0	0	0	757	574
Westminster	16	109	32	153	57	104	40	161	16	63	35	1	28	815	731
Yorba Linda	0	36	12	42	4	118	10	24	8	30	0	1	0	285	402
MWDOC Totals	960	3,004	661	2,921	2,049	2,245	1,079	4,134	4,537	3,424	1,966	1,594	1,171	29,745	17,646
Anaheim	1,042	400	947	362	1,113	780	766	3,298	582	64	48	165	341	9,908	4,848
Fullerton	28	41	138	270	91	96	133	579	29	4	0	94	0	1,503	1,141
Santa Ana	115	153	589	227	624	373	493	815	728	39	12	16	18	4,202	3,354
Non-MWDOC Totals	1,185	594	1,674	859	1,828	1,249	1,392	4,692	1,339	107	60	275	359	15,613	9,343
Orange County Totals	2,145	3,598	2,335	3,780	3,877	3,494	2,471	8,826	5,876	3,531	2,026	1,869	1,530	45,358	26,989

[1] Retrofit devices include ULF Toilets and Urinals, High Efficiency Toilets and Urinals, Zero Water Urinals, High Efficiency Clothes Washers, Cooling Tower Conductivity Controllers, Ph Cooling Tower Conductivity Controllers, Flush Valve Retrofit Kits, Pre-rinse Spray heads, Hospital X-Ray Processor Recirculating Systems, Steam Sterilizers, Food Steamers, and Water Pressurized Brooms.

Water Smart Smart Landscape Program

Total Number of Meters
in Program by Agency

Agency	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12	FY 12/13	FY 13/14	Overall Water Savings To Date (AF)
Brea	0	0	0	0	0	0	0	22	22	22	37.68
Buena Park	0	0	0	0	0	17	103	101	101	101	340.17
East Orange CWD RZ	0	0	0	0	0	0	0	0	0	0	0.00
El Toro WD	88	109	227	352	384	371	820	810	812	812	3,871.88
Fountain Valley	0	0	0	0	0	0	0	0	0	0	0.00
Garden Grove	0	0	0	0	0	0	0	0	0	0	0.00
Golden State WC	0	0	0	14	34	32	34	32	32	32	161.77
Huntington Beach	0	0	0	0	0	31	33	31	31	31	110.82
Irvine Ranch WD	277	638	646	708	1,008	6,297	6,347	6,368	6,795	6,797	30,101.86
Laguna Beach CWD	0	0	0	0	57	141	143	141	124	124	582.65
La Habra	0	0	0	0	23	22	24	22	22	22	110.04
La Palma	0	0	0	0	0	0	0	0	0	0	0.00
Mesa Water District	191	170	138	165	286	285	288	450	504	511	2,321.89
Moulton Niguel WD	80	57	113	180	473	571	595	643	640	675	3,301.15
Newport Beach	32	27	23	58	142	171	191	226	262	299	1,137.25
Orange	0	0	0	0	0	0	0	0	0	0	0.00
San Clemente	191	165	204	227	233	247	271	269	269	299	1,916.57
San Juan Capistrano	0	0	0	0	0	0	0	0	0	0	0.00
Santa Margarita WD	547	619	618	945	1,571	1,666	1,746	1,962	1,956	2,274	11,377.74
Seal Beach	0	0	0	0	0	0	0	0	0	0	0.00
Serrano WD	0	0	0	0	0	0	0	0	0	0	0.00
South Coast WD	0	0	0	62	117	108	110	118	118	118	647.37
Trabuco Canyon WD	0	0	0	12	49	48	62	60	60	60	277.73
Tustin	0	0	0	0	0	0	0	0	0	0	0.00
Westminster	0	0	0	10	18	18	20	18	18	18	94.62
Yorba Linda WD	0	0	0	0	0	0	0	0	0	0	0.00
MWDOC Totals	1,406	1,785	1,969	2,733	4,395	10,025	10,787	11,273	11,766	12,195	56,391.2
Non-MWDOC Totals	0	0	0	0	0	142	146	144	190	190	551.04
Orange Co. Totals	1,406	1,785	1,969	2,733	4,395	10,167	10,933	11,417	11,956	12,385	56,942.23

INDUSTRIAL PROCESS WATER USE REDUCTION PROGRAM

Number of Process Changes by Agency

Agency	FY 07/08	FY 08/09	FY 09/10	FY 10/11	FY 11/12	FY 12/13	FY 13/14	Overall Program Interventions	Annual Water Savings[1]	Cumulative Water Savings across all Fiscal Years[1]
Brea	0	0	0	0	0	0	0	0	0	0
Buena Park	0	1	0	0	0	0	0	1	54	293
East Orange	0	0	0	0	0	0	0	0	0	0
El Toro	0	0	0	0	0	0	0	0	0	0
Fountain Valley	0	0	0	0	0	0	0	0	0	0
Garden Grove	0	0	0	0	0	0	0	0	0	0
Golden State	1	0	0	0	0	0	0	1	3	18
Huntington Beach	0	0	0	0	0	2	0	2	54	101
Irvine Ranch	0	0	2	1	1	1	1	6	98	236
La Habra	0	0	0	0	0	0	0	0	0	0
La Palma	0	0	0	0	0	0	0	0	0	0
Laguna Beach	0	0	0	0	0	0	0	0	0	0
Mesa Water District	0	0	0	0	0	0	0	0	0	0
Moulton Niguel	0	0	0	0	0	0	0	0	0	0
Newport Beach	0	0	0	0	0	0	0	0	0	0
Orange	1	0	0	0	0	0	0	1	43	273
San Juan Capistrano	0	0	0	0	0	0	0	0	0	0
San Clemente	0	0	0	0	0	0	0	0	0	0
Santa Margarita	0	0	0	0	0	0	0	0	0	0
Seal Beach	0	0	0	0	0	0	0	0	0	0
Serrano	0	0	0	0	0	0	0	0	0	0
South Coast	0	0	0	0	0	0	0	0	0	0
Trabuco Canyon	0	0	0	0	0	0	0	0	0	0
Tustin	0	0	0	0	0	0	0	0	0	0
Westminster	0	0	0	0	0	0	0	0	0	0
Yorba Linda	0	0	0	0	0	0	0	0	0	0
MWDOC Totals	2	1	2	1	1	3	1	11	252	920

[1] Acre feet of savings determined during a one year monitoring period.

If monitoring data is not available, the savings estimated in agreement is used.

TURF REMOVAL BY AGENCY^[1]

through MWDOC and Local Agency Conservation Programs

Agency	FY 10/11		FY 11/12		FY 12/13		FY 13/14		Total Program		Cumulative Water Savings across all Fiscal Years
	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	
Brea	0	0	3,397	9,466	7,605	0	0	0	11,002	9,466	7.53
Buena Park	0	0	0	0	0	0	0	0	0	0	-
East Orange	0	0	0	0	0	0	1,964	0	1,964	0	0.27
El Toro	0	0	4,723	0	4,680	72,718	3,332	0	12,735	72,718	24.12
Fountain Valley	0	0	1,300	0	682	7,524	2,254	0	4,236	7,524	3.16
Garden Grove	0	46,177	14,013	0	4,534	0	7,166	0	25,713	46,177	34.02
Golden State	0	0	42,593	30,973	31,813	3,200	25,558	8,424	99,964	42,597	45.46
Huntington Beach	801	3,651	27,630	48,838	9,219	12,437	15,021	0	52,671	64,926	42.78
Irvine Ranch	5,423	12,794	6,450	1,666	32,884	32,384	31,677	67,381	76,434	114,225	45.75
La Habra	0	7,775	0	8,262	0	0	0	0	0	16,037	7.82
La Palma	0	0	0	0	0	0	0	0	0	0	-
Laguna Beach	978	0	2,533	0	2,664	1,712	3,531	226	9,706	1,938	3.36
Mesa Water District	0	0	6,777	0	10,667	0	9,678	0	27,122	0	7.19
Moulton Niguel	956	16,139	4,483	26,927	11,538	84,123	7,742	40,741	24,719	167,930	56.34
Newport Beach	0	0	3,454	0	3,548	2,346	894	0	7,896	2,346	3.23
Orange	0	0	12,971	0	15,951	8,723	6,826	0	35,748	8,723	13.31
San Clemente	0	0	21,502	0	16,062	13,165	15,356	13,908	52,920	27,073	21.31
San Juan Capistrano	0	0	22,656	103,692	29,544	27,156	10,388	0	62,588	130,848	70.39
Santa Margarita	4,483	5,561	1,964	11,400	10,151	11,600	14,028	48,180	30,626	76,741	26.04
Seal Beach	0	0	0	0	3,611	0	0	0	3,611	0	1.01
Serrano	0	0	0	0	0	0	2,971	0	2,971	0	0.42
South Coast	0	16,324	6,806	0	9,429	4,395	9,225	101,127	25,460	121,846	31.32
Trabuco Canyon	0	0	272	0	1,542	22,440	2,009	0	3,823	22,440	7.11
Tustin	0	0	0	0	9,980	0	1,410	0	11,390	0	2.99
Westminster	0	0	0	0	0	0	0	0	0	0	-
Yorba Linda	11,349	0	0	0	0	0	0	0	11,349	0	6.36
MWDOC Totals	23,990	108,421	183,524	241,224	216,104	303,923	171,030	279,987	594,648	933,555	461.28
Anaheim	0	0	0	0	0	0	0	0	0	0	-
Fullerton	0	0	0	0	0	0	0	9,214	0	9,214	1.29
Santa Ana	0	0	0	0	0	0	0	0	0	0	-
Non-MWDOC Totals	0	0	0	0	0	0	0	9,214	0	9,214	1.29
Orange County Totals	23,990	108,421	183,524	241,224	216,104	303,923	171,030	289,201	594,648	942,769	462.57

[1] Installed device numbers are listed as square feet

HIGH EFFICIENCY TOILETS (HETs) INSTALLED BY AGENCY

through MWDOC and Local Agency Conservation Programs

Agency	FY05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14	Total	Cumulative Water Savings across all Fiscal Years
Brea	0	2	7	43	48	8	0	0	30	138	26.60
Buena Park	0	1	2	124	176	7	0	0	47	357	73.24
East Orange CWD RZ	0	0	10	12	1	0	0	0	11	34	6.72
El Toro WD	0	392	18	75	38	18	0	133	203	877	189.09
Fountain Valley	0	69	21	262	54	17	0	0	31	454	112.36
Garden Grove	0	14	39	443	181	24	0	0	48	749	174.15
Golden State WC	2	16	36	444	716	37	80	2	112	1,445	304.13
Huntington Beach	2	13	59	607	159	76	0	0	128	1,044	229.99
Irvine Ranch WD	29	1,055	826	5,088	2,114	325	0	1,449	668	11,554	2,572.57
Laguna Beach CWD	0	2	17	91	28	11	0	0	26	175	37.92
La Habra	0	3	18	296	34	20	0	0	31	402	93.93
La Palma	0	1	10	36	26	13	0	0	18	104	21.02
Mesa Water District	0	247	19	736	131	7	0	0	166	1,306	313.83
Moulton Niguel WD	0	20	104	447	188	46	0	0	340	1,145	214.24
Newport Beach	0	5	19	163	54	13	0	0	40	294	64.39
Orange	1	20	62	423	79	40	0	1	112	738	162.15
San Juan Capistrano	0	10	7	76	39	11	0	0	30	173	36.35
San Clemente	0	7	22	202	66	21	0	0	54	372	80.44
Santa Margarita WD	0	5	14	304	151	44	0	0	466	984	142.96
Seal Beach	0	678	8	21	12	1	0	2	13	735	242.03
Serrano WD	0	0	1	13	5	0	0	0	2	21	5.53
South Coast WD	2	2	29	102	41	12	23	64	87	362	58.99
Trabuco Canyon WD	2	0	4	23	23	0	0	0	9	61	12.34
Tustin	0	186	28	387	479	17	0	0	54	1,151	277.61
Westminster	0	17	25	541	167	23	0	0	29	802	192.07
Yorba Linda WD	0	14	89	323	96	18	0	0	34	574	138.70
MWDOC Totals	38	2,779	1,494	11,282	5,106	809	103	1,651	2,789	26,051	5,783.35

Anaheim	0	255	78	2,771	619	114	0	0	125	3,962	974.09
Fullerton	0	4	28	286	60	23	0	0	51	452	101.59
Santa Ana	0	11	25	925	89	23	0	0	28	1,101	271.44
Non-MWDOC Totals	0	270	131	3,982	768	160	0	0	204	5,515	1,347.12

Orange County Totals	38	3,049	1,625	15,264	5,874	969	103	1,651	2,993	31,566	7,130.47
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HOME WATER SURVEYS PERFORMED BY AGENCY

through MWDOC and Local Agency Conservation Programs

Agency	FY 13/14		FY 14/15		Total		Cumulative Water Savings
	Surveys	Cert Homes	Surveys	Cert Homes	Surveys	Cert Homes	
Brea	0	0	0	0	0	0	0.00
Buena Park	0	0	0	0	0	0	0.00
East Orange	14	0	0	0	14	0	0.33
El Toro	0	0	0	0	0	0	0.00
Fountain Valley	2	0	0	0	2	0	0.05
Garden Grove	0	0	0	0	0	0	0.00
Golden State	0	0	0	0	0	0	0.00
Huntington Beach	1	0	0	0	1	0	0.02
Irvine Ranch	0	0	0	0	0	0	0.00
La Habra	0	0	0	0	0	0	0.00
La Palma	0	0	0	0	0	0	0.00
Laguna Beach	4	0	0	0	4	0	0.09
Mesa	0	0	0	0	0	0	0.00
Moulton Niguel	2	0	0	0	2	0	0.05
Newport Beach	1	0	0	0	1	0	0.02
Orange	0	0	0	0	0	0	0.00
San Clemente	13	0	0	0	13	0	0.31
San Juan Capistrano	2	0	0	0	2	0	0.05
Santa Margarita	10	0	0	0	10	0	0.24
Serrano	0	0	0	0	0	0	0.00
South Coast	4	0	0	0	4	0	0.09
Trabuco Canyon	0	0	0	0	0	0	0.00
Tustin	0	0	0	0	0	0	0.00
Westminster	0	0	0	0	0	0	0.00
Yorba Linda	0	0	0	0	0	0	0.00
MWDOC Totals	53	0	0	0	53	0	1.25

Anaheim	0	0	0	0	0	0	0.00
Fullerton	0	0	0	0	0	0	0.00
Santa Ana	0	0	0	0	0	0	0.00
Non-MWDOC Totals	0	0	0	0	0	0	0.00

Orange County Totals	53	0	0	0	53	0	1.247
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SYNTHETIC TURF INSTALLED BY AGENCY^[1] through MWDOC and Local Agency Conservation Programs

Agency	FY 07/08		FY 08/09		FY 09/10		FY 10/11		Total Program		Cumulative Water Savings across all Fiscal Years
	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	Res	Comm.	
Brea	0	0	2,153	2,160	500	0	0	0	2,653	2,160	3.30
Buena Park	0	0	1,566	5,850	0	0	0	0	1,566	5,850	5.19
East Orange	0	0	0	0	983	0	0	0	983	0	0.55
El Toro	3,183	0	2,974	0	3,308	0	895	0	10,360	0	6.98
Fountain Valley	11,674	0	1,163	0	2,767	0	684	0	16,288	0	12.46
Garden Grove	1,860	0	0	0	3,197	0	274	0	5,331	0	3.47
Golden State	6,786	0	13,990	0	15,215	0	2,056	0	38,047	0	24.88
Huntington Beach	15,192	591	12,512	0	4,343	1,504	0	0	32,047	2,095	25.29
Irvine Ranch	11,009	876	13,669	0	2,585	0	0	0	27,263	876	21.00
La Habra	0	0	0	0	0	0	0	0	0	0	-
La Palma	429	0	0	0	0	0	0	0	429	0	0.36
Laguna Beach	3,950	0	3,026	0	725	0	0	0	7,701	0	5.84
Mesa Water District	4,114	0	3,005	78,118	4,106	0	2,198	0	13,423	78,118	63.46
Moulton Niguel	14,151	0	25,635	2,420	7,432	0	0	0	47,218	2,420	35.69
Newport Beach	2,530	0	6,628	0	270	0	0	0	9,428	0	6.92
Orange	4,169	0	7,191	0	635	0	0	0	11,995	0	8.89
San Clemente	9,328	0	11,250	455	2,514	1,285	500	0	23,592	1,740	18.37
San Juan Capistrano	0	0	7,297	639	2,730	0	4,607	0	14,634	639	9.02
Santa Margarita	12,922	0	26,069	0	21,875	0	7,926	0	68,792	0	44.68
Seal Beach	0	0	817	0	0	0	0	0	817	0	0.57
Serrano	7,347	0	1,145	0	0	0	0	0	8,492	0	6.97
South Coast	2,311	0	6,316	0	17,200	0	1,044	0	26,871	0	16.43
Trabuco Canyon	1,202	0	9,827	0	0	0	0	0	11,029	0	7.89
Tustin	6,123	0	4,717	0	2,190	0	0	0	13,030	0	9.67
Westminster	2,748	16,566	8,215	0	890	0	0	0	11,853	16,566	22.47
Yorba Linda	11,792	0	12,683	0	4,341	5,835	0	0	28,816	5,835	24.48
MWDOC Totals	132,820	18,033	181,848	89,642	97,806	8,624	20,184	0	432,658	116,299	384.83

Anaheim	4,535	0	7,735	20,093	13,555	65,300	4,122	0	29,947	85,393	69.18
Fullerton	4,865	876	5,727	0	6,223	0	105	0	16,920	876	12.36
Santa Ana	0	0	2,820	0	525	0	0	0	3,345	0	2.27
Non-MWDOC Totals	9,400	876	16,282	20,093	20,303	65,300	4,227	0	50,212	86,269	83.81

Orange County Totals	142,220	18,909	198,130	109,735	118,109	73,924	24,411	0	482,870	202,568	468.63
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[1] Installed device numbers are calculated in square feet

ULF TOILETS INSTALLED BY AGENCY
through MWDOC and Local Agency Conservation Programs

Agency	Previous Years	FY 95-96	FY 96-97	FY 97-98	FY 98-99	FY 99-00	FY 00-01	FY 01-02	FY 02-03	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	Total	Cumulative Water Savings across all Fiscal Years
Brea	378	189	299	299	122	144	867	585	341	401	26	48	17	4	0	3,720	1,589.44
Buena Park	361	147	331	802	520	469	524	1,229	2,325	1,522	50	40	18	9	0	8,347	3,221.94
East Orange CWD RZ	2	0	33	63	15	17	15	50	41	44	19	18	13	2	0	332	127.24
El Toro WD	1,169	511	678	889	711	171	310	564	472	324	176	205	61	40	0	6,281	2,883.15
Fountain Valley	638	454	635	858	1,289	2,355	1,697	1,406	1,400	802	176	111	58	32	0	11,911	4,988.63
Garden Grove	1,563	1,871	1,956	2,620	2,801	3,556	2,423	3,855	3,148	2,117	176	106	67	39	0	26,298	11,284.48
Golden State WC	3,535	1,396	3,141	1,113	3,024	2,957	1,379	2,143	3,222	1,870	167	116	501	43	0	24,607	10,916.54
Huntington Beach	3,963	1,779	2,600	2,522	2,319	3,492	3,281	2,698	3,752	1,901	367	308	143	121	0	29,246	12,886.15
Irvine Ranch WD	4,016	841	1,674	1,726	1,089	3,256	1,534	1,902	2,263	6,741	593	626	310	129	0	26,700	10,965.00
Laguna Beach CWD	283	93	118	74	149	306	220	85	271	118	32	26	29	6	0	1,810	785.75
La Habra	594	146	254	775	703	105	582	645	1,697	1,225	12	31	6	7	0	6,782	2,733.13
La Palma	65	180	222	125	44	132	518	173	343	193	31	27	20	17	0	2,090	858.31
Mesa Water District	1,610	851	1,052	2,046	2,114	1,956	1,393	1,505	2,387	988	192	124	56	14	0	16,288	7,114.85
Moulton Niguel WD	744	309	761	698	523	475	716	891	728	684	410	381	187	100	0	7,607	3,119.21
Newport Beach	369	293	390	571	912	1,223	438	463	396	1,883	153	76	36	16	0	7,219	2,927.69
Orange	683	1,252	1,155	1,355	533	2,263	1,778	2,444	2,682	1,899	193	218	88	53	4	16,600	6,798.18
San Juan Capistrano	1,234	284	193	188	323	1,319	347	152	201	151	85	125	42	39	0	4,663	2,170.00
San Clemente	225	113	191	65	158	198	667	483	201	547	91	66	37	34	0	3,076	1,212.77
Santa Margarita WD	577	324	553	843	345	456	1,258	790	684	260	179	143	101	29	0	6,522	2,785.02
Seal Beach	74	66	312	609	47	155	132	81	134	729	29	10	6	12	0	2,396	994.45
Serrano WD	81	56	68	41	19	52	95	73	123	98	20	15	14	2	0	757	313.59
South Coast WD	110	176	177	114	182	181	133	358	191	469	88	72	32	22	0	2,305	913.71
Trabuco Canyon WD	10	78	42	42	25	21	40	181	102	30	17	20	12	14	0	634	252.02
Tustin	968	668	557	824	429	1,292	1,508	1,206	1,096	827	69	89	26	12	0	9,571	4,106.91
Westminster	747	493	969	1,066	2,336	2,291	2,304	1,523	2,492	1,118	145	105	70	24	0	15,683	6,544.89
Yorba Linda WD	257	309	417	457	404	1,400	759	1,690	1,155	627	158	136	81	41	0	7,891	3,148.16
MWDOC Totals	24,256	12,879	18,778	20,765	21,136	30,242	24,918	27,175	31,827	27,568	3,654	3,242	2,031	861	4	249,336	105,621.20

Anaheim	447	1,054	1,788	3,661	1,755	7,551	4,593	6,346	9,707	5,075	473	371	462	341	1	43,625	16,914.77
Fullerton	1,453	1,143	694	1,193	1,364	2,138	1,926	2,130	2,213	1,749	172	77	44	23	2	16,321	6,894.71
Santa Ana	1,111	1,964	1,205	2,729	2,088	8,788	5,614	10,822	10,716	9,164	279	134	25	5	0	54,644	21,078.27
Non-MWDOC Totals	3,011	4,161	3,687	7,583	5,207	18,477	12,133	19,298	22,636	15,983	924	582	531	369	3	114,590	44,887.75

Orange County Totals	27,267	17,040	22,465	28,348	26,343	48,719	37,051	46,473	54,463	43,556	4,578	3,824	2,562	1,230	7	363,926	150,508.96
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