



**Linda S. Adams**  
*Secretary for  
Environmental Protection*

# State Water Resources Control Board

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**Arnold Schwarzenegger**  
*Governor*

## Executive Office

**Charles R. Hoppin, Chairman**  
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## NOTICE OF PUBLIC INFORMATIONAL PROCEEDING AND PRE-PROCEEDING CONFERENCE

**To Develop Flow Criteria for the Delta Ecosystem  
Necessary to Protect Public Trust Resources**

**The Pre-Proceeding Conference  
will commence on  
Thursday, January 7, 2010, at 10:00 a.m.**

in the  
Coastal Hearing Room  
Joe Serna, Jr./Cal-EPA Building  
1001 I Street, Second Floor  
Sacramento, CA

**The Proceeding will commence on  
Monday, March 22, 2010, at 9:00 a.m.**  
and continue, if necessary, on  
**March 23, and 24, 2010, at 9:00 a.m.**

in the  
Coastal Hearing Room  
Joe Serna, Jr./Cal-EPA Building  
1001 I Street, Second Floor  
Sacramento, CA

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### **PURPOSE OF PROCEEDING**

The purpose of this informational proceeding is for the State Water Resources Control Board (State Water Board) to receive scientific information in order to develop new flow criteria for the Sacramento-San Joaquin Delta (Delta) ecosystem necessary to protect public trust resources pursuant to the board's public trust obligations in compliance with Senate Bill No. 1 of the 2009-2010 Seventh Extraordinary Session (Stats. 2009 (7<sup>th</sup> Ex. Sess.) ch 5, § 39) (SB 1).<sup>1</sup>

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<sup>1</sup> A quorum of the State Water Board may be present but no final action will be taken.

***California Environmental Protection Agency***

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SB1, enacted on November 12, 2009, adds the Sacramento-San Joaquin Delta Reform Act of 2009 (Act) to the Water Code. Section 39 of the bill establishes Water Code section 85086, which will identify the parameters of this proceeding. Within nine months of enactment, the Act requires the State Water Board to “develop new flow criteria for the Delta<sup>2</sup> ecosystem necessary to protect public trust resources.” The flow criteria “shall include the volume, quality, and timing of water necessary for the Delta ecosystem under different conditions.” SB 1 specifies that in determining the flow criteria, the State Water Board “shall review existing water quality objectives and use the best available scientific information.” The State Water Board must also develop the flow criteria through a public process, “in the form of an informational proceeding conducted pursuant to Article 3 (commencing with Section 649) of Chapter 1.5 of Division 3 of Title 23 of the California Code of Regulations.” SB 1 provides that “[t]he flow criteria shall not be considered predecisional with regard to any subsequent board consideration of a permit, including any permit in connection with a final [Bay Delta Conservation Plan (BDCP)].”<sup>3</sup> The flow criteria developed through this informational proceeding do not have any regulatory or adjudicative effect.

## **BAY-DELTA NOTICES**

If you would like to continue to receive information concerning this proceeding and other Bay-Delta related matters and are not already subscribed to the State Water Board’s Bay-Delta email list, please subscribe to the list at:

**[http://www.waterboards.ca.gov/resources/email\\_subscriptions/swrcb\\_subscribe.shtml](http://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.shtml)** and select “Bay Delta Notices.” To save paper, the State Water Board strongly encourages interested persons to subscribe to receive information by email. If, however, you would prefer to receive hard copy notifications and are not already subscribed to the State Water Board’s hard copy mailing list for Bay-Delta related matters, you should submit a request to:

Division of Water Rights  
State Water Resources Control Board  
Attention: Phillip Crader  
P.O. Box 2000  
Sacramento, CA 95812-2000  
Phone: (916) 341-5438  
[pcrader@waterboards.ca.gov](mailto:pcrader@waterboards.ca.gov)

## **LEGISLATIVE BACKGROUND**

In recognition that the Delta watershed and California’s infrastructure are in crisis, the Legislature enacted and the Governor signed into law a comprehensive water package for California designed to achieve a reliable water supply for future generations as well

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<sup>2</sup> SB 1 defines the “Delta” to include both the legally defined Delta and Suisun Marsh.

<sup>3</sup> SB 1 defines the “Bay Delta Conservation Plan” or “BDCP” as a multispecies conservation plan.

as restore the Delta and other ecologically sensitive areas. The package is comprised of a bond bill and four policy bills, including SB 1.

SB 1 reforms state policies, programs and governance for the Delta and establishes two coequal goals for the Delta to provide a more reliable water supply for California and to protect, restore, and enhance the Delta ecosystem. Among other provisions, SB 1 establishes the Delta Stewardship Council (Council) to develop, adopt, and commence implementation of a "Delta Plan" by January 1, 2012, that furthers the coequal goals. The Delta Plan is required to include sub-goals and strategies to assist in guiding state and local agency actions related to the Delta. SB 1 also requires that the BDCP be considered for inclusion in the Delta Plan under specific conditions. One of the conditions that must be met in order for BDCP to be considered for inclusion in the Delta Plan is that an analysis must be completed that evaluates, in part, flows necessary for recovering the Delta ecosystem and restoring fisheries under a reasonable range of hydrologic conditions. For the purpose of informing planning decisions for the Delta Plan and BDCP, SB 1 requires the State Water Board to develop new flow criteria for the Delta ecosystem. The flow criteria are required to be developed within nine months of enactment of SB 1, and submitted to the Council within 30 days of completion.

In addition to requiring the State Water Board to develop flow criteria for the Delta within nine months, SB 1 requires the Board to submit to the Legislature by the end of 2010 a prioritized schedule and estimate of costs to complete instream flow studies for the Delta and for high priority rivers and streams in the Delta watershed not otherwise covered by the Delta flow criteria discussed above by 2012, and for all major rivers and streams outside of the Sacramento River watershed by 2018.

### **ONGOING STATE WATER BOARD PROCEEDINGS RELATED TO THE CRITERIA**

The State Water Board has a number of ongoing proceedings that may inform the development of flow criteria. Some of these proceedings will result in regulatory requirements that impact flow, or otherwise affect the volume, quality, or timing of flows into, within, or out of the Delta. The State Water Board recently completed its periodic review of the 2006 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan). The staff report approved by the Board recommended further review in the basin planning process of the following:

- Delta Outflow Objectives
- Export/Inflow Objectives
- Delta Cross Channel Gate Closure Objectives
- Suisun Marsh Objectives
- Reverse Flow Objectives
- Floodplain Habitat Flow Objectives
- Changes to the Monitoring and Special Studies Program
- Other Changes to the Program of Implementation

In addition, the State Water Board has previously committed to reviewing two other issues in the water quality control planning process: southern Delta salinity and San Joaquin River flow objectives. The State Water Board is actively reviewing these two issues and has held a number of public workshops on them, and intends to consider adoption of San Joaquin River flow objectives in 2010.

The San Joaquin River flow objectives were established in the 1995 Bay-Delta Plan to protect fish and wildlife beneficial uses. In the 2006 update to the Bay-Delta Plan, the State Water Board amended the program of implementation to allow the Vernalis Adaptive Management Plan experiment proposed in the San Joaquin River Agreement to be conducted in lieu of the pulse flows. The State Water Board is currently evaluating what, if any, changes should be made to the objectives or their implementation to reasonably protect fish and wildlife beneficial uses.

### **APPROACH TO DEVELOPING DELTA FLOW CRITERIA**

As mentioned above, SB 1 requires the State Water Board to develop new flow criteria to protect public trust resources in the Delta ecosystem pursuant to the Board's public trust obligations. Public trust uses traditionally were limited to commerce, navigation, and fisheries, but have been expanded over the years to include recreational and ecological values. Under the public trust doctrine, the State of California has sovereign authority to exercise continuous supervision and control over the navigable waters of the state and the lands underlying those waters. (*National Audubon Society v. Superior Court (Audubon)* (1983) 33 Cal.3d 419.) A variant of the public trust doctrine also applies to activities that harm a fishery in non-navigable waters. (*People v. Truckee Lumber Co.* (1897) 116 Cal. 397, see *California Trout, Inc. v. State Water Resources Control Board* (1989) 207 Cal.App.3d 585, 630.)

In *Audubon*, the California Supreme Court held that the public trust doctrine requires the State Water Board to consider the effect of the diversion or use of water on streams, lakes, or other bodies of water, and "preserve, so far as consistent with the public interest, the uses protected by the trust." (*Id.* at p. 447.) In evaluating what is "consistent with the public interest," the court concluded that an authorized agency, such as the Water Board, must evaluate the needs of the resources protected by the trust and the need to divert and use water in recognition that "[t]he population and economy of this state depend upon the appropriation of vast quantities of water for uses unrelated to in-stream trust values." (*Id.* at p. 446.) Accordingly, before the State Water Board approves a water diversion, it must consider the effect of such diversions on public trust resources and avoid or minimize any harm to those resources *where feasible*. (*Id.* at p. 426.) Even after an appropriation has been approved, the public trust imposes a duty of continuing supervision. (*Id.* at p. 447.) SB 1 requires the State Water Board to develop flow criteria under its public trust obligations, but this proceeding does not apply public trust obligations to any particular water right or water use. This is an informational proceeding, and the flow criteria that will be developed in this proceeding do not have regulatory or adjudicatory effect.

Moreover, given the limited amount of time in which the State Water Board has to develop the criteria, the focus of this initial proceeding will be on Delta outflow conditions, discussed in detail below, necessary to protect public trust resources. Delta outflows are a primary driver of ecosystem functions in the Delta. However, in recent years there has been a great amount of debate regarding what flows are needed for the ecosystem. This issue is addressed to some extent in the recent biological opinions for operations of the State Water Project and Central Valley Project (OCAP BOs), but remains largely unresolved regarding the needed volume, timing, and quality of Delta outflows for the ecosystem. In addition, the OCAP BOs including their science are the subject of legal challenges and a review by the National Academy of Sciences. At the same time, Delta outflows are of critical importance to water supply, habitat restoration, and other planning issues in the Delta watershed that the Delta Plan and BDCP will need to address. Consideration of Delta outflow criteria will necessarily touch upon other flow issues in the Delta, but the focus will be on the outflow component. Specifically, as part of this process, the State Water Board is planning to address the role of sources of flows used to meet Delta outflows, but not the specific instream flow needs of each stream and river. Pursuant to SB 1, the State Water Board will develop a plan for completing instream flow studies for other areas of the Delta that may be used to develop flow criteria for those areas in the future. In addition, the State Water Board is currently in the process of reviewing flow objectives for the San Joaquin River for the protection of fish and wildlife. Accordingly, the focus of this proceeding is on Delta outflows.

## **DELTA OUTFLOWS**

Outflow conditions in the Delta are the product of multiple natural- and human-induced factors including: hydrology; tidal actions; reservoir operations for water supply, power generation, flood protection, and other uses; direct water diversions; returns of previously diverted water; surface and groundwater interactions; regulatory requirements; and other factors. Regulatory requirements governing flows in the Delta center around flood control requirements, minimum flow requirements, minimum bypass flow requirements, maximum reverse flow requirements, maximum export limits, maximum temperature requirements, and minimum dissolved oxygen requirements. These regulatory requirements include the OCAP BOs, Federal Energy Regulatory Commission requirements, flood control requirements, and water right requirements implementing the Bay-Delta Plan.

While this proceeding does not alter the current regulatory requirements governing the Delta, SB 1 specifies that the State Water Board shall review existing water quality objectives in developing the flow criteria. Existing flow related objectives contained in the 2006 Bay-Delta Plan include the following: Delta Outflow, Sacramento River Flow, and San Joaquin River Flow objectives for the protection of fish and wildlife; salinity objectives for municipal, agricultural, and fish and wildlife protection; Export Limits and other operational requirements for the protection of fish and wildlife; and Dissolved

Oxygen and Salmon Protection<sup>4</sup> (salmon doubling) objectives for the protection of fish and wildlife. Through their implementation in Revised State Water Board Decision 1641 (dated March 15, 2000) (D-1641), many of these objectives control Delta outflows to some extent depending on the time of year. The Delta Outflow objectives are intended to protect estuarine habitat for anadromous fish and other estuarine species. The Delta Outflow objectives include requirements for calculated minimum net flows from the Delta to Suisun and San Francisco Bays (the Net Delta Outflow Index or NDOI) and maximum salinity requirements<sup>5</sup> (measured as electrical conductivity or EC). The NDOI objectives apply throughout the year and vary by month and water year type. The salinity objectives, often referred to as the “X2”<sup>6</sup> objectives, apply during February through June, and were designed to restore a more natural hydrograph and salinity pattern by requiring maintenance of the low salinity zone at a specified point and duration.

Since implementation of the current Delta Outflow objectives in D-1641, several species dependant on the Delta have experienced dramatic population declines, thus raising concerns about the adequacy of the current Delta Outflow objectives and other flow, water quality, and habitat conditions. The State Water Board reviewed the Delta Outflow objectives as part of its Periodic Review of the 2006 Bay-Delta Plan and determined that this issue should be further reviewed during the State Water Board’s water quality control planning process to determine what, if any, changes should be made to the Delta Outflow objectives. The Delta Outflow discussion and conclusions from the Periodic Review Staff Report are included as Attachment B. At a minimum, the references cited in the Delta Outflow section of the Periodic Review Staff Report will be presented as State Water Board staff exhibits during this proceeding.

## **KEY ISSUE**

The key issue for this informational proceeding is what volume, quality, and timing of Delta outflows are necessary for the Delta ecosystem under different hydrologic conditions to protect public trust resources pursuant to the State Water Board’s public trust obligations and the requirements of SB 1. The State Water Board has provided the following examples of questions for which it seeks information, but encourages interested persons to submit other information and testimony that is relevant to this inquiry.

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<sup>4</sup> While the Salmon Protection objective is not explicitly a flow objective, the 2006 Bay-Delta Plan states that “the State Water Board expects that implementation of the numeric flow-dependant objectives and other non-flow measures will implement this objective.”

<sup>5</sup> The alternatives for meeting the maximum salinity portion of the Delta Outflow objective on any given day include meeting a maximum daily average EC requirement, 14-day running average maximum EC, or the specified 3-day average NDOI requirement for the specified location.

<sup>6</sup> X2 is defined as the distance in kilometers from the Golden Gate Bridge of the 2 parts per thousand isohaline at a depth of one meter from the bottom of the channel, which is approximately equivalent to a surface EC of 2.64 millimhos/cm.

1. What key information, in particular scientific information or portions of scientific information, should the State Water Board rely upon when determining the volume, quantity, and timing of water needed for the Delta ecosystem pursuant to the board's public trust obligations? For large reports or documents, what pages or chapters should be considered? What does this scientific information indicate regarding the minimum and maximum volume, quality, and timing of flows needed under the existing physical conditions, various hydrologic conditions, and biological conditions? With respect to biological conditions, what does the scientific information indicate regarding appropriateness of flow to control non-native species? What is the level of scientific certainty regarding the foregoing information?
2. What methodology should the State Water Board use to develop flow criteria for the Delta? What does that methodology indicate the needed minimum and maximum volume, quality, and timing of flows are for different hydrologic conditions under the current physical conditions of the Delta?
3. When determining Delta outflows necessary to protect public trust resources, how important is the source of those flows? How should the State Water Board address this issue when developing Delta outflow criteria?
4. How should the State Water Board address scientific uncertainty when developing the Delta outflow criteria? Specifically, what kind of adaptive management, monitoring, and special studies programs should the State Water Board consider as part of the Delta outflow criteria, if any?
5. What can the State Water Board reasonably be expected to accomplish with respect to flow criteria within the nine months following enactment of SB 1? What issues should the State Water Board focus on in order to develop meaningful criteria during this short period of time?

### **EFFECT OF FLOW CRITERIA**

The purpose of this informational proceeding is to develop flow criteria that will inform planning decisions for the Delta. The purpose is not to develop water quality "criteria" pursuant to the federal Clean Water Act nor "flow objectives" pursuant to the state Porter-Cologne Water Quality Control Act nor to implement such criteria or objectives through a water right proceeding. Any process with regulatory or adjudicative effect must take place through the State Water Board's water quality control planning and water rights processes in conformance with applicable law. The State Water Board's determinations will not be binding or have precedential effect in any subsequent regulatory or adjudicative proceeding. Any person who wishes to introduce information produced during the informational proceeding, or the State Water Board's ultimate determinations, into a later rulemaking or adjudicative proceeding must comply with the rules for submission of information or evidence applicable to that proceeding.

## **PRE-PROCEEDING CONFERENCE**

The State Water Board will conduct a pre-proceeding conference to discuss the procedures for the informational proceeding on **Thursday, January 7, 2010 at 10 a.m.** The goal of the conference is to ensure that the proceeding progresses in an orderly and expeditious manner. Specific topics for the pre-proceeding conference include coordination of joint presentations, use of presentation panels, time limits on presentations, and electronic submittal of written information. Specifically, the State Water Board will be interested in hearing the participants' views on how to divide panels by scientific issues, so that panels comprised of different stakeholders may present scientific information and testimony pertaining to specific issues as a panel. The conference will only be used to discuss procedural matters and will not address any substantive issues.

## **PARTICIPATION IN THE PROCEEDING**

If you want to participate in the informational proceeding, you should carefully read Attachment A, entitled "Procedures for Informational Proceeding." As stated in that attachment, individuals or groups wishing to present information at the proceeding must submit a **Notice of Intent to Appear**, which must be **received** by the State Water Board no later than the deadline below. Only one Notice of Intent to Appear is required per group of presenters. Only persons who are authorized by the State Water Board to appear will be allowed to present information.

Participants will be required to submit their written introduction, written testimony, exhibits, Witness Identification List and Exhibit Identification List to the State Water Board prior to the informational proceeding, but they will not be required to exchange those documents with other participants prior to the proceeding. The State Water Board will make all submitted testimony and exhibits electronically available via its website at **[http://www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/](http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/)** and will notify participants by email once submitted information has been posted. Persons who do not have access to the State Water Board's website may view the documents in this proceeding at the State Water Board's offices and may sign up to receive hard copy notification of the documents' availability as described in Attachment A.

Optionally, persons may submit clarifying questions on written testimony or exhibits of other participants following posting of the exhibits and testimony on the State Water Board's website. In addition, persons may submit closing comments following the conclusion of the informational proceeding. The due dates for the various submittals are specified below:

**12 Noon, Tuesday, January 5, 2010**

Deadline of receipt for Notice of Intent to Appear

**12 Noon, Monday, February 15, 2010**

Deadline of receipt for written introductions, Witness Identification Lists, written testimony, exhibits, and Exhibit Identification Lists

**12:00 Noon, two weeks following posting of testimony and exhibits on State Water Board website (the State Water Board will notify persons when the information has been posted):** Deadline of receipt for clarifying questions on written testimony or exhibits of participants – *submission of questions is optional*

**12 Noon, two weeks following the conclusion of the informational proceeding (the State Water Board will notify persons when the proceeding has concluded):** Deadline of receipt for closing comments

### **SUBMITTALS TO THE STATE WATER BOARD**

Participants will be required to submit their Notices of Intent to Appear, written introductions, Witness Identification Lists, written testimony, exhibits, Exhibit Identification Lists, clarifying questions, and closing comments to the State Water Board electronically at **Bay-Delta@waterboards.ca.gov** with the subject “**Delta Flow Criteria Informational Proceeding**,” unless authorized by the State Water Board to submit paper copies of information as described in Attachment A. Participants will also be required to submit six paper copies of their written summaries, exhibits, testimony, clarifying questions, and closing comments to the State Water Board by regular mail at:

Division of Water Rights  
State Water Resources Control Board  
Attention: Phillip Crader  
P.O. Box 2000  
Sacramento, CA 95812-2000

or by hand delivery to the State Water Board’s second floor mail room in the Joe Serna, Jr./Cal-EPA Building at 1001 “I” Street, Sacramento, CA 95814. The State Water Board will promptly post all information submitted as part of this proceeding on its website at:

**[http://www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/](http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/)**.

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### **IF YOU HAVE ANY QUESTIONS**

Questions regarding this proceeding should be directed to Phillip Crader, Senior Environmental Scientist, at (916) 341-5438 or [pcrader@waterboards.ca.gov](mailto:pcrader@waterboards.ca.gov), or Erin Mahaney, Senior Staff Counsel, at (916) 341-5187 or [emahaney@waterboards.ca.gov](mailto:emahaney@waterboards.ca.gov).

## **PARKING, ACCESSIBILITY AND SECURITY**

The enclosed maps show the location of the Joe Serna Jr./Cal-EPA Building and public parking sites in Sacramento. The Joe Serna Jr./Cal-EPA Building is accessible to people with disabilities. Individuals who require special accommodations at the Joe Serna Jr./Cal-EPA Building are requested to contact Catherine Foreman, Office of Employee Assistance, at (916) 341-5881.

Due to enhanced security precautions at the Cal-EPA Headquarters Building, all visitors are required to register with security staff prior to attending any meeting. To sign in and receive a visitor's badge, visitors must go to the Visitor and Environmental Services Center, located just inside and to the left of the building's public entrance. Depending on their destination and the building's security level, visitors may be asked to show valid picture identification. Valid picture identification can take the form of a current driver's license, military identification card, or state or federal identification card. Depending on the size and number of meetings scheduled on any given day, the security check-in could take up to fifteen minutes. Please allow adequate time to sign in before being directed to the hearing.

**December 16, 2009**

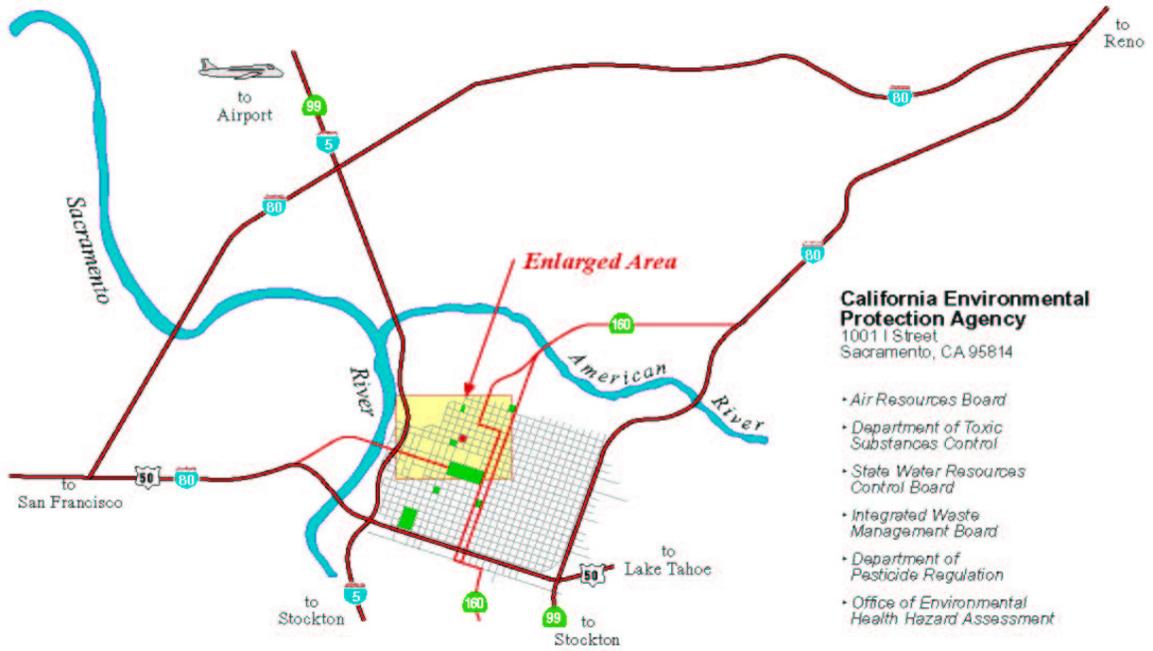
Date

*ORIGINAL SIGNED BY*  
*TOM HOWARD FOR*

Jeanine Townsend  
Clerk to the Board

### Attachments:

- Attachment A: Procedures for Informational Proceeding
- Attachment B: Delta Outflow Section of Staff Report on Periodic Review of the 2006 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary



**Parking Lot Locations**



**Parking Lot Locations**

- Lot 1 (7th & G St.)
- Lot 2 (7th & G St.)
- Lot A (7th & Capitol)
- Lot C (14th & H St.)
- Lot G (3rd & L)
- Lot H (10th & L)
- Lot I (10th & I, 11th & I)
- Lot K (6th & J/L, 7th & K)
- Lot P (2nd & I)
- Lot U (5th & J)
- Lot W (2nd & I St.)

**NOTICE OF INTENT TO APPEAR**  
**(Due 12 Noon, Tuesday, January 5, 2010)**

\_\_\_\_\_ plans to participate in the  
(name of individual participant or group/panel of participants)

**Delta Flow Criteria Informational Proceeding**

**Scheduled to Commence**  
**Monday, March 22, 2010**

Name, Address, and Phone Number of Representative:

Signature: \_\_\_\_\_ Dated: \_\_\_\_\_

Name (Print):

\_\_\_\_\_

Mailing Address:

\_\_\_\_\_

\_\_\_\_\_

Phone Number: ( ) \_\_\_\_\_.

E-mail (\*required for electronic notification of proceeding materials):

\_\_\_\_\_

I/we request hard copy notification of the availability of testimony and exhibits at the State Water Board's offices and notice of the conclusion of the informational proceeding and the associated due dates for clarifying questions and closing comments.





## ATTACHMENT A

### PROCEDURES FOR INFORMATIONAL PROCEEDING

The following procedural requirements will apply in the informational proceeding on Delta flow criteria:

1. **GENERAL PROCEDURES:** The proceeding will be conducted based on the procedures for informational proceedings set forth at California Code of Regulations, title 23, sections 649-649.5. A copy of the regulations may be viewed at the Office of Administrative Law's web site: <http://www.oal.ca.gov/>. Any requests for exceptions to procedural requirements shall be filed with the State Water Board at the email address or mailing address indicated below by **12 Noon on Tuesday, January 5, 2010**.
2. **PARTICIPATION:** The purpose of this proceeding is to receive scientific information that will assist the State Water Board in developing flow criteria for the Delta ecosystem. Accordingly, the State Water Board requests the participation of scientific experts with information specific to determining Delta outflow criteria needed to protect public trust resources in the Delta ecosystem. The State Water Board is not requesting information or experts to testify regarding legal or policy issues.

Interested persons may participate in this proceeding as individuals or as part of a group (herein after a participant refers to an individual participant or group of participants). Since this proceeding will be focused on scientific issues and will not consider policy issues, the State Water Board expects participants with similar scientific information to consolidate their presentations, possibly through group or panel presentations in order to expedite conduct of the proceeding. Organization of group or panel presentations will be discussed at the pre-proceeding conference.

3. **SUBMISSION OF INFORMATION:** To expedite conduct of this proceeding and facilitate the exchange of information, all information submitted as part of this proceeding (including: Notices of Intent to Appear, written summaries, Witness Identification Lists, Exhibit Identification Lists, exhibits, testimony, clarifying questions, and closing comments) must be submitted electronically to the State Water Board at Bay-Delta@waterboards.ca.gov with a subject of "**Delta Flow Criteria Informational Proceeding**." All documents submitted or served electronically must be in PDF format, except for Witness and Exhibit Identification Lists, which must be in a version supported by Microsoft Excel or Word. Electronic submittals to the State Water Board of documents greater than 12 megabytes in total size should be sent by regular mail or hand delivered in PDF format on compact disc media. Electronic submittal of all material is required unless a participant requests and receives specific approval from the State Water Board to submit paper copies of information at, or prior to, the pre-proceeding conference.

Attachment A

In addition to electronic copies of all material, six paper copies of written summaries, exhibits, testimony, clarifying questions, and closing comments are also required to be submitted by regular mail to:

Division of Water Rights  
State Water Resources Control Board  
Attention: Phillip Crader  
P.O. Box 2000  
Sacramento, CA 95812-2000

or by hand delivery to the State Water Board's second floor mail room in the Joe Serna, Jr./Cal-EPA Building at 1001 "I" Street, Sacramento, CA 95814.

3. **POLICY STATEMENTS:** The purpose of this proceeding is to receive scientific information. Accordingly, there will be no policy statements as part of this proceeding.
4. **NOTICE OF INTENT TO APPEAR:** Individual participants or groups of participants who wish to present scientific information, including summaries of scientific information or testimony, at the informational proceeding scheduled for March 22, 23, and 24, 2010, must submit an electronic copy of their Notice of Intent to Appear as described above no later than **12 Noon on Tuesday, January 5, 2010**. The Notice of Intent to Appear must identify the name, mailing address, and email address (unless requesting hard copy notifications) of the participant (an individual or representative of joint presenters). Only one Notice of Intent to Appear is required per group. Individual presenters or witnesses that are part of a group need not submit a Notice of Intent to Appear, but should be identified on the Witness Identification List described below. Failure to submit a Notice of Intent to Appear in a timely manner may be interpreted by the State Water Board as intent not to make a presentation. Participants who decide not to make a presentation in the informational proceeding after having submitted a Notice of Intent to Appear should notify the State Water Board as soon as possible. Persons who do not intend to make a presentation but wish to submit clarifying questions do not need to file a Notice of Intent to Appear.
5. **WRITTEN SUMMARIES:** Participants should submit a brief written summary outlining the participant's responses to the key issue and associated questions contained in the notice of informational proceeding and other relevant information. The written summary should describe how the participant's exhibits and their witness's testimony supports this information. Participants are encouraged to limit their summaries to no more than 5 pages in length. An electronic copy and six paper copies of each participant's or group's written summary are due by **12 Noon on Monday, February 15, 2010**.

## Attachment A

6. **WITNESSES/PRESENTERS:** Participants who wish to call witnesses to testify regarding written exhibits or presenters to summarize those written exhibits must submit an electronic copy of their Witness Identification Lists by **12 Noon on Monday, February 15, 2010**. The Witness Identification List must identify the names of each witness who will testify or summarize exhibits on the participant's behalf and an estimate of the time (not to exceed 1 hour per participant or panel) that the witness will need to present a brief oral summary of their testimony or summary of an exhibit. Participants should attempt to introduce the authors of scientific exhibits as witnesses, since authors are best qualified to answer questions on their studies and reports. If the authors are unavailable, the participants may present the evidence themselves.
  
7. **WRITTEN TESTIMONY, AND OTHER EXHIBITS:** Exhibits include written testimony and supporting documents. Each participant proposing to present testimony on scientific information shall submit such testimony in writing. Participants do not need to submit written testimony for witnesses who are only summarizing written scientific exhibits. Written testimony shall be designated as an exhibit, and must be submitted with the other exhibits. Any person who submits written testimony or provides a summary of exhibits must submit an exhibit containing a statement of their qualifications. Each participant shall submit to the State Water Board an electronic copy and six paper copies of each exhibit by **12 Noon on Monday, February 15, 2010**. With the testimony and exhibits, each participant must submit to the State Water Board a completed electronic copy of their Exhibit Identification List.

The following requirements apply to exhibits:

- a. Exhibits based on technical studies or models shall be accompanied by sufficient information to clearly identify and explain the logic, assumptions, development, and operation of the studies or models.
  
- b. Participants may reference relevant, easily accessible, public records of the State Water Board and documents or other evidence that has been prepared and published by a public agency, provided that the original or a copy was in the possession of the State Water Board before the notice of the proceeding is issued. A participant offering an exhibit by reference shall advise the State Water Board of the titles of the documents, the particular portions, including page and paragraph numbers, on which the participant relies, the nature of the contents, the purpose for which the exhibit will be used when offered in evidence, and the specific file folder or other exact location in the State Water Board's files where the document may be found.
  
- c. A participant seeking to submit a voluminous document or database as an exhibit may submit the exhibit to the State Water Board in electronic form, using a file format readable by Microsoft Office 2003 software or in Adobe Portable Document Format (PDF).

## Attachment A

- d. Exhibits that rely on unpublished technical documents must include the unpublished technical documents as an exhibit.
  - e. Participants submitting large format exhibits such as maps, charts, and other graphics shall submit the original exhibit in a form that can be folded to 8 ½ x 11 inches. Alternatively, participants may submit a reduced copy of a large format original if it is readable.
9. **Optional - CLARIFYING QUESTIONS ON WRITTEN TESTIMONY AND EXHIBITS:** Following posting of written testimony and exhibits on the State Water Board's website, interested persons will have **two weeks** to submit written questions on other participants' written testimony and exhibits to the State Water Board. Any interested person, and not just hearing participants, may submit questions on the written testimony or exhibits. To ensure that the hearing proceeds expeditiously, questions should be limited to 2 pages and interested persons should prioritize their questions by identifying the top 10 questions concerning each participant's presentation.
- An electronic copy and six paper copies of written questions should be submitted to the State Water Board as described above. The questions will promptly be posted on the State Water Board's website for review by all participants. To the extent that questions by participants are not addressed in the oral presentations, State Water Board members and staff will ask those questions that are deemed to be relevant to the proceeding and non-repetitive. Persons with similar information are requested to submit joint questions.
10. **CLOSING COMMENTS:** Following the close of the proceeding, interested persons will have **two weeks** to submit closing comments summarizing their conclusions regarding what Delta outflow criteria are needed to protect public trust uses and other important points from the proceeding. The closing comments shall be no more than **5 pages** in length and should be scientific in nature and should cite to the written testimony and exhibits if possible. Persons with similar information are requested to submit joint comments. Each participant shall submit to the State Water Board an electronic copy and six paper copies of their closing comments..
11. **AVAILABILITY OF DOCUMENTS FOR PUBLIC REVIEW:** The Notices of Intent to Appear, written summaries, exhibits, Witness Identification Lists, Exhibit Identification Lists, clarifying questions, and closing comments will all be promptly posted on the State Water Board's website at **[www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/](http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/)** for review by interested persons and a notice will be sent to the Bay-Delta email list. In addition, to ensure public access to all aspects of the proceeding, hard copies of all submissions will be kept in the State Water Board's file room on the second floor of the Joe Serna, Jr./Cal-EPA Building located at 1001 "I" Street in Sacramento. Documents will be available for review shortly after delivery to the State Water Board Monday through Friday, with the exception of State furlough

## Attachment A

days and State holidays, during the hours of 8 a.m. to 4:30 p.m. While not required, it is recommended that you call and confirm the availability of documents prior to arrival. To confirm document availability, please contact Phillip Crader at (916) 341-5438. In addition, if you would like to receive a notice by mail when: 1) the exhibits for this proceeding have been posted on the State Water Board's website and the associated due date for clarifying questions; and 2) when the proceeding has concluded and the associated due date for closing comments, you should check the associated box on the Notice of Intent to Appear and return to the State Water Board.

12. **ORDER OF PROCEEDING:** The State Water Board will follow the Order of Procedure specified in California Code of Regulations, title 23, section 649.3. The time limits specified below may be changed by the State Water Board, at its discretion, as a result of the pre-proceeding conference.
  - a. **Opening Statement by State Water Board:** A State Water Board member will summarize the subject matter and purpose of proceeding, as well as procedures to be used.
  - b. **Technical Introduction:** State Water Board staff will make a brief introductory presentation. The State Water Board will also invite authors of proposed staff exhibits and other experts, if any, to participate in the informational proceeding. If an author or expert is unavailable, staff may briefly summarize the exhibit's conclusions at the beginning of the proceeding for the convenience of interested persons or the proceeding.
  - c. **Presentation of Testimony and Exhibits:** Each participant may present testimony and exhibits addressing scientific information relevant to developing Delta outflow criteria necessary to protect public trust resources. The State Water Board may exclude any testimony that it determines is not relevant to the proceeding.
    - i. **Oral Testimony and Summary of Exhibits:** All witnesses presenting testimony or summarizing exhibits shall appear at the proceeding. Before testifying or summarizing exhibits, witnesses shall swear or affirm that the information they will present is true and correct. Written testimony and exhibits shall not be read into the record. Each participant or panel of participants will be allowed up to one hour total to present all of its testimony or summaries.<sup>7</sup>
    - ii. **Questioning:** The Board Members or staff may ask questions at any time.

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<sup>7</sup> The State Water Board may, for good cause, approve a participant's request to use more than one hour total to present testimony.

## ATTACHMENT B

### Delta Outflow Section of Staff Report on Periodic Review of the 2006 Bay-Delta Plan (the entire report is available at

[http://www.waterboards.ca.gov/waterrights/water\\_issues/programs/bay\\_delta/periodic\\_review/docs/periodicreview2009.pdf](http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/periodic_review/docs/periodicreview2009.pdf))

#### Delta Outflow Objectives

**Issue:** Delta outflow and/or inflow objectives for the protection of fish and wildlife beneficial uses

**Staff Recommendation:** Staff recommends that the State Water Board consider changes to the Delta outflow objective, or alternatively Delta inflow from the Sacramento Basin, based on available information as part of its review and possible revision of the Bay-Delta Plan.

**Discussion:** The Delta outflow objective is intended to protect estuarine habitat for anadromous fish and other estuarine dependent species. Delta outflows affect migration patterns of both estuarine and anadromous species and the availability of habitat (State Water Board 1999). Freshwater flow is an important cue for upstream migration of adult salmon and is a factor in the survival of smolts moving downstream through the Delta. The populations of several estuarine-dependent species of fish and shrimp vary positively with flow as do other measures of the health of the estuarine ecosystem (Kimmerer 2004). Freshwater inflow also has chemical and biological consequences through its effects on loading of nutrients and organic matter, pollutant concentrations, and residence time.

The Delta outflow objective includes requirements for calculated minimum net flows from the Delta to Suisun and San Francisco Bays (the Net Delta Outflow Index or NDOI) and maximum salinity requirements (measured as electrical conductivity or EC). Since salinity in the Bay-Delta system is closely related to freshwater outflow, both types of objectives are indicators of the extent and location of low salinity estuarine habitat. Listed in Table 3 of the Bay-Delta Plan, the Delta outflow objective varies by month and water year type. With some flexibility provided through a limited set of compliance alternatives, the basic outflow objective sets minimum outflow requirements that apply year round.

In addition to the basic outflow objective, Table 4 of the Bay-Delta Plan includes a set of salinity requirements that apply from February through June, often referred to as the X2 objectives. X2 is defined as the distance in kilometers from the Golden Gate Bridge of the 2 parts per thousand (ppt) isohaline at a depth of one meter from the bottom of the channel, which is approximately equivalent to a surface EC of 2.64 millimhos/cm (mmhos/cm). The X2 objectives are designed to restore a more natural hydrograph and salinity pattern by requiring maintenance of the low salinity zone at a specified point

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and duration based on unimpaired flow conditions. The X2 objectives are based on the concept of “X2 days”: the number of days in a month that the objective must be met at a specified location through any one of three alternatives. The alternatives for meeting the X2 objective on any given day include meeting the maximum daily average EC requirement (2.64 mmhos/cm), the 14-day running average maximum EC, or the specified 3-day average NDOI requirement for the specified location. As with the Delta outflow objective in Table 3, Table 4 includes compliance alternatives that can provide some operational flexibility in meeting the objectives.

Several species of fish that depend on the Delta have experienced significant declines in recent years. There is evidence that these declines are due in part to the impact of SWP and CVP operations (Baxter et al. 2008, NOAA Fisheries 2008). As indicated previously, since 2002, the abundance of four species of pelagic fish, including delta smelt, have declined dramatically (Sommer et al. 2007). Decline of these four pelagic species has been accompanied by declines in other fish species and has raised concerns about the ecological health of the estuary (Feyrer et al. 2007, Baxter et al. 2008, Lund et al. 2008, Nobriga et al. 2008). Understanding of the factors contributing to the POD and the health of the Delta ecosystem has improved since the last review of the Bay-Delta Plan and continues to expand with ongoing research.

Monitoring of fish and invertebrate abundance in the estuary continues to show the importance of flow. The relationships between outflow and several measures of the health of Bay-Delta estuary have been known for some time (Jassby 1995) and are the basis for the current X2 objectives. A more recent study determined that updated abundance-X2 relationships were similar to those previously reported and are seen in a wide variety of estuarine fish species (Kimmerer et al. 2009). Abundance of the upper estuary shrimp, *Crangon franciscorum*, an important invertebrate species in the Bay-Delta ecosystem, is also strongly correlated with flow (IEP 2008). Stream flow and Delta outflow are also important factors in the survival of Chinook salmon (NOAA Fisheries 2008).

With respect to delta smelt, outflow probably has two distinct but related impacts. Low outflow shifts the preferred habitat for many of the POD species closer to the area influenced by the SWP and CVP export facilities, thereby contributing to entrainment. Low outflow also decreases the extent and quality of delta smelt habitat (Baxter et al. 2008). Water temperature, salinity, and clarity have been shown to influence the distribution of delta smelt, and suitable summertime physical habitat for this species has likely decreased over time (Nobriga et al. 2008). Salinity is directly related to outflow.

A PPIC report hypothesizes that increased variability in Delta geometry would lead to more variability in residence time and other habitat parameters, which in turn would be more favorable to desirable species (Lund et al. 2007). The concept of habitat variability includes the hypothesis that more seasonal and year-to-year variability in salinity could be beneficial for native estuarine species (and striped bass) and less favorable for undesirable introduced species. A CALFED workshop explored these concepts and generally concluded that the evidence supporting the benefits of variable salinity was mixed; that habitat variability needs to include more than just salinity, and

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additional study at multiple scales is needed to test these ideas (CALFED Science Program 2007). The concept of a Delta with more diverse habitats, flows, and salinity, and the potential ecosystem benefits of these, has been explored further using available data and computer modeling (Lund et al. 2008). A Delta with greater habitat variability, variability in tidal and riverine flows, variability in water chemistry (especially salinity), over multiple scales of time and space, would likely support greater populations of desirable fish species (Moyle et al. 2009 in prep). The benefits of habitat variability (including flow and salinity variability), and provisions for testing and monitoring these hypotheses should be considered during development of any new or modified outflow objectives.

In its BO on the effects of SWP and CVP operations on delta smelt, the USFWS agrees with the studies that show, in addition to entrainment, the amount and quality of habitat are important factors in the survival of smelt, particularly in the fall. For much of their life cycle, the preferred habitat for delta smelt is the low-salinity zone (indicated by the position of X2). The location, lateral extent, and quality of this habitat depend on outflow but it is usually centered somewhere in the western Delta or Suisun Bay. The BO for delta smelt on operations of the SWP and CVP in the Delta finds that outflow over and above that required by the Bay-Delta Plan is needed to insure the survival of the species. Specifically, the BO calls for meeting X2 objectives during September and October following wet and above normal water years, and the release of November Sacramento basin reservoir inflows to provide more Delta outflow in the fall (USFWS 2008).

The effects of Delta outflow objectives on other species, regions, and water uses must also be considered. In addition to reduced supplies available for municipal/industrial and agricultural uses, existing and any increased outflow requirements could reduce the amount of cold water available in SWP and CVP reservoirs available for temperature control (the coldwater pool). In particular, revisions to the existing outflow objectives should consider potential impacts on flow and temperature control affecting salmonids upstream (NOAA Fisheries 2008). For this reason, the State Water Board could decide to also review Delta inflow from the Sacramento Basin as part of its review of Delta outflow objectives.

**Conclusion:** The available information indicates that further review and change of Delta outflow objectives may be required. Changes to Delta outflow patterns have likely contributed to the POD and are likely having an impact on the abundance of other species of concern. Actions taken under the federal ESA are already changing outflow requirements for the SWP and CVP and additional species protection actions are imminent. Additional Delta outflow recommendations are likely to come from the BDCP and other planning efforts currently under way. Based on current scientific information, recent regulatory actions, and expected recommendations from agencies and stakeholder groups, staff recommends the State Water Board conduct a detailed review of the Delta outflow objectives for possible revisions to the Bay-Delta Plan. Any revisions should also consider the need for Delta inflows. Some of this review could be provided by DWR to the State Water Board, in coordination with State Water Board planning efforts, as part of the environmental analyses conducted for the BDCP.