M E E T I N G N O T I C E AND A G E N D A

TECHNICAL ADVISORY COMMITTEE
OF THE
SEASIDE BASIN WATER MASTER

DATE: Wednesday, March 11, 2009
TIME: 1:30 p.m.
LOCATION: City of Seaside City Hall – Portable Buildings Conference Room
440 Harcourt Avenue
Seaside, CA 93955

If you wish to participate in the meeting from a remote location, please call in on the Watermaster Conference Line by dialing (877)810-9415. Use the Access Code of 4560043.

OFFICERS
Chairperson: Diana Ingersoll, City of Seaside
Vice-Chairperson: Tom. Bunosky, California American Water Company
MEMBERS

California American Water Company | **City of Del Rey Oaks** | **City of Monterey**
City of Sand City | **City of Seaside** | **Coastal Subarea Landowners**
Laguna Seca Property Owners | **Monterey County Water Resources Agency**
Monterey Peninsula Water Management District | **Public Member (John Fischer)**

In compliance with the Americans with Disabilities Act, the City of Seaside does not discriminate against persons with disabilities. Both Seaside City Hall and the Portable Office Buildings Conference Room are accessible facilities. If you wish to attend this meeting and you will require assistance in order to participate, please contact the Office of the City Clerk (831) 899-6707 at least three days in advance of the event to make necessary arrangements. If you need assistance in speaking on a specific item noted on the agenda, please inform staff as to which item you would like to comment on and arrangements will be made for you to participate. Portable microphones and assisted listening devices are available upon request.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	March 11, 2009
AGENDA ITEM:	1.A
AGENDA TITLE:	Approve Minutes from February 11, 2009
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

Draft Minutes from this meeting were emailed to all TAC members. Proposed changes have been included in the attached version.

ATTACHMENTS:	Minutes from this meeting
RECOMMENDED ACTION:	Approve the minutes

D-R-A-F-T
MINUTES

Seaside Groundwater Basin Watermaster
Technical Advisory Committee Meeting
February 11, 2009

Attendees: **TAC Members**
City of Seaside – Diana Ingersoll, Rick Riedl
California American Water – Tom Bunosky (by telephone)
City of Monterey – Todd Bennett
Laguna Seca Property Owners – No Representative
MPWMD – Joe Oliver
Public Member – John Fischer
MCWRA – No Representative
City of Del Rey Oaks – No Representative
City of Sand City – Steve Matarazzo
Coastal Subarea Landowners – No Representative

Watermaster
Technical Program Manager - Robert Jaques

Consultants
HydroMetrics LLC - Derrik Williams and Georgina King (by telephone)

Others:
None

The meeting was called to order at 1:34 p.m.

1. **Administrative Matters:**
   A. Approve Minutes from January 14, 2009
   On a motion by Mr. Riedl, seconded by Mr. Fischer, the minutes were unanimously approved as presented.

2. **Planned Workshop with HydroMetrics for Ground Water Modeling Work**

Mr. Jaques summarized the agenda packet material on this item.

Mr. Williams said that the Technical Memo contained in the agenda packet describes the subjects that will be discussed at the workshop. Mr. Williams extended an invitation to any other technical representatives who may be interested in the modeling process to attend the workshop. At the workshop Mr. Williams will lay out what data is available and will solicit input regarding other data can be provided to help with the modeling effort.

Ms. King said that the principal goal of the workshop will be to reach consensus on the issues to be addressed by the model. HydroMetrics will provide copies of the October, 2007 Durbin Model report to TAC members who request one, if they do not already have access to one from a previous distribution of that document.

Mr. Fischer commented that figures are much easier to understand when shown in color.

Questions were asked regarding various topics including model calibration issues and cell size. Mr. Williams responded that these will be included as topics for discussion at the workshop.

Mr. Matarazzo asked if Mr. Feeney would be participating in the workshop. Mr. Williams said that Mr. Feeney may or may not be at the workshop, but will participate in the modeling work itself.

Ms. King and Mr. Williams said they will need to acquire as much pumping data as possible for the modeling effort.

Mr. Bunosky noted that the workshop will produce a list of issues and questions the model will be used to address. This list will then go to the Board for their concurrence at the Board's March meeting, before proceeding with work on the model.

Mr. Williams and Ms. King said that the meeting will start at 1:00 PM rather than 1:30 PM as noted in the Technical Memorandum that was the emailed out by HydroMetrics. Mr. Jaques will highlight this time change in the minutes from today's meeting. Mr. Jaques noted that if an additional modeling meeting becomes necessary it could either be included with a Special TAC meeting, if one is necessary, or at the regularly scheduled March 11th TAC meeting, if the Board decides to delay its regular March 4th meeting to March 18, as Mr. Jaques has requested through Mr. Evans.

Mr. Jaques will e-mail TAC members with regard to TAC meeting dates once he hears back for Mr. Evans on this matter.

Mr. Bunosky asked Mr. Williams if there will likely be additional costs beyond the current amount authorized through RFS No. 2009-002, as a result of the workshop. Mr. Williams said he did not expect this to be a problem. Mr. Williams will provide a budget update to confirm that the original budget will be sufficient. Any cost issues will be identified at the workshop so they can be discussed at that time.

Mr. Fischer asked if any schedule impacts were envisioned. Mr. Williams said that the time to compile all the data will be the one issue beyond HydroMetrics' control, so the schedule will depend on how quickly that work can be accomplished. Schedule impact issues will also be discussed at the workshop if necessary.

Following discussion it was decided to move the start of the modeling workshop so as to begin at 11:30 AM. HydroMetrics will bring in sandwiches for the workshop. Ms. King will send out an updated e-mail with the new time and ask for a head count, so that the sandwiches can be ordered.

3. Progress Report on Database Issues

Mr. Jaques summarized the agenda packet materials for this item.

Mr. Oliver said that testing shows the database to be working satisfactorily, and it is no longer being hosted by RBF. It should be accessible on the Watermaster web site through a link in the very near future. Much of the data of will be available to view by the general public without having to have a password. Others will have more accessibility my logging in using their passwords. He anticipates the database will be active on the Watermaster's web site as early as next week. What it is ready, Mr. Oliver well send out an e-mail notifying TAC members.

Note: at this point Diana Ingersoll joined the TAC meeting at approximately 2:15 p.m.

4. Progress Report on Selection of Site for New Monitoring Well

Mr. Jaques summarized the agenda packet materials for this item.

Ms. Ingersoll requested that contact be made with MCWD to confirm that they have no objections or concerns with regard to installing the monitoring well. Mr. Jaques will do this.

Note: Mr. Bunosky turned over chairmanship of the meeting to Ms. Ingersoll at this point.

5. Develop Recommendations to the Board Regarding 10% Cutback Issues

Mr. Jaques summarized the agenda packet materials on this item.

Mr. Oliver noted that the first reduction is only for three-fourths of the first water year.

Mr. Bunosky said he had calculated CAW's cutback to be 387 acre feet. This would be their share of the 420 acre feet of cutback that is required, including both the Coastal on the Laguna Seca subareas. Mr. Bunosky recommended including a breakdown of how the cutback would affect each of the Standard Producers. Ms. Ingersoll commented that Mr. Riedl has already made this calculation and well provide it to Mr. Jaques.

There was discussion regarding the draft discussion paper included in the agenda packet, with comments and conclusions as described below.

For Condition (a): Mr. Oliver said the phase 1 ASR project is not intended as a replenishment supply to the Seaside Ground Water Basin, so it does not represent a replenishment source. **There was TAC consensus that the answer to this question is "no".**

For Condition (b): Mr. Oliver and Ms. Ingersoll explained that the term "reclaimed water" was considered to apply to reclaimed wastewater during testimony during the adjudication court process. However, it may be appropriate to extend the term to include desalination water as discussed in the agenda packet materials. Ms. Ingersoll asked Mr. Matarazzo if the desalination plant water could be made available by contract, and he responded "yes".

Mr. Bunosky commented that the State Department of Public Health will be issuing a permit which will impact how soon the desalination plant can be put into operation. He said the Department of Public Health has not yet provided CAW with their requirements to issue the permit. He also commented that they are affected staff-wise due to the current State budget problems and staff furloughs, and that he expected this might delay the process.

Mr. Matarazzo commented that the Department of Public Health will require two months of full-scale plant operation with satisfactory performance before they will allow the plant to begin delivering water to the potable distribution system of CAW.

Mr. Bunosky said it would not be possible to produce as many as 300 acre feet of desalinated water between the time the plant starts up and the September 30, 2009 end of Water Year, due to plant capacity limitations.

Ms. Ingersoll said that Seaside will be severely impacted by a 10 percent cutback on its Municipal System, and that solutions must be developed. She also commented that Seaside is of the understanding that the cutback has already been imposed as of January 1, 2009.

Mr. Williams questioned the Judge's intent with regard to subparagraph (b) of this Section of the Decision. Following discussion the issues were a clarified.

Mr. Matarazzo said that the projected earliest delivery date of desalinated water to the CAW distribution system would be June 1, 2009. Mr. Bunosky said the plant probably could not be run at a higher capacity to produce 300 acre feet in less time than a full year. Mr. Jaques asked if a best estimate of the how

much water could be produced between June 1 and September 30, 2009 could be provided, and Mr. Bunosky responded that he would look into getting this information.

Mr. Bunosky said that 94 acre feet of the desalination plant's production capacity is dedicated to Sand City under the terms of the contract between CAW and Sand City. He said this represents about one-third of the desalination plant's production capacity. The rest of the 300 acre feet of capacity is for Sand City's future growth, and CAW is not permitted to hook up any other customers that would be served by that water.

Various other edits were proposed and will be incorporated by Mr. Jaques into the discussion paper contained in the agenda packet.

Mr. Oliver said that due to CAW's system configuration it may not be possible for CAW to reduce their Seaside Basin pumping by the full 300 AFY.

Mr. Matarazzo asked for information from Ms. Ingersoll with regard to Seaside getting MCWD water for its golf courses. Ms. Ingersoll said that an evaluation of obtaining MCWD water for use in serving the Seaside golf courses and the Seaside Resort Development was still in progress. She said that the initial conclusion was that this was not the best approach to pursue. However, staff is evaluating the concept of how best to use the 540 AFY of golf course well production capacity that is allocated under the Decision. She said that the City Council would probably have a March Study Session to discuss this in detail. Due to delays in completing the Seaside Resort Development, a decision on this will probably not be made in time to get MCWD water by September 30, 2009. However, she said Seaside's Mayor could direct a staff to "make it happen" in order to avert a 10 percent reduction. She went on to say that Seaside is currently evaluating transferring some or all of the Alternative Production allocation of its Seaside Golf Course system to the Seaside Municipal system, if water from MCWD can be obtained to serve some or all of the golf course irrigation demand.

Mr. Bunosky commented that the TAC should focus on the technical issues, since many other aspects of Decision are really non-technical Board issues.

In response to a question from Mr. Jaques, Mr. Bunosky said that CAW would not be willing to commit to reducing its Seaside Ground Water Basin pumping by any specific amount, because it cannot control the water demands on its system.

There was TAC consensus that the answer to this question is "no".

For Condition (c): **There was TAC consensus that the answer to this question is "no".** However, it was agreed that describing MCWD water as a possible replenishment source should be included.

For Condition (d): There was TAC consensus that this applies to the entire basin, not to just certain sub-areas of the basin. **There was TAC consensus that the answer to this question is "no".**

Mr. Williams added that it is not possible at present to say that the sub-areas are truly hydrogeologically separate. He went on to say that the model will hopefully shed further light on this and may allow a refinement of that conclusion.

Mr. Jaques will revise the draft discussion paper contained in the agenda packet and e-mail the revised version to the TAC for further editing in order to finalize it for presentation to the Board at its March meeting.

6. Schedule

Mr. Jaques highlighted a few issues contained in the schedule, but there were no questions or other discussion.

7. Draft EIR for the CAW Coastal Water Project

Ms. Ingersoll summarized the agenda packet materials for this item. Comments on the CWP DEIR are to be provided to Mr. Jaques so they can be included in the next TAC meeting agenda packet for discussion. A Special TAC meeting may be held on Monday February 23, at 11:00 AM if the Board does not reschedule its regular March 4th meeting date to March 18th in order for it to occur after the TAC meeting. If the Board meeting is deferred, it will not be necessary to have the February 23rd Special TAC meeting. Mr. Jaques will email TAC members to alert them as to whether or not the Special TAC meeting will be necessary. If the Special TAC meeting is not needed, then the next TAC meeting will be the regular meeting on March 11, 2009.

8. Other business

Mr. Jaques summarized the agenda packet materials for this item and their was no further discussion other than an inquiry from Mr. Bunosky as to what MCWRA's rationale was in reaching its decision. Mr. Jaques explained that he was only provided the information that was contained in the agenda packet. It was agreed that Mr. Johnson would be asked to provide a further elaboration on this at a future TAC meeting.

Mr. Jaques and Mr. Oliver will review the work that was proposed for MCWRA to perform under its contract, and report back to the TAC as to any concerns they may have with regard to this.

9. Set next meeting date for Wednesday March 11, 2009 at 1:30 p.m.
To be held at the Seaside City Hall Portable Office Buildings Conference Room

The next Regular TAC meeting was set for this time, date, and location. A Special TAC meeting may be necessary, depending on whether the Board holds to its regular meeting date of March 4, or reschedules their meeting to March 18. This is discussed above under item 7.

The meeting adjourned at 4:10 p.m.

SEASIDE BASIN WATER MASTER TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	March 11, 2009
AGENDA ITEM:	2
AGENDA TITLE:	Progress Reports
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

As a regular part of most monthly TAC meetings, progress reports will be provided by the consultants and entities that are performing work on the Seaside Basin Monitoring and Management Program. From time to time there will also be a progress report from the Technical Program manager on related work. Attached are the progress reports for today's TAC meeting.

Under this agenda topic TAC members are encouraged to raise any questions or issues of concern regarding this task.

ATTACHMENTS:	Progress Reports
RECOMMENDED ACTION:	None required – information only

Progress Report from the MPWMD

Work Performed

- Reviewed final submission of Watermaster database components from RBF Consultants for consistency with requested modifications.
- Coordinated work to transfer Watermaster database from RBF host site to new virtual server at MPWMD host site.
- Tested successful deployment of Watermaster database at new host site.
- Resumed water level and water quality data entry into Watermaster database at new host location.
- Completed documentation of 2008 Watermaster well elevation surveys.
- Conducted meetings, field tours and correspondence regarding potential options for new inland monitor well site.
- Continued negotiations with US Army and State Parks regarding potential conversion of existing monitor well for Watermaster use in the coastal area of the basin.
- Provided supplementary information to support Watermaster's January 31, 2009 response to the court.
- Reviewed and provided comments on Supplemental Water Supplies section of Watermaster's *Basin Management Action Plan*.
- Continued water level and water quality data collection under enhanced monitoring program, including first and second quarter WY 2009 coastal monitor well water quality sampling.
- Continued data collection for specified Watermaster owner/operators as part of Watermaster required producer data collection program.
- Coordinated with Pumpers and Watermaster staff on issues associated with basin production records.
- Provided data in support of upcoming groundwater model development effort.

Upcoming Work

-
- Process data requests from Hydrometrics for groundwater model development.
- Continue data collection efforts under RFS 2009-01 and 2009-02.
- Continue support for Watermaster database deployment under RFS 2009-03.
- Continue support for Watermaster production accounting.
- Continue negotiations with State Parks and Army BRAC office for conversion of existing coastal monitor well for Watermaster use.
- Assist with process of securing a site for new inland monitor well.
- Continue Watermaster database data compilation efforts.
- Maintain listing of recommended enhancements for future upgrade of database.
- Support Watermaster technical consultant team on document preparation efforts.

Progress Report from HydroMetrics

Work Performed

A successful Seaside Basin Groundwater Modeling workshop was held at Monterey Regional Water Pollution Control Board (MRWPCA) on February 19th, 2009. Sixteen participants attended. A draft Technical Memorandum #1 - Seaside Groundwater Basin Model Goals and Objectives (TM) detailing all aspects of the model discussed at the workshop and recommendations for the development of the model has been prepared. The draft TM will be provided to the TAC members prior to the March 11th, 2009 TAC meeting for review and approval. If changes are needed, these will be made before forwarding the document to the Board prior to their Special Board meeting on March 18th, 2009.

The Seawater Intrusion Response Plan (SIRP) was finalized and 15 hardcopies produced. These will be shipped to Bob Jaques by March 6, 2009.

Finalization of the Basin Management Action Plan (BMAP) has been held up by some issues regarding MCWRA and MPWMD overlapping jurisdictions. These issues will be resolved within the next two weeks, whereupon 15 hardcopies of the BMAP will be shipped to Bob Jaques.

The Watermaster's database was provided in SQL Server format to HydroMetrics LLC by Joe Oliver at MPWMD. The SQL Server format was converted to MS Access format and will be used to compile groundwater level and production data for the model.

Upcoming Work

Actions anticipated in the upcoming month include sourcing, collecting and compiling data to be used in the groundwater model.

A table summarizing model data that are needed from the various water agencies is included in the TM as an appendix. As time is of the essence in gathering all the data for the model, this table will be emailed out to all those agencies from which data is needed by the first week of March. Georgina King will be in weekly contact with those agencies to ensure the data are obtained as quickly and efficiently as possible.

Progress Report from the Technical Program Manager

A. Database Issues

MPWMD is continuing to work toward having the Database on the Watermaster's website, and accessible to the general public with no password required, and to members of the TAC and consultants, with password access. Joe Oliver will provide and oral update at today's meeting.

B. Selection of Site for New Monitoring Well

An application was prepared and recently submitted to the U.S. Bureau of Land Management (BLM) to install the new monitoring well on property that has already been transferred to BLM. This property is in the vicinity of the intersections of Eucalyptus Road and Parker Flats Road, near the impact area of the

former Fort Ord inland firing range. The application was made using a standard form which BLM uses to process right-of-way for utility facilities. Thus far there has been no feedback from BLM regarding the processing of this application.

Inquiries were made with the FORA Land Transfer Agent regarding what types of terms and conditions would be included in the deed to transfer the parcel that will be going to Monterey Peninsula College (MPC) in this same general vicinity, in order to allow the new monitoring well to be installed on that parcel. This process is less clear than the process involved with the BLM site for several reasons:

- It was reportedly going to be difficult, and time consuming, to try to have the U.S. Army prepare the appropriate right-of-way language that would be included in the deed of transfer, so we were strongly urged to wait until the parcel had been transferred to FOR A, with whom the process was reportedly going to be easier and quicker.
- The parcel currently still remains under the jurisdiction of the U.S. Army and has not yet been transferred to FORA, although such transfer was reported as imminent (over a month ago). The FORA representative that provided that information also admitted that the transfer has been imminent for quite a while. Hence, it is not known when the parcel will actually be transferred to FORA, so it in turn can transfer it to MPC.
- Providing authorization for the well to be installed on the MPC parcel will involve getting approval at the MPC staff level, followed by approval by their Board of Directors, which meets monthly. Having no experience dealing with either of these parties, the time and complexity of following this process is unknown, although the staff was cordial and receptive in the one meeting that we have had with them.

The MPC site will be pursued by submitting a written request to the MPC staff to begin their approval process, so that both the MPC and BLM sites will be concurrently pursued until one or the other of them becomes the clearly preferred site.

A proposal was requested from, and was provided by, Martin Feeney for a Basis of Design Report to begin the design process for the new monitoring well. It is the subject of a separate item on today's' agenda.

Once the best site has been selected, we plan to focus all of our efforts on that one site.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	March 11, 2009
AGENDA ITEM:	3
AGENDA TITLE:	Develop Information for the Board's Consideration Regarding Reducing the Operating Yield
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

At its January 2009 meeting the Board discussed the issuance of a Declaration of Unavailability of Artificial Replenishment Water for Water Year 2009. In conjunction with this discussion, there was discussion regarding the reduction in the Operating Yield required under Section III.B.2 of the Amended Decision, if certain conditions are not met, since providing artificial replenishment water is one of the ways of averting having to reduce pumping.

At its February 11, 2009 meeting the TAC proposed edits to a draft Discussion Paper contained in that meeting's agenda packet describing the sections of the Amended Decision pertaining to this topic. The draft Discussion Paper was revised to reflect these edits, and was emailed out to the TAC for their further review and possible further edits, prior to today's TAC meeting.

At today's meeting the TAC is asked to give its final review comments and edits on the attached Revised Discussion Paper, so it can be finalized and then provided to the Board for their March 18th meeting.

ATTACHMENTS:	Revised Paper describing the sections of the Amended Decision pertaining to the availability of artificial replenishment water and its impacts on determining whether or not the Watermaster should require a reduction in water production from the Seaside Basin for the period January 1, 2009 through September 30, 2009, which is a portion of Water Year 2008-2009 (October 1, 2008-September 30, 2009)
RECOMMENDED ACTION:	Provide final input to the Technical Program Manager regarding this topic, so findings and conclusions from the TAC can be finalized and provided to the Board for the Board's March 18, 2009 meeting

PAPER DESCRIBING THE TECHNICAL ADVISORY COMMITTEE'S FINDINGS AND CONCLUSIONS REGARDING THE SECTIONS OF THE AMENDED DECISION PERTAINING TO REDUCING THE OPERATING YIELD

(REVISED FEBRUARY 26, 2009)

BACKGROUND

The Amended Decision filed February 9, 2007 states, in part, that beginning January 1, 2009 there shall be triennial 10% reductions in the Operating Yield of the Seaside Basin, unless certain conditions contained in Section III.B.2 of the Decision are met. Specifically, the language in Section III.B.2 states:

"Commencing with the fourth Water Year [starting January 1, 2009] and triennially thereafter the Operating Yield for both subareas [Coastal Subarea and Laguna Seca Subarea] will be decreased by ten percent (10%) until the Operating Yield is the equivalent of the Natural Safe Yield unless:

a. The Watermaster has secured and is adding an equivalent amount of Non-Native water to the Basin on an annual basis; or
b. The Watermaster has secured reclaimed water in an equivalent amount and has contracted with one or more of the Producers to utilize said water in lieu of their Production Allocation, with the Producer agreeing to forego their right to claim a Stored Water Credit for such forbearance; or
c. Any combination of a and b which results in the decrease in Production of Native Water required by this decision; or
d. The Watermaster has determined that Groundwater levels within the Santa Margarita and Paso Robles aquifers are at sufficient levels to ensure a positive offshore gradient to prevent seawater intrusion." (language in brackets added for clarity).

The Board has asked the TAC to provide its findings and conclusions regarding each of these four conditions, so the Board can determine whether or not to impose a reduction in pumping for Water Year 2008-2009.

This paper focuses on just the technical issues pertaining to this matter, but does include the TAC's thoughts and other information that the Board may wish to consider in making its decisions.

FINDINGS

The Decision contains a number of definitions that are pertinent to this discussion, including the following:

"Non-Native Water" is defined as all water that would not otherwise add to the Groundwater supply through natural means or from return flows from surface applications other than intentional Spreading.

"Subarea" is defined to be either the Laguna Seca Subarea or the Coastal Subarea.

"Water" is defined to be all forms of water.

"Spreading" is defined as a method of introducing Non-Native Water into the Seaside Basin whereby Water is placed in permeable impoundments and allowed to percolate into the Seaside Basin.

"Artificial Replenishment" is defined as the act of the Watermaster, directly or indirectly, engaging in or contracting for Non-Native Water to be added to the Groundwater supply of the Seaside Basin through Spreading or Direct Injection to offset the cumulative Over-Production from the Seaside Basin in any particular Water Year pursuant to Section III.L.3.j.iii. It shall also include programs in which Producers agree to refrain, in whole or in part, from exercising their right to produce their full Production Allocation where the intent is to cause the replenishment of the Seaside Basin through forbearance in lieu of the injection or spreading of Non-Native Water.

Each of the four sets of conditions described in Section III.B.2 were presented to and discussed by the TAC in the form of questions, with the answers to each question developed from currently available data or knowledge. The TAC's answers to each of the questions below are shown in ***boldface underlined italics***.

a. Question: Has the Watermaster secured and is adding an equivalent amount of Non-Native water to the Basin on an annual basis?
Answer: There is only one current project that adds Non-Native water to the Seaside Basin. This is the MPWMD's Phase 1 ASR project, all water from which is dedicated to offset production from the Carmel River Basin and is thus not replenishment water for the Seaside Basin. ***Since the Watermaster is not currently adding any Non-Native water to the Basin, and there are no projects which are expected to become operational in Water Year 2008-2009 which will do so, the TAC finds that the answer to this Question is "no."***

b. Question: Has the Watermaster secured reclaimed water in an equivalent amount and has it contracted with one or more of the Producers to utilize said water in lieu of their Production Allocation, with the Producer agreeing to forego their right to claim a Stored Water Credit for such forbearance?
Answer: Reclaimed water is not specifically defined in the Decision. The term reclaimed water is typically used to mean waste water which has been treated to a sufficiently high level such that it can be reused for some beneficial purpose, such as irrigation or groundwater replenishment. TAC members who participated in the adjudication hearings, and were therefore personally familiar with the testimony presented at those hearings, stated that in those hearings the term "reclaimed water" was used only in reference to reclaimed wastewater. ***Therefore, since no reclaimed water has been secured by the Watermaster for use in lieu of pumping from the Seaside Basin by any Producers, the TAC finds that the answer to this Question is "no."***

The following information and thoughts are provided by the TAC to the Board for its consideration in conjunction with the Board's making its decision on this Question: The Board may find it appropriate to expand the definition of "reclaimed water" to include desalinated water, since the Sand City desalination plant will take water that is typically unusable for any beneficial purpose due to its high salinity, and treat it (reclaim it) such that it can be used as a potable water supply source.

Using this interpretation, if there were a contract between the Watermaster and CAW (which is one of the Producers in the Basin, as defined in the Decision) in which CAW agreed to utilize desalinated water in lieu of a portion of their Production Allocation, and to forego their right to claim a Stored Water Credit for such forbearance, then the Board might find that the answer to this question is "yes," but only partially so, as discussed in the paragraphs below.

The TAC's Sand City representative said it is likely that the issuance of the permit from the California Department of Public Health (CDPH) will be the controlling factor in determining how soon the desalination plant will be able to begin delivering desalinated water to CAW's distribution system. It is projected by the City of Sand City and CAW (who will operate the plant under contract with Sand City) that the Sand City desalination plant will begin the two months of full-scale testing required by CDPH on or about April 1, 2009. If that testing is satisfactory to the CDPH, then the earliest the plant could begin delivering desalinated water to CAW's distribution system would be on or about June 1, 2009.

The Decision requires an initial reduction of 420 AFY for the period January 1, 2009 to September 30, 2009, increasing to a reduction of 560 AFY for the period October 1, 2009 to September 30, 2010. The full capacity of the Sand City desalination plant is reportedly 300 AFY. If the plant does not go into operation until June 2009 or later, it will not be able to produce 300 AF of water between the time it goes into operation and September 30, 2009. The amount it will be able to produce during that time period is currently unknown, pending completion of the two months of testing, but it will be substantially less than 300 AF.

CAW reported that 94 AF of the projected 300 AF of desalinated water the plant is expected to produce during a full 12 month period of operation will be used to meet existing water demands in Sand City. Ultimately, it is anticipated that the other 206 AF will be needed to serve planned growth in Sand City. However, in the meantime and on a temporary basis, this 206 AF could be available for CAW to use to serve its other existing customers. Under its agreement with Sand City, CAW cannot use any of this 206 AF to serve future customers that are located outside of Sand City.

Confirming the statements in the paragraph above from the CAW TAC representative, the Sand City TAC representative noted that for a significant length of time, the full 300 acre-feet of desalination plant capacity will not be usable by Sand City due to the economy and the length of time it takes to process development. He went on to say that Sand City has agreed, and it is required by the California Coastal Commission and MPWMD approvals of the desalination plant, that it will permanently "give up" the 94 acre feet it is now using as a permanent public benefit to the water sources used by CAW. That means that Sand City will only be able to use an additional 206 acre-feet of water to serve its future development, resulting in a maximum water use by Sand City of 300 acre-feet per year

CAW has indicated its goal is to operate its water production and distribution system in such a manner as to stay beneath the pumping limitations imposed on both the Seaside Basin and the Carmel River Basin via the Amended Decision (for the Seaside Basin) and SWRCB Order No. 95-10 (for the Carmel River Basin). MPWMD representatives have reported that at some past meetings, and recently in discussions before the SWRCB hearing regarding the potential imposition of a Cease and Desist Order against CAW for withdrawing too much water from the Carmel River Basin, CAW said it would use the water produced from the Sand City desalination plant to reduce its pumping from the Carmel River Basin. In other meetings, such as Watermaster TAC meetings, CAW has indicated it would use the water produced from the Sand City desalination plant to reduce its pumping from the Seaside Basin. At the February 11, 2009 TAC meeting the CAW TAC representative stated that CAW cannot commit to reducing its pumping from the Seaside Basin by any specific amount, because it cannot control the water demands on its distribution system. Thus, it would not be possible for CAW to enter into a contract with the Watermaster to utilize reclaimed water in lieu of their Production Allocation or to agree to forego their right to claim a Stored Water Credit for such forbearance. Without such a contract in place it would be not possible to answer "yes" to this question.

There is at least one other issue that further complicates answering "yes" to this Question. Even if 100% of the Sand City desalination plant's production was used to reduce CAW's pumping from the Seaside Basin, even the full 300 AFY that the plant is expected to be able to produce would not allow CAW to reduce its pumping from the Seaside Basin by the 420 AF required to fulfill the first cutback required by the Decision for Water Year 2008-2009. In Water Year 2009-2010 the cutback would increase to 560 AFY, which would increase this shortfall.

Therefore, even if it were possible to have the required contract with CAW to fulfill this condition, at best it appears that this condition could only be partially satisfied by the Sand City desalination plant, and that it would still be necessary to find additional supplemental water supplies in order to achieve the 420 AFY and 560 AFY volumes required by the Decision and thereby avert having to impose the 10% pumping reduction required by the Decision.

c. Question: Are there any combinations of a and b which result in the decrease in Production of Native Water required by this decision?
Answer: ***Since the answers to both Questions a and b are "no," the TAC finds that the answer to this Question is also "no."***

The following information and thoughts are provided by the TAC to the Board for its consideration in conjunction with the Board's making its decision on this Question: As discussed under Question b above, CAW could reduce its production of Native Water from the Seaside Basin by using desalinated water from the Sand City desalination plant. It could also reduce its production of Native Water from the Seaside Basin by using more water from the Carmel River Basin. However, the Carmel River Basin is subject to pumping limits, and increasing the pumping from the Carmel River Basin would likely cause CAW to exceed those limits, so this is not a viable action.

The City of Seaside might be able to reduce pumping from its Golf Course wells by connecting to the Marina Coast Water District (MCWD) system and obtaining its golf course irrigation water from MCWD. The City of Seaside TAC representative said that the City had performed a preliminary evaluation of this concept and initially concluded that it was not in the best interest of the city to pursue this approach. This conclusion was due in part to the fact that the City's Golf Course wells are Alternative Producers, whereas the City's Municipal Wells are Standard Producers. The City would like to reduce its exposure to being levied Replenishment Assessments on its Municipal Wells (Standard Producer) pumping. In order to be able to accomplish this it would have to first enter into an agreement with MCWD to obtain water to irrigate its golf courses, then convert its Golf Course Wells to Standard Producer status, and then transfer all or a portion of its Golf Course Well pumping allocation to its Municipal Well system, thus increasing the allocation for its Municipal Well system to an amount greater than the pumping level required to supply its customer demands.

The City may reevaluate the concept of seeking to obtain MCWD water to serve its golf courses in view of the significant adverse impacts its anticipates would occur if a 10% reduction was to be imposed on its Municipal Well system. The Seaside City Council is reportedly planning a study session to discuss this concept further in March 2009.

d. Question: Has the Watermaster determined that Groundwater levels within the Santa Margarita and Paso Robles aquifers are at sufficient levels to ensure a positive offshore gradient to prevent seawater intrusion?

Answer: This topic was the subject of a brief discussion at the October 10, 2008 TAC meeting, in response to a request by the Laguna Seca Alternative Producers, through their attorney, that the Laguna Seca Subarea be exempted from the proposed 10% pumping reduction scheduled for January 1, 2009. The following excerpt from the agenda packet from that meeting provides some useful background information:

"Based on my preliminary consultations with those TAC members who are specialists in groundwater hydrogeology, and whom I was able to reach in the short time given to us to prepare this topic for today's agenda, here are some issues for TAC members to consider regarding this request:

- *It may be possible to make a case that the water levels in the Southern Coastal subarea are protective of seawater intrusion. However, it may be difficult to determine whether or not reducing pumping in the Laguna Seca area will help water levels in the Northern Coastal Subarea.*
- *The Laguna Seca Study by Yates and Feeney for MPWMD apparently states that the Laguna Seca Area is in overdraft.*
- *Hydrologic studies apparently have concluded that there is hydrologic connectivity in the aquifers between the Laguna Seca Area and the rest of the Seaside Basin. If this is correct, then it would appear that the Laguna Seca Area pumping has hydrologic influence on the Coastal area(s) of the Seaside Basin.*
- *If the Laguna Seca Area is already in a documented "overdraft" condition, should water levels alone be the determining factor in responding to this request? That is to say, the non-technical findings may be more important than the technical findings - such as "what is the intent of the Amended Decision", or "Does the Amended Decision attempt to prevent overdraft regardless of the threat of seawater intrusion". While these are not decisions for the TAC to make, they should at least be pointed out to the Board in any recommendations the TAC makes to the Board."*

In Chapter 2 of the recently completed Basin Management Action Plan there are groundwater elevation contour maps for both the Paso Robles (shallow) and the Santa Margarita (deep) aquifers which are referred to in Section III.B.2 of the Decision. Copies of these maps, which are Figures 5, 6, and 13 of the BMAP, are attached. It is clear from Figures 5 and 6 that groundwater levels in much of the Northern Coastal Subarea are significantly below sea level in both of these aquifers. Water levels in the other parts of the Basin are well above sea level, although there are cones of depression (still well above sea level) in both aquifers in the Laguna Seca Subarea. Figure 13 shows the Ghyben-Herzberg protective water levels for the existing production wells near the coast. Comparing Figures 5 and 6 with Figure 13 shows that the existing water levels in both aquifers in the Northern Coastal Subarea are well below the levels needed to protect the production wells in those locations against sea water intrusion. Water levels elsewhere in the Basin are above the levels needed to protect the other existing production wells from sea water intrusion.

The language in this Section of the Decision makes no mention of evaluating the water levels on an individual subarea basis for the purposes of determining whether or not a 10% reduction

is to be imposed. The language in the first paragraph of Section III.B.2 simply states that the 10% cutback in production, if it is imposed, is to occur in both the Coastal and Laguna Seca Subareas.

The language in Section III.B.2.a refers to "the Basin" (as a whole) when discussing the importation of Non-Native water to help offset the overpumping. While the language in these Sections is not specific to the question of whether the 10% reduction is to apply to the Basin as a whole, or on an individual subarea basis, if none of the four sets of conditions described in Section III.B.2 are met, it was the conclusion of the TAC that the intent of the Decision is that the 10% reduction is to apply to the entire Basin, if none of the four sets of conditions is met for the entire Basin. ***Since none of the four sets of conditions have been met for the entire Basin, the TAC finds that the answer to this question is "no."***

The following information and thoughts are provided by the TAC to the Board for its consideration in conjunction with the Board's making its decision on this Question:

(1) If the intent of the Decision is that this condition must be met for the entire Basin, then it is clear that the answer to this question is "no."

(2) If the intent of the Decision is that the 10% cutback should occur only within the specific subarea(s) of the Basin where this condition is not met, then the answer to this question is "yes" for all subareas of the Basin except the Northern Coastal Subarea, where the answer is "no."

CONCLUSIONS

Determining whether or not the Watermaster is required to impose a pumping reduction is a complex matter. Meeting any one of the four sets of conditions contained in Section III.B.2 of the Decision would avert having to impose a pumping reduction. Based on the TAC's interpretation of the Decision, it is the TAC's conclusion that none of the four sets of conditions have been met. It is therefore the TAC's conclusion that a 10% Basin-wide pumping reduction must be imposed.

The attached table titled "Table Showing Breakdown of Pumping Cutback Amounts for Each Standard Producer" shows how much each Standard Producer would have to cut back its pumping, effective January 1, 2009 and October 1, 2009. Alternative Producers are not subject to the 10% cutback requirement, unless the Standard Producers have reduced their extractions to zero.

If the Board chooses to interpret the Decision as applying the conditions to individual subareas, rather than to the Basin as a whole, then the Board could find that condition III.B.2.d has been met for all subareas of the Basin except the Northern Coastal Subarea. This would lead to imposing a 10% pumping reduction only in the Northern Coastal Subarea.

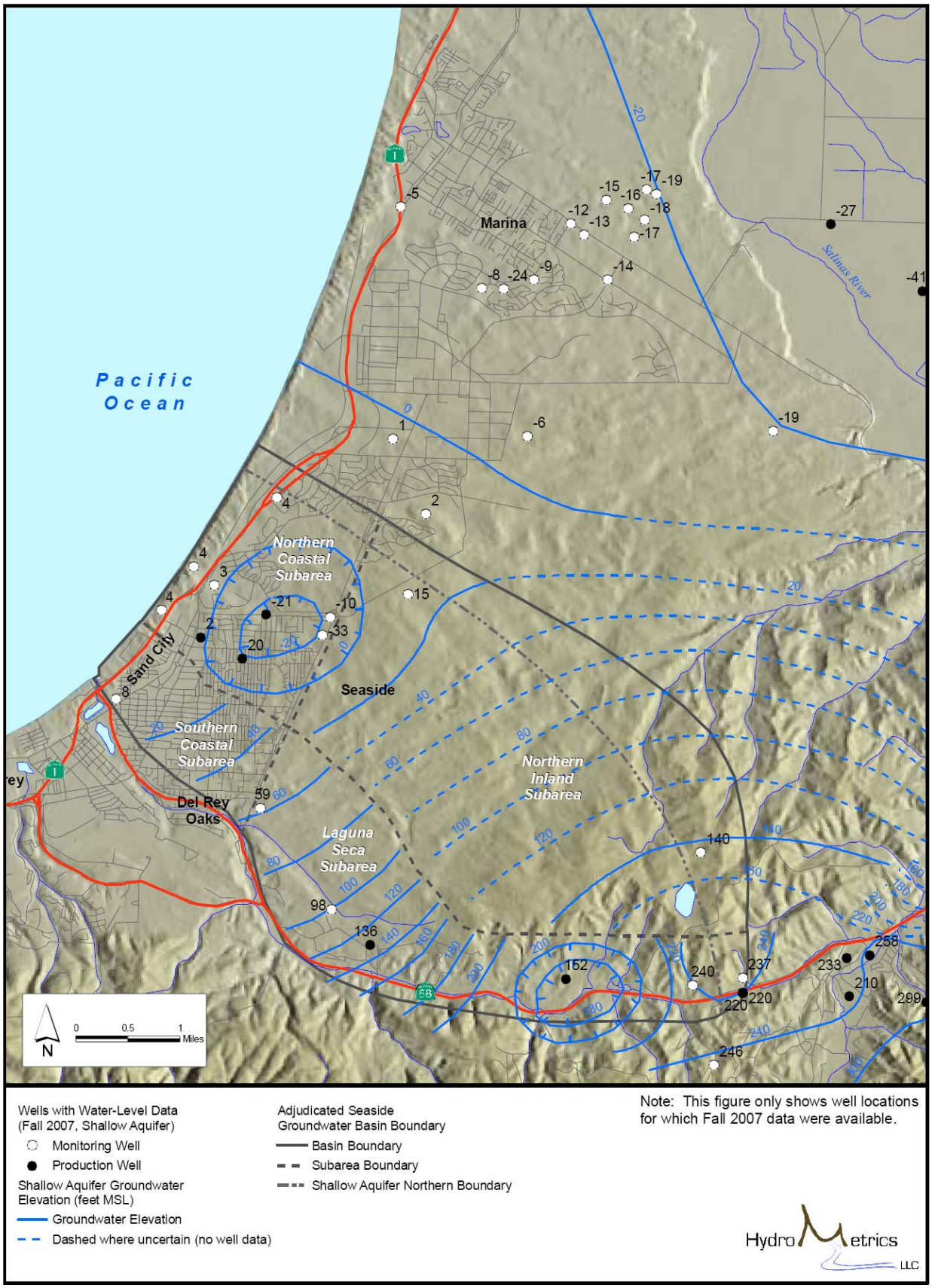


Figure 5: Groundwater Elevation Contours in the Shallow Aquifer (Correlated to the 400-Foot Aquifer in Salinas Valley) – Fall 2007

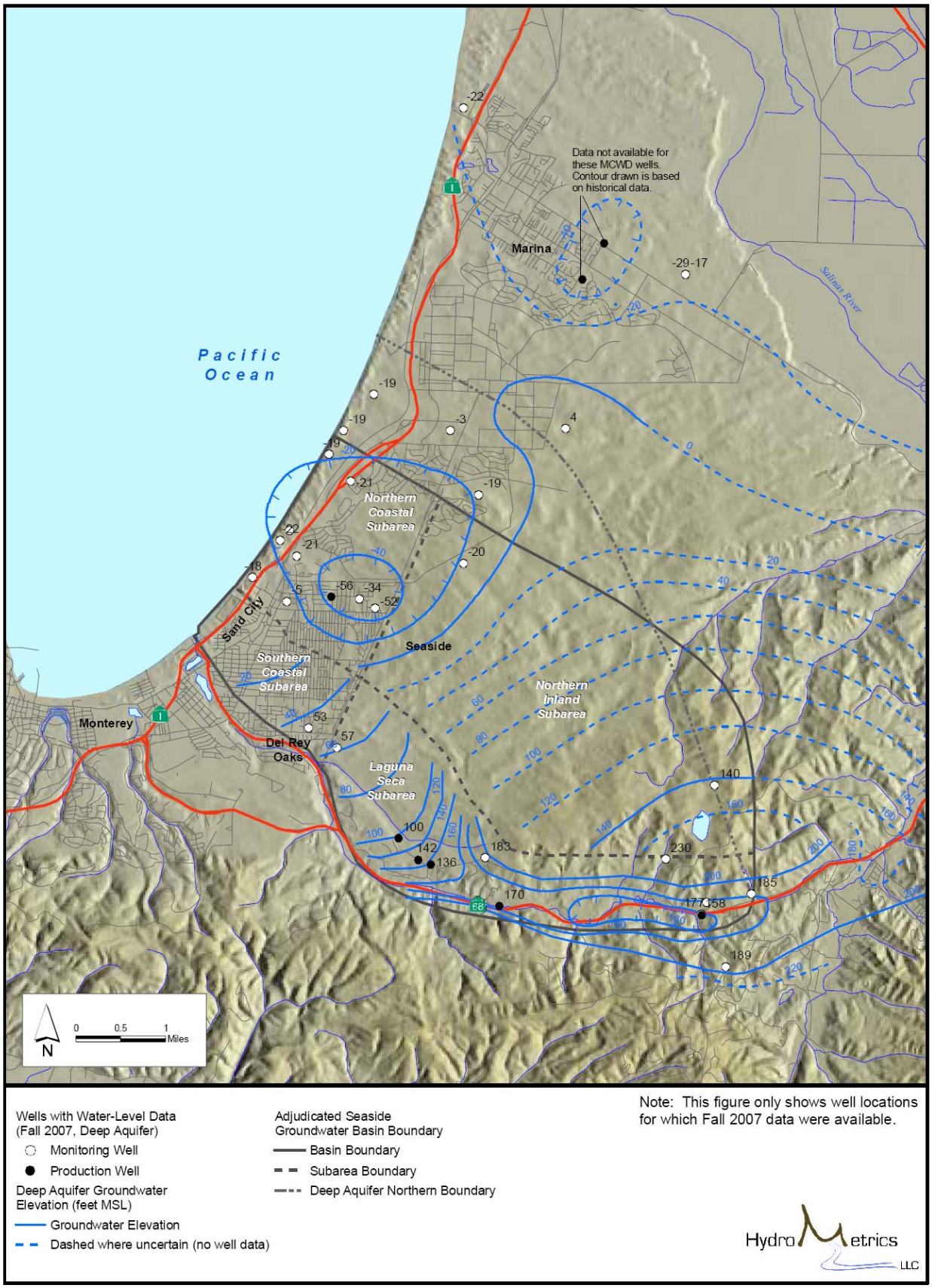


Figure 6: Groundwater Elevation Contours in the Deep Aquifer (Correlated to the Deeper Aquifer in the Salinas Valley) – Fall 2007

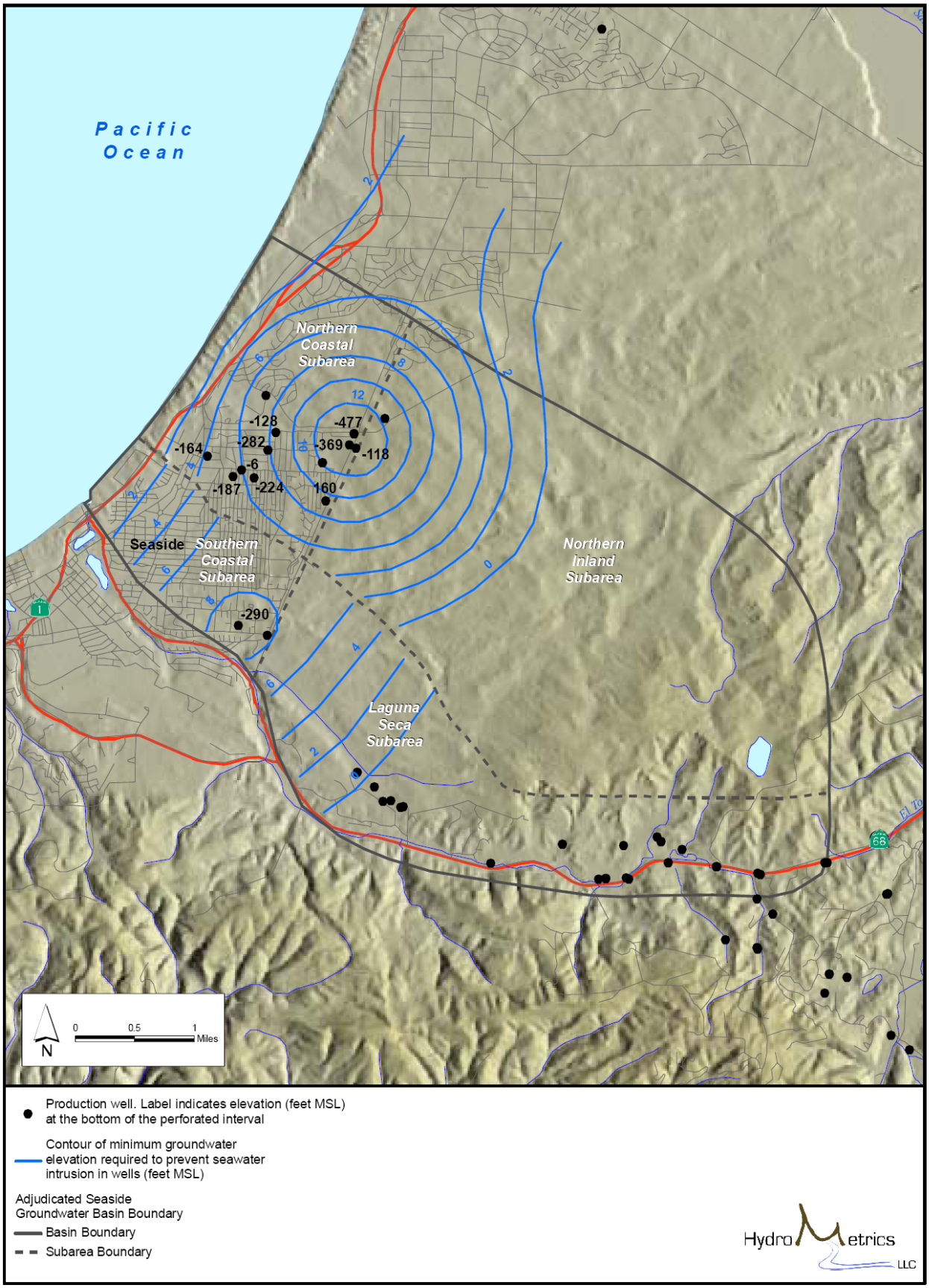


Figure 13: Ghyben-Herzberg Protective Groundwater Levels Based on Well Depths

Table Showing Breakdown of Pumping Cutback Amounts for Each Standard Producer

SEASIDE BASIN WATERMASTER PRODUCER ALLOCATIONS

Initial Basin-Wide Operating Yield[1]	**5600**	**Coastal Operating Yield[1]**	**4611**
Natural Safe Yield (NSY)[2]	**3000**	**Laguna Seca Operating Yield[1]**	**989**

ALTERNATIVE PRODUCER ALLOCATIONS

Coastal Subarea[3]	**Acre-Feet**	**Laguna Seca Subarea[3]**	**Acre-Feet**
Seaside (Golf)	540	Pasadera	251
SNG	149	Bishop	320
Calabrese	14	York School	32
Mission Memorial (Alderwood)	31	Laguna Seca County Park	41
Sand City	9		
Total[1]	**743**	**Total[1]**	**644**

STANDARD PRODUCER ALLOCATIONS

Coastal Operating Yield Available to Standard Producers (AFY)			**3,868**	**Laguna Seca Operating Yield Available to Standard Producers (AFY)**			**345**
Coastal Subarea	**Standard Producer Allocations**		**AFY Available to This Producer**	**Laguna Seca Subarea**	**Standard Producer Allocations**		**AFY Available to This Producer**
	Base Water Right %[4]	**Weighted %[5]**			**Base Water Right %[4]**	**Weighted %[5]**	
California American Water	77.55%	90.60%	3,504.2	California American Water	100.00%	100.00%	345.0
Seaside (Municipal)	6.36%	7.43%	287.4				
Granite Rock	0.60%	0.70%	27.1				
D.B.O. Development No. 27	1.09%	1.27%	49.3				
Total	**85.60%**	**100.00%**	**3,868.0**	**Total**	**100.00%**	**100.00%**	**345.0**

Standard Producers	**Total Base Water Rights Allocated to Each Standard Producer (AF) [6]**	**% of Total Base Water Rights Allocated to Each Standard Producer**	**Cutback Amount Required of Each Standard Producer on January 1, 2009 for Remainder of WY 2008-2009 (Total WY 2008-2009 cutback amount = 420 AF)**	**Cutback Amount Required of Each Standard Producer on October 1, 2009 for WY 2009-2010 (Total WY 2009-2010 cutback amount = 560 AF)**
California American Water	3,849.2	91.36%	383.7	511.6
Seaside (Municipal)	287.4	6.82%	28.7	38.2
Granite Rock	27.1	0.64%	2.7	3.6
D.B.O. Development No. 27	49.3	1.17%	4.9	6.6
Total	**4,213.0**	**100.00%**	**420.0**	**560.0**

Footnotes:
(1) From page 17 of Exhibit A (Amended Decision)of Court Order filed February 9, 2007.
(2) From page 14 of Exhibit A (Amended Decision)of Court Order filed February 9, 2007.
(3) From page 21 of Exhibit A (Amended Decision)of Court Order filed February 9, 2007.
(4) From Table 1 on page 19 of Exhibit A (Amended Decision)of Court Order filed February 9, 2007.
(5) Calculated from the Base Water Right percentages in the adjacent column.
(6) Total of both Coastal and Laguna Seca allocations.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	March 11, 2009
AGENDA ITEM:	4
AGENDA TITLE:	Proposed Comments on the Draft EIR for the CAW Coastal Water Project
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY: At its January 21, 2009 meeting the Board directed the TAC to review the document and provide its comments and recommendations to the Board in time for the Board to review those comments and recommendations and to submit formal written comments on behalf of the Watermaster to the PUC prior to the April 1, 2009 end of public comment period deadline. This was briefly discussed at the TAC's February 11, 2009 meeting, and all parties having comments were asked to email them to me, so I could compile all of the Watermaster's comments into a single document.

Attached is a tabulation of comments from my review, as well as additional comments provided to me by TAC members. I have highlighted in yellow those of my comments that I would particularly ask TAC members to closely review in order to ensure that they are as factually accurate as possible, and that they reflect the consensus of the TAC.

In preparing some of the comments highlighted in yellow, I had to go out on a limb a little, since there is no firm basis for arriving at some of the numbers I have used. With regard to how much additional water will be needed, and for how long, in order to restore protective ground water levels, I'm afraid if we don't provide some number, then the EIR folks will not know how to address our comment, since they don't know either. I'm concerned that somehow this might end up getting lost in the shuffle and we'd potentially end up with NO additional water. So I am proposing that we say that at least 2,000 AFY of water in addition to the 2,600 AFY already identified, for a period of at least 5 to 10 years, should be included in the demand projections for all of the Projects as they are sized and analyzed for costs and impacts.

By the end of 2009 the Modeling is supposed to be finished, and we should then have better numbers, and they would be available well before any final plans or designs are done for whatever project is selected.

At today's meeting the TAC is asked to discuss the attached comments and provide any further comments or edits/deletions to the attached comments, so this tabulation can be provided to the Board for its consideration at its March 18, 2009 meeting. Presumably the Board will wish to formally submit its written comments to the PUC prior to the April 1, 2009 comment deadline.

AGENDA ITEM:	4 (Cont'd)

In addition to the comments contained in the attached table, I recommend that we encourage the Board to pursue the two following directly related issues:

1. In our comments we are stating that certain of the project components, e.g. putting in new injection and/or ASR wells, as well as the proposed GWRP wells, will require approval by the Watermaster. It is not clear to me exactly what authority the Watermaster has in this regard. However, it would seem that if the Watermaster is supposed to be overseeing and managing the Basin to restore its health, the Watermaster should be in the loop with regard to granting approvals or denials for what can and cannot be done to affect the aquifers in the Basin.

2. The DEIR states in Section 1.4.2 that during the process of finalizing the EIR, the Administrative Law Judge will take into account, among other things, testimony and briefs from parties who have formally intervened in A.04-09-019. I believe that if the opportunity to become an intervener still exists, and if the Watermaster has not already done this, then the Watermaster should file the necessary documents to formally intervene in these proceedings. This would give the Watermaster the opportunity to submit testimony and briefs, if it so desires.

I have asked Mr. Evans if he can seek legal opinions on both of these issues.

ATTACHMENTS:	Tabulation of comments on the DEIR
RECOMMENDED ACTION:	Discuss and finalize the TAC's comments so they can be presented to the Board

DRAFT TAC COMMENTS ON DEIR FOR THE CAW COASTAL WATER PROJECT

Abbreviations Used in This Table:
CWP = Coastal Water Project
GWRP = Ground Water Replenishment Project
RUWAP = Regional Urban Water Augmentation Project
SGWB = Seaside Ground Water Basin
SBW = Seaside Basin Watermaster
WTP = Water Treatment Plant

DEIR PAGE NO.	PERTAINS TO PROJECT NOs.	COMMENTS
ES-3 (Table ES-1)	1,2,3,4	The 2 to 5 additional injection wells proposed for the SGWB will require approval by the SBW before they can be constructed
ES-7 & Fig. 3-22b	1,2	Getting the Coastal Development Permit from the California Coastal Commission should not take as long as the 3 years shown in the CWP Schedule. This Schedule should be revised to be more realistic and aggressive in order to implement these projects sooner.
ES-7 & Fig. 3-22b	1,2	SBW approval and a storage agreement between CAW and the SBW should be added under the "Facility Permits" section of the CWP Schedule.
ES-7 & Fig. 3-22b	1,2	The startup date shown for the desalination plant is March 2015. The Schedule should be revised to have the desalination plant startup in 2013 along with the other components of this project. The Schedule shown for the desalination plant is unrealistically slow (see comment above regarding Coastal Development Permit).
ES-7 & Fig. 3-22b	1,2	The Design-Build Procurement process should not take over 2 years as shown in the CWP Schedule. The Schedule should be revised, as it is unrealistically slow.
ES-8	1,2	Construction of the desalination plant should not take 1.75 years to complete using the Design-Build approach. The Schedule should be revised, as it is unrealistically slow
Exec. Summary	3,4	A Schedule should also be included for both Phases 1 and 2 of the Regional Project, so these can be evaluated alongside the CWP Schedule.
ES-11	3	The liquefaction risk from storage of water under the WTP adjacent to the Regional Wastewater Treatment Plant is described in Section ES.4.1.4 as being significant. The use of a slurry wall to contain the stored recycled water to prevent it from mixing with the groundwater being used for domestic supply purposes

		appears to be a relatively untried method, and would be one with its own risks of failure. For these reasons it appears that this element of Project 3 should be redesigned by the Project Sponsor, if this Project is to be implemented. Otherwise, there would be considerable public health risk from implementing the Project.
ES-13	4	As explained in Section ES.4.2.2 under the subheading titled "Surface Water," the Phase 4 Regional Project would use the same RUWAP pipeline for both tertiary recycled water and for advanced treated water. This could result in a degradation of quality of the advanced treated water, which would be used to replenish the SGWB, and therefore appears to be in conflict with the State Department of Public Health's Title-22 regulations pertaining to recycled water, as wells as its Ground Water Recharge Regulations. This apparent conflict should be formally resolved with concurrence from the Department of Public Health, and this aspect of this Project redesigned if necessary. The means of resolving the conflict should be described in the response to comments on the DEIR, so the public and the PUC can determine whether or not the proposed means of resolution is satisfactory.
ES-14	3,4	Section ES.5 mentions that the DEIR analyzes a Regional Phase 1 Project coupled with the GWRP component of the Regional Phase 2 Project. The SBW strongly urges that if the Regional Project is selected for implementation, it include the GWRP as part of the Phase 1 Project. Because of the large volume of water the GWRP would deliver to the SGWB, it would provide substantial benefit to the SGWB, more than any of the other projects or their components. It would enable the most rapid restoration of protective water levels in the SGWB, thus providing protection against seawater intrusion.
ES-14	3,4	As described in Section ES 6.1, the Regional Project has numerous interagency institutional issues that would need to be worked out in order for implementation to proceed. Time is of the essence in developing a solution to the water problems which all of the 4 proposed Projects are intended to address. A firm time schedule to complete the development of these interagency agreements should be required from the Regional Project Sponsors, and this should be included in a Schedule for the Regional Project (both Phases 1 and 2). This Schedule should be included in the response to comments, so the public and the PUC can determine whether or not the proposed schedule is realistic.
ES-14	1	There are many things about which there is future uncertainty, and each of the 4 Projects has their own sets of uncertainties. The uncertainty regarding the Moss Landing desalination plant's issues with once-through cooling should be resolved now, if that is possible. If that is not possible, then the Project should include in its design the flexibility to adapt to changing requirements as best they can be anticipated. This uncertainty should not be used as an obstacle to implementing the Project, if it is otherwise the best choice.
ES-15	3,4	Section ES.6.2 describes controversy pertaining to how the recycled water is used, who has the rights to deliver it, and what facilities are used for its delivery. Existing written agreements between MRWPCA and MCWRA, and pending written agreements between MRWPCA and MCWD have either already resolved such controversies, or are expected to resolve them within the next few months. Hence, this language appears to be inaccurate and should be reworded based on input from these three agencies.
ES-18	1,2	Impact 4.2-3 states that the storage of Carmel River or desalinated water in the ASR program would increase

		groundwater storage and water levels in the SGWB. The current MPWMD ASR program can only divert relatively small amounts of excess winter flows from the Carmel River on a seasonal basis, and as such is rainfall dependent and thus not a reliable means of raising the water level in the SGWB. Further, it does not increase storage in the SGWB, since all of the ASR water is subsequently pumped back out to reduce CAW's pumping from the Carmel River Basin. The CWP ASR wells would increase the amount of water stored in the SGWB for use in reducing pumping from the SGWB, and therefore would increase the stored groundwater in the Basin, as well as reliably raising water levels through storage. This distinction should be made clear in the EIR.
ES-34	4	For Impact 6.1-12, the GWRP component of the Regional Phase 2 Project should receive a "B" since it will help to reduce the discharge of treated wastewater to Monterey Bay.
ES-34	4	For Impact 6.1-13, as commented above for page ES-13, the issue of contamination resulting from the blending of tertiary treated wastewater with advanced treated wastewater should be resolved by the Project Sponsors for the GWRP component of the Regional Phase 2 Project before the EIR is certified, so that it does not receive an "SU" for this impact.
ES-34	4	For Impact 6.2-2, the GWRP component of the Regional Phase 2 Project was assigned a "B" since it will help to increase storage, ground water levels, and available water in the SGWB. This is a strong reason why the GWRP should be included in Phase 1 of the Regional Project, and not deferred to Phase 2.
ES-38	3	For Impact 6.5-5, the GWRP component of the Regional Phase 2 Project should receive an "SU" rather than an "SM" based on the discussion regarding liquefaction risks from stored recycled water on page E-11 (see comments on page E-11 above). A better approach would be for this issue to be addressed in the design of the Project, so as to mitigate the impact to less than significant.
4.1-31	All	Discharge of dewatering from construction projects to municipal storm drainage systems may be unacceptable under the SWRCB's Regional NPDES Permit issued to the local entities in September 2006. If any of the Projects envision discharging such water to the municipal storm drainage systems of any of these co-permitted entities, the entities should be contacted and their input and direction reflected in the EIR before it is certified.
1-4	All	Section 1.4.2 states that during the process of finalizing the EIR, the Administrative Law Judge will take into account, among other things, testimony and briefs from parties who have formally intervened in A.04-09-019. The SBW intends to file the necessary documents to formally intervene in these proceedings, for the purposes of being allow to submit testimony and briefs if it so desires.

1-7, 2-4 , and 2-5 (Table 2-1)	All	The Court Decision that created the SBW is a complex document. The "Quantity" numbers contained in Table 2-1 are accurate, except for those listed as being "CalAm's Eventual Allocations" for both the Coastal Subarea (which includes the Northern and Southern Subareas and the Northern Inland Subarea) and the Laguna Seca Subarea. Although the Decision does contain the ranges in values for the Natural Safe Yield of the Coastal and Laguna Seca Subareas as listed in Table 2-1, the Decision established a total-Basin Natural Safe Yield figure of 3,000 AFY, and did not break down this value between the two Subareas. Consequently, the SBW is interpreting the 10% mandatory reductions in pumping to be imposed triennially as being applied on the Basin as a whole, not separately by Subareas, against the 3,000 AFY value established in the Decision. Hence, Cal Am's "Eventual Allocation" if the 10% reductions were carried out until the total Standard Production allocations were reduced such that the 3,000 AFY Natural Safe Yield is not exceeded, would be 1,474 AFY for the Basin as a whole, with no distinction made between the two Subareas. The 1,474 AFY figure is arrived at by subtracting from 3,000 AFY the total of all of the Alternative Producer allocations, and then distributing the remaining amount between the Standard Producers in proportion to their share of their total base water rights. Prior to any reductions, the total base water right available to CalAm is 3,849 AFY and the total base water right available to all of the Standard Producers is 4,213 AFY. Thus, CalAm has 91.4% of the total base water rights allocated to Standard Producers. If a series of 10% reductions was imposed to the point that the 3,000 AFY Natural Safe Yield would not be exceeded, the total quantity the Standard Producers would be allowed to pump would be 1,613 AFY. CalAm would be entitled to 91.4% of this amount, or 1,474 AFY. Table 2-1 should be revised to clarify this.
1-13	3,4	In Subsection 1.8.3 reference is made to a Table 5.1-1, but there is no such table in the DEIR. The table reference appears to be for Table 5-2.

2-1	All	The amount of water that will be needed to satisfy the Seaside Basin Adjudication Decision will be significantly more than the roughly 2,600 AFY of water that would be needed to enable producers to reduce their production down to the 3,000 AFY Natural Safe Yield established by the Decision. This is because the water levels in the Basin have dropped below levels high enough to protect the wells against sea water intrusion. The annual quantity of water that will be needed to replenish the Basin so as to bring the water levels up to protective levels, and the time period over which that quantity of water will be required, is being determined through studies currently being performed by the SGB's consultants. The results are expected to be available in late 2009. Until the Modeling work now being undertaken by the SBW is completed and results are available, it is not possible to estimate how much additional water should be provided each year for a specified number of years in order to restore protective ground water levels in the SGWB. Any amount in addition to the 2,600 AFY mentioned above would be helpful, and the larger the additional amount the sooner protective levels will be restored. The SBW recommends that any project which is implemented include at least 2,000 AFY of additional water supply to the SGWB (for a total of 4,600 AFY) for an initial period of at least 5 to 10 years, in order to help restore the SGWB. A more refined number and time frame will be available toward the end of 2009, when the Modeling work has been completed. The water demands that each of the Projects is designed to meet should include this additional amount of replenishment water. Therefore, the demand figures shown in several of the tables in Section 2 of the DEIR should be revised accordingly.
2-3	All	The boundary of the SGWB should be re-described to say that the northern boundary is a dynamic hydrologic divide, the location of which is dependent, among other things, on rainfall patterns and pumping rates in the Salinas Valley Basin and the SGWB. The current location of the boundary passes through the former Fort Ord south of the City of Marina. It should also be noted that the northern boundaries of the shallow and the deep aquifers in the SGWB are at different locations.
2-4	All	See comment above pertaining to pages 1-7, 2-4, and 2-5 regarding the CalAm 1,494 AFY figure on page 2-4.
2-4	All	Footnote 6 at the bottom of this page should be revised to clarify that the 10% reductions apply to the Basin as a whole, not to the individual Subareas, and also that the reductions can be avoided if certain conditions, which are specified in Section III.B.2 of the Decision, are met.
2-6 & 2-7 (Table 2-2)	All	See comment above pertaining to page 2-1 with regard to the amount of water that will be needed to restore the SGWB. The 1,000 AFY stated on pages 2-6 and 2-7 will not be sufficient in the initial years.
2-7 (Table 2-2)	All	See comment above pertaining to pages 1-7, 2-4, and 2-5 regarding the CalAm 1,494 AFY figure in Table 2-2.
2-7 (Table 2-	All	Footnote "c" to Table 2-2 should state that the allocations are for the first three, not four, years, after which if certain conditions are not met, there will be 10% pumping reductions triennially.

2)		
2-7 (Table 2-2)	All	It is not clear where the figure of 272 AFY of needed replacement water for "Non-CalAm" production was derived. This should be clarified.
2-14 (Table 2-5)	All	Footnotes "f" and "g" in this Table are transposed.
2-14 (Table 2-5)	All	See comment above pertaining to pages 1-7, 2-4, and 2-5 regarding the CalAm 1,494 AFY figure in Table 2-5, and in footnote "c".
3-4	1,2	See comment above pertaining to pages 1-7, 2-4, and 2-5 regarding the CalAm 1,494 AFY figure in Table 2-5, and in footnote "c".
3-4 & 3-5	1,2	The volumes of water that are available from the Carmel River ASR project(s) are rainfall dependent, i.e. depend on their being excess flows in the Carmel River so that they can be diverted to the SGWB for ASR purposes, and thus should not be considered to be reliable sources of supply on a yearly basis.
3-49 (Table 3-14)	1,2	Table 3-14 should include the SBW as a Local Agency which must give its approval to those components of these Projects that impact the SGWB.
4.1-18	1,2	The language on this page pertaining to the Regional storm water group should be revised to state that these entities entered into a Memorandum of Understanding in 2001 which created the Monterey Regional Storm Water Pollution Prevention Program, not the SEA, and that this body prepared the MRSWMP which was accepted and approved by the RWQCB in September 2006 as the group's Storm Water Management Program to fulfill its obligations under the SWRCB's General Permit for MS4s. It should also be revised to state that the MURP was prepared by AMBAG, with the assistance of numerous local entities, not that it was prepared by SEA. It should also be revised to delete the reference to the permit being "Countywide" as it only pertains to a small portion of the County.
4.1-23 (Table 4.1-5)	1,2	Table 4.1-5 should include the SBW as a Local Agency which has applicable regulations regarding any activities or projects that impact the SGWB. Specifically, the SBW is charged with administering and enforcing the provisions of the Adjudication Decision, which includes implementing the physical solution described in the Decision to maximize the reasonable and beneficial use of water from the Basin, and in providing perpetual management of the Basin as a water supply for the Monterey Peninsula.
4.2-4 & Figure 4.2-2	1,2	The discussion regarding the northern boundary of the SGWB, and the location of this boundary as shown in Figure 4.2-2, should be corrected as noted in the comment above pertaining to page 2-3. Based on more recent hydrogeologic data than was available when the Kennedy/Jenks 2004 map shown in Figure 4.2-2 was prepared, this northern boundary is located differently than as shown in that figure. The recently completed Basin Management Action Plan, which is accessible on the SBW's website or from HydroMetrics, LLC

		shows the most recent plot of the location of the northern boundaries of the upper and lower aquifers in the SGWB.
4.2-6	1,2	The Purisima Formation is also found in the SGWB.
Figures 4.2-6 & 4.2-7	1,2	See comment above pertaining to page 4.2-4 and Figure 4.2-2 regarding the location of the flow divides. The updated information in the Basin Management Action Plan should be used to update these figures.
4.2-15	1,2	As noted in the comment above pertaining to pages 1-7, 2-4, and 2-5 (Figure 2-1), the Decision does contain a ranges in values for the Natural Safe Yield of the Coastal and Laguna Seca Subareas, but established a total-Basin Natural Safe Yield figure of 3,000 AFY. This 3,000 AFY Natural Safe Yield is used by the SBW in its management of the Basin.
4.2-18	1,2	The SGWB Model is in the process of being updated for the SBW by HydroMetrics, LLC, and will be used in the management of the SGWB. By late summer of 2009, the updated Model is expected to be ready to use for running various scenarios to provide information on how best to utilize water from the various Projects being considered in the DEIR to benefit the SGWB.
4.2-33	1,2	As noted in the comments pertaining to page 4.1-23 (Table 4.1-5), Table 4.2-4should include the SBW as an Agency which has applicable regulations and policies regarding any activities or projects that impact the SGWB.
5-3	3,4	The City of Sand City's desalination plant is scheduled to be completed and to start up by March 2009.
5-3	3	The demand figures referred to should be increased, as noted in the comment above pertaining to page 2-1, to account for the need to provide additional replenishment water to the SGWB for sufficient period of time to raise water levels to protective elevations.
5-6	3	The discussion pertaining to the RUWAP should note that the 2,700 AFY of water includes approximately 1,400 AFY of recycled water.
5-6	3	The 12,500 AFY figure cited as replacement water to meet existing demands needs to be increased as noted in the comment above pertaining to page 5-3 regarding demand figures.
5-11 & 5-12	3	The RUWAP should be able to provide more recycled water than the 1,000 AFY stated on this page. Previous plans were for approximately 1,427 AFY to be provided to the former Fort Ord.
5-12	3	Subsection 5.1.6.3 discusses the Seaside Basin ASR project. All water from that project is dedicated to reducing water withdrawals from the Carmel River Basin, and thus does not benefit the SGWB. This should be clarified in this Subsection.
5-34	4	The updated ground water Model discussed above in the comment pertaining to page 4.2-18 will provide refined information that will be helpful in siting the recharge areas for the GWRP, and in selecting the best means of accomplishing that recharge.
5-41	3,4	As noted in the comments pertaining to page 4.1-23 (Table 4.1-5), Table 5-6 should include the SBW as an Agency which must grant approval regarding any activities or projects that impact the SGWB.

6.1-21	4	See comment above pertaining to page ES-13 regarding use of the RUWAP pipeline for both tertiary recycled water and advanced treated water.
6.2-5	4	The discussion regarding the GWRP on this page mentions a total of 5,785 AFY of water being provided to help replenish the SGWB. However, elsewhere in the DEIR the figure cited is 6,700 AFY. This should either be corrected or explained.
6.2-6	4	What facilities are being proposed as part of the GWRP in order to provide the "…alternate source of domestic water supply…" required under the Groundwater Recharge Reuse Project regulations that are cited on this page?
6.2-8	4	The discussion of the Replenishment project Injection wells states that "…they would potentially be screened in an area that does not produce water…" This does not make sense, since the purpose of the replenishment is to provide water that can be pumped (i.e. produced) to meet water demands.
6.2-9	4	See comment above pertaining to page 6.2-5, except on this page the figure 6,037 AFY rather than 6,700 AFY is cited.
6.2-9 to 6.2-12	4	See comment above pertaining to page 5-34.
6.11-9	4	The subheading titled "Salinas Basin Groundwater Project" appears to refer to the Seaside Basin Groundwater Project.
6.12-3	4	See comment above pertaining to page 5-34. Use of the SBW's updated Modeling results to design the GWRP may be a condition of the SBW's approval of the GWRP.
6.13-13	4	Cultural resources in the two sites proposed for recharge of the SGWB by the GWRP should evaluated <u>now</u> (i.e. as part of the DEIR), in order to determine if there will be environmental impacts. While the pipelines could be rerouted to avoid such impacts, it does not appear that either of the two proposed recharge sites could be relocated. If there are unavoidable cultural resource impacts in the proposed recharge sites, it might not be possible to implement the GWRP.
7-3	All	Time is of the essence in selecting the Project that will be implemented to help solve the water problems of this area. The PUC is strongly urged to reach its decision regarding which Project to implement based on the FEIR and its associated documents, rather than directing CAW to return to the Commission at a later date for approval.
7-5	All	It is unreasonable for the DEIR to conclude that all of the Projects have components with significant unavoidable noise impacts. Neither the construction of the slant wells nor the ASR wells would cause such levels of impact, if reasonable measures to reduce noise, and to schedule the work during times of minimal impact, were required by the construction documents. These impacts should be reexamined and mitigation measures proposed to reduce these impacts to less than significant.
7-22	2	Section 7.5.2.3 states that the proposed location for the slant wells would be "…inland of the approximate 2050 beach bluff erosion zone…" Anyone familiar with beach erosion along the shoreline of central Monterey Bay knows that it is very difficult, in fact likely impossible, to accurately predict erosion rates, and

		that there is no solution in hand to stop, or perhaps even slow, the erosion rate that is occurring. The PUC should seek a solution to local water problems that has an infinite lifetime, not one that can already be predicted to fail in less than 40 years after it is constructed due to coastal erosion. This would be very poor planning, and would result in significant relocation costs when erosion reaches these wells. Graphic examples of erosion impacts include the bluffs at Stilwell Hall in the former Fort Ord, the seawalls being required to protect the Monterey Beach Hotel and the condominium project located in the Del Monte Beach area of Monterey. This Project should be redesigned such that the wells are further inland, or otherwise protected against failure from beach erosion for a much longer time than 40 years.
7-54	1	With regard to the discussion on Project 1 in Subsection 7.7.1.1, how and why did "…explore opportunities for regional partnerships or avoid duplicative facilities and infrastructure…" become an "objective" of the CWP? Adding these as objectives inappropriately biases the PUC's staff selection of preferred alternative. This issue should be reexamined and readdressed in order for Project 1 to receive a fair comparative analysis against the other three Projects.
7-55	1,2	The GWRP could be added to either Projects 1 or 2 to allow those projects to be reduced in scale, thus reducing their environmental impacts. The GWRP would provide significant benefit to the SGWB, and could help to reduce the impacts of these other projects.
7-56	3	Clearly there are significant institutional issues and challenges which have prevented the necessary agreements between MRWPCA and MCWD from being consummated for the RUWAP over the many years during which that project has been under development. As noted under Subsection 1.8.3, RUWAP is one of the components of the Phase 1 Regional Project. It does not seem reasonable to state that "…there are no…institutional…or political challenges associated with the Regional project" when these very same two agencies will have to reach agreement on the RUWAP for it to be implemented, and will also have to reach agreement in order for other components of the Phase 1 Regional Project (e.g. joint use of the MRWPCA outfall) to proceed. This conclusion should be more realistically reexamined and restated in the DEIR. This may be a serious consideration for the PUC to make in selecting the Project to which it provides implementation approval.
7-57	3	In Subsection 7.7.1.5, subparagraph 1) reference is made to an MCWD desalination plant that will not have to be built. However, the Phase 1 Regional Project includes a desalination plant that will have to be built in Marina, albeit adjacent to the MRWPCA Regional Wastewater Treatment Plant. It does not seem reasonable to list not having to build the MCWD desalination plant as an advantage of the Phase 1 Regional Project when the Phase 1 Project itself includes its own desalination plant. Using this same logic, Projects 1 and 2 could both be stated as having the advantage over the Phase 1 Regional Project of not having to build the Regional desalination plant at Armstrong Ranch. This logic appears to show a PUC staff bias in favor of the Regional Project over Projects 1 or 2, a bias that does not appear to be supported by the facts.
7-57	3	In Subsection 7.7.1.5 subparagraph 3) it should be reported and recognized that in accordance with the Joint Powers Authority that created the MRWPCA, MRWPCA's users cannot be charged for the costs to plan,

		design, construct, or operate a water recycling facility. Thus, the capital and O&M costs of such facilities may not be spread over as large a user base as is implied by the statements in this subparagraph. This should be clarified.
7-57	3	In Subsection 7.7.1.5 subparagraph 6) the "advantage" described in this subparagraph is not an advantage of Project 3 over Project 2, since both projects employ wells in the same North Marina location.
7-57	3	Absent from the DEIR is a comparison of the Phase 1 Regional Project (Project 3) to the Moss Landing CWP (Project 1). Such a comparison should be included in order for the DEIR to truly compare all of the alternatives.
7-59	2	Under the paragraph heading titled "Lack of Committed Consumers" the statement is made that "…the use of recycled water as a potable water source is currently rare in California…" The implication of this statement is that the process is essentially untried and therefore quite risky. Facts to the contrary are the well received and highly regarded Orange County Water District's groundwater replenishment project, which serves a much larger user base and delivers a much larger quantity of advanced treated water, using identical processes to those proposed for the GWRP. This misrepresentation suggests a bias on the part of PUC staff against including the GWRP in Phase 1 of the Regional Project.
9-9	2	In Subsection 9.4.1.2 the statement is made that "…well development activity could occur under a new NPDES permit or the existing MRWPCA NPDES Permit, which would be modified for the development of slant wells." This is listed as a means of "…ensuring a less than significant impact for the Moss Landing Project…" (Project 1). The MRWPCA's existing NPDES permit has no connection with slant wells, and only deals with the operational and effluent quality requirements that MRWPCA must meet to discharge its treated effluent from its outfall. No explanation or logic is provided as to how or why this NPDES permit would be "modified" for the development of slant wells.
9-17	4	Contrary to what is stated in the paragraph titled "Recycled Water Use," the GWRP does not involve ASR, and would not involve conveying advanced treated water for ASR in winter. The GWRP only involves recharge through a combination of vadose zone and injection wells.
9-17	4	The statement in the paragraph titled "Recycled Water Use" that the "…contribution of Phase 2 projects to cumulative hydrology and water quality impacts would therefore be cumulatively considerable…" is not supported by the facts which are presented in the DEIR. The impacts that are listed are not considerable. This suggests the PUC staff is biased against the use of recycled water, and is using these types of findings to rationalize its recommendation to defer the GWRP to Phase 2, rather than including it in Phase 1 of the Regional Project.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	March 11, 2009
AGENDA ITEM:	5
AGENDA TITLE:	Schedule
PREPARED BY:	Robert Jaques, Technical Program Manager

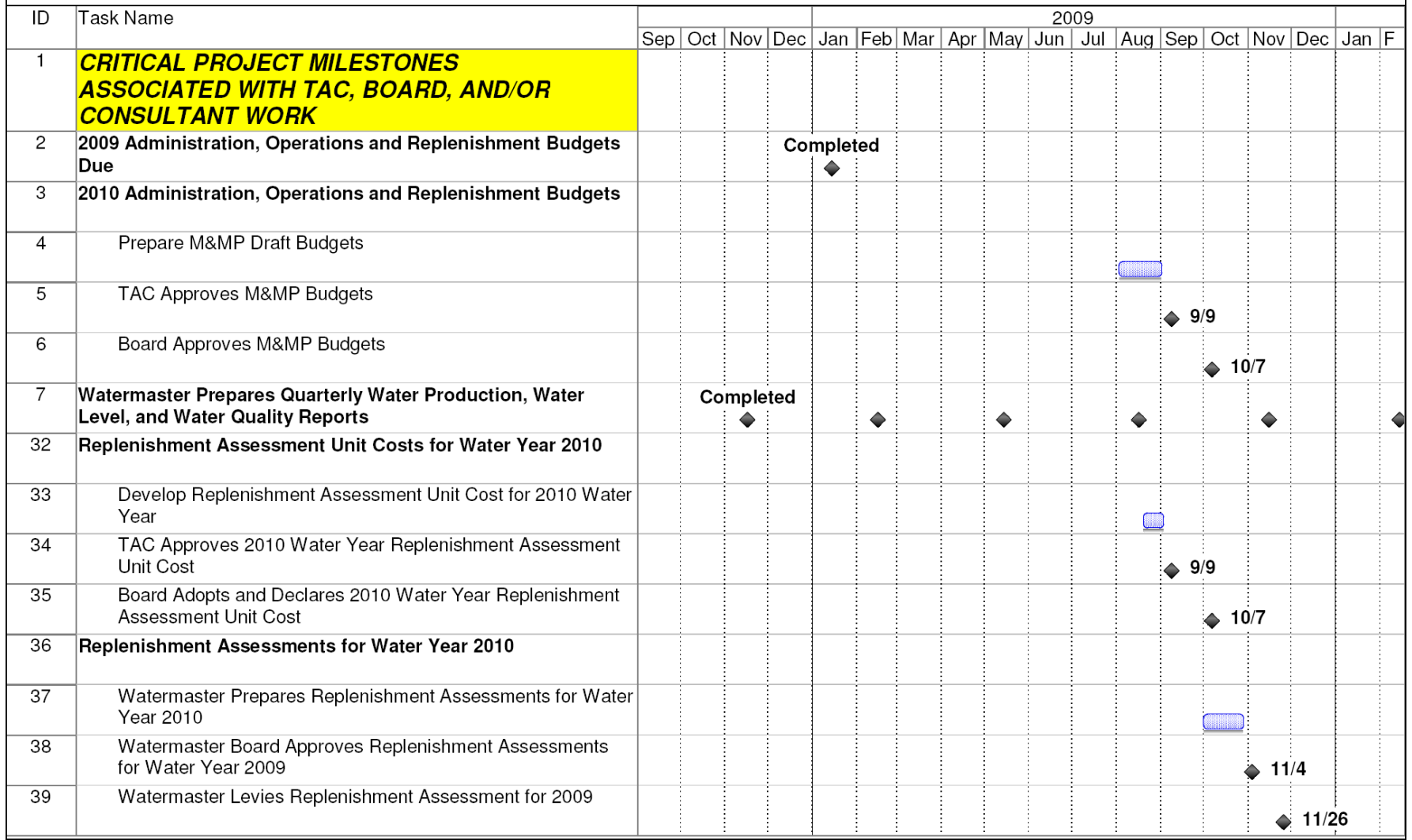
SUMMARY:

As a regular part of each monthly TAC meeting, I will provide the TAC with an updated Consultants Work Schedule of the activities being performed by the Watermaster's consultants and the public entities (MPWMD and MCWRA) that are performing certain portions of the work, and of the Critical Program Milestones Schedule.

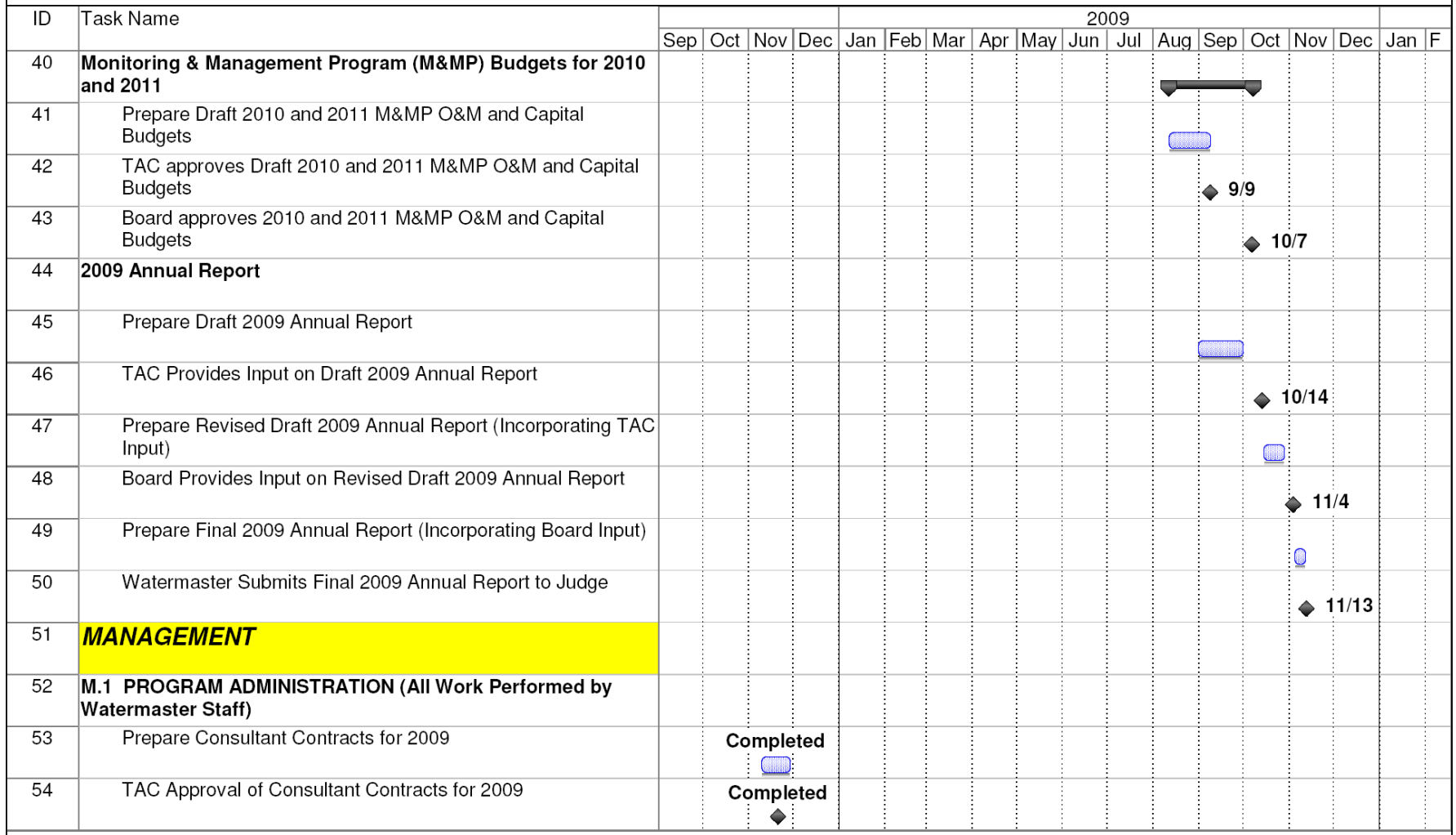
Attached is the Updated Consultants Work Schedule.

ATTACHMENTS:	Updated Schedule of Consultants Work Activities
RECOMMENDED ACTION:	Provide Input to Technical Program Manager Regarding Any Corrections or Additions to This Schedule

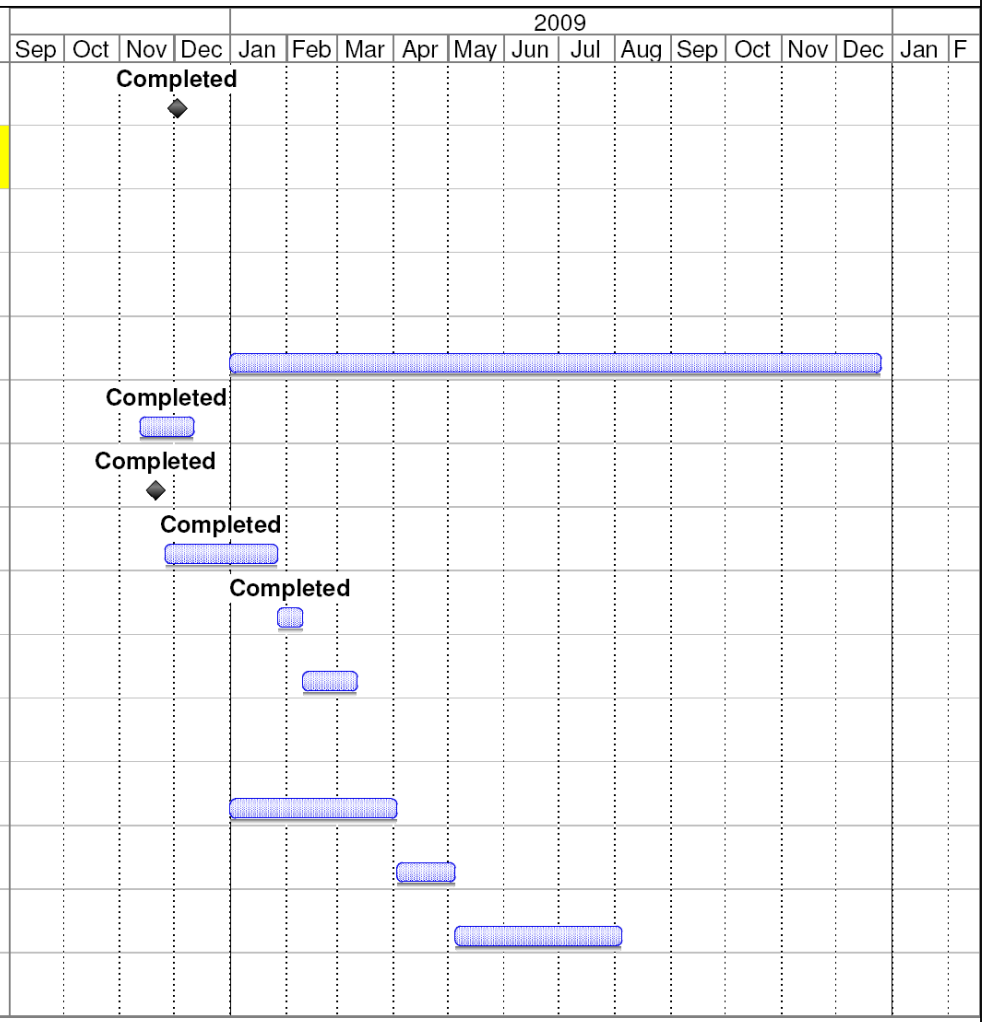
Seaside Basin WaterMaster
Monitoring and Management Program
2009 Work Schedule



Seaside Basin WaterMaster
Monitoring and Management Program
2009 Work Schedule

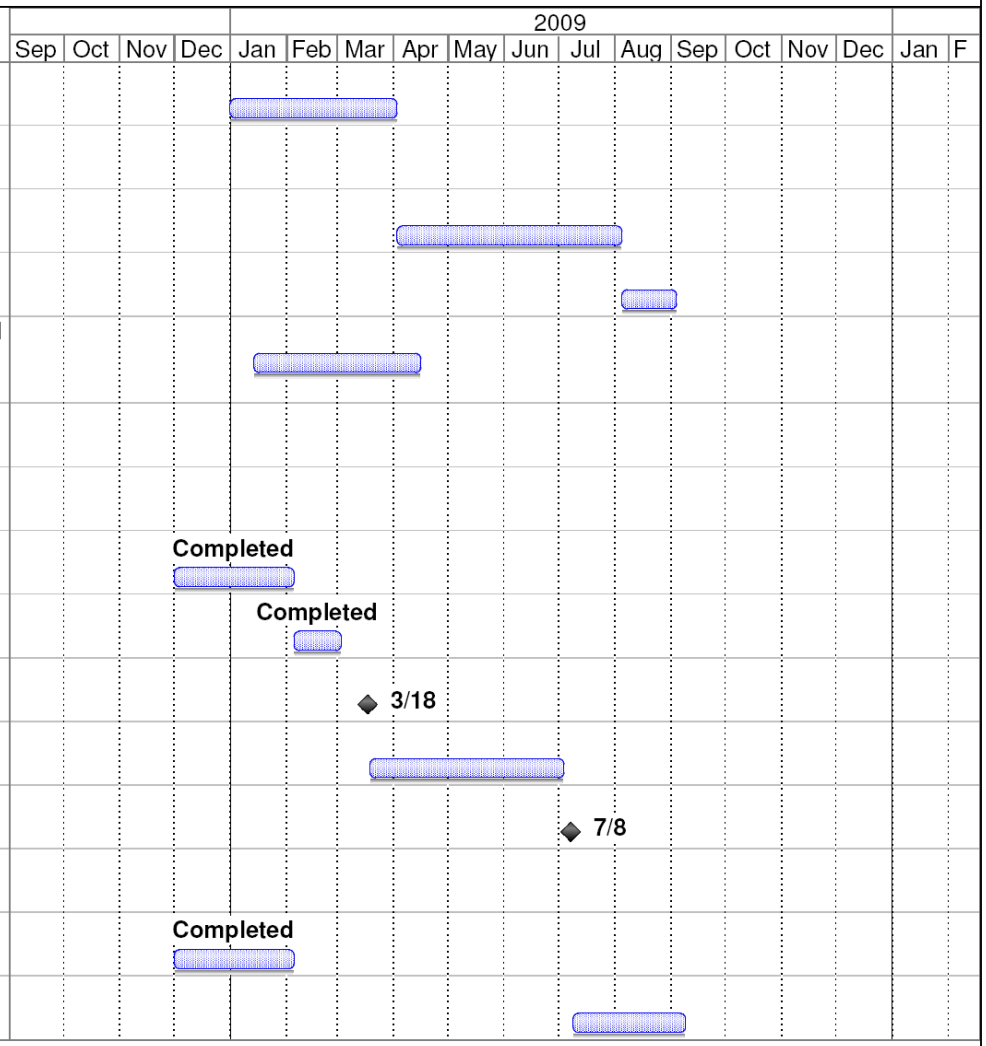


Seaside Basin WaterMaster
Monitoring and Management Program
2009 Work Schedule



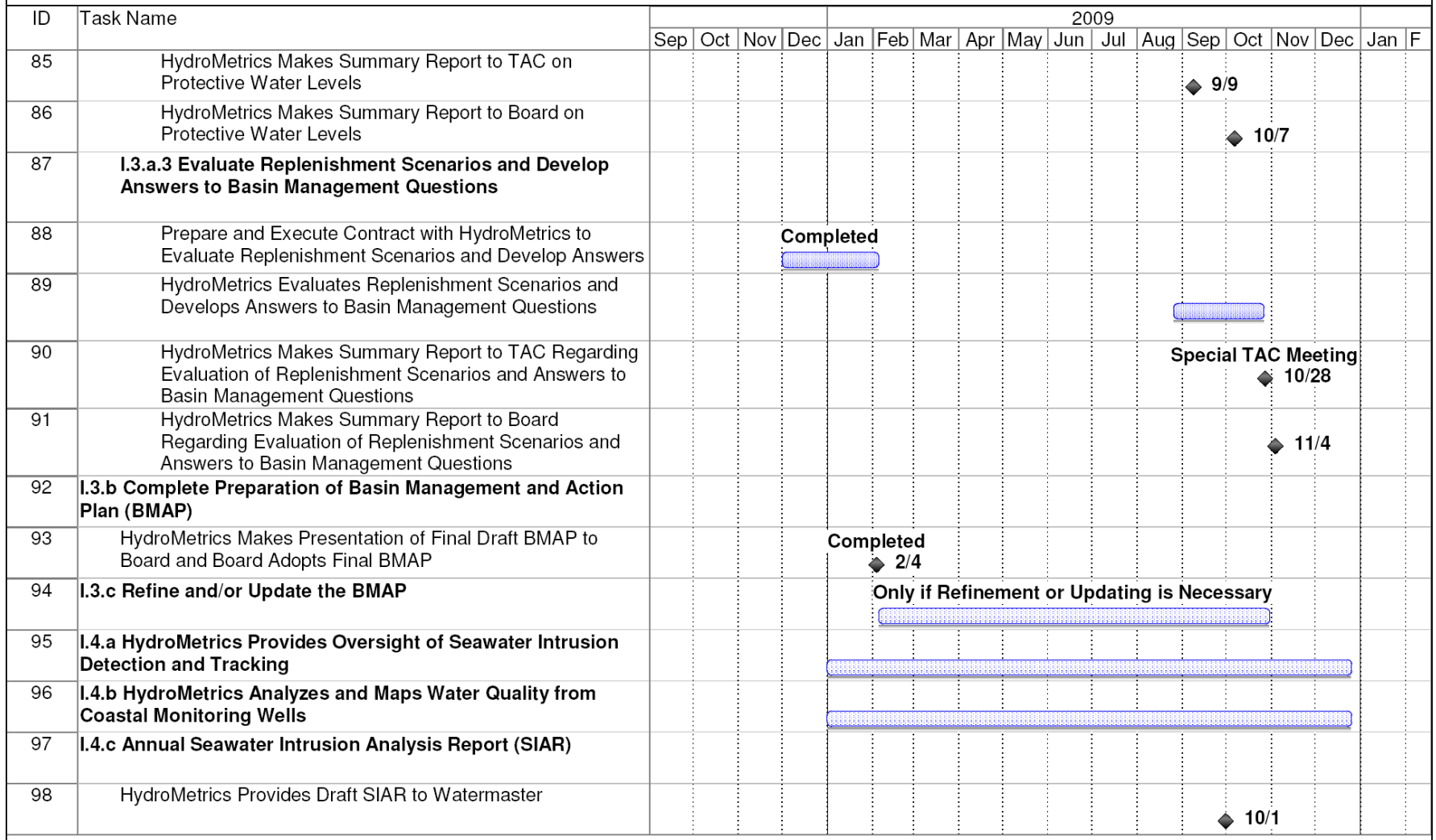
ID	Task Name
55	Board Approval of Consultant Contracts for 2009
56	***IMPLEMENTATION***
57	**I.2.a DATABASE MANAGEMENT**
58	**I.2.a.1 Conduct Ongoing Data Entry/Database Maintenance**
59	Perform Data Entry (Production, Level, and Quality)
60	Correct Deficiencies in Existing Database
61	Select New Database Host Site and Database Maintenance Firm
62	Prepare and Issue Contracts to New Database Maintenance Firm
63	Install Database on New Host Site
64	Make Improvements to Existing Database
65	**I.2.a.2 Verify Accuracy of Production Meters**
66	Determine Which Meters Require Calibration
67	Select Contractor to Perform Meter Calibration
68	Perform Meter Calibration and Report Results
69	**I.2.b DATA COLLECTION PROGRAM**

Seaside Basin WaterMaster
Monitoring and Management Program
2009 Work Schedule



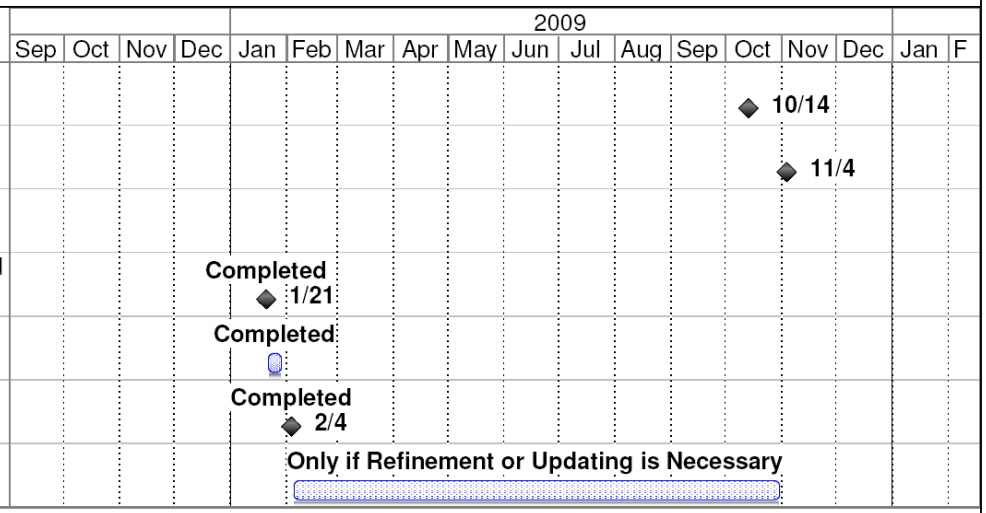
ID	Task Name
70	**I.2.b.1 Site Selection for New Monitoring Well**
71	**I.2.b.5 Monitor Well Construction**
72	Design, Permits, CEQA. And Approvals
73	Construction
74	**Pursue Conversion of Existing Abandoned U.S. Army Well for Use as an Additional Monitoring Well**
75	**I.3.a ENHANCED SEASIDE BASIN GROUNDWATER MODEL**
76	**I.3.a.1 Update the Existing Model**
77	Prepare and Execute Contract with HydroMetrics to Update the Existing Model
78	TAC Identifies Questions to be Answered by Updated Model
79	Board Concurs with Questions to be Answered by Updated Model, or Adds Additional Questions
80	HydroMetrics Updates the Model
81	HydroMetrics Makes Summary Report to TAC on Updating of the Model
82	**I.3.a.2 Develop Protective Water Levels**
83	Prepare and Execute Contract with HydroMetrics to Develop Protective Water Levels
84	HydroMetrics Develops Protective Water Levels

Seaside Basin WaterMaster
Monitoring and Management Program
2009 Work Schedule



Seaside Basin WaterMaster
Monitoring and Management Program
2009 Work Schedule

ID	Task Name
99	TAC Approves Annual Seawater Intrusion Analysis Report (SIAR)
100	Board Approves Annual Seawater Intrusion Analysis Report (SIAR)
101	**I.4.d Complete Preparation of Seawater Intrusion Response Plan (SIRP)**
102	HydroMetrics Makes Presentation of Final Draft SIRP to Board
103	CEQA Requirements for Adoption of SIRP and BMAP Evaluated
104	Board Adopts Final SIRP
105	**I.4.e Refine and/or Update the SIRP**



SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	March 11, 2009
AGENDA ITEM:	6
AGENDA TITLE:	HydroMetrics LLC Technical Memorandum Regarding the Groundwater Model
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

HydroMetrics LLC held the Ground Water Modeling Workshop on February 19, 2009. Many TAC members attended, as well as representatives of other interested agencies.

Attached is a Technical Memorandum from HydroMetrics which describes the Goals and Objectives of the Model, based on the memo they prepared for discussion at the Workshop, as well as the discussion and input provided by the attendees at the Workshop.

The TAC is asked to review the attached Memorandum and to provide any comments it has, and to raise any further questions, so the Memo can be either accepted as-is or edited into final form.

This Technical Memorandum will serve as the basis for the development of the Model, which HydroMetrics will be working on over the next several months.

ATTACHMENTS:	"Seaside Basin Groundwater Model Technical Memorandum No. 1"
RECOMMENDED ACTION:	Approve this Memorandum as the basis for developing the Model

Hydro Metrics LLC

519 17th Street, Suite 500
Oakland, CA 94612

SEASIDE GROUNDWATER BASIN GROUNDWATER MODEL TECHNICAL MEMORANDUM # 1

To: Seaside Groundwater Basin Technical Advisory Committee

From: Derrik Williams and Georgina King

Date: March 9, 2009

Subject: Seaside Groundwater Basin Model Goals and Objectives

An initial activity in the Seaside Groundwater Basin modeling project is for the Technical Advisory Committee (TAC) to help define the goals and objectives of the groundwater modeling effort. Additionally, the TAC should have a basic understanding of groundwater modeling and provide direction on a number of model related activities.

A workshop took place on February 19th, 2009 at the Monterey Regional Water Pollution Control Agency Board Room (MRWPCA) to provide the TAC members, their consultants and other interested parties an opportunity to participate in providing early input and direction to the modeling effort. The workshop participants are listed in Appendix A. A PowerPoint presentation, included in Appendix B, was used during the workshop to lead the discussion.

This Technical Memorandum describes issues the TAC considered during the workshop and the recommended direction to be taken in developing the model.

1. Identify purpose of modeling effort

Establishing the goals and purpose of a groundwater model is one of the first steps to take in its development. The identified goals and objectives will dictate how the model will be constructed, its required level of simplification and the type of data that will be used as input.

Based on findings in the Amended Decision, the Seawater Intrusion Response Plan (SIRP), and the Basin Management Action Plan (BMAP), the model should address the following general objectives:

- Evaluate selected supplemental water projects,
- Evaluate selected management actions,
- Determine storage efficiency of recharged water,
- Verify Total Useable Stored Groundwater and Total Useable Storage Space, and
- Refine the water budget and basin safe yield.

From the above general objectives, workshop participants generated a list of goals that the model needs to address for each model scenario run. These goals include:

- Assist in determining where water should be recharged, how it would best be recharged and what would its fate be.
- Determine how much inflow and outflow occurs from the ocean.
- Evaluate groundwater level responses to any new water project described in the Coastal Water Project DEIR which would deliver water to the Seaside Groundwater Basin.
- Evaluate well interference or how drawdown from wells impacts other wells.
- Evaluate impacts on hydrogeologic northern Seaside Groundwater Basin boundary.
- Evaluate impacts to protective groundwater levels.
- Evaluate flow between subareas, e.g., impact on flow between subbasins as a result of reducing pumping by 10 percent.
- Evaluate southern Seaside Groundwater Basin boundary flows.

In addition to the specific issues addressed in each model run, workshop participants stated that the model should be able to do the following:

- Assist with a proactive plan to manage seawater intrusion before it intrusion occurs.

- Assist in determining how to implement the Seawater Intrusion Response Plan (SIRP), including
  - How to change groundwater gradients, and
  - How to introduce supplemental supplies.
- Assist with determining offshore aquifer outcrop geometries and their influence on onshore aquifers.
- Include future development in the Basin, such as development projected in the Fort Ord Reuse Plan, and evaluate its influence on groundwater flows.
- Be inclusive enough to be able to run all potential scenarios without the need to construct an additional smaller, localized model for specific areas.

Transport modeling is used to simulate how and where dissolved chemicals such as salts move in an aquifer. Transport modeling will not be practical at this time due to a number of factors including the unknown distribution of chemical concentrations at the start of the model (i.e., initial condition of the seawater / freshwater interface), and the lack of data with which to calibrate the transport model. It is HydroMetrics LLC's opinion that the groundwater flow model will cost effectively provide the desired information, and that a transport model is not needed at this time.

2. Conceptual Model

The conceptual model is a simplified representation of the key features of the physical system and its hydrologic behavior. Conceptualization takes into consideration the overall objective of the model, resources for reaching the objective, and the available hydrogeologic data. The conceptual model is ultimately used to translate a complex system into a simplified numerical model.

Some anticipated changes to the previous conceptual model (Durbin, 2007), upon which the new model will be based, are:

- The Purisima and Santa Margarita Formations may be considered as a horizontal layer change and not one formation on top of the other. This means that they will be represented as one layer instead of two layers in the model. Aquifer properties such as hydraulic conductivity and storativity will vary spatially to characterize the different properties of each formation. Martin Feeney, who was the consultant to the Watermaster on construction of the sentinel wells and other projects, will be consulted during model conceptualization in order to ensure that his considerable knowledge of the Basin will be included in the modeling effort.
- Discretizing or increasing the number of layers in the Paso Robles Formation may be considered if enough data exist to justify the division. The reason for discretization would be to better evaluate the fate of water recharged in both spreading basins and injection wells.

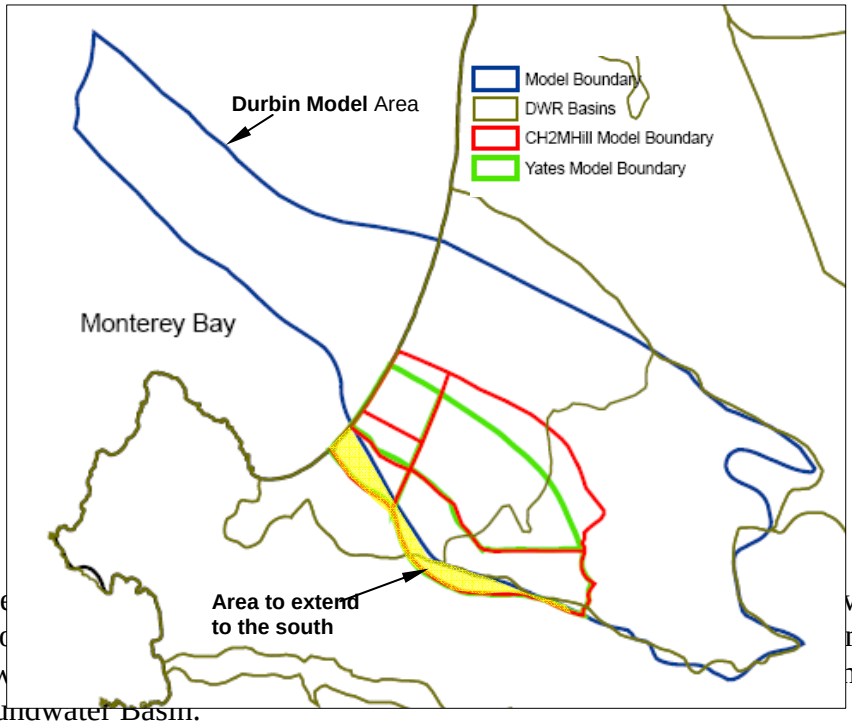
3. Model Structure and Boundaries

The model structure and boundaries define the physical extents and internal grid structure of the model. We propose using the basic structure and boundaries of the model created by Tim Durbin (2007). That model structure will be refined as necessary, or as data dictate.

- Number of Model Layers – Tim Durbin modeled each major unit (Santa Margarita, Purisima, Paso Robles, Aromas, and Salinas Valley clays). HydroMetrics LLC plans to use the same general units but will improve layer elevations and boundaries with recent drilling data (e.g. sentinel wells), and reinterpret each of the model's layers' bottom elevations, particularly the base of the model. If enough data exist, the possibility of adding more layers within the Paso Robles Formation will be explored.
- Model Area – The updated model will use some of the same model area as Tim Durbin (2007) used but with the following potential modifications:
  - Match the model to the adjudicated southern boundary (Figure 2),
  - Not extend the model out into the ocean as much as the Durbin model as this would add a lot of area to the model for which very little data are available, and
  - Potentially shift the northern model boundary further south than the Durbin model.

  If the model area has a reduced offshore area, the offshore aquifer outcrop will not be able to be modeled directly, however inferences can still be made about the degree of connection between the aquifers and the ocean. More information on how the ocean boundary will be handled is provided in the Boundary Condition bullet below.

  Shifting the northern model boundary southwards will reduce the amount of unnecessary area that would be modeled outside of the Seaside Groundwater Basin. The model's northern boundary will be kept far enough north to be able to accommodate the fluctuating groundwater ridge that defines the hydrogeological northern boundary of the Seaside Groundwater Basin. Available groundwater level records will be reviewed to see if there are enough data to tie specific wells to a new boundary.



Stake w from the
El To model will
allow ne Seaside
Groundwater Basin.

Figure 2: Durbin Model Area

- Cell Size – The cell size will be reasonable given the number of model layers and area. Areas where both current and planned wells are located will have a reduced cell size to provide better resolution in the results.
- Time Steps – Given the data available, and the goals and objectives of the model, monthly time steps will be used in the model.
- Boundary Conditions – The ocean will not be modeled but rather to simulate its effects on groundwater will be modeled using a general head boundary. HydroMetrics LLC will discuss this option with Martin Feeney to check on whether modeling the offshore aquifer outcrop is important. If it is found to be needed then the full Durbin model area will be used. Other boundary conditions used by Durbin will be the same as shown in Figure 3.

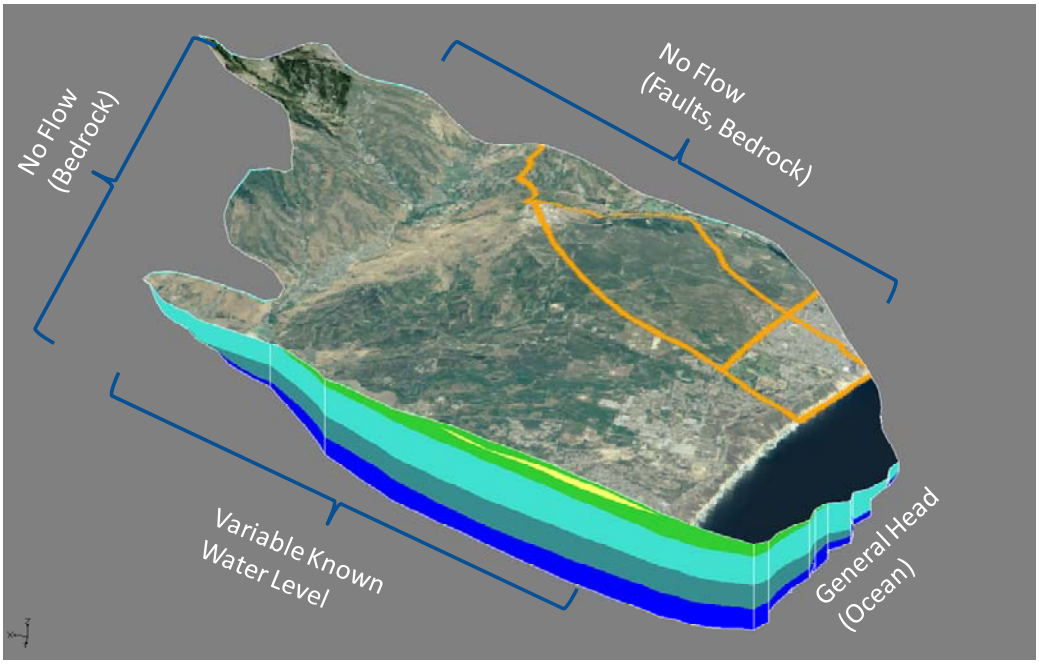


Figure 3: Durbin Model Boundary Conditions

- Initial Conditions (starting groundwater levels for the model) – Tim Durbin used 1956 groundwater levels for initial conditions. During the workshop Joe Oliver, of MPWMD, stated that MPWMD has historical monthly production data starting in 1987, with groundwater level data going back even further. Provided enough data (production and groundwater levels) exist spatially for 1987, 1987 will be used as the initial condition. The year 1987 represents the beginning of a dry period. The dry period was followed by a wetter period starting in 1992 and then more average conditions from 2000. Starting the model at 1987 will provide the model with wet, dry and average hydrological cycles.

4. Sources of Model Data

At the workshop, a presentation on groundwater modeling was given by Derrik Williams. After this presentation, all sources of data for the model were discussed. Workshop participants provided input on the types of data they had available.

The data needed for the modeling effort are included in the tables below together with a summary of the method of applying the data to the model and their sources.

Recharge Terms

Recharge Term	Method	Source of Data
Deep percolation by precipitation	Change from a constant value used by Durbin to a spatially and temporally variable distribution across the model area. Use isohyetal maps (precipitation contour map) and long-term data from precipitation stations along with a soil moisture balance to estimate amount of deep percolation	Isohyetals = Monterey County General Plan (Rosenberg, 2001) and MCWRA Co-op precipitation stations = Monterey (1949 - Dec 2008), Salinas (1958 - present) CIMIS stations = Castroville (1982 - present) Land use = County, MPWMD, MCWRA, cities, FORA and AMBAG Stormwater = MPWMD, MCWD, Army, Schaaf & Wheeler (include storm water ponds and ocean outfalls) See Management Plans for future developments' handling of storm water for predictive model
Irrigation	Use actual or estimated rates for typical landscape irrigation, actual golf course irrigation, and agricultural irrigation (if it exists). Use land use data and crop type to distribute irrigation spatially.	Land use = County, MPWMD, MCWRA, cities, FORA, and AMBAG Volume data = Water agencies Regional Urban Water Reuse Plan (RUWAP) for irrigation efficiency
Return flow (including system losses and septic tanks)	Use historical data on system losses from water agencies. If no data available then apply an average of 10% system losses in areas with piped utilities.	Delivered water volumes = CAW, MCWD, City of Seaside Location of historical septic systems in Seaside, Laguna Seca and Laguna Seca campgrounds from water agencies and County Parks Delivered water volumes from water agencies Infiltration and Inflow (I&I) Studies on system losses from water agencies Historical data on system losses from water agencies
Stream flow	Yates et al. (2005) and Durbin (2007) concluded that stream flow contributes insignificantly to groundwater recharge, and is therefore not important to the water budget or the response of the groundwater basin to pumping. This conclusion will be reexamined.	USGS gage = El Toro Creek near Spreckels MPWMD gage = Arroyo Del Rey at Del Rey Oaks (since 2003)
Underflow from adjacent basins	Use Yates et al. (2005), HydroMetrics LLC (2009) and Geosyntec (2007) estimates and refine during model calibration	Yates (2005), HydroMetrics LLC (2009) Groundwater level data and aquifer parameters (see below)
Inflow from the ocean	Use Yates' estimates from BMAP and refine during model calibration	HydroMetrics LLC (2009)

Discharge Terms

Discharge Term	Method	Source of Data
Evaporation/ evapo-transpiration	Use land use to distribute ET based on cover and vegetation type	CIMIS Stations for ET = Castroville, Salinas South, Gonzales, Salinas North, and Carmel Land use = County, MPWMD, MCWRA, cities, FORA and AMBAG
Groundwater production	Monthly production data for each well	El Toro area data = MCWRA and MPWMD Durbin model compiled annual data from 1956-2002 for CAW, City of Seaside, County and private, and from 1993-2002 for MCWD MPWMD has monthly distribution factor for wells in the Basin based on historic data CAW, City of Seaside and MCWD have monthly data Seaside Watermaster database has monthly data for 2007-2008
Underflow to adjacent basins	Use Yates et al. (2005), HydroMetrics LLC (2009) and Geosyntec (2007) estimates and refine during model calibration	Yates (2005), HydroMetrics LLC (2009) Groundwater level data and aquifer parameters (see below)
Outflow to the ocean	Use Yates' estimates from BMAP and refine during model calibration	HydroMetrics LLC (2009)

Aquifer Properties and groundwater levels

Term	Method	Source of Data
Aquifer parameters	Start with calibrated values generated in Durbin model, supplement with more recent aquifer testing. Further calibration will fine-tune the values to better match measured groundwater levels.	Durbin model MCWRA's IGSM model data is available in GIS format from MCWRA Yates et al. (2002 and 2005) El Toro report by GeoSyntec (2007)
Groundwater levels	Groundwater level data to be used for calibration	CH2M Hill compiled annual data for 1956-2004 Seaside Watermaster, MCWRA, CAW and MPWMD
Well locations and screen depths	Well locations will be used to assign wells to model cells and layers	Seaside Watermaster database Screen depths will be obtained from Durbin report and Seaside Watermaster database

AMBAG	Association of Monterey Bay Area Governments
CAW	California American Water Company
IGSM	Integrated Surface and Groundwater Model
FORA	Fort Ord Reuse Authority
MCWRA	Monterey County Water Resources Agency
MPWMD	Monterey Peninsula Water Management District
USGS	United States Geological Survey

Appendix C of this technical memorandum contains a table summarizing each water agency's responsibility for providing data for the model. Receiving the data within 30 days from issuance of this Technical Memorandum will ensure that the project remains on schedule. As data are received, the table will be updated and distributed to reflect when the data were submitted to HydroMetrics LLC.

5. Model Code

During the workshop, the two model codes FEFLOW (finite-element) and MODFLOW (finite-difference) were discussed. See tables summarizing advantages and disadvantages of each of the models in Appendix B.

MODFLOW will be used as the model code for the Seaside Groundwater Basin groundwater flow model for the following reasons:

- It is industry standard and freely available ,
- It allows for evaluation of the groundwater budget for the entire Basin as well as for specified subareas – this is a major objective of the model, and
- It will calculate the amount of flow between subareas.

6. Model Calibration

- Steady-State Calibration – No steady-state calibration will be carried out. The reasons for this are:
  - There is no need to limit the number of parameter types being calibrated. Newer calibration techniques using programs such as PEST easily handle many parameters simultaneously.
  - Steady-state calibration of transient models is relatively insensitive to many parameter values.
  - The parameters derived from Tim Durbin's 2007 model are sufficient as initial values. Additional steady-state calibration will likely not change these values.
- Transient Time Period – 1987 – 2008 will be used as the transient model period.
- Method of Calibration – Only groundwater levels will be calibrated. Streamflow calibration will not be included because recharge by streams is not significant and will not warrant inclusion in the model. HydroMetrics LLC will first use hand calibration followed by parameter estimation (PEST) techniques to improve the match between modeled and measured groundwater levels.
- Measure of Calibration: Qualitative methods to compare modeled vs. measured groundwater levels include hydrographs (Figure 5), contour maps and, XY plots (Figure 4). Quantitative methods will include statistical measures such as relative error (standard deviation of residuals divided by the observed head range).
- Model Sensitivity – This is a method of quantifying the uncertainty in the calibrated model caused by uncertainty in the estimates of aquifer parameters, stresses, and boundary conditions. It is expected that the major stresses that will be sensitive will be groundwater production and recharge by precipitation. The effects of the northern model boundary type (i.e., general vs. constant head) can

also be added as a parameter to check during the sensitivity analysis. The goal will be to have less than 10 percent relative error in the calibration results.

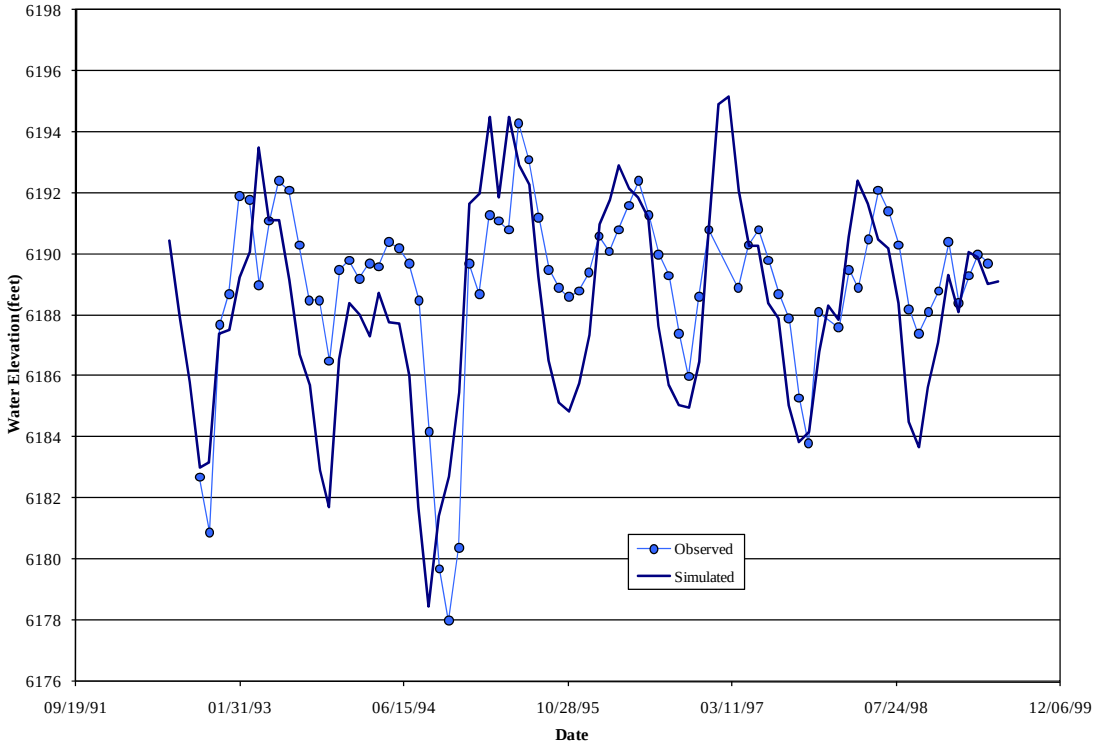


Figure 5: Example Calibration Hydrograph

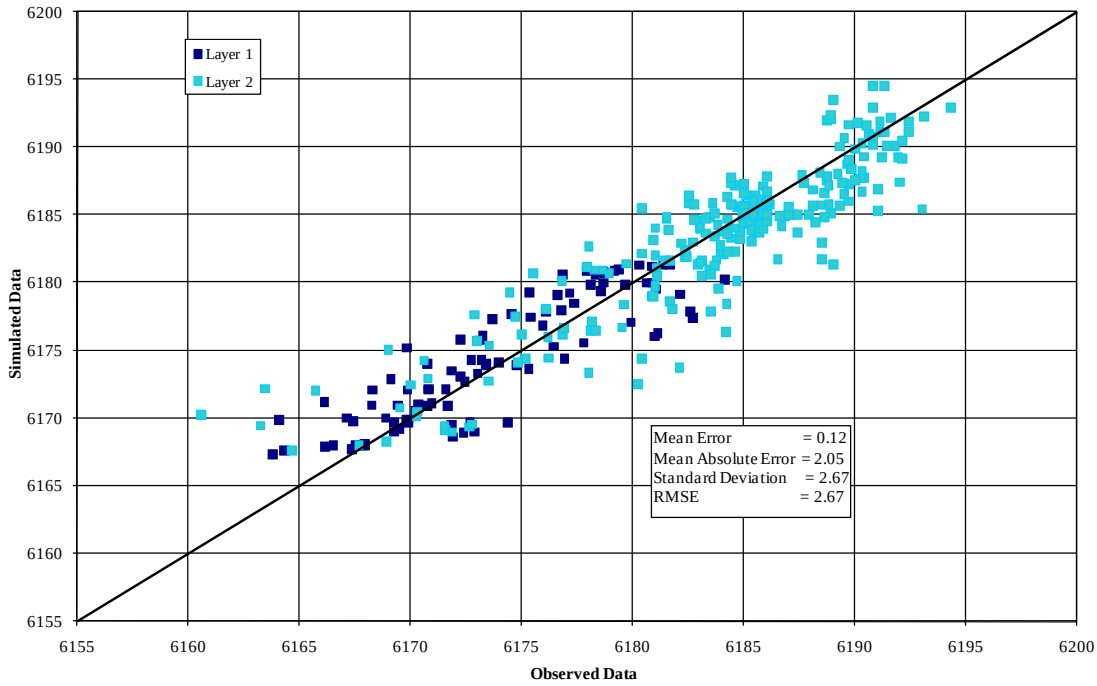


Figure 4: Example Calibration XY Plot

7. Predictive Scenarios

The predictive model period will be 20 years, from 2009 through 2028. Five model scenarios are part of the currently authorized modeling scope. A meeting to specifically decide on the model scenarios and will most likely occur in March or April 2009. A Technical Memorandum will be distributed ten days prior to the meeting and will provide suggested scenarios with basic assumptions. Included will be recommendations for the future hydrology and base conditions to apply to the predictive model. It is expected that predictive scenarios will be run in August 2009.

A predictive scenario is a "what if" condition that the model runs to predict impacts on the groundwater system. A scenario comprises a number of changes to the predictive model input. For example, importing new water into the Basin might involve a scenario that takes into account:

- The amount of water imported into the Basin,
- How the water is used in the Basin, e.g., injection, surface recharge or in-lieu of groundwater pumping,
- Changes to the operation of existing wells as a result of the imported water being used,
- Changes in future land use, and
- Changes in future boundary conditions.

It may take numerous model runs to optimize the model scenario by changing placement of recharge and/or extraction to where the scenario has the least negative impact to the Basin in terms of adverse groundwater levels.

8. References

Durbin, T.J., 2007. *Groundwater flow and transport model, Seaside groundwater basin, Monterey County, California.* Technical advisory committee draft, prepared for RBF Consultants, October 1, 2007.

Feeney, M.B., 2007. *Seaside Groundwater Basin Watermaster - seawater sentinel wells project, summary of operations,* October 2007.

Geosyntec Consultants, 2007. *El Toro groundwater study, Monterey County, California,* prepared for Monterey County Resources Management Agency, July 2007.

Harbaugh, A.W., E.R. Banta, M.C. Hill, and M.G. McDonald. 2000. *MODFLOW-2000, the U.S. Geological Survey modular ground-water model – user guide to modularization concepts and the ground-water flow process,* U.S. Geological Survey, Open-File Report 00-92, 121p.

HydroMetrics LLC, 2009. *Basin management action plan, Seaside groundwater basin, Monterey County, California,* prepared for Seaside groundwater basin Watermaster, February 2009.

Watermark Numerical Computing. 2004. *PEST Model-Independent Parameter Estimation User Manual: 5th Edition,* July 2004.

Yates, E.B., M.B. Feeney, L.I. Rosenberg, 2002. *Laguna Seca subarea phase III hydrogeologic update,* prepared for Monterey Peninsula Water Management District, November 2002.

Yates, E.B., M.B. Feeney, L.I. Rosenberg, 2005. *Seaside groundwater basin: update on water management resource conditions,* prepared for Monterey Peninsula Water Management District, April 2005.

APPENDIX A

LIST OF WORKSHOP ATTENDESS

Bob Jaques	Seaside Groundwater Basin Watermaster
Bob Costa	Seaside Groundwater Basin Watermaster and Laguna Seca subarea landowners
John Fischer	Public
Rick Riedl	City of Seaside
Brain True	Marina Coast Water District
Robert Johnson	Monterey County Water Resource Agency
Martin Feeney	Consultant
Tom Bunosky	California American Water Company
Craig Antony	California American Water Company
Joe Oliver	Monterey Peninsula Water Management District
Thomas Christensen	Monterey Peninsula Water Management District
Bob Holden	Monterey Regional Water Pollution Control Agency
Jerry Cole	CDM (consultant to MRWPCA)
Phyllis Stanin	Todd Engineers (consultant to MRWPCA)
Derrik Williams	HydroMetrics LLC
Georgina King	HydroMetrics LLC

APPENDIX B

WORKSHOP POWERPOINT PRESENTATION

APPENDIX C

DATA REQUEST

Agency	Data Needed	Date Received
MCWRA	GIS data from IGSM	
	Groundwater level data for all wells within model boundary (see GIS shapefile)	
	Precipitation contours in GIS format	
	Land use	
MPWMD	Monthly production for each well	
	Groundwater level data for all wells within model boundary (see GIS shapefile)	
	Injection and artificial recharge data	
	Map showing historical areas of septic tanks	
	Laguna Seca golf course monthly irrigation since 1987 (include source of water)	
	Land use	
City of Seaside	Monthly production for each well	
	Map showing historical areas of septic tanks	
	Land use	
Cal-Am	Monthly production for each well	
	Delivery to irrigators	
MCWD	Monthly production for each well	
	Groundwater level data for all wells within model boundary (see GIS shapefile)	
	Bayonet and Blackhorse golf course monthly irrigation since 1987 (include source of water)	
AMBAG	Land use	
FORA	Land use	
County Parks	Map showing historical areas of septic tanks	

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	March 11, 2009
AGENDA ITEM:	7
AGENDA TITLE:	Decision of MCWRA Not to Perform Contract Services for the Watermaster in FY 08/09
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

As reported and briefly discussed at the TAC's February 11, 2009 meeting, MCWRA has notified the Watermaster that MCWRA has decided, after much discussion, to withdraw from the unsigned pending contract with the Watermaster to provide technical services. MCWRA has stated that while it is capable of performing work and providing service to the Watermaster as a consultant, MCWRA's service to the community is better utilized solely as a TAC member. MCWRA went on to say that they will still continue serving as a Watermaster TAC member and will attend regularly scheduled monthly TAC meetings.

MCWRA has also notified the Watermaster that effective immediately their representative to the TAC will be Robert Johnson, replacing Kathy Thomasberg who has been serving as the MCWRA representative to date.

Mr. Johnson will be asked to provide an oral explanation of what led to MCWRA's decision, and to answer questions TAC members may have on this matter.

I have reviewed the proposed scope of work for MCWRA's FY 08/09 contract (their RFS No. 2009-01). The tasks included in that RFS are described on the attachment to this agenda item.

It is my belief that, while the more in-depth and detailed review and input from MCWRA of the documents listed in their RFS would certainly have been beneficial, I do not believe that the work of the Watermaster will be compromised to any appreciable degree by not having these formal reviews performed by MCWRA. As noted in the "Comments" contained in the attachment to this agenda item, since MCWRA will continue to participate as an active TAC member, and will thus be asked to review these same documents just as any other TAC member would be asked, I believe that much of the benefit of MCWRA's review will still be provided.

ATTACHMENTS:	Paper describing impacts on Watermaster of MCWRA not performing the work of its RFS No. 2009-01, and comments from MPWMD on this same subject
RECOMMENDED ACTION:	None required – information only

SCOPE OF WORK FOR MCWRA RFS NO. 2009-01

M&MP TASK NO.	TASK DESCRIPTION	DISCUSSION REGARDINGWORK TO BE PERFORMED BY MCWRA
I. 2. a.1	Conduct ongoing data entry/ database maintenance	MCWRA was to periodically examine the water level and water quality data entered into the Watermaster's Database and to provide quality assurance and quality control assistance to MPWMD in the form of comments and suggestions. Comment: Under its RFS No. 2009-01, MPWMD is also tasked with providing appropriate quality control and quality assurance for this data. Under that same RFS MPWMD is also tasked with reviewing the data entered by WATERMASTER for quality assurance and quality control purposes. Thus, quality control and quality assurance is being provided on this work, albeit by a single agency rather than by two agencies.
I. 2. b. 4.	Update Program Schedule and Standard Operating Procedures	MCWRA was to conduct periodic reviews of the data collection program and provide to WATERMASTER any recommended improvements or modifications which MCWRA believed would be beneficial to the program. MCWRA was to conduct these reviews and provide these recommendations at least twice during calendar year 2009. Comment: Under its RFS No. 2009-01, MPWMD is also tasked with conducting periodic reviews of the data collection program and providing any recommended improvements or modifications which MPWMD believes will be beneficial to the program. MPWMD is tasked with conducting these reviews and providing these recommendations at least twice during calendar year 2009. Thus, periodic reviews of the data collection program are being conducted, albeit by a single agency rather than by two agencies.

M&MP TASK NO.	TASK DESCRIPTION	DISCUSSION REGARDINGWORK TO BE PERFORMED BY MCWRA
I. 2. b. 6.	Reports	MPWMD will prepare and submit the following reports to WATERMASTER summarizing and analyzing the data that is collected: 1. Four quarterly reports summarizing and analyzing the water quality and water level data. 2. One annual report that contains tables consolidating the data from the quarterly reports and a narrative summarization of the findings, conclusions, and recommendations from the quarterly reports. This annual report may include, as attachments, each of the four quarterly reports. MCWRA was tasked with reviewing each of these reports and providing its comments and recommendations to WATERMASTER. Comment: As an active TAC member MCWRA will be provided these same reports and asked to review and comment on them. The review contemplated under MCWRA's RFS No. 2009-01 would have been more detailed and in more depth than the review it will likely be providing simply as a TAC member. Nevertheless, any significant issues MCWRA identifies in its review will be expected to be reported by them, and appropriate followup action by the Watermaster can still be taken.
I. 3. a	Enhanced Seaside Basin Groundwater Model	During 2009 WATERMASTER intends to hire a Consultant to update the existing groundwater model for the Seaside Basin, and to use the updated model to evaluate various Basin management issues. MCWRA was to assist WATERMASTER with the Modeling work being performed by HydroMetics work by participating in meetings, providing information and data for the Hydrometrics' use, and performing other related work as requested by WATERMASTER. Comment: As was apparent at the recent Modeling Workshop held by HydroMetrics, MCWRA participated fully in the meeting, and offered to provide information and data available to it in order to assist HydroMetrics with carrying out the Modeling work. Thus, it appears that the process is fully benefitting from MCWRA's participation and assistance.
I. 3. b.	Complete Preparation of Basin Management Action Plan	During 2009 HydroMetrics completed preparation of the Basin Management Action Plan (BMAP). MCWRA was tasked with assisting WATERMASTER with this work by participating in meetings, providing information and data for HydroMetrics' use, and performing other related work as requested by WATERMASTER. Comment: MCWRA participated fully in the TAC meetings at which topics raised by HydroMetrics during the preparation of the BMAP were discussed. The BMAP was subsequently approved and adopted by the Board, and the work to which this task pertains was satisfactorily completed. Thus, completion of preparation of the BMAP benefitted fully from MCWRA's participation and assistance.

M&MP TASK NO.	TASK DESCRIPTION	DISCUSSION REGARDINGWORK TO BE PERFORMED BY MCWRA
I. 4. a, b, and c	Perform Seawater Intrusion Analyses	WATERMASTER will have a HydroMetrics perform analyses and prepare mapping and other documents pertaining to seawater intrusion detection as part of preparing the annual Seawater Intrusion Analysis Report (SIAR). MCWRA was tasked with participating in meetings with HydroMetrics during the course of performing this work, and with providing review comments and recommendations regarding this work. Comment: As an active TAC member MCWRA will be provided these same documents and the Draft SIAR and asked to review and comment on them. The review contemplated under MCWRA's RFS No. 2009-01 would have been more detailed and in more depth than the review it will likely be providing simply as a TAC member. Nevertheless, any significant issues MCWRA identifies in its review will be expected to be reported by them, and appropriate followup action by HydroMetrics and the Watermaster can still be taken.
I. 4. d.	Complete Preparation of Seawater Intrusion Response Plan	During 2009 HydroMetrics completed preparation of the Seawater Intrusion Response Plan (SIRP). MCWRA was tasked with assisting WATERMASTER with this work by participating in meetings, providing information and data for Hydrometrics' use, and performing other related work as requested by WATERMASTER. Comment: MCWRA participated fully in the TAC meetings at which topics raised by HydroMetrics during the preparation of the SIRP were discussed. The SIRP was subsequently approved and adopted by the Board, and the work to which this task pertains was satisfactorily completed. Thus, completion of preparation of the SIRP benefitted fully from MCWRA's participation and assistance.

The following are comments from Joe Oliver of MPWMD regarding how the Watermaster might be affected by the MCWRA not performing work under its RFS No. 2009-01.

1. **Task Nos. I.2.a.1, I.2.b.4 and I.2.b.6** relate to quality assurance and review assistance that MCWRA was to provide to MPWMD and Watermaster on monitoring data collection and reports, including recommendations on program improvements. In the place of having this work conducted by MCWRA, I suggest that at least some of this assistance could be made up by the combination of you, as Technical Program Manager, HydroMetrics, as the Watermaster's technical consultant, and possibly by the TAC as well. For example, instead of me working directly with MCWRA staff (i.e., Kathy Thomasberg) as in the past when database entry, formatting, collection and enhancement questions come up, I would bring these issues directly to you. Depending on the nature of the issue, you could decide if it warranted having HydroMetrics weigh in on it, and/or if it was an issue that the full TAC should engage on. One likely issue like this that will need to be dealt with is whether and what type of "Quality Assurance Project Plan" the Watermaster should have for the data collection program. This would include things like written water quality sampling protocols, water meter record-keeping and inspections, etc. I think these types of things can still be done, but it would be with less direct guidance and input from MCWRA.

2. **Task Nos. I.3.a, I.3.b and I4.d** relate to work that MCWRA was to provide to support on certain technical work that the Watermaster is moving forward with this year (i.e., groundwater model, BMAP, SIRP). Given that this work was to be performed as requested by the Watermaster, I suggest that where the need arises, this additional support could come from the TAC, even if it means that we may want to periodically assemble subcommittee meetings of selected TAC members on an ad hoc basis to do so. An example could be when it is time to undertake a detailed review of groundwater model inputs and outputs, it may be appropriate for a TAC subcommittee to tackle this as a partial replacement for expertise that MCWRA would have provided on this under their contract work. A similar example could be forming a subcommittee to give focused technical input on the applicability and feasibility of certain supply projects identified in the BMAP or elsewhere.

3. **Task Nos. I.4.a, b and c** relate to work that MCWRA was to provide on the seawater intrusion (SWI) analyses. This is where I believe the Watermaster will be the most at a loss for not having formal contracted assistance from the MCWRA, given their expertise in this area. I spoke briefly with Kathy Thomasberg about this yesterday. She said that she is no longer directly assigned to do the Watermaster work, and her time has been redirected to other high-priority tasks. However, she said that she will still be available as a resource, particularly as it relates to SWI evaluations. She also indicated that Rob Johnson, who has now been assigned as the TAC representative, could help fill in with agency experience and expertise in this regard. Accordingly, I suggest that we seek MCWRA guidance on SWI issues through Rob's participation as a TAC member, and informally from Kathy, as this is her area of expertise and she is willing to help out to a limited extent that does not unduly conflict with her other priorities.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	March 11, 2009
AGENDA ITEM:	8
AGENDA TITLE:	Martin Feeney RFS No. 2009-02 to Prepare a Basis of Design Report for the New Monitoring Well
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

Attached is a proposed contract for Martin Feeney to prepare a Basis of Design Report for construction of the new monitoring well to be constructed during FY 2009.

If the TAC concurs with this RFS No. 2009-02, it will be presented to the Board for approval at the Board's March 18, 2009 meeting.

ATTACHMENTS:	Proposed RFS No. 2009-02 with Martin Feeney
RECOMMENDED ACTION:	Provide input regarding any changes that should be made to this RFS before it goes to the Board for approval on March 18, 2009

SEASIDE BASIN WATERMASTER
REQUEST FOR SERVICE

DATE: 3/18/2009 **RFS NO**. 2009-02
(To be filled in by WATERMASTER)

TO: Martin Feeney **FROM**: Robert Jaques
Martin Feeney WATERMASTER
PROFESSIONAL

Services Needed and Purpose: Prepare Basis of Design Report for the construction of a monitoring well in the inland area of the former Fort Ord, as described in Attachment 1.

Completion Date: All work of this RFS shall be completed not later than May 31, 2009.

Method of Compensation: Time and Materials (As defined in Section V of Agreement.)

Total Price Authorized by this RFS: $6,600.00 (Cost is authorized only when evidenced by signature below.) (See Attachment 1 for derivation of Estimated Costs).

Total Price may not be exceeded without prior written authorization by WATERMASTER in accordance with Section V. COMPENSATION.

Requested by: _____ Date: _____.
WATERMASTER Technical Program Manager

Authorized by: _____ Date: _____.
WATERMASTER Chief Executive Officer

Agreed to by: _____ Date: _____.
PROFESSIONAL

ATTACHMENT 1

SCOPE OF WORK AND ESTIMATED COSTS

BACKGROUND

The Watermaster Board approved the Budget for the 2009 Management and Monitoring Program Scope of Work (hereinafter referred to as the "2009 M&MP Scope of Work") at its Special meeting of October 23, 2008. One of the activities included in the 2009 M&MP Scope of Work is to select a site for, and to design and construct, an additional monitoring well to fill a data gap in the existing monitoring well network.

The purpose of the new monitoring well is as follows:

- Allow for on-going collection of aquifer-specific water level data
- Allow for on-going collection of aquifer-specific water quality data
- Collect lithologic and geophysical data that will assist in better delineation of aquifer units and basin structure.

Under RFS No. 2009-01 PROFESSIONAL is assisting WATERMASTER with the selection of the site for the new monitoring well.

Under this RFS No. 2009-02 PROFESSIONAL will prepare a Basis-of-Design Report (BODR) for the new monitoring well.

WORK TO BE PERFORMED

PROFESSIONAL will perform the tasks listed below:

Task 1 – Review Hydrogeologic Setting for Candidate Well Sites. The selected site for the new monitoring well will be examined for both hydrogeologic and logistical/land acquisition criteria. The anticipated hydrogeologic conditions at the site, including the anticipated aquifer units and estimated depth to Monterey Shale, will be identified.

Task 2 – Develop Conceptual Well Designs. Based on the above, conceptual well designs will be developed to fulfill the new monitoring well's purposes. The well designs will consider anticipated sampling and monitoring methodology and aquifer zones to be completed. It is anticipated that the well's purposes can be achieved by use of either nested wells or a well cluster. The pros and cons of these alternative designs will be determined.

Task 3 – Prepare Basis of Design Document/Well Construction Guidelines. Task 1 and 2 will be incorporated into a Draft BODR. After technical review and concurrence with proposed design, the BODR will be finalized and a set of well construction guidelines will be prepared for use in soliciting prices from selected contractors.

ESTIMATED COSTS

Estimated Costs:

Task 1 – 10 hours
Task 2 – 10 hours
Task 3 – 24 hours

Total = 44 hours.

At PROFESSIONAL's hourly rate of $150, this would amount to $6,600. This serves as the basis for the Total Price set forth on page 1 of this RFS No. 2009-02.

Note: Regardless of the use of the term "Estimated Cost" in this RFS, if the work of this RFS is to be compensated for using Lump Sum Payment method, it is understood and agreed to by PROFESSIONAL that the Total Price listed on page A-1 of this RFS is binding and limiting as defined in Section V of the Agreement.