

MEETING NOTICE AND AGENDA

**NOTE DIFFERENT
TIME, DATE, AND
LOCATION!!!**

TECHNICAL ADVISORY COMMITTEE OF THE SEASIDE BASIN WATER MASTER

DATE: Wednesday, September 23, 2009

TIME: 9:00 a.m.

**LOCATION: Monterey Regional Water Pollution Control Agency – Board Room
5 Harris Court, Building D
Monterey, CA 93940**

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)

Agenda Item

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10. Set next meeting dates:	
The next regular meeting will be held on Wednesday October 14, 2009 at 1:30 p.m. at the Seaside City Hall Portable Office Buildings Conference Room	

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:	September 23, 2009
AGENDA ITEM:	1.A
AGENDA TITLE:	Approve Minutes from August 12, 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
August 12, 2009**

Attendees: TAC Members

City of Seaside – Rick Riedl
California American Water – Eric Sabolsice
City of Monterey – No Representative
Laguna Seca Property Owners – No Representative
MPWMD – Joe Oliver
Public Member – No Representative
MCWRA – Rob Johnson
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 - Derrick Williams and Georgina King (both via telephone)
Martin Feeney Hydrogeologist - Martin Feeney (via telephone)

Others:

MPWMD – Jonathan Lear
MCWD – Brian True

The meeting was called to order at 1:33 p.m.

Note: Since neither Ms. Ingersoll nor Mr. Bunosky was present (Chair and Vice-Chair respectively), Mr. Oliver offered to temporarily chair the meeting. The meeting immediately moved to Agenda item No. 1.B having to do with appointing an additional Vice-Chairperson. Hence, the order of business under agenda item No. 1 was taken out of order, as discussed below.

1. Administrative Matters:

B. Consider Appointment of an Additional Vice Chairman for the TAC

Following brief discussion of this agenda item, Mr. Oliver nominated Mr. Johnson to serve as an additional Vice Chairperson for the TAC. Mr. Riedl seconded this motion. Under discussion Mr. Jaques reported that Mr. Fischer, who was unable to attend today's meeting, had said that he supported having Mr. Johnson serve as the additional Vice Chairperson. The motion passed unanimously, thus appointing Mr. Johnson to the position of an additional Vice Chairperson.

A. Approve Minutes from June 10, 2009 Regular Meeting

On a motion by Mr. Oliver, seconded by Mr. Johnson, the minutes were unanimously approved as presented, with Mr. Matarazzo abstaining as he had not attended that meeting.

C. Consider Alternate Meeting Site or Rescheduling for September 9 and November 11, 2009 TAC Meetings

Mr. Jaques summarized the agenda packet materials for this item. Mr. Johnson and Mr. Oliver both said they would be away during the week of September 7, and Mr. Oliver said he would also be away the week of September 1-4. Mr. Jaques said he would be away during the week of September 14-19. As a result it was proposed that the September TAC meeting be held on Wednesday September 23 at 9:00 a.m. at the MRWPCA offices. Mr. Jaques will confirm the availability of the MRWPCA offices for that date.

It was agreed that the date for the November TAC meeting will be set at the October TAC meeting, when it is clearer as to what date in November will be most convenient for TAC members, recognizing that the normal November meeting date of November 11 conflicts with a scheduled holiday for several TAC member entities.

2. Progress Reports

A. MPWMD

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

He reported that the Watermaster database is in the process of being put on the Watermaster's web site, with the access level and other modifications included. It is anticipated that the database will be accessible from a website within a few days.

Mr. Jaques will e-mail all TAC members with their password information, so they can access the database. "Help" information has been added to the website, to assist users who have a problem getting the PDF or Excel reports to download.

Ms. King reported problems with the Excel version of some reports. Correcting this may be a future database enhancement, as well as other enhancements that may be suggested by users as they begin to use the database.

Mr. Oliver reported that MPWMD has changed the water quality sampling method in accordance with TAC recommendations from the June 10, 2009 TAC meeting. He reported that the equipment has been purchased to use this new sampling method, and that the July (Water Year 08-09-fourth-quarter) samples have been collected using this new method. Mr. Oliver confirmed that the new method is EPA approved.

With regard to water level data for the City of Seaside golf course wells on General Jim Moore Boulevard, Mr. Riedl reported that the sounding tape the City uses at that location does not go deep enough to reach the current water level, which has fallen during recent summer pumping. Mr. Oliver said he could offer to loan a measuring device until Mr. Riedl can purchase a deeper one for use at this well.

A. HydroMetrics

Ms. King and Mr. Williams summarized the agenda packet materials on this item.

Ms. King reported that the well production data was largely all received, and that only a few assumptions had to be made to complete the work. She said that water level data has been received from all sources which had available data to submit. Mr. Williams said he was not waiting for any more data from TAC members in order to complete work on proceeding with the model.

Mr. Williams said that there are still some geologic questions remaining, but that the modeling work is "looking good" and good progress is being made. Calibration will be done soon, but the modeling work is approximately two weeks behind schedule due to delays in getting some of the data.

Mr. Williams asked what people would like to see from the model at the September 23rd TAC meeting. It was suggested that maps of layers, maps of recharge, hydrographs, etc. be presented.

Mr. Oliver said he would prefer to see water level data and water budget topics covered in the presentations. Mr. Johnson said that hydrogeologic convergence should also be covered.

Mr. Riedl asked Mr. Williams if all the County data had come in. Ms. King responded "yes", that WRIME had provided data which covered this. However, not all water production data was available, so she worked with Mr. Oliver to prepare estimates for that purpose.

C. Martin Feeney

Mr. Feeney summarized the agenda packet materials for this item. He reported that the well drilling contractor is slightly behind schedule, but he still projected that drilling would begin on Monday August 17. E-logs will be produced later that week. At Mr. Oliver's request, Mr. Sabolsice introduced himself. Mr. Oliver provided a short briefing for Mr. Sabolsice on the sentinel wells and the current new monitoring well being constructed at the BLM site.

In response to a question from Mr. Fischer, as voiced by Mr. Jaques, Mr. Feeney said he did not have an explanation for why the sentinel well water levels are higher this year than they were last year. Mr. Matarazzo, Mr. Riedl, and Mr. Oliver suggested that perhaps lower water demand and reduced pumping in the Seaside basin by CAW was causing this.

Mr. Matarazzo asked Mr. Oliver if there was more precipitation this last winter than in previous winters which might account for this. Mr. Oliver responded "no", and also commented that he would not expect a quick response in the deep aquifer from rainfall occurrences.

D. Technical Program Manager

A. Database Issues: Mr. Jaques summarized the agenda packet materials for this item, and there were no comments or questions on this item.

B. Selection of Site for New Monitoring Well: Mr. Jaques summarized the agenda packet materials for this item, and there were no comments or questions on this item.

C. Calibration of Production Well Meters: Mr. Jaques summarized the agenda packet materials on this item.

The TAC concurred with the evaluation presented on pages 19 and 20 of the agenda packet. Mr. True commented that Mr. Evans is a CAW employee, but that he has his own separate business doing pump testing.

There was unanimous TAC concurrence to have Mr. Jaques pursue the pump testing recommendations as contained on page 21 of the agenda packet.

3. Grant-fund Availability Update Report

Mr. Oliver said he did not find any new opportunities for grants, but under the economic stimulus program there may be future opportunities. Mr. Matarazzo asked Mr. Oliver if the Watermaster would be a qualified applicant under any of these programs. Mr. Oliver said he felt that the Watermaster might be a qualified applicant. Mr. Oliver will provide updates as he learns more, and will cover this under his regular monthly Progress Reports.

Mr. Johnson asked if the Watermaster was part of an Integrated Regional Water Management Plan (IRWMP). Mr. Jaques said he did not believe that the Watermaster was covered by any such plan, but it

would be worth checking out on a case-by-case basis under the specific grant programs which Mr. Oliver identifies.

Mr. True and Mr. Johnson noted that some Proposition 50 grant work is now resuming being funded after being delayed for a while. Mr. Oliver will discuss the topic with Mr. Hampson on and report at a future TAC meeting.

4. Status Report on City of Seaside Negotiations with MCWD to Obtain Golf Course Water

Mr. Riedl reported that the City of Seaside is seeking funding to purchase the water from MCWD for the golf courses. Mr. Jaques commented that at the July 27th Budget and Finance Committee meeting, Mr. Corpuz had clarified that Seaside would not be asking the Watermaster to pay for the water. Rather, the city would seek offsets to its replenishment assessment liability amounts through this project. Mr. Riedl did not have a forecasted date when the agreement (being drafted by Seaside and CAW) would go to the Watermaster Board for approval. This will continue to be an item on future TAC agendas for updating by Mr. Riedl.

5. Change in Classification of Design Center Well in Sand City

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

Following a short discussion, a motion was made by Mr. Oliver, seconded by Mr. Riedl, to approve the change in the status of the design center well as recommended in the agenda packet. The motion passed unanimously.

6. Schedule

Mr. Jaques asked for initial feedback/direction on several Schedule items as follows:

- The replenishment assessment unit cost in view of recent CAW CWP project cost development documents.
- M&MP Budget development. Mr. Jaques said he was not planning to include another monitoring well in the FY 2010 budget. Mr. Riedl asked Mr. Oliver if all the bottlenecks in the MPWMD ASR project had been worked out. Mr. Oliver responded "no", but that he was working on these items.

Mr. Jaques highlighted several upcoming TAC and Board meeting dates and topics.

7. Other business

Mr. Jaques reported that Mr. Fischer was in the Community Hospital for further medical treatment. He said that Mr. Fischer expressed optimism about being able to complete the treatment process and to be able to resume attending TAC meetings in the near future.

Mr. True reported that CAW has asked MCWD for ASR test water for the two sites adjacent to General Jim Moore Boulevard near the Seaside golf courses. They project about 200 acre feet of water will be needed for each well to test the wells, once the site issues have been resolved.

Mr. Oliver reported that the RWQCB has requested a monitoring well be installed as part of MPWMD's Phase 1 ASR project. This will add another monitoring well for inclusion in the Watermaster's database. The new monitoring well will probably go in during October 2009, near the Fitch school. It will probably be drilled about 1,000 feet deep to reach the bottom of the Santa Margarita formation (Monterey shale).

Mr. Jaques said he will distribute the BLM Monitoring Well Basis of Design Report at the next TAC meeting.

8. Set Next Meeting Date

The next regular meeting will be held on Wednesday September 23, 2009 at 9:00 a.m. at the Monterey Regional Water Pollution Control Agency's Board Room. Note that this is not the normal monthly meeting date, but is later in the month in order to accommodate holiday and vacation conflicts with various TAC members.

The meeting adjourned at 3:28 p.m.

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

***** AGENDA TRANSMITTAL FORM *****

MEETING DATE:	September 23, 2009
AGENDA ITEM:	1.B
AGENDA TITLE:	Select Date(s) for Possible Special TAC Meeting Later in October, and for the November TAC Meeting
PREPARED BY:	Robert Jaques, Technical Program Manager
SUMMARY:	
<p>At the August 12, 2009 TAC meeting it was agreed that the date for the November TAC meeting would be set at the October TAC meeting, when it was clearer as to what date in November would be most convenient for TAC members, recognizing that the normal November meeting date of November 11 conflicts with a scheduled holiday for several TAC member entities.</p> <p>The Schedule contained in the Agenda packet also calls for a Special TAC meeting in late October, with the proposed date being Wednesday October 28, in order for HydroMetrics to make a presentation to the TAC regarding the evaluation of replenishment scenarios and answers to Basin management questions using the updated Groundwater Model. The TAC needs to receive that information prior to the Board's November 4th meeting, so any changes or clarifications the TAC feels should be made can be incorporated into HydroMetrics November 4th presentation to the Board. HydroMetrics will need much of October in order to complete their Model runs. For these reasons the October 28th date was tentatively picked some time ago.</p> <p>Firm times and dates for both of these meetings should be picked not later that the October 14th regular TAC meeting. However, I recommend that the TAC try to pick those dates at today's meeting in order to provide more lead-time for TAC members to incorporate those meeting dates into their schedules.</p>	
ATTACHMENTS:	None
RECOMMENDED ACTION:	Select times and dates for these two TAC meetings

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

***** AGENDA TRANSMITTAL FORM *****

MEETING DATE:	September 23, 2009
AGENDA ITEM:	2
AGENDA TITLE:	Progress Reports
PREPARED BY:	Robert Jaques, Technical Program Manager
SUMMARY:	
<p>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.</p> <p>The attached Progress Reports cover the time period since the last Regular TAC meeting held in September, 2009 to the date when this Agenda packet was prepared.</p> <p>Under this agenda topic TAC members are encouraged to raise any questions or issues of concern regarding these items.</p>	
ATTACHMENTS:	Progress Reports
RECOMMENDED ACTION:	None required – information only

Progress Report from the MPWMD

Work Performed

- Assisted with drilling and construction of new Watermaster Monitor well at the BLM site. Monitor well will consist of one shallow completion in the Paso Robles Formation (QTp) and one deep completion in the Santa Margarita Formation (Tsm). As of 9/8/09, the shallow borehole has been drilled. Over the next week, the deep borehole will be drilled and both completions will be constructed. The well will be sampled following completion and the data will be presented in the 2009 fourth quarter monitoring report along with a summary of well construction and site-specific lithology encountered during drilling.
- Provided additional data to HydroMetrics to support groundwater model development.
- Worked with Zone 24x7 database consultant to update list of future fixes/enhancements to Watermaster database.
- Prepared updated quarterly Watermaster production report.
- Continued water-level and water-quality data entry into Watermaster database.
- Continued water-level data collection under enhanced monitoring program.

Upcoming Work

- Continue to assist with drilling and construction of the new Watermaster Monitor well at the BLM site and add the well to the Watermaster database.
- Process data requests from HydroMetrics for groundwater model development.
- Continue data collection efforts under RFS 2009-01 and 2009-02.
- Continue support to Watermaster for quarterly production accounting.
- Provide assistance on new inland monitor well at BLM site.
- Prepare the WY 2009 fourth quarter monitoring report.
- Support Watermaster technical consultant team on document preparation efforts.
- Continue working with Zone 24x7 database consultant to obtain cost and time estimates for future fixes/enhancements to Watermaster database.

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Progress Report from HydroMetrics

HydroMetrics will be making separate progress report presentations on the Updating the Groundwater Model and on Protective Water Levels under other agenda items at today's meeting, so no other Progress Reports from them will be provided for this meeting.

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Progress Report from Martin Feeney

Work Performed

Construction operations on the new monitoring well at the BLM site in the former Fort Ord began August 17, and continue as of the date of this Progress Report.

The project has had some complicating issues over the last month. These issues are discussed below:

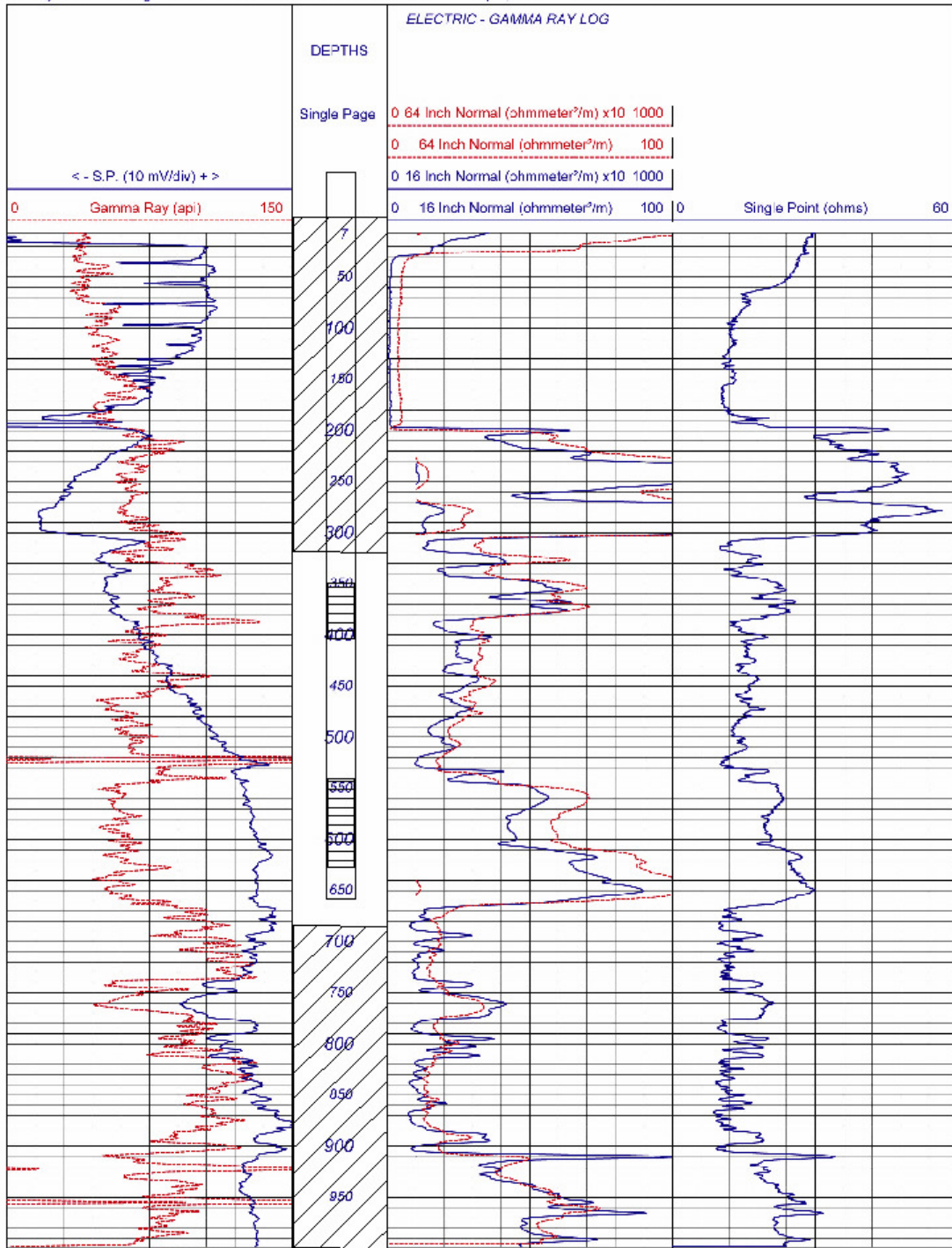
- Paperwork originally submitted to BLM early in the project permitting discussed a deep monitoring and a second shallower monitoring well. Through the Basis-of-Design process this was modified to three well progressively shallower wells. Due to a misunderstanding between BLM and the Watermaster's agents, the BLM permit referenced a single well. Through negotiation with BLM they agreed to modify the Right a Way agreement to include the originally requested 2 wells.
- The test hole has been drilled to 1,300 feet and has not yet encountered the Monterey Shale. The Shale appears to be at least 400 feet deeper than anticipated. This additional depth may impact the budgeted and proposed well constructions. This situation was discussed among project geologists and Joe Oliver. Based on these discussions the following priorities for the project were developed to balance available funds with hydrogeologic information. The goals in order of importance are:
 1. Determine depth to Monterey Shale and delineate overlying aquifer units.
 2. Complete borehole as monitoring well in the deeper aquifer unit.
 3. Complete second borehole, perforated in the upper aquifer unit, with one or more casings in a single borehole, as allowed by budget.
- Due to a massive hydraulic system failure on the drilling contractor's new drilling rig, the contractor lost the ability to lift or rotate drill pipe at depth of 1,300 feet. Due to loss of movement, the drill pipe became stuck in the hole. Despite the use of a crane and a second drill rig, the pipe could not be freed. The drill pipe was subsequently "shot off" as a depth of approximately 1100 feet, leaving 180 feet of drill pipe in the hole. The hole was then geophysically logged. Based on the data from the lithologic and geophysical logs, the decision was made to complete the borehole as a shallow monitoring well, sealing the bottom of the hole to a depth of 700 feet, encasing the lost drill pipe in concrete. The geophysical log and well schematic are attached. Construction of the shallow monitoring well was completed September 10.
- The Contractor will be moving forward and starting the second borehole September 11, 2009. This borehole, which was originally to be the shallow well, will be drilled to the top of the Monterey Shale. It is anticipated that this borehole will extend to at least 1,400 feet. Upon reaching bottom the borehole will be geophysically logged and completed to a deep monitoring well.

The complications discussed above will not impact the established budget. As discussed, project priorities were developed to provide flexibility to stay within budget. The work associated with converting the failed borehole into a monitoring well are Contractor costs and will only be paid to the

Contractor if funds remain after drilling and construction of the deep borehole and monitoring well and only up to the contract amount.

Upcoming Work

Completion of the monitoring well will complete all work currently assigned to this consultant and the contractor working for him.



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Progress Report from the Technical Program Manager

A. Database Issues

The updated version of the Watermaster Database has been linked to the Watermaster's website, for access by all users. All TAC members were emailed their User Names and Passwords so they should all be able to access the Database. At today's meeting any comments or problems that have been encountered in using the Database will be solicited, so they can be resolved as soon as possible. In the Agenda item pertaining to the FY 2010 M&MP Budget, there is a line-item to provide funds to make further improvements to the Database, if desired.

B. Selection of Site for New Monitoring Well

Work on installing the new monitoring well at the BLM site in the former Fort Ord began on schedule in August. An amended right-of-way Agreement with the BLM was necessary to rectify some misunderstandings pertaining to the fact that there will be one "monitoring well" but that it will consist of more than one actual well casing being installed. That amended right-of-way Agreement has been processed. Some drilling problems were encountered during the week of August 31. Mr. Feeney's report will provide an update on the progress of installing this well.

C. Calibration of Production Well Meters

As discussed at previous TAC meetings, page 35 of the Amended Court Decision contains a requirement in Section L.3.j.vii, which reads:

"The Watermaster will make inspections of Water Production facilities and measuring devices at such times and as often as may be reasonable under the circumstances, and to calibrate or test such devices."

As a result of direction received from the TAC at its June 10th and August 12th meetings, I have evaluated the water meter calibration data submitted by each of the producing well owners and have prepared recommendations regarding meter calibration or testing. Table 1 at the end of this Agenda item summarizes the information for each of the active production wells. Note: These tables reflect data and information received subsequent to the August 12th TAC meeting.

As discussed at the June 10th and the August 12th TAC meetings, there are several factors which lead to the conclusion that having the water meters calibrated in the field is not practical:

- For most types of mechanical meters there is no field calibration procedure. Such meters typically must be taken out and sent to the factory for calibration in a hydraulics test facility that has volumetric calibration equipment.
- Electronic flow meters can be "calibrated" in the field, but what this really consists of is calibrating the electronics to manufacturer specifications. This ensures that the electronics are reading properly, but does not ensure that the primary element (the flow sensor) or the meter installation configuration are producing accurate metering conditions.
- Meters are often installed, due to site constraints, in such a piping configuration that they may only be able to provide reasonably accurate readings. Even if these meters were taken to the factory for calibration and then reinstalled, they would still only be able to produce reasonably accurate readings, but not readings that would match calibrated readings.

Rather than performing meter calibration, a more commonly used technique is to first perform pump testing. If the calculated flow rates, based on the pump manufacturers' performance curves and pressure measurements taken during the test, are significantly different than those indicated by the water meters, then one of two conditions is assumed to exist: either (1) the pump is worn and is not performing in accordance with its pump curve, or (2) the meter is out of calibration. Depending on the age of the pump

and the meter, operational experience with the pump or the meter, i.e. experience with worn parts or loose tolerances or erratic performance, the well owner determines which of these two conditions is most likely to exist and either has the pump inspected, repaired, or replaced, or sends the meter into the factory for recalibration, and then repeats the pump test.

Also, there would be little benefit to requiring that pumping tests be performed on wells that have historically produced very small quantities of water, since even large errors in meter readings from these pumps would have little or no impact on Basin management decisions.

There was TAC concurrence with this analysis and its conclusions at the August 12th TAC meeting. Based on that direction I make the recommendations contained in Table 2 at the end of this Agenda item. As Table 2 indicates, all of the larger active production wells have had the accuracy of their flow meters independently verified through the use of clamp-on flow meters within the past three years. Therefore, no additional meter testing is recommended at this time.

In addition to the meter calibration requirement contained in the Amended Decision, there are a set of criteria contained in the Watermaster's Rules and Regulations pertaining to the installation of meters. These are believed to come from the MPWMD's standards. It is very likely that few, if any, of the currently installed meters would conform to all of these requirements, and retrofitting them to conform would likely be quite costly. Therefore, it is my interpretation that these requirements would be applied to new meters being installed, and that it was not the Watermaster's intent in adopting these requirements that they would be applied to existing meter installations.

The information and conclusions regarding meter calibration and meter installation criteria will be included in this year's Annual Report to the Court.

TABLE 1 – BACKGROUND INFORMATION ON EACH ACTIVE PRODUCTION WELL

WELL OWNER/ OPERATOR	WAS/WERE METER(S) RECENTLY CALIBRATED?	RECENT PUMPING DATA						COMMENTS
		WY 2006		WY 2007		WY 2008		
		Volume Pumped, AF	%-age of Total Annual Basin Production	Volume Pumped, AF	%-age of Total Annual Basin Production	Volume Pumped, AF	%-age of Total Annual Basin Production	
Laguna Seca Resorts	No, but pump tests were recently performed on both of the well pumps	264.7	5%	254.3	5%	300.2	6%	Meter readings indicate that both meters are operating (i.e. not stuck) and are producing results that closely correspond to the separate flowmeter used to conduct the pump tests.
California American Water-Coastal Subareas	No, but pump tests were recently performed. CAW reports that "Cal-Am does not calibrate well water meters, which are the source of supply for the Central Division. Cal-Am performs pump efficiency tests on its facilities to determine motor, pump, and water meter efficiency and/or accuracy. If a well water meter is found to be outside of the manufacturer's accuracy specification, it is removed and sent to the manufacturer for calibration, repair, and/or replacement."	3264.1	65%	3625.0	67%	3329.8	63%	Meter readings indicate that the meters are operating (i.e. not stuck) and are producing results that closely correspond to the separate flowmeter used to conduct the pump tests.
California American Water-Inland Subareas		445.9	9%	434.9	8%	533.1	10%	
City of Sand City	One meter is now on a well that the City asks to have classified as inactive. This is the "Design Center" well. It was originally intended for irrigation use by the owner, but the owner has subsequently abandoned that concept and is using CAW water for irrigation. The city said they are in the process of having their other meter at the City's Public Works Yard calibrated.	0.5	<1%	2.2	<1%	0.0	0%	Pursuing process of recategorizing the Design Center well as inactive. Meter reading from the Public Works Yard well shows very small flows but considerable variation from year to year. However, this may just be because of the nature of the use of this well, and not the meter.
City of Seaside-Golf Courses	Yes. Both meters were calibrated on 10-13-2008.	464.7	9%	473.0	9%	593.0	11%	None
City of Seaside-Municipal	Yes. Both meters were calibrated on 10-13-2008.	332	7%	287.8	5%	294.2	6%	None

TABLE 1 (CONTINUED)

WELL OWNER/ OPERATOR	WAS/WERE METER(S) RECENTLY CALIBRATED?	RECENT PUMPING DATA						COMMENTS
		WY 2006		WY 2007		WY 2008		
		Volume Pumped, AF	%-age of Total Annual Basin Production	Volume Pumped, AF	%-age of Total Annual Basin Production	Volume Pumped, AF	%-age of Total Annual Basin Production	
Mission Memorial Park	Meter apparently has not been calibrated since installation.	21.9	<1%	26.2	<1%	20.8	<1%	None
Security National Guaranty Inc	Yes. The owner reports that the meter was calibrated in 2006, but did not have a copy of the calibration report to submit.	8.1	<1%	9.2	<1%	4.3	<1%	None
Pasadera Country Club, LLC	No, but pump tests were recently performed on both of the well pumps	150.9	3%	214.8	4%	141.4	3%	Meter readings indicate that both meters are operating (i.e. not stuck) and are producing results that closely correspond to the separate flowmeter used to conduct the pump tests.
York School	No. Meter was installed over 5 years ago and not calibrated since it was installed.	29.5	1%	24.0	<1%	22.0	<1%	None
Monterey County Parks Department	No. One Meter is new, but not calibrated subsequent to installation; the other meter has not been calibrated.	37.8	1%	33.2	1%	33.2	1%	None
Total Basin Pumping Production, AFY		5020.1		5384.6		5272		

TABLE 2 – RECOMMENDATIONS REGARDING EACH ACTIVE PRODUCTION WELL

WELL OWNER/ OPERATOR	RECOMENDED FOR PUMP TESTING TO CONFIRM METER ACCURACY?
Laguna Seca Resorts	No. Although production is significant enough to warrant periodically checking metered flows against predicted flows from pump testing to confirm that meter is working properly and producing reasonably accurate readings, pump tests were performed on all of these wells within the past 3 years. All of these tests showed good agreement between the installed meter readings and the independent (clamp-on) meter readings obtained during the conduct of the pump tests. Therefore, these meters do not appear to warrant being tested again at this time.
California American Water-Coastal Subareas	No. Although production is significant enough to warrant periodically checking metered flows against predicted flows from pump testing to confirm that meter is working properly and producing reasonably accurate readings, pump tests were performed on all of these wells within the past 3 to 5 years. All of these tests showed good agreement between the installed meter readings and the independent (clamp-on) meter readings obtained during the conduct of the pump tests. The differences between the installed meter and the clamp-on meter values ranged from 0% to 22%, with all but one of the differences being less than 15%. The test report for the one well having the 22% difference stated that "the test results may be impaired due to poor hydraulic test section." Since all but one of the wells had good agreement (a difference of less than 15%) between the installed meter readings and the independent (clamp-on) meter readings obtained during the conduct of the pump tests, and since the one outlier was for a meter with a hydraulic configuration that would not lend itself to field accuracy verification, these meters do not appear to warrant being tested again at this time.
California American Water-Inland Subareas	
City of Sand City	No. The very small production from the Public Works Well does not warrant the time, effort, and expense of checking metered flows against predicted flows from pump testing to confirm that meter is working properly and producing reasonably accurate readings.
City of Seaside-Golf Courses	No. All of these meters were calibrated within the past 3 years. All of these tests showed good agreement between the installed meter readings and the independent (clamp-on) meter readings obtained during the calibration process. Therefore, these meters do not appear to warrant being tested again at this time.
City of Seaside-Municipal	No. All of these meters were calibrated within the past 3 years. All of these tests showed good agreement between the installed meter readings and the independent (clamp-on) meter readings obtained during the calibration process. Therefore, these meters do not appear to warrant being tested again at this time.
Mission Memorial Park	No. The very small production from this well does not warrant the time, effort, and expense of checking metered flows against predicted flows from pump testing to confirm that meter is working properly and producing reasonably accurate readings.
Security National Guaranty Inc	No. The very small production from this well does not warrant the time, effort, and expense of checking metered flows against predicted flows from pump testing to confirm that meter is working properly and producing reasonably accurate readings.
Pasadera Country Club, LLC	No. Although production is significant enough to warrant periodically checking metered flows against predicted flows from pump testing to confirm that meter is working properly and producing reasonably accurate readings, pump tests were performed on all of these wells within the past 3 years. The most recent tests showed good agreement between the installed meter readings and the independent (clamp-on) meter readings obtained during the conduct of the pump tests. Therefore, these meters do not appear to warrant being tested again at this time.
York School	No. The very small production from this well does not warrant the time, effort, and expense of checking metered flows against predicted flows from pump testing to confirm that meter is working properly and producing reasonably accurate readings.
Monterey County Parks Department	No. One of the two meters is new and can be assumed to have been factory calibrated before it was installed. The other meter has been installed for an unreported period of time. The very small production from these two wells does not warrant the time, effort, and expense of checking metered flows against predicted flows from pump testing to confirm that meter is working properly and producing reasonably accurate readings.

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

***** AGENDA TRANSMITTAL FORM *****

MEETING DATE:	September 23, 2009
AGENDA ITEM:	3
AGENDA TITLE:	Summary Report on Updating the Groundwater Model
PREPARED BY:	Robert Jaques, Technical Program Manager
SUMMARY: HydroMetrics will make a presentation at today's meeting summarizing their work to date on updating the Seaside Basin Groundwater Model. By separate email HydroMetrics will email all TAC members a report on the topics to be covered in their presentation at today's TAC meeting. That email is scheduled to be sent to all TAC members not later than Friday, September 18, 2009.	
ATTACHMENTS:	None (separate email to come from HydroMetrics providing the background materials for this Agenda item)
RECOMMENDED ACTION:	Provide comments and questions to HydroMetrics to assist them in completing and finalizing this work

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

*** * * AGENDA TRANSMITTAL FORM * * ***

MEETING DATE:	September 23, 2009
AGENDA ITEM:	4
AGENDA TITLE:	Report on Protective Water Levels for the Basin
PREPARED BY:	Robert Jaques, Technical Program Manager
<p>SUMMARY: HydroMetrics will make a presentation at today's meeting summarizing their work to date on developing protective groundwater levels within the Seaside Basin. Their report will also contain recommendations on this matter.</p> <p>By separate email HydroMetrics will email all TAC members a report on the topics to be covered in their presentation at today's TAC meeting. That email is scheduled to be sent to all TAC members not later than Friday, September 18, 2009.</p>	
ATTACHMENTS:	None (separate email to come from HydroMetrics providing the background materials for this Agenda item)
RECOMMENDED ACTION:	Provide comments and questions to HydroMetrics to assist them in completing and finalizing this work

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

***** AGENDA TRANSMITTAL FORM *****

MEETING DATE:	September 23, 2009
AGENDA ITEM:	5
AGENDA TITLE:	Proposed Replenishment Assessment Unit Costs for Water Year October 1, 2009-September 30, 2010
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

Background

For the benefit of newer TAC members who may not be familiar with this topic, Attachment 1 contains a background paper describing Replenishment Assessment issues. Attachment 2(Table 1) is the Unit Cost calculation spreadsheet that was prepared last year (for Water Year October 1, 2008-September 30, 2009).

Last year the TAC revised some of the steps involved in preparing the annual calculation of the Unit Cost of replenishment water. This Unit Cost is used to calculate the Replenishment Assessments that are charged to any Standard Producer that exceeds its allocation during the Water Year.

The changes which the TAC made, and which were approved by the Board, were:

1. All potential supplemental water supply projects that could bring water to the Seaside Basin any time within the next 10 years will be included in the calculations, assuming sufficient information on those projects can be obtained.
2. Costs for each project will be inflated to the first year in which it could potentially begin supplying water, to reflect the increase in costs that will be occurring before the projects actually come on-line.
3. Contingency allowances will be included in these costs based on the level of project development for each project. This allowance is intended to provide for unforeseen cost impacts to the projects, particularly for projects that are only at the conceptual level of development.

Discussion

With the preparation of the draft section of the Basin Management Action Plan (BMAP) in mid-2008 titled "Supplemental Water Supplies" we were provided detailed information on all potential projects that we could consider in making this year's calculation of the Unit Cost. However, the TAC subsequently decided to remove cost data from the BMAP, since updated and more refined cost data was expected to be prepared by others in conjunction with preparing the Draft Environmental Impact Report (DEIR) for the California American Water (CAW) Coastal Water Project (CWP). The cost data that was developed by RMC Engineers for the Public Utility Commission's (PUC) use in evaluating the CWP was only developed for some of the potential projects, not all of them. Hence, the development of the proposed Replenishment Assessment Unit Cost for Water Year 2009-2010 was based partly on data from the Draft BMAP and partly on data from RMC Engineers.

One of the projects evaluated in the CWP DEIR is referred to simply as the "Regional Project." It consists of a number of components, some of which were proposed for implementation in the near future, referred to as the "Phase 1" project components. Other projects that were proposed for future implementation,

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

***** AGENDA TRANSMITTAL FORM *****

AGENDA ITEM:

5 (Continued)

presumably after the Phase 1 projects had been implemented, were referred to as the “Phase 2” project components.

With all of the projects included in Phase 1 of the Regional Project, and the costs, institutional issues, permits, approvals, and funding that will be necessary to implement those projects, it seems unlikely that few if any of the Phase 2 projects will be implemented within the 10 year planning horizon the Watermaster uses to determine whether or not to include a project in its unit cost calculation for the Replenishment Assessment. However, because of the Board’s apparent interest in at least some of the Phase 2 projects, they have been included in the Replenishment Assessment Unit Cost calculation.

Each of the projects that were considered in preparing last year’s Unit Cost calculations are discussed in Attachment 3. Some of the other projects discussed in Attachment 3 were not included in the Unit Cost calculations for the coming year, for the reasons stated in that attachment.

Attachment 4 (Table 2) contains cost data from RMC Engineers for each of the principle water supply projects evaluated in the CWP DEIR.

Attachment 5 (Table 3) is the proposed Unit Cost calculation spreadsheet for the upcoming Water Year October 1, 2009-September 30, 2010. The Unit Cost used for the Water Year that is just ending was \$3,040. The proposed new Unit Cost is \$4,074, which is obviously considerably higher. This higher cost results primarily from using the more complete and comprehensive cost estimates now available from RMC Engineers for the larger of the projects being planned to provide supplemental water. Since these are the larger projects, their costs have a great impact on the Unit Cost, which is calculated using a volume-weighted approach. Most of the other cost data is the same, or close to, the cost data used to prepare last year’s Unit Cost.

Once the TAC has discussed these documents and we have edited the Proposed Unit Cost for Water Year 2009-2010 Replenishment Assessments to meet the satisfaction of the TAC, I will present the Proposed Unit Cost for Water Year 2009-2010 Replenishment Assessments to the Board for their approval at their October 7, 2009 meeting.

ATTACHMENTS:

1. Paper discussing the Replenishment Assessment, its purpose and intent under the Court Order
2. Table 1: Replenishment Assessment Unit Cost Development Spreadsheet from Water Year 2008-2009
3. Status of and Comments Regarding the Projects Included in the Water Year 2008-2009 Replenishment Assessment Unit Cost Calculations
4. Table 2: Summary of Costs of the Principal Supplemental Water Supply Projects
5. Table 3: Proposed Replenishment Assessment Unit Costs for Water Year October 1, 2009-September 30, 2010

RECOMMENDED ACTION:

Approve the Proposed Replenishment Assessment Unit Costs for Water Year October 1, 2009-September 30, 2010, either as-presented in Table 3, or with revisions

Replenishment Assessments

What is the Replenishment Assessment?

The Amended Decision filed with the Court February 9, 2007 contains the following statements and/or requirements pertaining to the Replenishment Assessment on pages 32 and 33:

Each Water Year, the Watermaster will determine a Replenishment Assessment for Artificial Replenishment of the Seaside Basin necessary to offset the cumulative Basin Over-Production (as defined in Section III.A. 21), and levy a Replenishment Assessment. Replenishment Assessments based on Over-Production and on Operating Yield Over-Production shall be assessed within 60 days of the end of each Water Year on a per acre-foot basis on each acre-foot, or portion of an acre-foot, of Over-Production, and payment shall be due no later than January 15th of the following year. The per acre-foot amount of the Replenishment Assessments shall be determined and declared by Watermaster in October of each Water Year in order to provide Parties with advance knowledge of the cost of Over-Production in that Water Year.

Section III.A.21 of the Order defines Over-Production to mean, with regard to all Production from the Seaside Basin, "...that quantity of Production which exceeds an initially assumed Natural Safe Yield of 3,000 AFY." With regard to each Producer, Over-Production means "...that quantity of Water Produced in any Water Year in excess of that Producer's Baser Water Right, as applied to an assumed Natural Safe Yield of 3,000 AFY."

Replenishment Assessments are collected from Standard Producers (and Alternative Producers but only if they exceed their allocations) in proportion to the amount that they have cumulatively pumped in excess of their allocation of the Basin Natural Safe Yield of 3,000 AFY. If a Standard Producer has not pumped in excess of their allocation, then they are not charged a Replenishment Assessment.

The actual calculation of the Assessments gets complex and will therefore not be discussed or explained in this paper. The purpose of this paper is to describe the Replenishment Assessments and what the monies collected through these Assessments is intended to be used for.

What Are the Monies Collected Through the Replenishment Assessments to be Used for?

On Page 34 of the Order it states that "...All proceeds of Replenishment Assessments shall be used to procure Non-Native water, including, if appropriate, substitute reclaimed water."

Although there is some variation in language between several sections of the Order, it is clear that the monies collected through the Replenishment Assessments are intended to be used to obtain water to recharge the Basin to the extent necessary to reduce the net water production taken from the Basin to a level at or below the Natural Safe Yield of 3,000 AFY. The recharge water could be such things as water imported from another water supply outside the Basin, recycled water used to reduce pumping for landscape irrigation, or recycled water used for recharge through direct injection or spreading.

How is the Per Acre-Foot Cost of the Replenishment Assessments to be Determined?

Per page 33 of the Order, "*The per acre-foot amount of the Replenishment Assessments shall be determined and declared by Watermaster in October of each Water Year in order to provide Parties with advance knowledge of the cost of Over-Production in that Water Year.*" Thus, the per acre-foot amount declared by the Board in October of each year will be used to calculate Replenishment Assessments for pumping that occurs during the Water Year which begins on October 1 of that year and ends on September 30 of the following year.

On pages 9 and 10 (Section 6.5) of the Watermaster Rules and Regulations, there is a discussion of how the Replenishment Assessment per acre-foot costs are to be calculated. It states that *“The per acre-foot cost of Replenishment Assessments for Production in excess of Natural Safe Yield shall be based on the anticipated cost of Artificial Replenishment, including the cost to construct, operate, and maintain facilities necessary for replenishment of the Basin. Replenishment Assessment may only be used for Artificial Replenishment.”* The Order defines Artificial Replenishment to mean the act of engaging in or contracting for Non-Native Water to be added to the Groundwater Basin through spreading or direct injection to offset the cumulative Over-Production from the Basin in any particular Water Year. It can also include programs in which Producers agree to refrain from exercising their rights to pump their full Production Allocations where the intent is to cause the replenishment of the Basin through forbearance in lieu of the injection or spreading of Non-Native Water.

So the per acre-foot cost used to determine the Replenishment Assessments should be the cost that would have to be paid, per acre-foot, to obtain water to recharge the Basin to the extent necessary to offset the cumulative over-production above the Natural Safe Yield, during a given Water Year.

From work done to date in calculating the per acre-foot cost, it is apparent that there are ongoing changes in projected costs of recharge water and in the timing of the projects which will provide that water. Hence, the per acre-foot cost needs to be recalculated each year using updated cost projections and implementation schedules for these recharge projects.

If recharge water is not available to be purchased in a given Water Year to offset the cumulative over-production that occurred in that year, then the monies collected through the Replenishment Assessments in that Water Year may be accumulated for multiple Water Years until they can be used to purchase recharge water.

It is to be expected that the costs of the recharge projects will increase with inflation, among other things. Therefore, the unspent Replenishment Assessment monies should be invested in interest-earning accounts that will offset these inflation increases, until such time as the recharge projects come on-line and the needed water can then be purchased.

As long as the unit costs of water from the various potential recharge projects is forecast by the agencies sponsoring the recharge projects to the dates at which the projects will come on-line, there should be no need to inflate those unit costs when the per acre-foot cost used to determine the Replenishment Assessments is calculated. However, if the costs have not been inflated to the year the project will come on-line, then inflation should be included in the calculations.

**Table 1. Replenishment Assessment Unit Cost Development Spreadsheet from Water Year 2008-2009
WATER YEAR 2008-2009**

ANTICIPATED UNIT COSTS OF REPLENISHMENT WATER FOR THE SEASIDE BASIN ⁽⁹⁾

POTENTIAL SOURCE OF REPLACEMENT WATER	POTENTIAL DATE REPLACEMENT WATER COULD BECOME AVAILABLE	POTENTIAL VOLUME OF WATER THAT COULD BE SUPPLIED BY THE PROJECT (AFY)	LEVEL OF PROJECT DEVELOPMENT	CONTINGENCY INCLUDED IN BASE UNIT COST ⁽¹¹⁾ (%)	BASE UNIT COST (\$/AF)	BASE UNIT COST YEAR	ADDITIONAL CONTINGENCY ADDED TO REFLECT LEVEL OF PROJECT DEVELOPMENT ⁽¹⁰⁾ (%)	UNIT COST INCLUDING ADDITIONAL CONTINGENCY (\$/AF)	UNIT COST INFLATED @ 3% FROM COST BASIS YEAR TO YEAR REPLACEMENT WATER COULD BECOME AVAILABLE	VOLUME-WEIGHTED AVG %	REPLENISHMENT UNIT COST SHARE
Moss Landing Desalination Plant – Local Alternative	2015	10,430	Conceptual	25%	\$2,230	2007	25%	\$2,788	\$3,531	10.87%	\$383.91
Moss Landing Desalination Plant – Regional Alternative	2015	18,972	Conceptual	25%	\$1,690	2007	25%	\$2,113	\$2,676	19.78%	\$529.22
North Marina Desalination Plant – Local Alternative (brine disposal at MLPP) ⁽¹⁾	2015	10,430	Conceptual	10%	\$1,980	2005	40%	\$2,772	\$3,725	10.87%	\$405.02
North Marina Desalination Plant – Regional Alternative (brine disposal at MLPP) ⁽¹⁾	2015	18,972	Conceptual	10%	\$1,660	2005	40%	\$2,324	\$3,123	19.78%	\$617.66
MPWMD's 95-10 Desal Plant	2015	8,400	Conceptual	25%	\$2,920	2007	25%	\$3,650	\$4,624	8.76%	\$404.85
Sand City Water Supply Project ⁽²⁾	2009	300	Design	0%	\$3,600	2007	15%	\$4,140	\$4,392	0.31%	\$13.73
Salinas River Surface Water Treatment Plant ⁽⁶⁾	2012	7,500	Conceptual	30%	\$1,500	2008	20%	\$1,800	\$2,026	7.82%	\$158.38
Regional Desalination ⁽⁷⁾	2015	9,930	Conceptual	30%	\$1,791	2008	20%	\$2,149	\$2,643	10.35%	\$273.60
Regional Urban Water Augmentation Project	2011	3,000	Conceptual	5%	\$1,200	2006	45%	\$1,740	\$2,017	3.13%	\$63.08
Seaside Aquifer Storage and Recovery Project	2008	1,300	Design	25%	\$260	2005	-10%	\$234	\$256	1.36%	\$3.46
MRWPCA Groundwater Replenishment Project for the Seaside Basin	2012	6,700	Conceptual	30%	\$1,865	2006	20%	\$2,238	\$2,672	6.98%	\$186.63
Seawater Conversion Vessel ⁽⁵⁾	2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pacific Grove Stormwater Project ⁽³⁾	2010	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conservation ⁽⁴⁾	2009	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Total Quantity of Replacement Water (AFY) Expected to Potentially be Available Within the Next 10 Years = 95,934

Volume-Weighted Replacement Water Cost Per Acre-Foot = \$3,040

FOOTNOTES:

- (1) Contingency percentage included in Base Unit Cost was not stated. Assume 10%.
- (2) Contingency percentage included in Base Unit Cost was not stated. Assume 0%.
- (3) This Project was not included because the costs were not known. A feasibility study for the Pacific Grove Stormwater Project was just recently completed, and it is unknown whether preliminary costs were developed.
- (4) This Project was not included because the costs were not known. The cost for conservation will be realized through rebates and are unknown at this time.
- (5) This Project was not included because there is no apparent project sponsor for it.
- (6) Project has a proposed range of supply of 5,000 to 10,000 AFY. For this analysis assume 7,500 AFY.
- (7) Project has a proposed range of supply of 7,430 to 12,430 AFY. For this analysis assume 9,930 AFY.
- (8) Project has a proposed range of supply of 5,000 to 10,000 AFY. For this analysis assumed 7,500 AFY.
- (9) The data used in this table was taken from the Basin Management Action Plan, Section 3, titled "Supplemental Water Supplies."
- (10) The following Contingency percentages were considered reasonable for the indicated levels of project development: Conceptual Level - 50%, Project Report Level - 30%, and Design Level - 15%.
- (11) This percentage of Contingency was included in the Base Unit Cost.

Status of and Comments Regarding the Projects Considered in the Water Year 2008-2009 Replenishment Assessment Unit Cost Calculations

1. Moss Landing Desalination Plant – Local Alternative: This is the only Moss Landing Desalination Plant alternative being considered in the CWP DEIR. It would produce 8,800 AFY, and all of this would be supplied to the CAW distribution system. It should be included in the Replenishment Assessment Unit Cost calculations.
2. Moss Landing Desalination Plant – Regional Alternative: This alternative is not being considered in the CWP DEIR, and should therefore not be included in the Replenishment Assessment Unit Cost calculations.
3. North Marina Desalination Plant – Local Alternative: This is one of the alternative projects to the CAW Moss Landing Desalination Plant. It would be similar to the Moss Landing Desalination Plant alternative, but the desalination plant would be located in north Marina. It would produce 9,600 AFY, with 8,800 AFY going to the CAW distribution system and 800 AFY going to the Castroville Seawater Intrusion Project (CSIP) to offset groundwater taken from the Salinas Basin by the desalination plant. It should be included in the Replenishment Assessment Unit Cost calculations.
4. North Marina Desalination Plant – Regional Alternative: This alternative is not being considered in the CWP DEIR, and should therefore not be included in the Replenishment Assessment Unit Cost calculations.
5. MPWMD's 95-10 Desal Plant: This alternative is not being considered in the CWP DEIR. However, it is still considered an active project by the MPWMD, and therefore should continue to be included in the Replenishment Assessment Unit Cost calculations.
6. Sand City Water Supply Project: This project has been completed and is now in operation. However, all of its water production will be used by CAW to reduce the amount of water CAW takes from the Carmel River Basin, and thus it will not benefit the Seaside Basin. Therefore, this project should not be included in the Replenishment Assessment Unit Cost calculations.
7. Salinas River Surface Water Treatment Plant: This project is considered to be a Phase 1 component of what is now referred to simply as the "Regional Project" in the CWP DEIR. However, it may have been dropped from consideration as part of that project, and the size of the desalination plant may have been increased to offset this, due to difficulties encountered in gaining acceptance of using Salinas River water as part of the solution to the CAW water supply objectives. Unless it is learned that this is no longer a viable component of the Regional Project, it should continue to be included in the Replenishment Assessment Unit Cost calculations.
8. Regional Desalination: This project is the key Phase 1 component of what is now referred to simply as the "Regional Project" in the CWP DEIR. It would produce 10,500 AFY, with 8,800 AFY going to the CAW distribution system and 1,700 AFY to MCWD to offset groundwater taken from the Salinas Basin by the desalination plant. Therefore, this project should continue to be included in the Replenishment Assessment Unit Cost calculations.
9. Regional Urban Water Augmentation Project: This project is considered to be a Phase 1 component of what is now referred to simply as the "Regional Project" in the CWP DEIR. The RUWAP is being pursued by MCWD and MRWPCA. Since it is an element of the Regional Project, it should continue to be included in the Replenishment Assessment Unit Cost calculations.
10. Seaside Aquifer Storage and Recovery Project: This project is considered to be a Phase 1 component of what is now referred to simply as the "Regional Project" in the CWP DEIR. The Seaside ASR Project is being pursued by MPWMD. When the October 2007 Replenishment Assessment Unit Cost was calculated the TAC concluded that, since all of the water production of this project will be used by CAW to reduce the amount of water CAW takes from the Carmel River Basin and thus it will not benefit the Seaside Basin, it should not be included in the calculation of the Seaside Basin Replenishment Assessment Unit Cost, and it was not included in the 2007 calculation. When the October 2008 Unit Cost calculation was prepared, this project was included in the calculation. I could find no record in the TAC meeting minutes to explain why this project was included in 2008 when it had not been included in 2007. It is my conclusion that including it in the 2008 calculation was an

oversight, and that it should not be included in the Replenishment Assessment Unit Cost calculations, even though it is an element of the Regional Project.

11. MRWPCA Groundwater Replenishment Project for the Seaside Basin: Based on information provided by MRWPCA during the development of the Seaside Basin Groundwater Model in the Spring of 2009, the GWRP would be initially sized to provide 2,800 AFY to the Seaside Basin, and could potentially start-up in 2015. This estimated start-up date was based in part on the expectation that the GWRP would eventually be included as a Phase 1 component of the Regional Project. However, the CWP DEIR currently lists the GWRP as a Phase 2 component of the Regional Project, and no time schedule for implementation of Phase 2 project components was presented in the CWP DEIR. Since it is a component of the Regional Project, albeit a Phase 2 component, it should continue to be included in the Replenishment Assessment Unit Cost calculations.
12. Seawater Conversion Vessel: This project was listed, but not included, in the Replenishment Assessment Unit Cost Calculation for Water Year 2008-2009, because there did not appear to be any sponsor for it. This appears to still be the case, so this project should not be included in the Replenishment Assessment Unit Cost calculations.
13. Pacific Grove Stormwater Project: This Project is listed in the CWP DEIR as a Phase 2 component of the Regional Project. No time schedule for implementation of Phase 2 project components was presented in the CWP DEIR. A feasibility study has reportedly been completed indicating that the City of Pacific Grove should pursue this project, which could produce an estimated 200 AFY of water. The estimated capital cost of the project, including engineering and construction, is reportedly \$13.2 million in 2008 dollars. No O&M cost estimate and no contingency percentage was provided. Using the same financing assumptions as were used for the Regional Project in Table 2, the Annualized Capital Cost of such a project, with no additional contingencies or other implementation costs added, would be approximately \$868,500. With a 200 AFY production capacity, this results in a unit cost of approximately \$4,340. Since it is a component of the Regional Project, albeit a Phase 2 component, it should continue to be included in the Replenishment Assessment Unit Cost calculations.
14. Conservation: Conservation was listed, but not included in the Replenishment Assessment Unit Cost Calculation for Water Year 2008-2009, because there was no cost data for it. This appears to still be the case, so this project should not be included in the Replenishment Assessment Unit Cost calculations.

Table 2. Summary of Costs of the Principal Supplemental Water Supply Projects

Project Cost Comparison

	Regional Project (RP)	CAW - North Marina Alternative (NMA)	CAW - Moss Landing (ML)	CAW Facilities (Seaside Pipeline, Terminal Res. 2 ASR Wells, 9 mgd ASR pump station, Monterey Pipeline, Valley Greens PS)	MRWPCA GWRP ⁽¹⁰⁾
Capital Costs					
Base Construction Cost	\$ 108,700,000	\$ 118,380,000	\$ 138,100,000	\$ 42,500,000	\$ 44,700,000
Most Probable Capital Cost with Contingency and other Implementation Costs	\$ 177,400,000	\$ 200,000,000	\$ 211,550,000	\$ 73,200,000	\$ 77,550,000
Annual Costs					
Total Annual O&M Including Repair, Replacement, Power, Chemicals, and Other O&M Cost Components	\$ 12,080,000	\$ 11,380,000	\$ 10,950,000	\$ 560,000	\$ 4,450,000
Annualized Costs					
Total Annualized Cost	\$ 24,080,000	\$ 30,080,000	\$ 30,750,000	\$ 5,350,000	\$ 9,650,000
Production Quantities & Unit Costs of Water					
Annual Production to Customers, AFY	10,500	8,800	8,800	8,800	2,400
Production Breakdown	8,800 to CAW 1,700 to MCWD	8,800 to CAW 800 to CSIP	8,800 to CAW	8,800 to CAW	2,400 to Seaside Basin
Cost of Water (\$/AF)	\$ 2,290	\$ 3,420	\$ 3,490	\$ 610	\$ 4,020
Cost of Water (\$/AF)					
Total Cost of Water Adjustments	\$ 350	\$ (30)	\$ -	\$ -	\$ -
Cost of Water to the Seaside Basin (includes CAW's costs for CAW facilities which are needed to deliver water from the alternative projects to the CAW distribution system, and which are common to all of the Alternatives, except the GWRP which does not require the CAW facilities)	\$ 3,250	\$ 4,000	\$ 4,100	\$ 610	\$ 4,020

Notes:

1. Cost estimates are in current, 2009 dollars.
2. Contingency not applied to O&M estimates.
3. Power costs at time of startup dependent on long-term contract rate with MRWMD or potential contract rate with PGE or current PGE rates that time.
4. Regional, NM and ML desal plants assumed to operate at same efficiency and pressures.
5. O&M costs are based on the RP producing 10,500 AFY, NMA producing 9,600 AFY, and ML producing 8,800 AFY.
6. Ground water unit cost for the MCWD (\$500/AF) is based on their current groundwater supplies.
7. \$300/AF for CSIP supplies is based on approximate cost for MRWPCA to produce recycled water to CSIP.
8. Membrane replacement is based on a 15 year cycled (replacing approximately 15% a year).
9. \$500,000 groundwater monitoring program is a conservative placeholder until the details of the program are identified.
10. MRWPCA's Groundwater Replenishment Project (GWRP) costs taken from Project Cost Comparison prepared by RMC dated August 11, 2009 as part of RMC's work in preparing their "Draft Technical Memorandum Capital and O&M Cost Estimated Update for the Coastal Water project, August 10, 2009" which was presented to the PUC in conjunction with cost workshops.

Table 3. Proposed Replenishment Assessment Unit Costs for Water Year October 1, 2009-September 30, 2010

WATER YEAR 2009-2010

ANTICIPATED UNIT COSTS OF REPLISHMENT WATER FOR THE SEASIDE BASIN

POTENTIAL SOURCE OF REPLACEMENT WATER	POTENTIAL DATE REPLACEMENT WATER COULD BECOME AVAILABLE	POTENTIAL VOLUME OF WATER THAT COULD BE SUPPLIED BY THE PROJECT (AFY) ⁽¹⁰⁾	LEVEL OF PROJECT DEVELOPMENT	CONTINGENCY INCLUDED IN BASE UNIT COST ⁽⁹⁾ (%)	BASE UNIT COST (\$/AF)	BASE UNIT COST YEAR	ADDITIONAL CONTINGENCY ADDED TO REFLECT LEVEL OF PROJECT DEVELOPMENT ⁽⁸⁾ (%)	UNIT COST INCLUDING ADDITIONAL CONTINGENCY (\$/AF)	UNIT COST INFLATED @ 3% FROM COST BASIS YEAR TO YEAR REPLACEMENT WATER COULD BECOME AVAILABLE	VOLUME-WEIGHTED AVG %	REPLISHMENT UNIT COST SHARE
CAW Moss Landing Desalination Plant ⁽⁷⁾	2015	8,800	Project Report	25%	\$4,100	2009	5%	\$4,305	\$5,140	18.22%	\$936.55
CAW North Marina Desalination Plant ⁽⁷⁾	2015	8,800	Project Report	25%	\$4,000	2009	5%	\$4,200	\$5,015	18.22%	\$913.71
MPWMD's 95-10 Desal Plant ⁽²⁾	2015	8,400	Conceptual	25%	\$2,920	2007	25%	\$3,650	\$4,624	17.39%	\$804.12
Salinas River Surface Water Treatment Plant ⁽⁵⁾	2012	7,500	Conceptual	30%	\$1,500	2008	20%	\$1,800	\$2,026	15.53%	\$314.58
Regional Desalination ⁽⁷⁾	2012	8,800	Project Report	25%	\$3,250	2009	5%	\$3,413	\$3,729	18.22%	\$679.39
Regional Urban Water Augmentation Project ⁽⁴⁾	2011	3,000	Design	5%	\$1,200	2006	10%	\$1,320	\$1,530	6.21%	\$95.05
MRWPCA Groundwater Replenishment Project for the Seaside Basin ⁽¹⁾	2012	2,800	Conceptual	30%	\$4,020	2009	20%	\$4,824	\$5,271	5.80%	\$305.58
Pacific Grove Stormwater Project ⁽³⁾	2011	200	Conceptual	25%	\$4,340	2,008	25%	\$5,425	\$5,928	0.41%	\$24.55

Total Quantity of Replacement Water (AFY) That the Listed Projects Could Cumulatively be Expected to Produce Within the Next 10 Years ⁽⁶⁾ =

48,300

Volume-Weighted Replacement Water Cost Per Acre-Foot = \$4,074

FOOTNOTES:

- (1) Amount of water this Project could initially supply was reduced to 2,800 AFY by MRWPCA as reported to the TAC in the Spring of 2009. The on-line date for this project was provided by MRWPCA. Cost data was taken from project cost documents prepared for the PUC by RMC Engineers.
- (2) Data provided by MPWMD.
- (3) Contingency percentage included in Base Unit Cost was not stated. Assume 25%. Project has not advanced since the 2008 Unit Cost calculation was prepared, so assume its on-line date has slipped one year to 2011.
- (4) Data provided by MCWD.
- (5) Data provided by MCWRA. Project has a proposed range of supply of 5,000 to 10,000 AFY. For this analysis assume 7,500 AFY.
- (6) This value is the cumulative production capacity of all of the Potential Sources of Replacement Water that were evaluated, and is used only to determine the "Valued-Weighted Average." It is not the amount of water that is expected to be available to the Seaside Basin
- (7) Information and parameters for the project were taken from the CWP DEIR and supporting project cost documents prepared for the PUC by RMC Engineers.
- (8) The following Contingency percentages were considered reasonable for the indicated levels of project development: Conceptual Level - 50%, Project Report Level - 30%, and Design Level - 15%. The sum of the values in the columns titled "Contingency Included in Base Unit Cost" and "Additional Contingency Added to Reflect Level of Project Development" equals the Contingency appropriate for the project's level of development.
- (9) This percentage of Contingency was included in the Base Unit Cost.
- (10) This is the total amount of water from each production source which could potentially come to the CAW distribution system, not just the amount of production committed to the Seaside Basin.

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

***** AGENDA TRANSMITTAL FORM *****

MEETING DATE:	September 23, 2009
AGENDA ITEM:	6
AGENDA TITLE:	Proposed Monitoring and Management Program Scope of Work and Budgets for 2010 and 2011, and Proposed Capital Budgets for 2010 and 2011
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY: In September, 2007 the TAC went through the initial “Phase 2 Anticipated Scope of Work” that had been prepared and filed with the Court in March 2007 when the Implementation Plan was submitted to the Judge. The TAC produced and approved an “Updated Anticipated Phase 2 Scope of Work” which was approved by the Board, and was included in the Annual Report that was submitted to the Court in November, 2007. A similar process was followed in 2008.

I have reviewed the “Updated Anticipated Phase 2 Scope of Work” which was prepared in 2008, and have made some revisions to reflect work that has now been completed and new work that should now be undertaken. The “Anticipated 2010 Scope of Work” is attached.

Also attached are proposed Operations Budgets for 2010 and 2011. The 2010 Operations Budget corresponds to, and is intended to support, the activities described in the Anticipated 2010 Scope of Work. In the past the Board has requested that the TAC prepare two-year budgets, so the Board will have advance notice of any significant expected changes in budgets in the subsequent year. The 2011 Operations Budget is intended to provide the Board with that information. It is similar to the 2010 Operations Budget, with the following main differences:

- A 3% inflation factor has been added to all of the costs except for the Technical Program Manager cost which has been left unchanged.
- Costs associated with selecting a site for, and providing consultant assistance for the design of, an additional monitoring well have been included.
- Funds for performing additional Groundwater Model runs, and for updating the BMAP, have been reduced compared to the 2010 Budget on the assumption that most of that work will have been performed in 2010.

Also attached are proposed Capital Budgets for 2010 and 2011. The 2010 Capital Budget is zero, as no capital projects are expected to be undertaken in 2010. As with the Operations Budgets, the Board has also requested that the TAC prepare two-year Capital budgets. The 2011 Capital Budget includes funds for the possible construction of an additional monitoring well, in the event the Watermaster determines that a significant data gap exists in the existing monitoring well network, and thus an additional well is needed.

Once the TAC has discussed these documents and we have edited them to meet the satisfaction of the TAC, I will present them to the Board for their approval at their October 7, 2009 meeting.

ATTACHMENTS:	<ol style="list-style-type: none"> 1. M&MP Anticipated 2010 Scope of Work 2. 2010 Operations Budget 3. 2011 Operations Budget 4. 2010 Capital Budget 5. 2011 Capital Budget
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**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

***** AGENDA TRANSMITTAL FORM *****

AGENDA ITEM:	6 (Continued)
RECOMMENDED ACTION:	Approve: <ol style="list-style-type: none">1. The proposed M&MP 2010 Scope of Work2. The proposed FY 2010 and 2011 Operations Budgets3. The proposed FY 2010 and 2011 Capital Budgets

Seaside Groundwater Basin Management and Monitoring Program Anticipated 2010 Scope of Work

The tasks outlined below are those that are anticipated to be performed during 2010. Some Tasks listed below are specific to 2010, while others Tasks recur throughout the program, such as data collection and database entry, and Program Administration Tasks.

Within the context of this document the term “Consultant” refers either to a firm providing professional engineering or other types of technical services, or to the Monterey Peninsula Water Management District (MPWMD). The term “Contractor” refers to a firm providing construction or field services such as well drilling, induction logging, or meter calibration.

M.1 Program Administration

M. 1. a. Project Budget and Controls	Consultants will provide monthly or bimonthly invoices to the Watermaster for work performed under their contracts with the Watermaster. Consultants will perform maintenance of their internal budgets and schedules, and management of their subconsultants. The Watermaster will perform management of its Consultants.
M. 1. b. Assist with Board and TAC Agendas	Watermaster staff will prepare Board and TAC meeting agenda materials. No assistance from Consultants is expected to be necessary to accomplish this Task.
M. 1. c. Preparation and Attendance of Meetings	<p>The Consultants’ work will require internal meetings and possibly meetings with outside governmental agencies and the public. For meetings with outside agencies, other Consultants, or any other parties which are necessary for the conduct of the work of their contracts, the Consultants will set up the meetings and prepare agendas and meeting minutes to facilitate the meetings. These may include planning and review meetings with Watermaster staff. The costs for these meetings will be included in their contracts, under the specific Tasks and/or subtasks to which the meetings relate. The only meeting costs that will be incurred under Task M.1.c will be:</p> <p>Those associated with attendance at TAC meetings (either in person or by teleconference connection), and</p> <p>From time-to-time when Watermaster staff asks Consultants to make special presentations to the Watermaster Board and/or the TAC.</p> <p>Appropriate Consultant representatives will attend TAC meetings when requested to do so by Watermaster Staff (either in person or by teleconference connection), but will not be asked to prepare agendas or meeting minutes. As necessary, Consultants may provide oral updates to their progress reports (prepared under Task M.1.d) at the TAC meetings.</p>
M. 1. d. Prepare Board/ TAC Status Updates and Reports	Consultants will provide written monthly progress reports to the Watermaster for inclusion in the agenda packets for the TAC meetings. These progress reports will typically include project progress that has been made, problem identification and resolution, and planned upcoming work.
M. 1. e. Peer Review of Documents and Reports	When requested by the Watermaster staff, Consultants may be asked to assist the TAC and the Watermaster staff with peer reviews of documents and reports prepared by various other Watermaster Consultants and/or entities.
M. 1. f. QA/QC	A Consultant (MPWMD) will provide general QA/QC support over the Seaside Basin Monitoring and Management Program.

I. 2 Comprehensive Basin Production, Water Level and Water Quality Monitoring Program

I. 2. a. Database Management

I. 2. a. 1

Conduct Ongoing Data Entry and Database Maintenance/Enhancement

The database will be maintained by a Consultant performing this work for the Watermaster. Either one of the other Consultants or the Watermaster staff will enter new data into the consolidated database. Such data will include water production volumes, water quality and water level data, and such other data as may be appropriate. The database programming may periodically be enhanced at the direction of the Watermaster to improve the usefulness and “user friendliness” of the database.

I. 2. a. 2

Verify Accuracy of Production Well Meters

To ensure that water production data is accurate, the well meters of the major producers were verified for accuracy during 2009. No additional work of this type is anticipated during 2010.

I. 2. b. Data Collection Program

**I. 2. b. 1.
Site Representation and Selection.**

The monitoring well network review that was started in 2008 has been completed, and sites have been identified where future monitoring well(s) could be installed, if it is deemed necessary to do so in order to fill in data gaps. No further work of this type is anticipated in 2010.

**I. 2. b. 2.
Collect Monthly Manual Water Levels.**

Each of the monitoring wells will be visited on a monthly basis. Water levels will be determined by either taking manual water levels using an electric sounder, or by dataloggers.

**I. 2. b. 3.
Collect Quarterly Water Quality Samples.**

Water quality data will be collected quarterly from certain of the monitoring wells. This data may come from water quality samples that are taken from these wells and submitted to a State Certified analytic laboratory for general mineral and physical suite of analyses, or the data may come from induction logging of these wells and/or other data gathering techniques. The Consultant selected to perform this work will make this judgment based on consideration of costs and other factors.

**I. 2. b. 4.
Update Program Schedule and Standard Operating Procedures.**

The TAC, with assistance from Consultants, will conduct periodic reviews of the data collection program and will recommend to the Watermaster improvements as warranted.

**I. 2. b. 5.
Monitor Well Construction**

An additional monitoring well was installed in 2009. No further work of this type is anticipated in 2010.

**I. 2. b.6
Reports**

The groundwater level and quality monitoring will be conducted on a monthly, quarterly, and annual basis, as described in the Contractor’s Scope of Work. Reports summarizing data collected and analyzed will be submitted to the Watermaster on a schedule to be established during the year. Reports will include:

- Water Quality and Water Level Quarterly Reports
- An Annual Water Quality and Water Level Report

I. 3 Basin Management

**I. 3. a.
Enhanced Seaside Basin
Groundwater Model**

As a result of the data obtained during Phase 1, including constructing new coastal sentinel monitoring wells and developing a consolidated database of groundwater production, water levels, and water quality, it was concluded that at that time it was not necessary to develop a new Model. Preliminary conclusions from work performed on preparing the Basin Management Action Plan in 2008, along with comments and questions from Technical Advisory Committee and Board members, indicated that it was desirable to update the existing Model during 2009, so that it could be used as more data becomes available.

**I.3.a.1
Update the Existing
Model**

The existing Model, described in the report titled "Groundwater Flow and Transport Model" dated October 1, 2007, was updated in 2009 in order to develop protective water levels, and to evaluate replenishment scenarios and develop answers to Basin management questions (Tasks I.3.a.2 and I.3.a.3). This work was done by a Consultant hired by the Watermaster. No further work of this type is anticipated in 2010.

**I. 3. a. 2
Develop Protective Water
Levels**

A series of cross-sectional models was created in order to develop protective water levels for selected production wells, as well as for the Basin as a whole. This work was done in 2009 by a Consultant hired by the Watermaster (HydroMetrics), and is discussed in HydroMetrics' "Seaside Groundwater Basin Protective Water Elevations Technical Memorandum." No further work of this type is anticipated in 2010.

**I. 3. a. 3
Evaluate Replenishment
Scenarios and Develop
Answers to Basin
Management Questions**

The updated Model was used to evaluate different scenarios to determine such things as the most effective methods of using supplemental water sources to replenish the Basin and/or to assess the impacts of pumping redistribution. This work was done in 2009 by a Consultant hired by the Watermaster (HydroMetrics), and is described in HydroMetrics' "Seaside Groundwater Basin Groundwater Model Report." In 2010 if requested by the Watermaster, HydroMetrics may use the updated Model to develop answers to other questions associated with Basin management.

**I. 3. b.
Complete Preparation of
Basin Management Action
Plan**

The Watermaster's Consultant completed preparation of the Basin Management Action Plan (BMAP) in February 2009. The BMAP serves as the Watermaster's long-term seawater intrusion prevention plan. The Sections that are included in the BMAP are:

- Executive Summary
- Section 1 – Background and Purpose
- Section 2 – State of the Seaside Groundwater Basin
- Section 3 – Supplemental Water Supplies
- Section 4 –Groundwater Management Actions
- Section 5 – Recommended Management Strategies
- Section 6 – References

The only work which is anticipated to be performed on the BMAP in 2010 is discussed under Task I. 3. c.

**I. 3. c.
Refine and/or Update the
Basin Management Action
Plan**

During 2010 it may be beneficial to update the BMAP based on new data, and/or knowledge that is gained from the work described under Tasks I. 3. a. 2 and/or I. 3. a. 3. Such work might involve issues pertaining to Basin storage capacity, water storage rights, or pumping redistribution strategies. This task is included primarily for budgeting purposes in the event such work is deemed necessary.

I. 4 Seawater Intrusion Response Plan (formerly referred to as the Seawater Intrusion Contingency Plan)

I. 4. a. Oversight of Seawater Intrusion Detection and Tracking	A Consultant will provide general oversight over the Seawater Intrusion detection program.
I. 4. b. Analyze and Map Water Quality from Coastal Monitoring Wells	Annual chloride concentration maps will be produced incorporating the data from the coastal wells. Data from the Phase 1 coastal sentinel wells will be used to develop time series graphs.
I. 4. c. Annual Report- Seawater Intrusion Analysis	At the end of each water year, a Consultant will reanalyze all water quality data. Semi-annual chloride concentration maps will be produced for each aquifer in the basin. Time series graphs, trilinear graphs, and stiff diagram comparisons will be updated with new data. The annual EM logs will be analyzed to identify changes in seawater wedge locations. All analyses will be incorporated into an annual report that follows the format of the initial, historical data report. Potential seawater intrusion will be highlighted in the report, and if necessary, recommendations will be included. The annual report will be submitted for review by the TAC and the Board. Modifications to the report will be incorporated based on input from these bodies, as well as Watermaster staff.
I. 4. d Complete Preparation of Seawater Intrusion Response Plan	<p>The Watermaster's Consultant (HydroMetrics) completed preparation of the long-term Seawater Intrusion Response Plans (SIRP) in February 2009. The Sections that are included in the SIRP are:</p> <ul style="list-style-type: none">• Section 1 – Background and Purpose• Section 2 – Consistency with Other Documents• Section 3 – Seawater Intrusion Indicators and Triggers• Section 4 –Seawater Intrusion Contingency Actions• Section 5 - References <p>No further work on the SIRP is anticipated in 2010.</p>
I. 4. e. Refine and/or Update the Seawater Intrusion Response Plan	At the beginning of 2009 it was thought that it might be beneficial or necessary to perform work to refine the SIRP and/or to update it based on new data or knowledge that was gained subsequent to the preparation of the SIRP. However, this did not prove to be necessary, and no further work of this type is anticipated in 2010.
I. 4. f. If Seawater Intrusion is Determined to be Occurring, Implement Contingency Response Plan	The SIRP will be implemented if seawater intrusion, as defined in the Plan, is determined by the Watermaster to be occurring.

Monitoring and Management Plan Operations Budget For Tasks to be Undertaken in 2010							Comparative Costs from 2009 Budget		
Task	Subtask	Sub-Subtask	Cost Description	CONSULTANTS & CONTRACTORS ⁽⁶⁾			Total		
				MPWMD	MCWRA	Private Consultants			Contractors
Labor									
			Technical Project Manager	\$0	\$0	\$100,000	\$0	\$100,000	\$100,000
M.1 Program Administration									
	M.1.a		Project Budget and Controls	\$0	\$0	\$0	\$0	\$0	\$0
	M.1.b		Assist with Board and TAC Agendas	\$0	\$0	\$0	\$0	\$0	\$0
	M.1.c		Preparation and Attendance of Meetings ⁽⁸⁾	\$0	\$0	\$5,000	\$0	\$5,000	\$0
	M.1.d		Prepare Board/ TAC Status Updates and Reports	\$0	\$0	\$0	\$0	\$0	\$0
	M.1.e		Peer Review of Documents and Reports ⁽⁸⁾	\$0	\$0	\$3,000	\$0	\$3,000	\$0
	M.1.f		QA/QC	\$0	\$0	\$0	\$0	\$0	\$0
I.1 Initial Phase 1 Monitoring Well Construction (Task Completed in Phase 1)									
I.2 Production, Water Level and Quality Monitoring									
	I.2. a.		Database Management						
		I.2. a. 1.	Conduct Ongoing Data Entry/ Database Maintenance/Enhancement	\$9,600	\$0	\$28,000	\$0	\$37,600	\$30,520
		I.2. a. 2.	Verify Accuracy of Production Well Meters	\$0	\$0	\$0	\$0	\$0	\$4,550
	I.2. b.		Data Collection Program						
		I.2. b. 1.	Site Representation and Selection ⁽⁷⁾	\$0	\$0	\$0	\$0	\$0	\$3,600
		I.2. b. 2.	Collect Monthly Water Levels ⁽⁶⁾	\$3,360	\$0	\$0	\$0	\$3,360	\$3,360
		I.2. b. 3.	Collect Quarterly Water Quality Samples ⁽¹⁾⁽⁵⁾⁽⁶⁾	\$43,480	\$0	\$0	\$28,000	\$71,480	\$71,480
		I.2. b. 4.	Update Program Schedule and Standard Operating Procedures.	\$1,000	\$0	\$1,000	\$0	\$2,000	\$3,150
		I.2. b. 5.	Monitor Well Construction ⁽⁷⁾	\$0	\$0	\$0	\$0	\$0	\$7,400
		I.2. b. 6.	Reports	\$5,680	\$0	\$1,000		\$6,680	\$7,255
I.3 Basin Management									
	I.3. a.		Enhanced Seaside Basin Groundwater Model	(Costs Shown in Subtasks Below)					\$312,360
		I.3. a. 1.	Update the Existing Model	\$0	\$0	\$0	\$0	\$0	N/A
		I.3. a. 2.	Develop Protective Water Levels	\$0	\$0	\$0	\$0	\$0	N/A
		I.3. a. 3.	Evaluate Replenishment Scenarios and Develop Answers to Basin Management Questions	\$0	\$0	\$25,000	\$0	\$25,000	N/A
	I.3. b.		Complete Preparation of Basin Management Action Plan	\$0	\$0	\$0	\$0	\$0	\$45,040
	I.3. c.		Refine and/or Update the Basin Management Action Plan ⁽¹¹⁾	\$0	\$0	\$25,000	\$0	\$25,000	\$0
I.4 Seawater Intrusion Contingency Plan									
	I.4. a.		Oversight of Seawater Intrusion Detection and Tracking	\$3,600	\$0	\$2,000	\$0	\$5,600	\$9,050
	I.4. b.		Analyze and Map Water Quality from Coastal Monitoring Wells	(Costs Included Under I.4.a)					N/A
	I.4. c.		Annual Report- Seawater Intrusion Analysis	\$0	\$0	\$25,000	\$0	\$25,000	N/A
	I.4. d.		Complete Preparation of Seawater Intrusion Response Plan ⁽²⁾⁽⁸⁾	\$0	\$0	\$0	\$0	\$0	\$40,960
	I.4. e.		Refine and/or Update the Seawater Intrusion Response Plan ⁽²⁾⁽⁹⁾	\$0	\$0	\$0	\$0	\$0	\$0
	I.4. f.		If Seawater Intrusion is Determined to be Occurring, Implement Contingency Response Plan ⁽²⁾	(No Costs are Included for This Task, as This Task Will Likely Not be Necessary During 2010. If it Does Become Necessary, Use of Contingency Funds or a Budget Modification Will Likely be Necessary)					N/A
TOTALS CONSULTANTS & CONTRACTORS				\$66,720	\$0	\$215,000	\$28,000		
SUBTOTAL not including Technical Program Manager =							\$209,720	\$538,725	
Contingency (not including Technical Program Manager) @ 20% ⁽⁴⁾ =							\$41,944	\$45,273	
TPM							\$100,000	\$100,000	
TOTAL =							\$351,664	\$683,998	

Footnotes:

- (1) An outside contractor would be used to perform the induction logging, and potentially to also collect some water quality samples in conjunction with doing the induction logging. MPWMD is expected to perform portions of the work of this Subtask, and would likely be the party that contracts with the Contractor to perform the induction logging and sample collection work on certain of the wells.
- (2) The response plan would only be implemented in the event sea water intrusion is determined to be occurring.
- (3) Within the context of this document the term "Consultant" refers either to a Private Consultant providing professional engineering or other types of technical services, or to the Monterey Peninsula Water Management District (MPWMD). The term "Contractor" refers to a firm providing construction or field services such as well drilling, induction logging, or meter calibration.
- (4) Due to the uncertainties of the exact scopes of some of the Tasks listed above at the time of preparation of this Budget, e.g. Tasks I.2.a.1, I.3.a, and I.3.c, it is recommended that a 20% Contingency be included in the Budget.
- (5) Includes approximately \$10,000 in potential well site retrofitting costs that may be necessary in order to make some of these wells available for use as monitoring wells.
- (6) Does not include costs for MPWMD to collect water level data or water quality samples from wells other than those that are part of the basic monitoring well network, i.e. for private well owners who have requested that the Watermaster obtain this data for them. Costs to obtain that data are to be reimbursed to the Watermaster by those well owners, so there should be no net cost to the Watermaster for that portion of the work under these Tasks.
- (7) No new monitoring wells are planned for construction in 2010.
- (8) For HydroMetrics to provide hydrogeologic consulting assistance to the Watermaster, beyond that associated with performing other specified Tasks, when requested to do so by the Technical Program Manager.
- (9) If work under this Task is found to be necessary, it will be funded through the Contingency line item in this Budget.
- (10) Includes funds to enhance the Watermaster's Database, if necessary, to improve its usefulness and "user friendliness."
- (11) If necessary to reflect knowledge gained from modeling work or other data sources.

Monitoring and Management Plan Operations Budget For Tasks to be Undertaken in 2011 ⁽¹²⁾								
Task	Subtask	Sub-Subtask	Cost Description	CONSULTANTS & CONTRACTORS ⁽⁹⁾			Total	
				MPWMD	MCWRA	Private Consultants		Contractors
Labor								
			Technical Project Manager	\$0	\$0	\$100,000	\$0	\$100,000
M.1 Program Administration								
	M.1.a		Project Budget and Controls	\$0	\$0	\$0	\$0	\$0
	M.1.b		Assist with Board and TAC Agendas	\$0	\$0	\$0	\$0	\$0
	M.1.c		Preparation and Attendance of Meetings ⁽⁸⁾	\$0	\$0	\$5,150	\$0	\$5,150
	M.1.d		Prepare Board/TAC Status Updates and Reports	\$0	\$0	\$0	\$0	\$0
	M.1.e		Peer Review of Documents and Reports ⁽⁸⁾	\$0	\$0	\$3,090	\$0	\$3,090
	M.1.f		QA/QC	\$0	\$0	\$0	\$0	\$0
I.1 Initial Phase 1 Monitoring Well Construction (Task Completed in Phase 1)								
I.2 Production, Water Level and Quality Monitoring								
	I.2.a.		Database Management					
		I.2.a.1.	Conduct Ongoing Data Entry/ Database Maintenance/Enhancement	\$9,888	\$0	\$28,840	\$0	\$38,728
		I.2.a.2.	Verify Accuracy of Production Well Meters	\$0	\$0	\$0	\$0	\$0
	I.2.b.		Data Collection Program					
		I.2.b.1.	Site Representation and Selection ⁽⁷⁾	\$1,648	\$0	\$2,060	\$0	\$3,708
		I.2.b.2.	Collect Monthly Water Levels ⁽⁶⁾	\$3,461	\$0	\$0	\$0	\$3,461
		I.2.b.3.	Collect Quarterly Water Quality Samples ⁽¹⁾⁽⁵⁾⁽⁶⁾	\$44,784	\$0	\$0	\$28,840	\$73,624
		I.2.b.4.	Update Program Schedule and Standard Operating Procedures.	\$1,030	\$0	\$1,030	\$0	\$2,060
		I.2.b.5.	Monitor Well Construction ⁽⁷⁾	\$2,472	\$0	\$5,150	\$0	\$7,622
		I.2.b.6.	Reports	\$5,850	\$0	\$1,030	\$0	\$6,880
I.3 Basin Management								
	I.3.a.		Enhanced Seaside Basin Groundwater Model					(Costs Shown in Subtasks Below)
		I.3.a.1	Update the Existing Model	\$0	\$0	\$0	\$0	\$0
		I.3.a.2	Develop Protective Water Levels	\$0	\$0	\$0	\$0	\$0
		I.3.a.3	Evaluate Replenishment Scenarios and Develop Answers to Basin Management Questions	\$0	\$0	\$25,000	\$0	\$25,000
	I.3.b.		Complete Preparation of Basin Management Action Plan	\$0	\$0	\$0	\$0	\$0
	I.3.c.		Refine and/or Update the Basin Management Action Plan ⁽¹¹⁾	\$0	\$0	\$10,000	\$0	\$10,000
I.4 Seawater Intrusion Contingency Plan								
	I.4.a.		Oversight of Seawater Intrusion Detection and Tracking	\$3,708	\$0	\$2,060	\$0	\$5,768
	I.4.b.		Analyze and Map Water Quality from Coastal Monitoring Wells					(Costs Included Under I.4.a)
	I.4.c.		Annual Report- Seawater Intrusion Analysis	\$0	\$0	\$25,750	\$0	\$25,750
	I.4.d.		Complete Preparation of Seawater Intrusion Response Plan ⁽²⁾⁽⁸⁾	\$0	\$0	\$0	\$0	\$0
	I.4.e.		Refine and/or Update the Seawater Intrusion Response Plan ⁽²⁾⁽⁹⁾	\$0	\$0	\$0	\$0	\$0
	I.4.f.		If Seawater Intrusion is Determined to be Occurring, Implement Contingency Response Plan ⁽²⁾					(No Costs are Included for This Task, as This Task Will Likely Not be Necessary During 2010. If it Does Become Necessary, Use of Contingency Funds or a Budget Modification Will Likely be Necessary)
TOTALS CONSULTANTS & CONTRACTORS				\$72,842	\$0	\$209,160	\$28,840	
				SUBTOTAL not including Technical Program Manager =			\$210,842	
				Contingency (not including Technical Program Manager) @ 20% ⁽⁴⁾ =			\$42,168	
				TPM			\$100,000	
				TOTAL=			\$353,010	

Footnotes:

- (1) An outside contractor would be used to perform the induction logging, and potentially to also collect some water quality samples in conjunction with doing the induction logging. MPWMD is expected to perform portions of the work of this Subtask, and would likely be the party that contracts with the Contractor to perform the induction logging and sample collection work on certain of the wells.
- (2) The response plan would only be implemented in the event sea water intrusion is determined to be occurring.
- (3) Within the context of this document the term "Consultant" refers either to a Private Consultant providing professional engineering or other types of technical services, or to the Monterey Peninsula Water Management District (MPWMD). The term "Contractor" refers to a firm providing construction or field services such as well drilling, induction logging, or meter calibration.
- (4) Due to the uncertainties of the exact scopes of some of the Tasks listed above at the time of preparation of this Budget, e.g. Tasks I.2.a.1, I.3.a, and I.3.c, it is recommended that a 20% Contingency be included in the Budget.
- (5) Includes approximately \$10,000 in potential well site retrofitting costs that may be necessary in order to make some of these wells available for use as monitoring wells.
- (6) Does not include costs for MPWMD to collect water level data or water quality samples from wells other than those that are part of the basic monitoring well network, i.e. for private well owners who have requested that the Watermaster obtain this data for them. Costs to obtain that data are to be reimbursed to the Watermaster by those well owners, so there should be no net cost to the Watermaster for that portion of the work under these Tasks.
- (7) An additional monitoring well may need to be constructed in 2011.
- (8) For HydroMetrics to provide hydrogeologic consulting assistance to the Watermaster, beyond that associated with performing other specified Tasks, when requested to do so by the Technical Program Manager.
- (9) If work under this Task is found to be necessary, it will be funded through the Contingency line item in this Budget.
- (10) Includes reduced funds from 2010 Budget to enhance the Watermaster's Database, if necessary, to improve its usefulness and "user friendliness," assuming most of this work has been completed in 2010.
- (11) If necessary to reflect knowledge gained from modeling work or other data sources. Amount lower than in 2010 assuming there is less updating, if any, that will need to be done in 2011.
- (12) Includes a 3% inflation factor on all 2010 Budget costs except the Technical Program Manager cost which has no inflation factor applied to it.

**Monitoring and Management Plan Capital Budget
For Tasks to be Undertaken in 2010**

The Capital projects and expenditures for 2010 are:

No Capital projects are anticipated to be undertaken in 2010, so this budget is \$0.

**Monitoring and Management Plan Capital Budget
For Tasks to be Undertaken in 2011**

The Capital projects and expenditures that may be necessary in 2011 are:

- 1. Install one additional monitoring well at an estimated cost of \$275,000 (including consultant costs and well contractor costs).**

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

***** AGENDA TRANSMITTAL FORM *****

MEETING DATE:	September 23, 2009
AGENDA ITEM:	7
AGENDA TITLE:	Status Report on City of Seaside Negotiations with MCWD to Obtain Golf Course Water
PREPARED BY:	Robert Jaques, Technical Program Manager
<p>SUMMARY: At the Special Watermaster Board meeting held on August 25, Mr. Ray Corpuz, Chair of the Budget and Finance Committee, made a report to the Board on this topic. The Board granted its approval for the City of Seaside and CAW to jointly draft an Agreement, which would be executed between the City of Seaside and the Watermaster, containing the terms and conditions under which obtaining water from MCWD for Seaside's use at its golf courses, and in turn helping to replenish the Basin, would be accomplished.</p> <p>Briefly stated, these are the principle elements to be covered in the Agreement:</p> <ul style="list-style-type: none"> • There would be no money required from the Watermaster to pay for this replenishment water. • By obtaining the replenishment water the City of Seaside would receive credits against its previously levied Replenishment Assessments. • Those credits could continue to be generated until such time as all of the City's unpaid Replenishment Assessments had been satisfied. • There may be other terms and conditions relating to this when the Draft Agreement is presented to the Board for its approval, potentially at the Board's October 7th meeting. (The Board cancelled its regular September Board meeting, as it conflicted with the date of the Cease and Desist hearing on CAW's taking of water from the Carmel River Basin, and many Board members and support staff members planned to attend that meeting in Sacramento.) <p>At an earlier meeting the Board asked the TAC to continue to monitor and report on progress being made between the City of Seaside and MCWD to obtain replacement water for Seaside's golf courses from the MCWD distribution system.</p> <p>Mr. Riedl will provide an oral update on the status Seaside's negotiations with MCWD to obtain this new source of water for irrigation of the Seaside golf courses.</p>	
ATTACHMENTS:	None
RECOMMENDED ACTION:	None required at this time

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

***** AGENDA TRANSMITTAL FORM *****

MEETING DATE:	September 23, 2009
AGENDA ITEM:	8
AGENDA TITLE:	Schedule
PREPARED BY:	Robert Jaques, Technical Program Manager
SUMMARY:	<p>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 entity, MPWMD, which is performing certain portions of the work, and of the Critical Program Milestones Schedule.</p> <p>Attached is the Updated Consultants Work Schedule.</p>
ATTACHMENTS:	Updated Schedule of 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

ID	Task Name	2009																	
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	F
1	CRITICAL PROJECT MILESTONES ASSOCIATED WITH TAC, BOARD, AND/OR CONSULTANT WORK																		
2	2009 Administration, Operations and Replenishment Budgets Due				Completed														
3	2010 Administration, Operations and Replenishment Budgets																		
4	Prepare M&MP Draft Budgets (Same as Task 41)																		
5	TAC Approves M&MP Budgets (Same as Task 42)																		
6	Board Approves M&MP Budgets (Same as Task 43)																		
7	Watermaster Prepares Quarterly Water Production, Water Level, and Water Quality Reports		Completed			Completed		Completed		Completed		Completed							
32	Replenishment Assessment Unit Costs for Water Year 2010																		
33	Develop Replenishment Assessment Unit Cost for 2010 Water Year																		
34	TAC Approves 2010 Water Year Replenishment Assessment Unit Cost																		
35	Board Adopts and Declares 2010 Water Year Replenishment Assessment Unit Cost																		
36	Replenishment Assessments for Water Year 2009																		
37	Watermaster Prepares Replenishment Assessments for Water Year 2009																		
38	Watermaster Board Approves Replenishment Assessments for Water Year 2009																		
39	Watermaster Levies Replenishment Assessment for 2009																		

Seaside Basin WaterMaster Monitoring and Management Program 2009 Work Schedule

ID	Task Name	2009																	
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	F
55	Board Approval of Consultant Contracts for 2009			Completed															
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 Known Deficiencies in Existing Database			Completed															
61	Select New Database Host Site and Database Maintenance Firm			Completed															
62	Prepare and Issue Contracts to New Database Maintenance Firm			Completed															
63	Install Database on New Host Site				Completed														
64	Conduct TAC Test Period							Completed											
65	Compile Deficiencies in Existing Database Found From TAC Test Period								Completed										
66	TAC Approves Deficiencies to be Corrected in Database									Completed									
67	Correct Deficiencies in Existing Database Found From TAC Test Period & Activate Database on WM Website										Completed								
68	Make Improvements to Existing Database												Deferred						
69	I.2.a.2 Verify Accuracy of Production Meters																		

Seaside Basin WaterMaster Monitoring and Management Program 2009 Work Schedule

ID	Task Name	2009												Jan	F											
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug			Sep	Oct	Nov	Dec							
70	Determine Which Meters Require Calibration																									
71	Select Contractor to Perform Meter Calibrations																									
72	Perform Meter Calibration and Report Results																									
73	Determine and Take Followup Actions Based on Calibration Results																									
74	I.2.b DATA COLLECTION PROGRAM																									
75	I.2.b.1 Site Selection for New Monitoring Well																									
76	I.2.b.5 Monitor Well Construction																									
77	Design, Permits, CEQA. And Approvals																									
78	Construction																									
79	Pursue Conversion of Existing Abandoned U.S. Army Well for Use as an Additional Monitoring Well																									
80	I.3.a ENHANCED SEASIDE BASIN GROUNDWATER MODEL																									
81	I.3.a.1 Update the Existing Model																									
82	Prepare and Execute Contract with HydroMetrics to Update the Existing Model																									
83	TAC Identifies Questions to be Answered by Updated Model																									
84	Board Concurs with Questions to be Answered by Updated Model, or Adds Additional Questions																									

Seaside Basin WaterMaster Monitoring and Management Program 2009 Work Schedule

ID	Task Name	2009												Jan	F			
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug			Sep	Oct	Nov
114	I.4.e Refine and/or Update the SIRP						Only if Refinement or Updating is Necessary											

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

***** AGENDA TRANSMITTAL FORM *****

MEETING DATE:	September 23, 2009
AGENDA ITEM:	9
AGENDA TITLE:	Other Business
PREPARED BY:	Robert Jaques, Technical Program Manager
SUMMARY:	
<p>1. Updates in terms of User Access Levels and other improvements have been made to the Watermaster's Database. Any feedback from TAC members on the Database would be appreciated, so we can determine what, if any, enhancements we should make in FY 2010.</p> <p>2. The TAC and Board developed a comment letter on the CAW CWP DEIR and that letter was submitted to the PUC prior to the comment submittal deadline several months ago. One of the major comments and concerns expressed in that letter was the fact that more water than was being proposed by any of the regional projects will be needed to protect the Seaside Basin against seawater intrusion.</p> <p>Attached is an Agenda transmittal I presented to the Board at its August 25, 2009 Special Meeting describing these concerns. As a result of that presentation the Board authorized sending a letter to the MPWMD asking them to present these concerns to the Administrative Law Judge who is holding hearings on the DEIR, in hopes that the concerns would be addressed in that forum, if they are not addressed through the EIR process. MPWMD is a party to the proceedings before the Administrative Law Judge, whereas the Watermaster is not. Hence, MPWMD will be able to formally present these concerns to the Judge. This item is presented to the TAC for its information.</p>	
ATTACHMENTS:	Agenda Transmittal Presented to the Board at its August 25, 2009 Special Meeting
RECOMMENDED ACTION:	Provide Input to Technical Program Manager Regarding Any Enhancements TAC Members Would Like to See Made in the Watermaster's Database

**SEASIDE GROUNDWATER BASIN
WATERMASTER**

TO: Board of Directors

FROM: Robert S. Jaques, Technical Program Manager

DATE: August 20, 2009

SUBJECT: Discuss and Consider taking Action regarding comments submitted by Watermaster on the Draft Environmental Impact Report (DEIR) on the California American Water--Coastal Water Project.

BACKGROUND:

At its March 18, 2009 meeting the Board directed the Staff to submit a comment letter on the Draft Environmental Impact Report (DEIR) which was prepared by the California Public Utilities Commission (PUC) for the California American Water Company's (CAW) Coastal Water Project (CWP). A copy of the comment letter that was submitted is attached to this Agenda item.

DISCUSSION:

I recently learned (informally) that the response to our comments is likely to not recommend to the PUC that additional water, beyond the 2,600 AFY needed to offset the current level of overpumping of the Basin, be provided for the Seaside Groundwater Basin (SGWB) in any of the projects being considered in the DEIR. Our comment in this regard pertained to page 2-1, and also to pages 2-6, 2-7(Table 2), and 5-3 of the DEIR. Our comment, taken directly from the attached comment letter, reads as follows:

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 SBW'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 initially 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. At that time

the results of the modeling work could be used to update this initial 2,000AFY quantity. 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.

I was (informally) informed that the response to our comment is likely to only recommend to the PUC that the 2,600 AFY mentioned in the DEIR be included in any project that the PUC approves or recommends for implementation, and that no additional water will be recommended for inclusion. It was also indicated to me that the objective of whatever project is selected is only to “protect” not to “restore” the Seaside Groundwater Basin.

Staff strongly feels that the additional water requested in our comments is essential to the “protection” of the SGWB. Only providing the 2,600 AFY amount proposed in the DEIR will keep the seawater intrusion problem from getting worse, but will still leave the SGWB vulnerable to seawater intrusion. This is because water levels in the SGWB have been clearly shown to be below sea level, and therefore seawater intrusion will occur unless these levels are raised by providing additional water. The exact amount of additional water was estimated by staff to be on the order of 2,000 AFY, but this amount will be refined when the Groundwater Modeling currently being prepared for the Watermaster by HydroMetrics is completed later this year.

It is not clear to staff exactly what action, or approach, can or should be taken by the Watermaster at this point in the PUC’s EIR process. It may be that some form of legal filing with the Administrative Law Judge that is overseeing and directing the PUC’s process would be in order, or there may be some other approach to raise the Watermaster’s concerns regarding this matter.

Staff wishes to make sure the Board is aware of this situation, so it can provide to staff whatever direction it feels is appropriate.

RECOMMENDATION:

Provide direction to staff regarding any actions the Board wishes to have pursued regarding the matter of having additional water provided to the SGWB through whatever project the PUC recommends or approves.

**Seaside Basin Watermaster
2600 Garden Road, Suite 228
Monterey, CA 93940
(831) 641-0113**

March 24, 2009

Mr. Andrew Barnsdale
C/O Coastal Water Project
Environmental Science Associates
225 Bush Street, Suite 1700
San Francisco, CA 94104

Subject: Comments on Coastal Water Project Draft Environmental Impact Report

Dear Mr. Barnsdale:

Through a legal process that is referred to as an "Adjudication" the Seaside Basin Watermaster was created on March 26, 2006 by entry of Judgment in California Superior Court, Monterey County, under Case No. M66343. The purpose of the Watermaster is to assist the Court in the administration and enforcement of the provisions of the Judgment, which pertains to overseeing and managing the groundwater resources of the Seaside Groundwater Basin. The Watermaster's objective is to help resolve the problems of lowered groundwater levels and the threat of seawater intrusion which are the result of overpumping of the Basin.

The Seaside Basin Watermaster submits the attached comments pertaining to the Draft Environmental Impact Report for California American Water's Coastal Water Project. For the most part our comments pertain to project components which would directly or indirectly affect the volume and/or quality of water that the Coastal Water Project, and the alternatives to it, is proposing for use in replenishing the Seaside Basin.

If you have any questions regarding our comments, please contact the Watermaster's Technical Program Manager, Mr. Robert Jaques, by telephone to his home office (831) 375-0517 or by email at bobj@mrwpca.com.

Thank you for the opportunity to provide these comments.

Sincerely,

Dewey Evans
Chief Executive Officer

SEASIDE BASIN WATERMASTER 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 7 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	SBW approval and a storage agreement between CAW and the SBW should be added under the "Facility Permits" section of the CWP Schedule.
Exec. Summar y	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-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 well 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.

DEIR PAGE NO.	PERTAINS TO PROJECT NOS.	COMMENTS
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-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 that use desalination plant source water 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 6.1-13, 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.

DEIR PAGE NO.	PERTAINS TO PROJECT NOS.	COMMENTS
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. If the opportunity to do so still exists, 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.

DEIR PAGE NO.	PERTAINS TO PROJECT NOS.	COMMENTS
2-1	All	<p>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 SBW'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 initially 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. At that time the results of the modeling work could be used to update this initial 2,000AFY quantity. 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.</p>
2-3	All	<p>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.</p>
2-4	All	<p>See comment above pertaining to pages 1-7, 2-4, and 2-5 regarding the CalAm 1,494 AFY figure on page 2-4. The Cal Am figure should be 1,474 AFY.</p>
2-6 & 2-7 (Table 2-2)	All	<p>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.</p>

DEIR PAGE NO.	PERTAINS TO PROJECT NOS.	COMMENTS
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. The Cal Am figure should be 1,474 AFY.
2-7 (Table 2-2)	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.
2-7 (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”. The Cal Am figure should be 1,474 AFY.
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”. The Cal Am figure should be 1,474 AFY.
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 there 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 an individual-year basis.
Figures 3-2.b and 3-4.d	All	Why is the ASR Well Siting Area limited to only the area shown in these Figures?
3-49 (Table 3-14)	1,2	Table 3-14 should include the SBW as an entity which must give its approval to those components of these Projects that impact the SGWB.

DEIR PAGE NO.	PERTAINS TO PROJECT NOS.	COMMENTS
4.1-23 (Table 4.1-5)	1,2	Table 4.1-5 should include the SBW as an entity 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 4.2-4 should include the SBW as an entity which has applicable authority 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 June 2009.

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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 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 MRWPCA 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 provide long-term increased storage to 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 entity 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.

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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 be 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.

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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 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.
7-57	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.