

# MEETING NOTICE AND AGENDA

## *TECHNICAL ADVISORY COMMITTEE OF THE SEASIDE BASIN WATER MASTER*

**DATE:** Wednesday, May 13, 2009

**TIME:** 1:30 p.m.

**LOCATION:** City of Seaside City Hall – Portable Buildings Conference Room  
440 Harcourt Avenue  
Seaside, CA 93955

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

### **OFFICERS**

**Chairperson:** Diana Ingersoll, City of Seaside

**Vice-Chairperson:** Tom. Bunosky, California American Water Company

### **MEMBERS**

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

### Agenda Item

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| <b>8. Set next meeting dates:</b>   |           |
| <b>A. Special Meeting (Workshop on Protective Water Levels) for Thursday May 28, 2009 at 1:30 p.m. at the MRWPCA Board Room</b>       |           |
| <b>B. Regular Meeting for Wednesday June 10, 2009 at 1:30 p.m. at the Seaside City Hall Portable Office Buildings Conference Room</b> |           |

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 \*\*\***

<b>MEETING DATE:</b>	May 13, 2009
<b>AGENDA ITEM:</b>	1.A
<b>AGENDA TITLE:</b>	Approve Minutes from April 8, 2009
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b>  Draft Minutes from this meeting were emailed to all TAC members. Proposed changes have been included in the attached version.	
<b>ATTACHMENTS:</b>	Minutes from this meeting
<b>RECOMMENDED ACTION:</b>	Approve the minutes

**D-R-A-F-T**  
**MINUTES**

**Seaside Groundwater Basin Watermaster  
Technical Advisory Committee Meeting  
April 8, 2009**

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

**Watermaster**  
Technical Program Manager - Robert Jaques

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

**Others:**  
MCWD – Brian True  
Attorney for City of Seaside – Russ McGlothlin (by telephone)

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The meeting was called to order at 1:35 p.m.

**1. Administrative Matters:**

**A. Approve Minutes from March 11, 2009**

On a motion by Mr. Oliver, second by Mr. Riedl, the minutes were unanimously approved as presented.

**2. Progress Reports**

**A. MPWMD**

Mr. Oliver reported that the database has a good "deployment guide" as result of the work performed by Zone 24X7. He will provide this to Mr. Jaques for the Watermaster's records. Mr. Jaques, Mr. Feeney and Mr. Oliver have been working with the California Department of Parks to renew the existing sentinel well permit and also to add the additional former U.S. Army monitoring well to the permit.

The site selection process for the new monitoring well to be located further inland is in progress. Contacts have been made with the U.S. Bureau of Land Management (BLM) and Monterey Peninsula College (MPC).

Mr. Oliver said he is responding to HydroMetrics' data requests with regard to development of the Groundwater Model.

Mr. Fischer asked Mr. Oliver if any issues appeared to be problems with either the BLM or MPC sites. Mr. Oliver responded that the issues appeared mainly to be just normal administrative processing types of issues.

### **B. HydroMetrics**

Ms. King reported that data collection for the groundwater model is coming along pretty well, but she is still waiting for Monterey County water level data, MPWMD water production data, and CAW monthly deliveries-by-service area data, as well as Toro and Ambler Park water system information.

She said that the next step will be working on soil moisture budget issues. She said a meeting yesterday regarding hydrostratigraphy issues and other model development issues had been held. Also, she is preparing for the Model Scenario Workshop which will be held later this month.

Mr. Bunosky reported that the Ambler Park water system data from CAW will only be data since CAW acquired that system. He commented that Monterey County may have additional information. He said that the Toro system historical data should be available.

Mr. Johnson said that compiling water level data is in progress. He said the Ambler Park data would be difficult to obtain.

Mr. True asked how the water loss data was being used, and where it would be included in the Modeling documents. Ms. King responded that it will be put into the individual cell information for the groundwater recharge portion of the Model. Mr. True said that MCWD would prefer using an "assumed" system loss rate of some typical amount such as 8.5% for all water systems. Ms. King commented that 7% to 10% is typically used. There was agreement on using this approach. Consequently, MCWD will not need to develop a specific system loss figure to be provided to Ms. King for the report.

Mr. Fischer asked if fire hydrant testing by fire departments results in too small a loss to be considered. Ms. King responded that that was correct. Mr. True said that this probably is included in the system loss percentage.

Mr. Riedl asked if the City of Seaside had been historically providing water level data. Mr. Oliver responded yes, and noted that a procedure for doing this was provided by the Watermaster some months ago. Ms. King said there is very little water level data from Seaside currently available to her. Mr. Oliver said it appears that either little data has been generated, or data has not yet been turned in.

Mr. Bunosky asked Ms. King who will be invited to the April 23rd Model Scenario Development workshop. Ms. King said that the invitation list thus far is essentially the same as the one that was used for the last Workshop.

### **C. Selection of Site for New Monitoring Well (also continued discussion of Database issues)**

Mr. Feeney reported that the information contained in the agenda packet for today's meeting adequately described the work he had performed to date under his current contract authorization.

Continuing today's earlier discussion with regard to the database, Mr. Jaques summarized the current status of getting the database linked to the Watermaster's website. Mr. Oliver proposed making the database accessible for a one month test period to just the TAC members to see if there are any further access "glitches" to correct. Mr. Oliver reviewed the Table on page 11 of the agenda packet which described issues pertaining to the database access levels.

Mr. Oliver pointed out that one important issue is that even Access Level 5 (general public level) can currently edit the documents in the database. Also, well logs provided by drillers are not supposed to be

publicly available, but they are currently accessible at Access Level 5. Thus, Mr. Oliver recommended one of the following options: (1) the database not be linked to the Watermaster's web site, or (2) the currently known glitches be corrected before putting it on the website.

There was discussion regarding the issue of including, or making accessible, information on the location of wells in the database. Two of the thoughts discussed included making such information only available to the persons having the greatest levels of access (the lowest Access Level Number users) or removing such information from the database altogether and making it available on an as-requested basis in the form of the survey information provided to the Watermaster by Central Coast Surveyors when it did the well location surveying in 2008. Mr. Fischer suggested that using generic location descriptions such as "Monterey Cemetery," as an alternative identifier might be one way to address concerns about making location information available.

Mr. Feeney asked Mr. Oliver if it would be possible to limit access to the well logs from drillers only to Access Level 1. Mr. Oliver said this could be done.

Mr. Oliver said he will e-mail the TAC members the portal information for Access Level 5, so they can examine the database and provide their feedback.

Mr. Jaques asked Mr. Oliver if this could be done over a time period shorter than one month, and the answer was yes. Following some discussion there was consensus to proceed with option number one as described above. Mr. Oliver will e-mail the portal information to TAC members tomorrow. It was requested that comments, questions, and any other information be e-mailed to Mr. Oliver by April 23rd, so these can be compiled. Thereafter, Mr. Jaques and Mr. Oliver will work with Zone 24X7 to get the corrections made, so the database can be linked to the Watermaster's website.

Mr. Fischer asked Mr. Oliver what the "Well List" was for. Mr. Oliver said this allows you to select the well for which you are interested in getting information.

Mr. Bunosky asked Mr. Jaques if he would be seeking final TAC approval at the next regular TAC meeting before linking the updated database to the Watermaster's web site. Mr. Jaques said that he would seek approval from the full TAC before proceeding to have the database linked to the Watermaster's web site.

Mr. Johnson offered his services to Mr. Oliver with regard any database issues that may arise.

Mr. Jaques summarized the status of work on the site selection process for the new monitoring well. He noted that both the BLM and MPC sites are currently proceeding toward approval. If both sites are approved, Mr. Feeney said that he and Mr. Oliver would prefer the BLM site, but that both sites would be valuable, and if both were approved one could be used this year and the other could be used at a future date, if the Watermaster decided to put in an additional monitoring well.

### **3. Preliminary Planning Discussion Regarding Scenarios to be Evaluated Using the Updated Groundwater Model**

**(Note: this item was taken up after item 4)**

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

Mr. Fischer said the Model Scenario Workshop should be posted as a TAC meeting. Mr. Bunosky asked Mr. Jaques to make the Workshop a Special TAC meeting and to post it accordingly. Mr. Jaques said that he would take that action, and would see that the agenda packet for the meeting is posted at least 72 hours prior to the meeting date.

Ms. King said that the Workshop will be scheduled to be held on April 23, 2009 at 1:30 PM. She said that the agenda is prepared and will be sent to Mr. Jaques shortly so it can be posted. She will e-mail the Model Scenario Technical Memorandum, which will be the subject of discussion at the Workshop, to TAC members next week.

Ms. King said she proposed to group various issues to form the Scenarios. She said another Scenario that may also be considered is an injection barrier. She said that a Scenario works best if a specific question is asked of the Model, rather than a broad open-ended type of question. She has developed approximately 10 Scenarios for discussion at the Workshop. These will be described in the Technical Memorandum she is preparing.

The impact on the northern ground water basin flow divide will be evaluated in each of the Scenarios.

There was some discussion between Mr. Riedl and Ms. King with regard to the northern boundary conditions that are being used in the Model.

Mr. Riedl asked if spreading basins could be added for consideration in a Scenario. Ms. King said this has already been included in one of the Scenarios.

Mr. Fischer asked Ms. King how variations in rainfall or accounted for. Ms. King responded that the Model is calibrated with multiple years of rainfall data taken into account.

Mr. Bunosky asked if the Triennial 10% pumping reductions will be taking into account. Ms. King said this is included as a Baseline Scenario, i.e. the no-new-water-supplies-available Scenario.

Mr. Fischer asked what if the SWRCB requires CAW to reduce its Carmel Basin pumping. Mr. Bunosky responded that this would not directly impact the Seaside Basin, since CAW would not increase its pumping in the Seaside Basin as a result of such a directive from the SWRCB.

Mr. Riedl requested discussion at the Workshop of a Scenario to evaluate not reducing pumping by the triennial 10% amounts required by the Decision. Mr. Jaques said he did not feel it would be an appropriate use of the consultant's cost authorization to evaluate such a Scenario, since it would be inconsistent with the direction provided by the Decision itself. There was TAC consensus on this.

Mr. Bunosky said the Model should take into account the portion of the 6,600 acre-feet per year of former Fort Ord Salinas Valley Groundwater Basin water supply that serves both existing and future development on the former Fort Ord.

Mr. Fischer asked Mr. Williams if the issue of hydro-connection between the subareas, as discussed on page 14 of the agenda packet, will be covered. Mr. Williams said that this will be a topic for discussion at the Workshop.

Other issues for discussion at the workshop were also raised and briefly discussed.

#### **4. Continued Development of Information for the Board's Consideration Regarding Reducing the Operating Yield**

**(Note: At Mr. McGlothlin's request, this item was taken up before item 3)**

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

Mr. Riedl and Mr. McGlothlin provided proposed edits to Attachment 2, which the TAC discussed. Mr. Jaques will make these edits and e-mail a revised version of Attachment 2 to the TAC for further review before finalizing the document so it can be provided to the Board of Directors.

Mr. McGlothlin said if we are able to make up at least part of the 420 acre-foot per year of mandated pumping reduction, the Watermaster could request the Court to allow this to be accepted as satisfactory for the current water year. There was much discussion on this topic.

Mr. Bunosky commented that the black and white answer to question (a) is "no". All TAC members concurred with Mr. Bunosky on this point, since according to Mr. Riedl the recently reconstructed golf courses are intended to require less water than in the past, so it is extremely unlikely that the full 420 acre-feet of pumping reduction for the current Water Year can be achieved at this late point in the Water Year.

Mr. Fischer asked if the RUWAP will serve recycled water to the golf courses, and Mr. True responded that this was correct.

Mr. Riedl said that MCWD was not willing to commit to providing all the water needed by the golf courses in the event MCWD has any distribution system problems in meeting its other water demands.

Mr. McGlothlin said that the golf course wells would be used only to make up the difference between the irrigation demand of the golf courses and the amount of water that MCWD can deliver. He said that the golf courses' historical demand has been about 540 acre-feet per year, and this is what served as the basis for the establishment of this Alternative Producer Allocation water right in the Decision.

Mr. McGlothlin said he hoped to bring this topic back to the Board for action at its May meeting. He said he intends to process the topic through the Budget and Finance Committee before then.

Mr. Jaques offered to e-mail the proposed revised versions of Attachments 1 and 2 to this agenda item to the TAC members for their further review prior to sending these on to the Board. There was consensus with this approach, and Mr. Jaques will take this action within the next few days.

Mr. Bunosky asked McGlothlin if there were any CEQA issues that needed to be addressed. Mr. McGlothlin responded that all CEQA issues had already been addressed by the City of Seaside. He also noted that the Watermaster itself is exempt from CEQA with regard to any actions that it takes.

Mr. Bunosky asked how replenishment money issues would be dealt with. Mr. McLaughlin and Mr. Jaques said it was their understanding that these would be dealt with by the Budget and Finance Committee.

Note: At this point in the meeting Mr. McLaughlin departed.

## **5. Schedule**

Mr. Jaques asked for comments or corrections with regard to the Schedule. Mr. Bunosky and Mr. Riedl asked if the Task pertaining to water meter calibration was in progress. Mr. Jaques responded that it was.

Mr. Bunosky asked if getting the overlying jurisdictional issues in the BMAP resolved was in progress. Mr. Jaques and Ms. King responded yes. Ms. King asked Mr. Jaques to please make sure MCWRA was aware that this was holding up completion of BMAP. Following discussion by the TAC there was consensus to ask Mr. Johnson to provide proposed wording to Ms. King with regard to this issue within two weeks of the date of today's meeting. If such proposed revised language is not received from MCWRA by then, the BMAP will be finalized and printed in the form it was presented to the Board for approval earlier this year.

## **6. Other business**

Mr. True reported that Ed Alexander had approached MCWD with regard to selling them reclaimed water from a wastewater treatment plant that he operates near Highway 68 and the Salinas River. Following a brief discussion there was consensus that this was not an issue for involvement by the Watermaster TAC.

Mr. Bunosky reported that mandatory salt and nutrient management plans are now being required of all basins in California by 2014. It was agreed that this would be discussed further at a future TAC meeting.

Mr. Riedl asked if surveying would be done next year to see if subsidence is occurring within the Basin. Mr. Jaques said that this had been proposed for inclusion in next year's budget, and can be discussed further by the TAC at that time.

**7. Set next meeting date for Wednesday May 13, 2009 at 1:30 p.m.**

**To be held at the Seaside City Hall Portable Office Buildings Conference Room**

It was agreed that the next TAC meeting will be a Special TAC meeting to be held on April 23, 2009 at 1:30 p.m. at a location yet to be determined, for the purposes of holding a Workshop on Development of Model Scenarios. Mr. Jaques will try to have the MRWPCA Boardroom made available for this meeting. If that location is not available, he will seek another location.

The next regular TAC meeting will be held on May 13, 2009 at 1:30 p.m. at the Seaside City Hall portable office buildings conference room.

The meeting adjourned at 4:17 p.m.

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

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

<b>MEETING DATE:</b>	May 13, 2009
<b>AGENDA ITEM:</b>	1.B
<b>AGENDA TITLE:</b>	Approve Minutes from April 23, 2009 Special Meeting
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b>  Draft Minutes from this meeting were emailed to all TAC members. Proposed changes have been included in the attached version.	
<b>ATTACHMENTS:</b>	Minutes from this meeting
<b>RECOMMENDED ACTION:</b>	Approve the minutes

**D-R-A-F-T**  
**MINUTES**

**Seaside Groundwater Basin Watermaster  
Technical Advisory Committee  
Special Meeting  
April 22, 2009**

**Attendees: TAC Members**  
City of Seaside – Rick Riedl  
California American Water – Tom Bunosky  
City of Monterey – No Representative  
Laguna Seca Property Owners – Bob Costa  
MPWMD – Joe Oliver  
Public Member – John Fischer  
MCWRA – Rob Johnson  
City of Del Rey Oaks – No Representative  
City of Sand City – No Representative  
Coastal Subarea Landowners – No Representative

**Watermaster**  
Technical Program Manager - Robert Jaques

**Consultants**  
HydroMetrics LLC - Derrick Williams and Georgina King  
Martin Feeny Hydrogeologist - Martin Feeny

**Others:**  
MCWD – Brian True  
Todd Engineers – Phyllis Stanin (on behalf of MRWPCA)

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The meeting was called to order at 1:35 p.m.

Note This Special TAC meeting was held in a workshop format for focused discussion on issues pertaining to the development of scenarios to be evaluated by the Seaside Basin Groundwater Model. The workshop was led by representatives of HydroMetrics, LLC, the consultant that is preparing the updated groundwater model.

1. Mr. Bunosky called the meeting to order and explained its purpose was to select the 5 Scenarios to be analyzed by the updated Groundwater Model. He then asked Mr. Williams to lead the discussion.
2. Using HydroMetrics' April 14, 2009 Technical Memorandum No. 2 as a guide, Mr. Williams discussed the process for developing Scenarios. This Memorandum was reviewed and comments and questions from attendees were discussed. HydroMetrics will revise the Memorandum to address these comments and questions.
3. Mr. Williams handed out the attached sheet with bullet points pertaining to "Potential Aspects of the Baseline Simulations" and "Aspects of Each of the Five Scenarios."
4. Five Scenarios that were developed by the TAC for evaluation using the updated Groundwater Model, and are briefly described as follows:

**Scenario 1.** Cal Am discontinues all of its pumping from the Seaside Basin, thus reducing Basin wide pumping by approximately 3,600 AFY (referred to in the workshop as the “Cal Am in-lieu recharge” scenario). This means no other pumpers would need to make any cutbacks ever, since CAW's cutback alone would bring the Basin down below its Natural Safe Yield of 3,000 AFY. Net production after this would be approximately 1,800 AFY (5,400 AFY [approx. current total pumping from the Basin] - 3,600 AFY = 1,800 AFY) which is well below the 3,000 AFY NSY.

**Scenario 2.** CAW's total discontinuance of pumping (from Scenario 1) coupled with direct injection of 2,000 AFY into the Basin aquifer(s) (i.e., the “Cal Am in-lieu recharge + injection” scenario). This nominal amount was picked for purposes of assessing the impact on the Basin of direct injection, which is one element of the proposed Regional Water Supply Project being evaluated against the CAW proposal for its desal plant. So the net benefit to the Basin would be a reduction in pumping of 3,600 AFY and a replenishment supply on top of that of 2,000 AFY for a total benefit of 5,600 AFY.

**Scenario 3.** Replenishment using advanced treated water from MRWPCA's plant under their Groundwater Replenishment Project in the amount of 2,800 AFY (i.e., the “GWRP inland recharge” scenario). 1,400 AFY would be recharged into the upper (Paso Robles) aquifer using vadose zone wells and 1,400 AFY would be recharged into the lower aquifer (Santa Margarita) using direct injection wells. No new extraction wells would be needed, as the existing wells can pump all the water that is needed to meet demands. The replenishment water would migrate naturally toward the extraction wells. Replenishment would occur during the 5 month period of November to March (nominally) each year.

**Scenario 4.** Install a string of wells along the coastline to form a coastal injection barrier (i.e., the “coastal recharge barrier” scenario). These wells would raise the groundwater level along the coastline, forming a protective ridge that would effectively prevent sea water from intruding into the aquifers of the Seaside Basin. 2,600 AFY would be injected thru these wells. This nominal amount was picked for purposes of assessing the impact on the Basin of coastal injection wells. The hydrologists at the meeting felt a much smaller amount might be sufficient.

**Scenario 5.** Redistribute pumping locations (i.e., the “pumping redistribution” scenario). The specifics of this are yet to be developed, but conceptually the amounts of water pumped from existing wells could be redistributed to help reduce cones of depression, and/or new wells in other parts of the Basin could be drilled so some of the existing wells could either cut back or be shut down. No volume amount is needed for this Scenario, since existing demands would remain the same, the water would just be pumped in a redistributed manner.

5. For the next regular TAC meeting (May 13, 2009) HydroMetrics will provide refined descriptions of each of these scenarios, so the TAC can approve them at that meeting. If that is accomplished, they will be presented to the Board for their approval at the Board's June meeting.

The meeting adjourned at 5:12 p.m.

## HydroMetrics LLC Handout at 4/23/09 Special TAC Meeting

### Potential Aspects of the Baseline Simulation:

1. Hydrologic period will be 20 years, similar to the previous 20 years of hydrology.
2. Land use changes. Do we know the footprint of future development in Fort Ord? Is there a schedule for this development? Do we know where all the water for this development will come from? Are there other land use changes or anticipated growth that we should acknowledge?
3. Triennial 10% pumping cuts. How do we divide this among wells?
4. ASR Phase I. Should we include this in the baseline simulation? At what rates? Variable for variable climatic conditions?
5. Sand City Desal plant. How do we incorporate this into the baseline simulation? Less pumping for Cal-Am, which slowly goes away as growth occurs? We will need a schedule for this.
6. RUWAP. Should we include this in the baseline simulation? Does it impact pumping of certain wells? Does it increase irrigation anywhere? How much of the RUWAP water will come to the Seaside Basin?
7. Boundary Conditions – What is the anticipated water level change in Salinas Valley over the next 20 years? Is this a no-project change, or does it rely on some future project?

### Aspects of Each of the Five Scenarios

1. The volume of imported water. Note that there may be cases where more than one volume of water can be simulated as a single scenario. This is true if the various volumes of water don't impact other pumping or infrastructure.
2. Timing of water deliveries. Is water delivered at a constant rate? Is it only available in the winter? Is it only available in wet years?
3. Fate of imported water. Is the water used for in-lieu recharge? Is the water injected into the basin? Is the water used for irrigation?
4. Operational impacts. How does the pumping **at every well** change over time in response to the imported water? Does only summer pumping change, or does pumping change all year? Is the pumping at certain wells preferentially modified because the project preferentially provides water to a certain area?
5. New well locations. Does the project require new wells for injection of extraction? How many wells are needed, and where will they be located.

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

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

<b>MEETING DATE:</b>	May 13, 2009
<b>AGENDA ITEM:</b>	1.C
<b>AGENDA TITLE:</b>	Cancel July, 2009 TAC Meeting
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b> Due to vacation conflicts it is recommended that the TAC meeting that would normally be held on July 8, 2009 be cancelled.  The only items currently scheduled for that meeting date were the presentation by HydroMetrics of their summary report on Updating the Groundwater Model, and on the development of Protective Water Levels. They have indicated that they can defer making those presentations until the August TAC meeting without delaying completion of their work.	
<b>ATTACHMENTS:</b>	None
<b>RECOMMENDED ACTION:</b>	Approve cancelling the July, 2009 TAC Meeting

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

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

<b>MEETING DATE:</b>	May 13, 2009
<b>AGENDA ITEM:</b>	2
<b>AGENDA TITLE:</b>	Progress Reports
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager

**SUMMARY:**

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

The attached Progress Reports cover the time period since the last Regular TAC meeting held April 8, 2009 to May 6, 2009 when this Agenda packet was prepared.

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

<b>ATTACHMENTS:</b>	Progress Reports
<b>RECOMMENDED ACTION:</b>	None required – information only

## **Progress Report from the MPWMD**

### **Work Performed**

- Reviewed and edited draft Basis of Design memo for proposed inland monitor well site.
- Conducted follow up meetings and correspondence regarding plans for revising Watermaster database to modify user access levels, consistent with direction from the TAC.
- Conducted follow up research on approval for adding existing Army coastal monitor well to Watermaster monitor well network, and researched equipment needs for well.
- Prepared 1<sup>st</sup>/2<sup>nd</sup> quarterly water level and water quality monitoring report.
- Continued water level and water quality data entry into Watermaster database at new host location.
- Provided Seaside Basin historical production data, ASR project data and Arroyo Del Rey flow records to Watermaster consultant (HydroMetrics) for groundwater modeling effort.
- Conducted follow up correspondence on Seaside Basin hydrogeology analysis with HydroMetrics for groundwater modeling effort.
- Continued water level and water quality data collection under enhanced monitoring program.

### **Upcoming Work**

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

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## **Progress Report from HydroMetrics**

### **Work Performed**

Note: Discussion of the conclusions from the Special TAC meeting held April 23, 2009 regarding selection of scenarios for evaluation by the Updated Groundwater Model will be covered under Agenda Item No. 3 on today's agenda.

Since the last TAC meeting, all work has been focused on model development, namely data collection, model conceptualization and water budget. Specific tasks have included:

- Following up on data requests,
- Compiling groundwater level data,

- Compiling production data,
- Preparing GIS layer on system losses,
- Preparing flow chart for recharge calculations,
- Preparing input file for precipitation for recharge calculations,
- Preparing input file for evapotranspiration for recharge calculations,
- Preparing master well table of all wells within model area with updated spatial data,
- Preparing model layer shapefiles for importing into groundwater model.

See the table below for a summary and status of requested data.

A successful workshop to discuss and decide on five model scenarios was held on April 23 at MRWPCA. A draft Technical Memorandum on the model scenarios has been prepared and is included for discussion and approval under Agenda Item No. 3 on today's agenda.

### DATA REQUEST Status as of May 4, 2009

Agency	Data Needed	Date Received
MCWRA	<b><i>GIS data from IGSM (boundary, water levels)</i></b>	
	<b><i>Groundwater level data for all wells within model boundary (see GIS shapefile)</i></b>	
	Precipitation contours in GIS format	3/25/09
	Land use (preferably GIS format)	3/25/09
MPWMD	Monthly production for wells in Seaside Basin	4/10/09
	Groundwater level data for all wells within model boundary (see GIS shapefile)	3/27/09
	Injection and artificial recharge data	4/10/09
City of Seaside	Monthly production for each well	3/10/09
	Map showing historical areas of septic tanks	4/14/09
	Current land use (GIS format)	3/4/09
	Consumption	3/4/09
	Bayonet and Blackhorse golf course monthly irrigation since 1987 (see MCWD backup supply on occasion)	3/4/09
	GIS shapefile of water mains	3/4/09
Cal-Am	Monthly production for each well	3/10/09
	<b><i>Monthly deliveries (by service area), including Carmel River water</i></b>	
	Groundwater levels	3/13/09
	GIS shapefile of water mains	3/18/09
	GIS shapefile of service area	3/18/09
MCWD	Monthly production for each well	4/7/09
	Groundwater level data for all wells within model boundary (see GIS shapefile)	3/25/09
	GIS shapefile of water mains	3/23/09
AMBAG	Land use (preferably GIS format)	3/15/09
FORA	Land use (preferably GIS format)	3/15/09

- Notes: 1. Date originally sent out: March 3, 2009  
2. Items still needed are highlighted in **boldface italics**.

## Upcoming Work

- Complete data collection,
- Complete recharge calculations,
- Complete constructing model grid and model layers,
- Complete compilation of pumping and injection data,
- Start working on model boundary conditions, and
- Workshop to discuss Protective Level goals and objectives.

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## Progress Report from the Technical Program Manager

### A. Database Issues

At the last TAC meeting it was agreed that TAC members would examine the database online and provide any comments or identify any deficiencies and provide that information to Mr. Jaques and Mr. Oliver by April 23. Table 1 contains a summary of the feedback provided by TAC members.

Tables 2 and 3 are proposed revisions to the User Access Levels and the capabilities of each Level.

Mr. Oliver spoke briefly with Inder-Mohan Osahan (MPWMD's IT consultant) regarding modifying the Database programming to allow users at different User Levels to have different capabilities to access and be able to edit selected data and screens in the Database. Mr. Osahan did not think that making such programming revisions would result in significant additional Database programming effort over the more simple option of simply restricting access to many of the screens altogether, e.g. for example General Public would not be able to view the Well Details screen because it contains the location information for the wells.

If the TAC is in agreement with making these proposed revisions, Mr. Oliver will get a quote from Mr. Osahan to do the work and see if enough money is already authorized to MRWMP to cover this work, or whether an additional RFS will be needed.

**Table 1. Summary of the Feedback Provided by TAC Members**

<b>Person Reporting</b>	<b>Screen</b>	<b>Deficiency</b>	<b>Comment Following Investigation</b>	<b>Proposed Correction or Action</b>
Rick Riedl	Report, Well Owner	Well owners should be listed in alphabetical order	The order can be sorted alphabetically by clicking on the "Well Owner" column heading	None required
Rick Riedl	Well Database	Well locations should not be accessible to the lowest level users	Concur	Edit the programming of the Database to restrict such information to only the higher levels of users

<b>Person Reporting</b>	<b>Screen</b>	<b>Deficiency</b>	<b>Comment Following Investigation</b>	<b>Proposed Correction or Action</b>
Rick Riedl & Joe Oliver	Documents	Confidential documents available under the “Doc” tab should not be accessible to the general population. They should also not be editable to any but the highest level users.	Concur	Edit the programming of the Database to restrict such information and capabilities to only the highest levels of users
Rick Riedl	Database Home Page	Feedback link does not work	There does not appear to be any particular benefit to asking for feedback using this means. Interested persons can simply phone or email the Watermaster with any feedback they’d like to offer	Remove this feature from the Database Home Page
Rick Riedl	Database Home Page	States that it is powered by RBF	RBF is no longer involved in hosting or maintaining the Database	Remove this from the Database Home Page
Bob Jaques & Joe Oliver	User access levels	There appear to be more access levels than are actually necessary, and many of the lower access levels can access or manipulate/edit data when in fact they should only be able view that data. Also, some of the data should not be accessible at all to the lower access levels	Originally 5 access levels were established by RBF. It now appears that a maximum of 4 levels are all that are needed, and that what can be accessed by each of these levels should be revised.	Reduce the number of access levels to 4, as described in Table 2 below. Provide each level with the capabilities described in Table 3 below.
Joe Oliver	Well List, Secondary Info.	Some problems when in the “Edit Mode”	Programming revision needed	Perform these programming revisions
Joe Oliver	Well List, Secondary Info.	No box exists for “Conductor Depth”	Programming revision needed	Perform these programming revisions

**Table 2. Proposed Revised User Access Levels**

<b>User Access Level</b>	<b>Password Required?</b>	<b>Persons Assigned to this User Access Level</b>	<b>General Description of User Capabilities</b>
1	Yes	<u>Database Administrators:</u> Joe Oliver & Bob Jaques	<ul style="list-style-type: none"> <li>• View and edit all data and documents in the Database</li> <li>• Assign and change passwords and User Levels</li> </ul>
2	Yes	<u>Regular Users and Data Entry Personnel:</u> Laura Dadiw and certain MPWMD personnel	<ul style="list-style-type: none"> <li>• Enter and edit data to <u>all</u> of the <u>data entry</u> screens</li> <li>• View only, but not be able to edit, things in the Documents screen</li> </ul>
3	Yes	<u>TAC Members and Consultants Working for the Watermaster:</u> All members of the TAC, and consultants such as HydroMetrics and Martin Feeney	<ul style="list-style-type: none"> <li>• View only, but not be able to edit, <u>all</u> screens and documents contained in the Database</li> <li>• Prepare and download reports</li> </ul>
4	No	<u>General Public:</u> Anyone who wishes to get information on issues pertaining to the Database	<ul style="list-style-type: none"> <li>• View only, but not be able to edit, <u>selected</u> screens contained in the Database</li> <li>• Prepare and download reports</li> </ul>
5	N/A	Delete this User Level	N/A

**Table 3. Proposed Revised User Capabilities**

User Access Level	<b><i>Tab &amp; Screen List Showing Proposed Capabilities at Each Access Levels</i></b>										
	<b><i>Contacts</i></b>	<b><i>Well Database</i></b>							<b><i>Reports</i></b>		
		<b>Well List</b>	<b>Gen'l Info.</b>	<b>Second'y Info</b>	<b>Water Quality</b>	<b>Depth</b>	<b>Production</b>	<b>Docs</b>	<b>Water Quality</b>	<b>Depth</b>	<b>Production</b>
1	E	E	E	E	E	E	E	E	Report	Report	Report
2	E	E	E	E	E	E	E	View	Report	Report	Report
3	View	View	View	View	View	View	View	View	Report	Report	Report
4	View	View	None	None	None	None	None	None	Report	Report	Report

**Notes:** Abbreviations used in the Table above are:

**Edit** – Can view, add, change, or delete data in this screen

**View** – Can view all data in this screen, but cannot add, change, or edit the data

**None** – Access is not authorized to this screen

**Report** – Can prepare customized reports and download them

## **B. Selection of Site for New Monitoring Well**

Applications have now been prepared and submitted to the U.S. Bureau of Land Management (BLM) and to Monterey Peninsula College (MPC) to install the new monitoring well on property that has already been, or will soon be, transferred to them. These sites are in the vicinity of the intersections of Eucalyptus Road and Parker Flats Road, near the impact area of the former Fort Ord inland firing range. Thus far there the feedback from both parties has been encouraging.

A draft MOU between MPC and the Watermaster was requested by MPC. I prepared one for them to review and it will be submitted to them on May 8th. MPC staff indicated they anticipate putting the MOU on their Board of Directors May 26, 2009 meeting agenda for approval. I will attend that meeting to respond to any questions that may arise. If the application is approved by the MPC Board, the process will then move to FORA which will be able to prepare the necessary right-of-entry documents to allow us to install the well on the MPC site prior to the property being transferred to MPC.

The BLM application is being reviewed by their inhouse permit specialist, who apparently has the authority to prepare and issue the necessary right-of-way documentation, if BLM approves the application. On May 7 he contacted me to report that he had completed preparing the NEPA Environmental Assessment for the permit, and was awaiting approval of it from their NEPA Coordinator. He also had some questions regarding whether the Watermaster would be exempt from BLM's permitting processing fees and annual lease fees for the well site.

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

The Watermaster Board approved the issuance of RFS No. 2009-02 to Martin Feeney to prepare a Basis of Design Report to begin the design process for the new monitoring well. The initial sections of Mr. Feeney's Draft Basis of Design Report are included for discussion and approval under Agenda Item No. 4 on today's agenda.

## **C. Calibration of Production Well Meters**

The attached form letter was mailed out to the owners/operators of all production wells in the Seaside Basin, and responses were requested by April 27, 2009. The table below summarizes the responses received as of the date of preparation of this agenda packet item.

Followup contacts will be made to try to obtain responses from those entities that have not yet responded. Once responses from all entities have been received, a proposed action plan will be presented to the TAC for discussion.

<b>WELLOWNER/ OPERATOR</b>	<b>RESPONSE RECEIVED?</b>	<b>WAS/WERE METER(S) RECENTLY CALIBRATED?</b>	<b>IF YES, WAS/WERE CALIBRATION REPORT(S) PROVIDED?</b>	<b>IF YES, WHAT, IF ANY, FOLLOWUP ACTION IS NEEDED?</b>
Laguna Seca Resorts	Yes	No. Neither of the 2 meters has been calibrated.	No	
California American Water	Enroute but not yet received			
City of Sand City,	No			
City of Seaside	Yes	Yes. All 4 meters (2 municipal, 2 golf courses) were calibrated on 10-13-2008.	Yes, for all 4 meters.	Under study at this time.
Mission Memorial Park	No			
Security National Guaranty Inc	No			
Pasadera Country Club, LLC	Yes	No. Neither of the 2 meters has been calibrated.	No	
York School	No			
Monterey County Parks Department	Yes	No. One Meter is new, but not calibrated subsequent to installation; the other meter has not been calibrated	No	

**REQUEST  
FOR  
WATER METER CALIBRATION INFORMATION**  
**April 6, 2009**

The Seaside Groundwater Basin Watermaster (Watermaster) is responsible for enforcing and administering the provisions of the adjudication Decision for the Seaside Groundwater Basin (Basin) located in northern Monterey County, California. This Decision was issued by the Superior Court in Monterey County on February 9, 2007.

Concerns about overpumping of groundwater from the Basin, and the potential for this to lead to seawater intrusion, led to the Court's issuing of the Decision. The Decision requires that certain actions be taken by the Watermaster to preserve and protect the ground water resources within the Basin. One of these requirements is to ensure that the meters on all of the active production wells are calibrated, so that the production quantities which are reported to the Watermaster are accurate.

You are receiving this Request because the Seaside Groundwater Basin Watermaster's records indicate you are the owner or operator of one or more active water production wells located within the Seaside Groundwater Basin.

An active production well is defined as any well that extracts water for a beneficial use, such as landscape irrigation, commercial uses, or drinking water. An inactive production well is defined as any well that could extract water for a beneficial use, but which currently either has an inoperable pump, no pump at all, or for some other reason is not currently capable of extracting water for a beneficial use.

So that the Watermaster can fulfill this requirement, please fill out and return the attached questionnaire to the Watermaster's Technical Program Manager at the following address:

Mr. Robert Jaques  
Technical Program Manager  
83 Via Encanto  
Monterey, CA 93940

If you have any questions regarding this request, or how to fill out the questionnaire, please contact Mr. Jaques at (831) 375-0517, or via email at [boj@mrwpca.com](mailto:boj@mrwpca.com).

**Please submit your response not later than Monday, April 27, 2009.**

The Watermaster may hire a contractor to perform calibration tests on active water well production meters, if they have not been recently calibrated, or if recent calibration tests indicate the meters are not reading accurately. After reviewing your Response, if the Watermaster determines that your meter needs to be calibrated you will be contacted to arrange for the calibration contractor to perform this work. There will be no cost to you to have your meter calibrated. However, if the calibration work finds that the meter is in need of repair or replacement, you will be notified, and that will be your responsibility.

Thank you for your attention to this Request.

Dewey D. Evans  
Chief Executive Officer

Attachment

**NOTE:** IF YOU OWN OR OPERATE MORE THAN ONE ACTIVE WELL WITHIN THE SEASIDE GROUNDWATER BASIN, PLEASE FILL OUT A SEPARATE RESPONSE FORM FOR EACH WELL THAT YOU OWN OR OPERATE (You may make copies of this blank form for this purpose)

**Water System Name:** \_\_\_\_\_

**Well Name:** \_\_\_\_\_

**Well Status:**         Active     Inactive

If you indicate the well is Inactive, please explain why it is no longer active:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Has this well's water meter been calibrated within the last 5 years?    Yes         No

If "yes" when was the most recent calibration date? \_\_\_\_\_

Do you have a copy of the calibration test results?    Yes         No

If "yes" please attach them to this response.

## Well Calibration Letter Mailing List

Laguna Seca Resorts  
Attn: Bob Costa  
10520 York Road  
Monterey, CA 93940

California American Water  
Attn: Craig Anthony, General Manager  
P.O. Box 951  
Monterey, 93942

City of Sand City,  
Attn: Richard Simonitch, Public Works Director  
1 Sylvan Park  
Sand City, CA 93955

City of Seaside  
Attn: David Fortune  
440 Harcourt Ave  
Seaside, CA 93955

Mission Memorial Park  
Attn: Roxan Schwab  
1915 Ord Grove Avenue  
Seaside, CA 93955

Security National Guaranty Inc  
Attn: Ed Ghandour  
155 Jackson Street, Suite 2103  
San Francisco, CA 94111

Pasadera Country Club, LLC  
Attn: Dean Leonard  
9781 Blue Larkspur Lane  
Monterey, CA 93940

York School  
Attn: Fana Oldfield  
9501 York Rd.  
Monterey, CA 93940-6530

Monterey County Parks Department  
Attn: Richard Higgins  
1025 Monterey-Salinas Hwy  
Salinas, CA 93908

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

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

<b>MEETING DATE:</b>	May 13, 2009
<b>AGENDA ITEM:</b>	3
<b>AGENDA TITLE:</b>	Approval of Selection of Scenarios to be Evaluated Using the Updated Groundwater Model
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b>	
<p>HydroMetrics conducted the Workshop at the April 23, 2009 Special TAC Meeting at which a list of Scenarios to be evaluated by the Updated Groundwater Model was selected. Attached is HydroMetrics' revised Technical Memorandum No. 2 which describes that Workshop and contains the listing of scenarios the TAC recommended for evaluation.</p> <p>The TAC is asked to discuss any further issues regarding the selection of these scenarios, and the process that will be used to evaluate them using the Updated Groundwater Model, and to then approve this list of scenarios as those to be evaluated using the Groundwater Model.</p> <p>Following TAC approval, the list will be forwarded to the Board for its approval, or modification, at its June 3, 2009 meeting.</p>	
<b>ATTACHMENTS:</b>	HydroMetrics Technical Memorandum No. 2
<b>RECOMMENDED ACTION:</b>	Discuss any remaining issues related to this work

## SEASIDE GROUNDWATER BASIN GROUNDWATER MODEL TECHNICAL MEMORANDUM # 2

To: Seaside Groundwater Basin Technical Advisory Committee  
From: Derrick Williams and Georgina King  
Date: May 7, 2009  
Subject: Seaside Groundwater Basin Model Scenario Development

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The Seaside Groundwater Basin model is a tool that can predict basin impacts, such as changes to groundwater levels and flow directions, resulting from implementing various management actions and supplemental supply projects. HydroMetrics LLC is contracted to simulate up to five model scenarios that address such impacts. As the scenarios should be realistic and representative of potential projects, the Technical Advisory Committee (TAC) was asked to provide input and guidance in the selection of scenarios. This technical memorandum defines model scenarios, discusses potential model scenarios, and presents the recommended scenarios that were developed at a special TAC meeting on April 23, 2009.

### 1. MODEL SCENARIO DEFINITION

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

- The amount of water imported into the Basin,

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

Even for the same general project, separate model scenarios will be required to evaluate the impact of different project sizes. For example, injecting 2,500 acre-ft per year (AFY) would be one model scenario, and injecting 4,000 AFY would be another model scenario. The greater injection volume requires a separate scenario because the project will not simply change how much water is added to the groundwater system, but will involve adding additional injection wells and changing the operation of extraction wells to capture the injected water at a later date.

Each model scenario must be carefully designed, and cannot contain any ambiguities or vagueness. To achieve maximum benefit to the Basin as a whole, scenarios should take into account basin wide management issues and should not focus on micro-scale optimization that would only affect a small portion of the basin. Model scenarios must be detailed with specific water volumes, include realistic assumptions, and be based on defined infrastructure.

The model results should be interpreted with caution when predicting absolute groundwater levels at specific times in the future. Absolute groundwater levels are difficult to predict because it is impossible to accurately predict future rainfall patterns and groundwater use. Rather, the model should be used to predict relative impacts between scenarios, as this causes less uncertainty. All scenarios will be run using the same climatic conditions; and the results for each scenario will thus be accurate relative to one another.

## 2. BASELINE MODEL SCENARIO

The first model scenario that will be developed is a Baseline Scenario against which other predictions can be compared. The Baseline Scenario includes all anticipated changes to the groundwater basin that are independent of the proposed groundwater management actions and supplemental supply projects. The following assumptions will be applied to the Baseline Scenario:

1. The twenty years of rainfall and evaporation used in the calibrated model (1987 – 2008) will be repeated for the Baseline Scenario.
2. Pumping will reflect the Court-ordered triennial ten percent reduction in basin production by uniformly reducing all Standard Production Allocation producers' well production by ten percent,
3. Planned development in the former Ford Ord will be simulated based on the Fort Ord Base Reuse Plan, including development of the Del Rey Oaks Golf Course and Resort. Land use changes and development will be phased in, with 25% of the final planned build-out implemented after 5 years and the remaining 75% implemented after 10 years. Water for new development on the former Fort Ord is assumed to come from outside the modeled area.
4. Land use changes in the Laguna Seca / Toro area will be based on the County's General Plans.
5. Land use changes due to planned development in Sand City will be simulated based on that city's General Plan.
6. The MPWMD ASR Phase I operations will be included, using predicted injection volumes from MPWMD.
7. We will assume that Sand City's desalination plant provides 300 AFY of water. This water, however, is not dedicated toward offsetting Seaside Basin pumping,
8. Northern model boundary conditions will reflect MCWRA's anticipated future groundwater levels in the Salinas Valley. These boundary groundwater levels will be provided by MCWRA from their Salinas Valley Integrated Groundwater Surface water Model (IGSM).

The results of the Baseline Scenario, like all other model scenarios, will include:

- Evaluation of groundwater levels,

- Evaluation of groundwater flow directions, including changes to the northern Seaside Groundwater Basin boundary, and
- Evaluation of the water budget, including inflows and outflows to the oceans and across subarea boundaries.

### 3. EXAMPLE MODEL SCENARIOS

Example scenarios may include developing in-lieu recharge by providing supplemental sources to address annual basin overdraft; injecting water into the existing MPWMD ASR wells in excess of the annual basin overdraft; developing an injection barrier along the coast; or recharging highly treated wastewater through MRWPCA's proposed Ground Water Recharge Project using either surface spreading, vadose zone injection wells, and/or direct aquifer injection wells.

The source of water is not important to model scenario development. More important is the volume of water, timing of water deliveries, fate of imported water, operational impacts, and possible new well locations needed to capture the supplemental water. Many of the supplemental supplies described in the Basin Management Action Plan (BMAP) can be considered similar with respect to the volume of water they will bring into the Seaside Groundwater Basin, and how the water will be used. Table 1 groups the BMAP supplemental water supply sources by the general type of supply.

Table 1: Potential Supplemental Water Sources

Grouping	Project	Potential Volume to Seaside Basin (acre-feet per year)
In-lieu supply that reduces pumping in Seaside basin	Moss Landing Desalination – Local Alternative	4,000
	North Marina – Local Alternative	4,000
	Regional Desalination Project	4,000
	Not specified – source of water from north of Seaside Basin	3,000
	Regional Urban Water Augmentation Project	700
Injection / ASR	Seaside Basin ASR	2,500 – 4,000
	Seaside Groundwater Replenishment Project	6,700
Depends on storm flows	Pacific Grove Stormwater Project	200

Based on the grouping of projects in Table 1, a list of example model scenarios were presented to the TAC.

The example model scenarios are provided in Table 2.

Table 2: Example Model Scenarios

Type of Water and Location	Volume (acre-feet per year)	Operational Changes in Basin
In-lieu, delivered to CAW	3,600	CAW reduces pumping by 3,600 AFY
Injection of water in Seaside (Seaside ASR Phase II)	4,000	Injection and extraction from new ASR wells
Injection of water in Seaside (Seaside Groundwater Replenishment Project)	6,700	New injection wells Use existing wells to capture stored water
Surface recharge of water in Seaside (Seaside Groundwater Replenishment Project)	6,700	New vadose wells Use existing wells to capture stored water
Both injection and surface recharge of water in Seaside (Seaside Groundwater Replenishment Project)	6,700	New injection wells and recharge ponds or vadose wells. Use existing wells to capture stored water
Coastal injection barrier	?	New barrier wells injecting water along coast, pumping inland of the injection barrier continues at current amount
Coastal injection barrier	?	New barrier wells injecting water along coast, pumping inland of the injection barrier increases from current amount
Redistribute pumping locations	-	New wells are located optimally to ensure even distribution of pumping that eliminates major pumping depressions – pumping remains at current amount
Increase pumping in the Laguna Seca subarea	percentage increase	Increase pumping in Laguna Seca subarea wells, keep the rest of the wells in the Basin at current amounts
Do not institute the triennial 10% reduction in pumping	-	Production remains as per pre-2009 allocations, without reductions taking place
Effects of global warming	?	Sea level rise, less natural groundwater recharge

#### 4. SELECTED MODEL SCENARIOS

During the meeting on April 23, TAC members commented and discussed the example model scenarios, made suggestions on alternatives, and reached consensus on five model scenarios to develop for modeling. The five model scenarios are outlined in Table 3.

Specific operational details for each of the five scenarios were not developed at the April 23 meeting. HydroMetrics LLC will be contacting the relevant agencies regarding assumptions about future well operations that should be used to define the specific operational details for each scenario.

**Table 3: Selected Model Scenarios**

Model Scenario	Type of Water and Location	Volume (acre-feet per year)	Operational Changes in Basin
1	In-lieu, delivered to CAW	3,600	CAW stops all pumping and brings in 3,600 AFY of in-lieu supply until their accumulated over-production has been paid back. Once it has been paid back, pumping will continue as per CAW's Natural Safe Yield Allocation (1,494 AFY). The triennial reduction in pumping does not take place while CAW repays the overproduction debt because total pumping will be below the Natural Safe Yield.
2	Scenario 1 plus Injection of water in Seaside Basin	3,600 + 2,000	Scenario 1 plus new wells injecting 2,000 AFY along General Jim Moore Blvd
3	Both injection and surface recharge of water in Seaside Basin	2,800 Nov-Mar only	Install new injection and vadose wells to replenish the Basin using highly treated wastewater. Use existing wells to capture the replenished water. The details and operations of this scenario will be based on concepts developed by MRWPCA
4	Coastal injection barrier	2,600	New barrier wells injecting water along the coast, pumping inland of the injection barrier continues at current amount.
5	Redistribute pumping locations	No change	New wells are installed to move pumping troughs inland, to more evenly distribute pumping, and to eliminate major pumping depressions. Pumping remains at current amount

## 5. MODEL SCENARIO RESULTS

The Baseline Scenario and the five predictive model scenarios shown in Table 3 will be simulated using the calibrated groundwater model. After running each scenario, the following will be evaluated and compared against the Baseline Scenario:

- Time needed to reach protective groundwater elevations,
- Storage efficiency of recharged water (i.e., how much of the recharged water can be extracted),
- Water budget or accounting of all groundwater inflows, groundwater outflows, and changes in storage for each of the four Seaside Groundwater Basin subareas, and
- Change in basin wide groundwater levels and flow directions, especially along the northern basin boundary.

The evaluation of each model scenario will cover all the model goals identified in the TAC special Workshop #1. The model goals and objectives agreed to at that workshop are attached in Appendix B.

## 6. REFERENCES

ESA, 2009. *California American Water Company coastal water project, draft environmental impact report*, prepared for California Public Utilities Commission, January 30, 2009.

**APPENDIX A**  
*LIST OF WORKSHOP ATTENDEESS*

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

## APPENDIX B

### GOALS AND OBJECTIVES AGREED TO AT TAC WORKSHOP #1

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

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

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

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

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

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

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

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

<b>MEETING DATE:</b>	May 13, 2009
<b>AGENDA ITEM:</b>	4
<b>AGENDA TITLE:</b>	Presentation of Basis of Design Report for New Monitoring Well
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager

**SUMMARY:**

Martin Feeney prepared the initial sections of draft Basis of Design Report (BODR) for the New Monitoring Well to be installed later this year. It was reviewed by Mr. Jaques and Mr. Oliver and their review comments have been addressed in the attached version of this document. The document cannot be completed until the specific well site has been selected, as discussed under Agenda Item No. 2.C of today's agenda. At that time a cost estimate and language specific to the selected site will be included, so the document can be finalized for use in designing the well and preparing bid documents for its installation.

In order to enable the design work to begin as soon as possible after the site is selected, I would like the TAC to review the preliminary sections of the BODR and raise any questions or issues of concern now, so Mr. Feeney can address them as he finalizes the document.

Mr. Feeney will provide a brief summary of the preliminary sections of the draft BODR and respond to any questions the TAC may have on it.

<b>ATTACHMENTS:</b>	Preliminary Sections of the Draft BODR for the New Monitoring Well
<b>RECOMMENDED ACTION:</b>	Provide any proposed edits to Mr. Feeney for his use in finalizing the document after the final site selection has been made

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## TECHNICAL MEMORANDUM

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**To:** Seaside Groundwater Basin Watermaster  
**Date:** May 5, 2009

**From:** Martin Feeney, PG, CHg  
**Project No:** \_\_\_\_\_

**Subject:** Basis of Design – Seaside Groundwater Basin Watermaster’s  
2009 Inland Monitoring Well

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### INTRODUCTION

Pursuant to the Seaside Groundwater Basin Watermaster’s (Watermaster) obligations under the court settlement, the Watermaster has budgeted for the installation of one new monitoring well in 2009 to better understand the inland hydrogeology of the basin. This document presents a basis-of-design for the proposed well. Presented in this document is a review of the regional hydrogeologic setting, a summary of available site-specific data, a preliminary design, and construction approach. After review of project design and approach by the TAC, a cost estimate will be developed.

### PROJECT GOALS

The purpose of the monitoring well installation project is to further understand the hydrogeology of the inland portion of the Seaside Groundwater Basin. Data will be developed from both the drilling of the monitoring well and from the longer-term record from the new monitoring well, once established.

The information from the borehole will:

- Allow identification of aquifer units in the inland portion of the Seaside Groundwater Basin.
- Allow for delineation of depths, thickness and characteristics of the underlying aquifer units.
- Allow collection of lithologic and geophysical data that will assist in better delineation of aquifer units and basin structure

The completed monitoring well will:

- Allow for on-going collection of aquifer-specific water level data
- Allow for on-going collection of aquifer-specific water quality data

### DESIGN CONSIDERATIONS

#### Location

Two potential locations are being considered for the inland monitoring well. One site is located on land that is to be developed as Monterey Peninsula College’s (MPC) Fort Ord Campus. The other site is at the current Bureau of Land Management (BLM) Headquarters on the former Fort Ord. The BLM Headquarters is located at the site of the old Camp Huffman, a predecessor to Fort Ord. Camp Huffman previously had a water well that has subsequently been destroyed. However, data from this well has been used to support much of the hydrogeologic analysis of this portion of the Seaside Basin. The locations of the sites under consideration are shown on Figure 1 – Well Site Location Map.

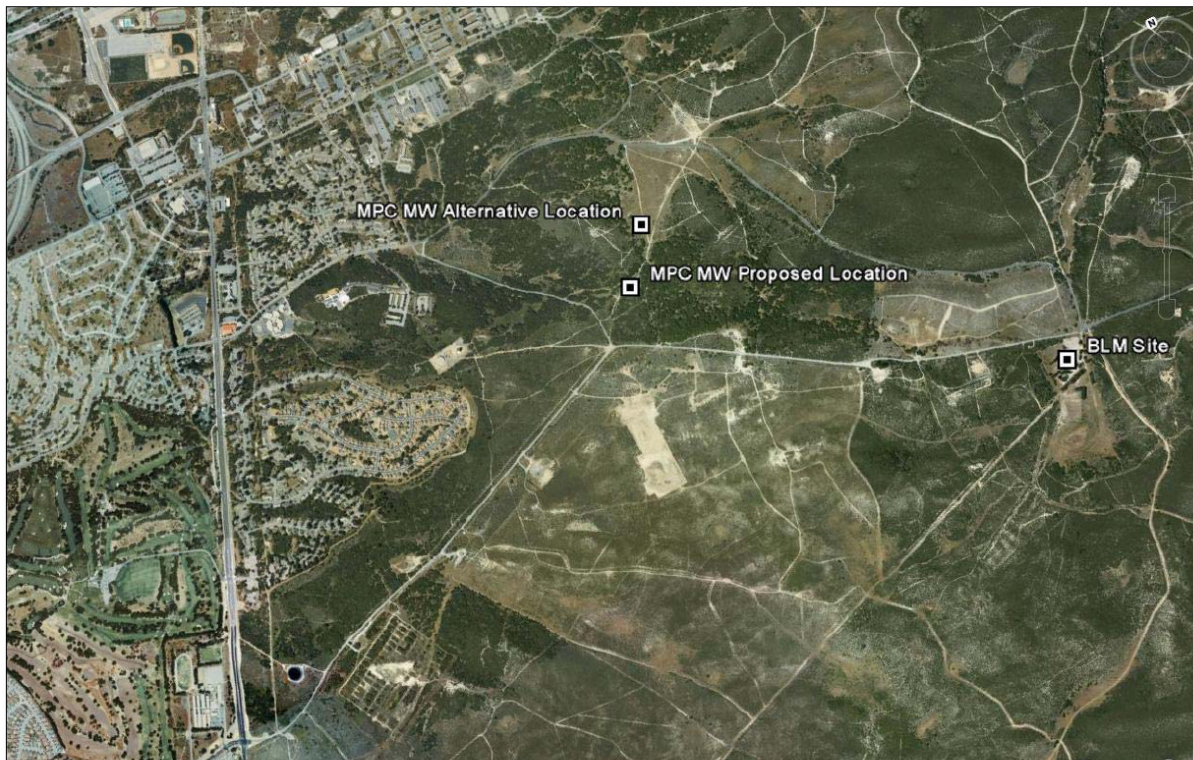


Figure 1 - Well Site Location Map

## Hydrogeology

### *Regional Hydrogeology*

Due to the surficial dune sand deposits that cover most of the Seaside Basin, indications of the subsurface geology are largely obscured. As such, subsurface data in the Basin is limited to areas where water wells have been historically drilled. Very few water wells have been drilled in the inland portion. The wells that have been drilled are limited to the Camp Huffman well at the BLM site and the monitoring wells installed by the Monterey Peninsula Water Management District (MPWMD).

The hydrogeology underlying both sites is assumed to be consistent with conditions observed in the adjacent areas of the Seaside Groundwater Basin. That is, a sedimentary sequence of water-bearing materials that overlie the non-water-bearing shales of the Monterey Formation. The Monterey Formation is considered the bottom of the Seaside Groundwater Basin due to its low-permeability and poor water quality. The sedimentary materials overlying the Monterey Formation are assigned to three stratigraphic units — the Aromas Sand/Older Dunes, Paso Robles Formation and the underlying Santa Margarita Sandstone/Purisima Formation. Structural deformation of the basin has resulted in varying thickness and depths of these units across the basin.

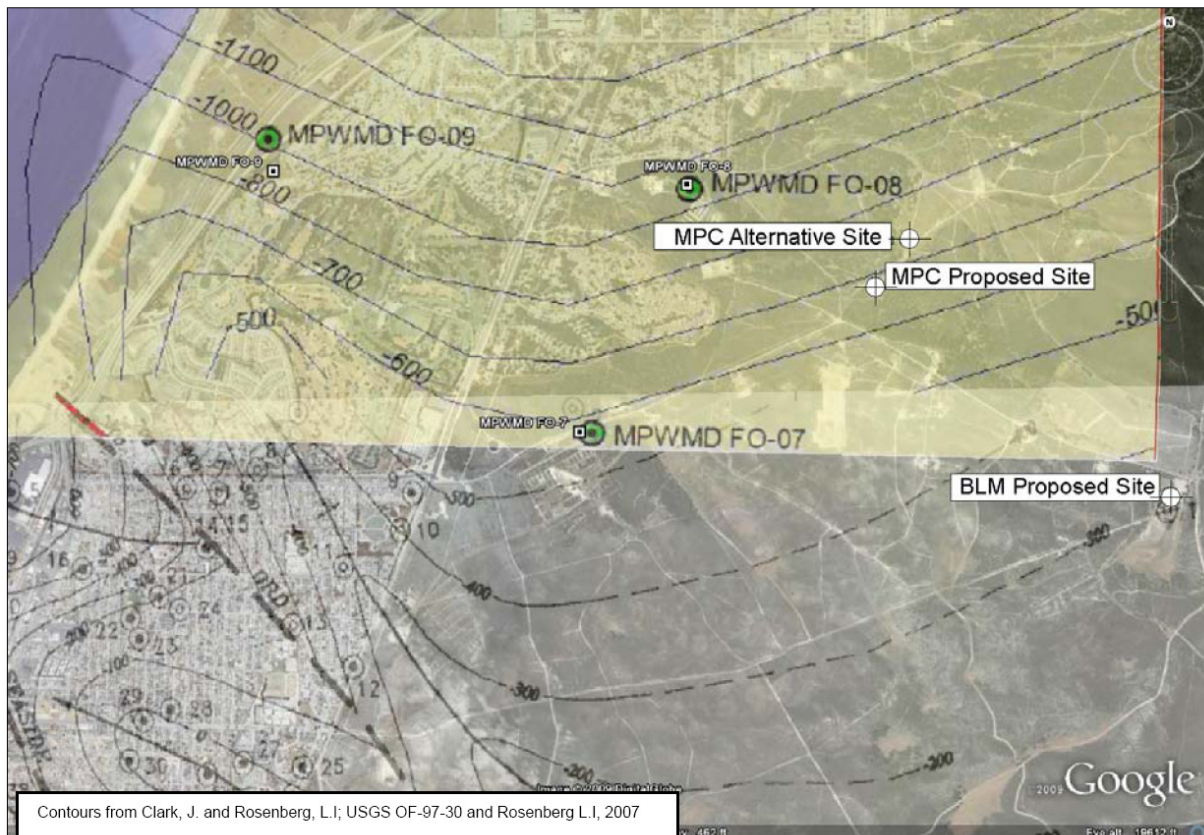
The three upper stratigraphic units constitute the three aquifers in the Seaside Basin. The upper aquifer consists of the Aromas Sand/Older Dunes. This aquifer is of minor importance in the basin as it is unconfined, in direct hydraulic communication with the ocean, and is saturated only in the extreme coastal portion of the basin. The Aromas Sand/Older Dune aquifer is underlain by the Paso Robles Formation. This formation consists of a complex sequence of interbedded sand, gravel and clay deposits. These deposits are more than 600 feet thick in some portions of the basin. The water bearing portions of this formation are thick sand and gravel lenses of limited areal extent. The Santa Margarita Sandstone underlies the Paso Robles Formation. The Santa Margarita Sandstone is a loose to weakly

cemented arkosic sandstone with a stratigraphic thickness of approximately 200 to 250 feet. The upper portion of this formation is clean sand. With increasing depth and proximity to the underlying Monterey Shale, the clay content of the formation increases. Information collected as part of the recent installation of the Coastal Sentinel Wells suggests that in the northern portion of the Seaside Groundwater Basin, the Santa Margarita Sandstone is replaced in the stratigraphic sequence by the Purisima Formation.

In the inland area of the Seaside Basin, the understanding of the areal and vertical distribution of the various hydrostratigraphic units described above is very limited. However, regional analysis of the area has allowed investigators (Clark and Rosenberg 1994, Rosenberg 2007) to infer regional structure of the area. Presented in Figure 2 – Contours on Top of Monterey Formation are contours on the top of the Monterey Formation from these two sources overlaid on a regional airphoto showing existing well control and proposed well sites.

### *Site-Specific Hydrogeologic Data*

**Camp Huffman Well** – This now-destroyed well was located at what is now the BLM headquarters on the former Fort Ord. The well was drilled in 1912 to 485 feet and was at an elevation of approximately 390 feet. As constructed the well bottom was at an elevation of approximately 95 feet below sea level. The wellbore encountered sand, gravel and clay horizons to total depth. The available geologic data are inadequate to precisely define the producing aquifer unit, but analysis of the regional hydrogeology suggests that the well was in the Paso Robles Formation, the top of the Santa Margarita Sandstone being inferred to be approximately 55 deeper than the well at a depth of approximately 540 feet.



**Figure 2 - Contours on Top of Monterey Formation**

Based on the above preliminary well designs can be developed for each of the sites. Proposed for each well site are three casing strings; one perforated in the Santa Margarita Sandstone the other two perforated in the upper and lower portions of the overlying Paso Robles Formation. Assuming a multiple completion at the selected site, the well particulars are as presented below:

Site	Elevation (feet, mgl)	Projected Depth to Water (feet, bgs)	Estimated Elevation QTP Water Surface (feet, msl)	Estimated Elevation of Top of Monterey Formation (feet, msl)	Estimated Depth to Top of Santa Margarita (feet, bgs)	Estimated Elevation of Top of Santa Margarita (feet, msl)	Saturated Thickness of QTP (feet)	Estimated Depth of Deep Boring (feet, bgs)	Estimated Depth of Tsm Well (feet, bgs) <sup>c</sup>	Estimated Depth of Deep QTP Boring/Well (feet, bgs) <sup>b</sup>	Estimated Depth of Shallow QTP Boring/Well (feet, bgs) <sup>a</sup>	Total Drilled Footage (feet)	Total Well Footage (feet)
BLM	394	300	80	-400	544	-150	230	794	694	469	414	1677	1577
MPC	343	273	70	-700	793	-450	520	1043	943	718	373	2134	2034
MPC Alt	296	231	65	-735	781	-485	550	1031	931	706	331	2068	1968

notes

a Shallow QTP Completion 100 below saturation

b Deep QTP Completion 75 above Tsm/QTP contact

c Tsm Completion 100 above Tm contact

### Monitoring Well Functional Requirements

The adopted well design must include the flexibility to allow the well to accommodate all the intended and potential uses. Although the primary data interest is water level and there are no reasons to anticipate rapid changes in water quality, periodic water-quality sampling is still likely to be performed. The adopted design therefore needs to allow for aquifer-specific collection of water-level and water-quality data. Well casings must be of sufficient diameter to allow for anticipated sampling and monitoring equipment.

With minor exception, all water-level monitoring equipment, either manual or automated, is designed to fit within 1-inch diameter casings. As such, this criterion is not particularly limiting. Collection of water-quality samples is more complicated. The proposed wells are to be as deep as 900 feet. Water levels in the wells are anticipated to be between 200 and 300 feet below ground surface. For the deeper wells, this will result in a standing water column of 600 to 700 feet of water in the well under static conditions. Some sampling guidelines suggest that as much as three casing volumes should be removed prior to collecting representative samples. Assuming a 2.5 inch diameter PVC casing, this can be more than 500 gallons of purge water. Removal of this amount of water with a pump that will fit in this size casing and pump from the anticipated depths can take significant time (100 minutes at 5 gpm). Increasing the casing diameter to 4-inch would allow for a larger pump, however, increasing the casing diameter will increase costs significantly. Alternatively, the well could be outfitted for airlift pumping. This is the method used by the MPWMD to purge their monitoring wells. An additional alternative would be to adopt the use of “zero-purge<sup>1</sup>” sampling methods that utilize downhole tools that sample directly opposite the well screen. This is the method utilized for the Sentinel Wells.

<sup>1</sup> Zero-purge sampling relies on collecting a sample from within the screened portion of the monitoring well thereby eliminating the need to remove the stagnant water above the screened interval.

## CONCEPTUAL WELL DESIGN/WORKPLAN

Overall the workplan is to drill a borehole to the top of the Monterey Formation. After reaching the Monterey Formation the borehole will be geophysically logged. These geophysical data, along with lithologic data from the borehole will be used to determine the depth, perforated intervals and seal depths for the monitoring wells.

### Potential Monitoring Well Designs

At locations where there is an interest in monitoring hydrogeologic conditions in two or more underlying aquifer units, there are two common monitoring well designs. 1) The *nested well* consisting of a single borehole containing two or more separate casing strings. Each casing string is perforated at differing depths and is hydraulically separated from other perforated intervals with low-permeability seals. 2) The other common design is a *well cluster*. This design utilizes a separate smaller diameter borehole for each casing string. In comparison, a nested well designed to monitor three separate hydrogeologic units would have three casings in a single borehole whereas; a well cluster designed for the same purpose would consist of three separate wells of varying depths. The two designs are presented on Figure 3 – Monitoring Well Designs.

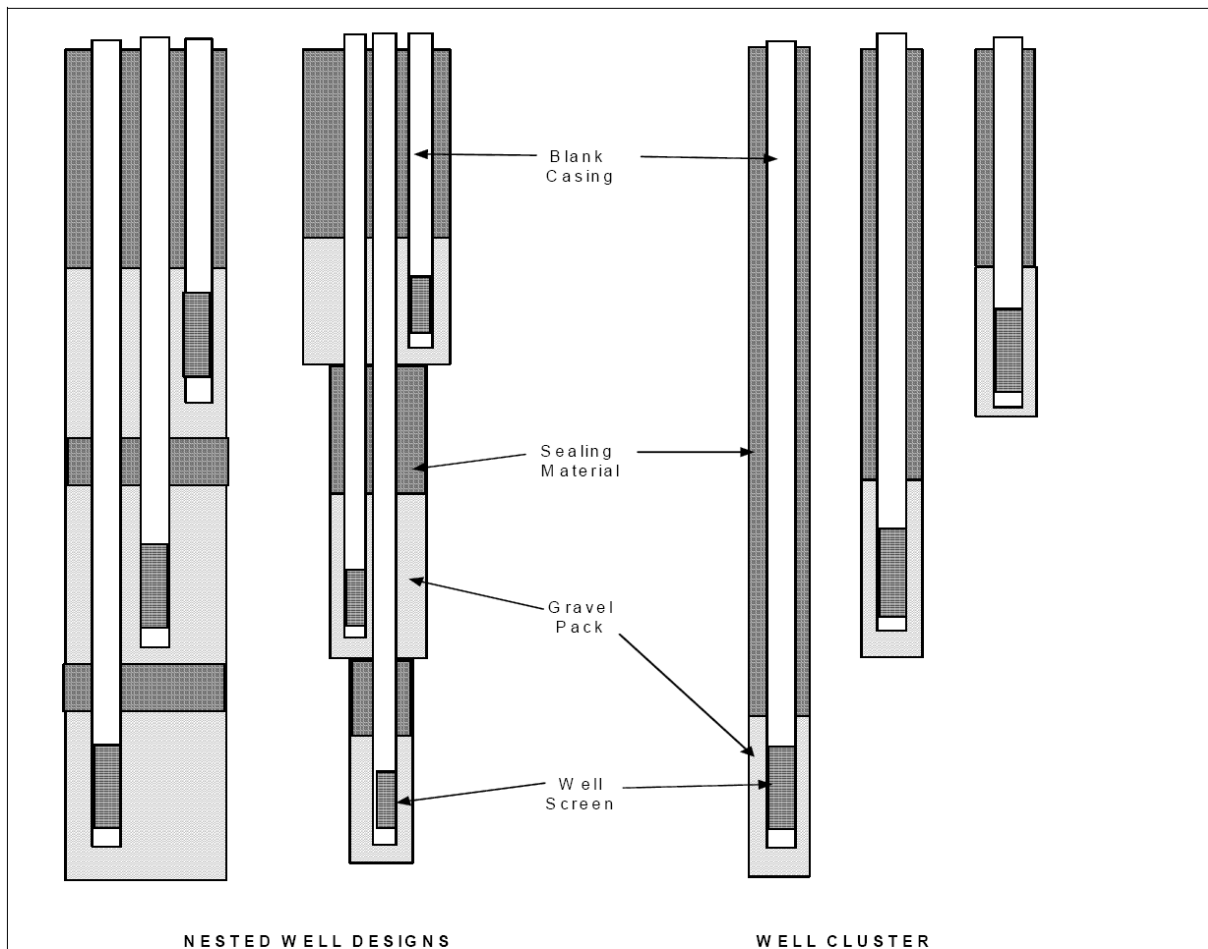


Figure 3 - Monitoring Well Designs

Both of the designs have pros and cons. The primary advantage of the nested well design is that its surface footprint is more limited than the well cluster. The surface expression of a 3-aquifer zone nested

well is typically a single large-diameter surface-mounted vault. In comparison, the surface expression of a comparable well cluster would consist of three smaller-diameter surface-mounted vaults separated by 10 or more feet. Thus, for this latter design the total surface expression could be contained in an area of approximately 5 feet by 25 feet.

The primary advantage of the well cluster is the increased confidence in the hydraulic separation between aquifer units. Although nested wells are routinely constructed and typically can display significant differences in water level between the casings, there is always the possibility that the seals within the borehole are less than perfect and the some minor leakage between aquifer units is occurring.

The cost differences between the approaches are not significant. Whereas there is significantly more drilled footage in a clustered design, the boreholes are smaller in diameter, reducing the volume of fluid and cuttings. Comparison of the volume of cuttings and fluids from a 14 ¾ inch diameter 1,000 foot borehole for a triple completion nested well verses three 8 ¾ inch diameter wells (say 1,000, 700 and 400 feet in depth) comprising a cluster reveals the three-well cluster comprised of three separate holes to have a third less cuttings and fluids. Given that disposal of cuttings and fluids are significant costs, this difference in volume of cuttings and fluids can balance out the cost of the additional drilled footage in the cluster design over the nested.

Additionally, construction of a nested well takes significantly more time than construction of a single casing well. The first casing needs to be installed, gravel packed, an intermediate seal placed and allowed to harden, a second casing string installed, gravel packed and sealed and repeated for the third casing string. This process can typically take several days. This extended construction time increases risk of hole stability problems and formation damage. This compares to single-casing construction that allows installation of casing, gravel pack and final seal as continuous process; a process that can take less than a day for each well.

Discussions with Bradley and Sons Drilling, the Contractor that constructed the Watermaster's Sentinel Wells, confirmed the above, suggesting that cost for construction of the proposed monitoring well will be approximately the same with either of the two designs.

Given the above, it is recommended that the subject monitoring well be established as a well cluster. The recommended design and methods are summarize below:

### **Recommended Design and Methods**

Design:	Well Cluster
Drilling Method:	Direct Rotary Method
Casing:	2.5 inch PVC casing (2.875 inch OD)
Screen:	2.5 inch diameter PVC horizontally slotted (0.032 inch slots)
Borehole size:	9 7/8 or 10 5/8 inch diameter
Gravel Pack:	8 x 16 or Aquarium #3
Sealing Material:	Concrete or as permitted by local agency
Development:	Swabbed and air-lifted clean to bottom
Surface:	Flush-mounted, traffic-rated, monitor well vault with locking lid

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**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

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

<b>MEETING DATE:</b>	May 13, 2009
<b>AGENDA ITEM:</b>	5
<b>AGENDA TITLE:</b>	Update on Board's Action Regarding Reducing the Operating Yield
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b>	
<p>At the April 8, 2009 TAC meeting there was discussion regarding the TAC's recommendations to the Board regarding whether or not the TAC had concluded that the operating yield would need to be reduced in the current Water Year, even if the City of Seaside's proposal to shift water supplies for its golf courses from its well pumps to the MCWD potable system.</p> <p>Following that TAC meeting a revised document on this subject was emailed to TAC members for their further review. Attached is the draft Board Agenda Transmittal on this item, reflecting the edits and comments that I received from TAC members. This Agenda Transmittal was provided to Mr. Evans for inclusion in the Board's agenda packet for its May 6, 2009 meeting.</p> <p>At today's TAC meeting, an oral report will be provided regarding the action the Board took on this matter at their May 6<sup>th</sup> meeting.</p>	
<b>ATTACHMENTS:</b>	Board Agenda Transmittal containing the TAC's Findings and Conclusions based on the City of Seaside's proposal being formalized and implemented
<b>RECOMMENDED ACTION:</b>	None required – information only

**SEASIDE GROUNDWATER BASIN  
WATERMASTER**

TO: Board of Directors

FROM: Robert S. Jaques, Technical Program Manager

DATE: April 20, 2009

SUBJECT: Further Information for the Board's Consideration Regarding Reducing the Operating Yield  
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**BACKGROUND:** At its March 18, 2009 meeting the Board received an oral presentation by the City of Seaside's water attorney, Mr. Russ McGlothlin, describing a proposal the City is considering as a means of helping to avert the Court-imposed 10% pumping reduction for the remainder of Water Year 2008-2009.

Since this proposal was viewed with optimism by the Board, the Board deferred taking action on whether or not to impose the 10% reduction in order for the proposal to be further developed by the City, and for the Budget and Finance and the Technical Advisory Committees to review the proposal and provide their findings and conclusions.

**DISCUSSION:** The matter was discussed by the TAC at its April 8, 2009 meeting. Draft working papers for purposes of this discussion were prepared by the Technical Program Manager, and substantial changes to those draft documents were proposed by the TAC. After making those revisions, the documents were circulated for further TAC review. The two attached documents reflect the revisions proposed by, and agreed to by, the TAC.

Attachment 1 describes the concept being pursued by the City of Seaside to change the source of water to irrigate its golf courses from well water that is pumped from the Seaside Groundwater Basin, to water provided by the MCWD's potable water distribution system, which draws from the Salinas Valley Groundwater Basin.

Attachment 2 describes the consensus of the TAC as to how this approach would alter the Findings and Conclusions that were presented to the Board at its March 18<sup>th</sup> meeting with regard to the first of the four conditions listed in the Decision, the satisfying of any one of which would avert having to impose the 10% reduction in pumping. The concept being pursued by the City of Seaside would not pertain to the other three of the four conditions.

It was the TAC's conclusion that, even if the City of Seaside's proposal were to be implemented for the remainder of Water Year 2008-2009, none of the four sets of conditions which would avert the Court-imposed 10% pumping reduction for the remainder of Water Year 2008-2009 would be met. It is therefore the TAC's conclusion that a 10% Basin-wide pumping reduction should be imposed.

**RECOMMENDATION**: The TAC does not provide a recommendation, since this is a matter for the Board to decide. The TAC only provides its findings and conclusions, from a technical perspective, to assist the Board in making its decisions.

**ATTACHMENT 1**  
**DESCRIPTION OF**  
**PROPOSAL BY THE CITY OF SEASIDE**  
**TO REDUCE OR ELIMINATE PUMPING FROM ITS GOLF COURSE**  
**IRRIGATION WELLS**  
**AS A MEANS OF AVERTING THE IMPENDING 10% REDUCTION IN**  
**PUMPING**  
**REQUIRED BY THE ADJUDICATION DECISION**

**THE CONCEPT**

The City of Seaside, property owner for the Bayonet and Blackhorse golf courses, is considering a change in source for the irrigation water for these golf courses. The proposed project involves a change in water supply from the City's own wells that draw from the Seaside Basin to Marina Coast Water District (MCWD) potable water which draws its water from the Salinas Basin.

The proposed project would result in decreased groundwater withdrawals from the Seaside Basin, which would benefit the Seaside Basin by bringing it closer to its Natural Safe Yield.

The City is considering making this change so that the Watermaster could potentially use the water for in-lieu replenishment of the Basin.

**PROJECT DESCRIPTION**

The proposed project is the change in water supply source at the Bayonet and Blackhorse golf courses from the city's own wells that draw from the Seaside Basin to MCWD potable water which draws its water from the Salinas Basin to allow for alternative uses of the golf course water supply.

MCWD water is currently available at the project site. Some physical improvements are expected to be necessary to switch to the MCWD source.

As condition of approval, the City must receive approval from MCWD to make the change in the water source for the irrigation system. The City submitted an application on March 3, 2009 to obtain irrigation water from MCWD.

**WATER USE**

Blackhorse and Bayonet Golf course irrigation used as much as 600 acre-feet per year at the time the City assumed ownership of the courses in 1998. In coordination with the City's Golf Course Operator, a new irrigation system has been installed in conjunction with major renovation of the golf course fairways and greens that has led to a decrease in water use. Now that the renovations are completed and the new irrigation system is in use on all 36 holes, water use is expected to be less than 450 acre-feet per year. The Seaside Basin adjudication authorizes annual withdrawals of 540 acre-feet from the golf course irrigation well; the actual 2007 water year withdrawal was 473 acre-feet. The golf course lease establishes 400 acre-feet as a baseline water use, above which the golf course operator must pay current MCWD rates for all water used. Based on expected water use savings from the new irrigation system, the City anticipates that its golf courses will use up to 450 acre-feet annually.

Seaside withdraws water from the Seaside Basin through four wells, two of which provide the potable supply to part of the city under the management of Seaside Municipal Water District, and two of which provide irrigation water for the golf courses. The golf course irrigation wells are allotted 540 acre-feet per year; in water year 2007 actual production was 473 acre-feet. The golf course wells are Alternative Production wells, whereas the municipal wells are Standard Production wells, as defined in the Adjudication Decision.

### **FUTURE USE OF RECYCLED WATER**

The MCWD anticipates the eventual construction of a recycled water pipeline that would serve the golf courses, which is not a part of this currently proposed project. When a recycled water pipeline is completed to the project site, irrigation of the golf courses with recycled water would be possible, and use of potable water could end. The date at which the recycled water pipeline will be built is not known. However, at the Water for Monterey County Coalition meeting held on April 1, 2009 Mr. Heitzman, General Manager of MCWD, said he anticipated that the recycled water project could become operational by the summer of 2011.

### **CURRENT STATUS**

The City is in the midst of negotiations with MCWD to reach agreement on the terms and conditions under which water for the golf courses would be provided by MCWD's potable water distribution system. The City is optimistic that agreement will be reached in the near future. However, no date-certain can currently be projected for this, and thus no date-certain by which the changeover in water sources would occur can be projected.

## ATTACHMENT 2

### PAPER DESCRIBING THE TECHNICAL ADVISORY COMMITTEE'S FINDINGS AND CONCLUSIONS REGARDING THE IMPACT OF IMPLEMENTING THE CITY OF SEASIDE'S CONCEPT ON THE FIRST CONDITION IN THE DECISION PERTAINING TO REDUCING THE OPERATING YIELD (REVISED APRIL 23, 2009)

(Note: This paper supplements and updates the materials provided in the Board's March 18, 2009 agenda packet on this same topic)

#### BACKGROUND

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

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

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

The Board was provided the TAC's findings and conclusions regarding each of these four conditions at its meeting of March 18, 2009. This paper updates the TAC's findings and conclusions with regard to the first of these four conditions, based on the City of Seaside's proposal to seek a new water supply source for the irrigation of its golf courses. This updated information is provided for the Board's use in determining whether or not to impose a reduction in pumping for Water Year 2008-2009.

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

## FINDINGS

The TAC's findings with regard to whether or not the first of the four conditions would be satisfied by implementing the City of Seaside's proposal are shown below in **boldface underlined italics**.

- a. Question: Has the Watermaster secured and is adding an equivalent amount of Non-Native water to the Basin on an annual basis?

Answer: If the City of Seaside enters into its proposed agreement with MCWD to secure water from the MCWD distribution system to irrigate the City's golf, and if the City commits to reducing its pumping of water from its golf course wells on a 1:1 basis by the amount of water delivered by MCWD as a result of this change in water supply sources for its golf courses, then in-lieu recharge in the amount of water that MCWD delivers will have been achieved. However, based on historical pumping data for the golf course wells, the fact that the golf courses have been recently reconstructed to require less irrigation water than in the past, and the fact that there are only a few months remaining in the current Water Year during which this new water supply could be used, the amount of in-lieu replenishment water would be less than the 420 AFY required by the Decision for Water Year 2008-2009. Thus, the concept described in this paragraph would partially, but not fully, offset the required 420 AFY amount. **Therefore, the TAC finds that the answer to this Question is "no."**

In future years there would be a potential to in-lieu recharge more water than could be recharged during the remaining portion of Water Year 2008-2009. However, it still may not be possible to achieve the full 560 AFY of reduction that is required beginning in Water Year 2009-2010, because the water demand of the golf courses may not be as high as 560 AFY.

The following is a related issue the Board should take into consideration: The City of Seaside stated in its presentation at the Board's March 18, 2009 meeting that it intended to ask the Watermaster to pay for its costs in obtaining the in-lieu replenishment water from MCWD. This cost is likely to be well in excess of \$1 million. In order for the proposal to be implemented the Watermaster would have to have sufficient funds available to pay the City of Seaside for its costs. The TAC understands that the Watermaster does not currently have this amount of money in its Replenishment Assessment Account. Therefore, a means of acquiring the necessary funds should be put in place in order for the proposal to be implemented.

## CONCLUSIONS

Determining whether or not the Watermaster is required to impose a pumping reduction is a complex matter. Meeting any one of the four sets of conditions contained in Section III.B.2 of the Decision would avert having to impose a pumping reduction. Even if the City of Seaside's proposal were to be implemented for the remainder of Water Year 2008-2009, based on the TAC's interpretation of the Decision it is the TAC's conclusion that none of the four sets of conditions have been met. It is therefore the TAC's conclusion that a 10% Basin-wide pumping reduction must be imposed.

The proposal by the City of Seaside to change the water source for irrigation of the Seaside golf courses (Blackhorse and Bayonet) from wells fed by the Seaside Groundwater Basin to potable water supplied by the MCWD is beneficial to the Seaside Groundwater Basin and the Watermaster. The water delivered by MCWD to the golf courses for irrigation would constitute an in-lieu replenishment of groundwater to the Seaside Basin. This in-lieu replenishment could be used by the Watermaster to replenish prior overdraft or as a component of an offset of the required 10% Operating Yield reduction. The Watermaster may also elect to petition the judge to allow a proration of the required 10-percent pumping reduction in an

amount equivalent to the replenishment amount. For example, since the required Water Year 2008-2009 pumping reduction is 420 AF, if the MCWD delivered 210 AF to the Seaside golf courses, the Watermaster might petition the court to allow a prorated reduction of only 5-percent rather than 10-percent.

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE**

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

<b>MEETING DATE:</b>	May 13, 2009
<b>AGENDA ITEM:</b>	6
<b>AGENDA TITLE:</b>	Schedule
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b>	<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>
<b>ATTACHMENTS:</b>	Updated Schedule of Consultants Work Activities
<b>RECOMMENDED ACTION:</b>	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
55	Board Approval of Consultant Contracts for 2009			Completed															
56	<b>IMPLEMENTATION</b>																		
57	<b>I.2.a DATABASE MANAGEMENT</b>																		
58	<b>I.2.a.1 Conduct Ongoing Data Entry/Database Maintenance</b>																		
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																		
67	Correct Deficiencies in Existing Database Found From TAC Test Period																		
68	Make Improvements to Existing Database																		
69	<b>I.2.a.2 Verify Accuracy of Production Meters</b>																		

# 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	<b>I.2.b DATA COLLECTION PROGRAM</b>																					
75	<b>I.2.b.1 Site Selection for New Monitoring Well</b>																					
76	<b>I.2.b.5 Monitor Well Construction</b>																					
77	Design, Permits, CEQA. And Approvals																					
78	Construction																					
79	<b>Pursue Conversion of Existing Abandoned U.S. Army Well for Use as an Additional Monitoring Well</b>																					
80	<b>I.3.a ENHANCED SEASIDE BASIN GROUNDWATER MODEL</b>																					
81	<b>I.3.a.1 Update the Existing Model</b>																					
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	Dec			
85	HydroMetrics Updates the Model																					
86	HydroMetrics Makes Summary Report to TAC on Updating of the Model																					
87	<b>I.3.a.2 Develop Protective Water Levels</b>																					
88	Prepare and Execute Contract with HydroMetrics to Develop Protective Water Levels																					
89	HydroMetrics Meets with TAC to Discuss Development of Protective Water Levels																					
90	HydroMetrics Develops Protective Water Levels																					
91	HydroMetrics Makes Summary Report to TAC on Protective Water Levels																					
92	HydroMetrics Makes Summary Report to Board on Protective Water Levels																					
93	<b>I.3.a.3 Evaluate Replenishment Scenarios and Develop Answers to Basin Management Questions</b>																					
94	Prepare and Execute Contract with HydroMetrics to Evaluate Replenishment Scenarios and Develop Answers																					
95	HydroMetrics Meets with TAC to Select Scenarios to be Evaluated																					
96	TAC Approves Scenario Selection																					
97	Board Concurs with Selection of Scenarios to be Evaluated, or Adds Additional Scenarios																					
98	HydroMetrics Evaluates Replenishment Scenarios and Develops Answers to Basin Management 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	Dec	
114	I.4.e Refine and/or Update the SIRP						Only if Refinement or Updating is Necessary													