I. CALL TO ORDER

II. ROLL CALL

III. MINUTES;
The minutes of the Special Board meeting of May 6, 2009 are attached to this agenda. The Board is requested to consider approving the minutes.

IV. REVIEW OF AGENDA
If there are any items that arose after the 72-hour posting deadline, a vote may be taken to add the item to the agenda pursuant to the requirements of Government Code Section 54954.2(b). (A 2/3-majority vote is required.)

V. PUBLIC COMMUNICATIONS
Oral communications is on each meeting agenda in order to provide members of the public an opportunity to address the Watermaster on matters within its jurisdiction. Matters not appearing on the agenda will not receive action at this meeting but may be referred to the Watermaster Administrator or may be set for a future meeting. Presentations will be limited to three minutes or as otherwise established by the Watermaster. In order that the speaker may be identified in the minutes of the meeting, it is helpful if speakers would use the microphone and state their names. Oral communications are now open.

VI. CONSENT CALENDAR
A. Consider Approval of Summary for Payments Made during May and June, 2009 totaling $94,717.00
B. Consider Year-End Financial Reports – Through June 30, 2009
C. Approve two payments authorized and paid by CEO each under the $10,000 authorized limit.
   1. HydroMetrics; $7,500.00 (Obtain additional groundwater modeling data)
   2. MPWMD; $5,000.00 (Make improvements to Watermaster database)

VII. ORAL PRESENTATION
VIII. OLD BUSINESS

A. COMMITTEE REPORTS

1. TECHNICAL ADVISORY COMMITTEE (TAC)

   a). Consider Responses to the Board Informational Requests Regarding City of Seaside Obtaining Irrigation for its Golf Courses from the Marina Coast Water District

IX. NEW BUSINESS

A. COMMITTEE REPORTS

1. TECHNICAL ADVISORY COMMITTEE (TAC)

   a). Consider Approving the Selection of Scenarios to be Evaluated by the Updated Seaside Basin Groundwater Model

   b). Consider Approving a Request for Service to Martin Feeney to Design and Construct a Monitoring Well at an estimated cost of $262,599.00

X. INFORMATIONAL REPORTS (No Action Required)

   A. Timeline Schedule of Milestone Dates (Critical date monitoring)
   B. Technical Advisory Committee (TAC) minutes of April 22, May 13, May 28 & June 10, 2009
   C. Water Production Report for Second Quarter of Water Year 2009 (January 1st through March 31, 2009)
   D. TAC Progress Report on two topics:
      1. Groundwater Modeling – Protective Water Levels
      2. Installation of New Monitoring Well

XI. DIRECTOR'S REPORTS

XII. EXECUTIVE OFFICER COMMENTS

XIII. NEXT REGULAR MEETING DATE – AUGUST 5, 2009 (MRWPCA-Board Room) 2:00 P.M.

XIV. ADJOURNMENT

This agenda was forwarded via e-mail to the City Clerks of Seaside, Monterey, Sand City and Del Rey Oaks; the Clerk of the Monterey Board of Supervisors, the Clerk to the Monterey Peninsula Water Management District; the Clerk at the Monterey County Resources Agency and the California American Water Company for posting on June 26, 2009 per the Ralph M. Brown Act, Government Code Section 54954.2(a).
ITEM NO. III.

MINUTES
REGULAR MEETING
Seaside Groundwater Basin Watermaster
May 6, 2009

DRAFT MINUTES

I. CALL TO ORDER
Chairman Rubio called the meeting to order at 2:01 p.m. in the Monterey Regional Water Pollution Control Agency Boardroom at 5 Harris Court, Building D, Monterey.

II. ROLL CALL
City of Seaside – Mayor Ralph Rubio, Chairman
Coastal Subarea Landowner – Director Paul Bruno, Vice Chair
Monterey Peninsula Water Management District (“MPWMD”) – Director Judi Lehman, Secretary
City of Del Rey Oaks – Mayor Joseph Russell, Treasurer
Laguna Seca Subarea Landowner – Director Bob Costa
California American Water (“CAW”) – Director Craig Anthony
City of Monterey – Mayor Charles “Chuck” Della Sala
City of Sand City – Mayor David Pendergrass
Monterey County/Monterey County Water Resources Agency (“MCWRA”) – Curtis Weeks (Alternate)

Absent: None

III. APPROVAL OF MINUTES

It was moved by Director Weeks, seconded by Director Bruno, and unanimously carried to approve the minutes of the Watermaster Regular Meeting of March 18, 2009.

IV. REVIEW OF AGENDA
There were no changes to the agenda.

V. PUBLIC PARTICIPATION/ORAL COMMUNICATIONS
There were no questions or comments from the public.

VI. CONSENT CALENDAR

A. Consider Approval of Summary for Payments Made in April 2009 totaling $87,493.81
B. Consider current year Financial Reports – Through April 30, 2009
   CEO Evans submitted a corrected version of the Monitoring and Management – Operations Fund with corrections made for errors detected by the Watermaster Treasurer, Mayor Russell, in the bottom line total calculations.

Moved by Mayor Russell, seconded by Director Anthony, and unanimously carried, to approve the consent calendar as presented.

VII. ORAL PRESENTATION
There were no oral presentations scheduled.
VIII. OLD BUSINESS

A. COMMITTEE REPORTS

1. BUDGET AND FINANCE COMMITTEE

a) The Board received and reviewed the submitted memorandum regarding the Watermaster Budget and Finance Committee meeting of April 27, 2009 and Subcommittee meeting of April 29, 2009. Committee Chair, Ray Corpuz addressed the board stating that the Committee considered the proposed in-lieu replenishment project proposed by the City of Seaside and made no determination, but is further considering the project and associated pricing basis and funding sources. The Committee further considered the option of retaining independent legal counsel to assist Watermaster staff when consultation on particular issues with legal counsels associated with member parties could be perceived as a conflict of interest and recommended not to pursue retention at this time however recommended reconsideration if and when a particular issue arose that warranted it.

Moved by Director Weeks, seconded by Mayor Pendergrass, and unanimously carried, to approve the Watermaster Budget and Finance Committee defer determination on pricing and funding of the proposed in-lieu replenishment project to the June 3, 2009 board meeting, and to not authorize retention of independent legal counsel at this time.

2. TECHNICAL ADVISORY COMMITTEE

a) The Board received and reviewed the submitted TAC report on further information regarding reducing the operating yield of the Seaside Groundwater Basin. Technical Program Manager, Robert Jaques was not present; CEO Evans reviewed the report and attachments provided. Joe Oliver, Monterey Peninsula Water Management District hydrologist responded to questions from the Board, stating that, in the opinion of the TAC, criteria D had not been met as there were not protective water levels to prevent seawater intrusion at all locations along the coast. Chair Rubio thanked the TAC for its hard work and answers provided. He questioned if the City of Seaside proposal of in-lieu replenishment was a technically sound approach worthy of further consideration. Mr. Oliver stated that the TAC concurred that it was a technically sound proposal and that the Board might consider reporting the efforts toward replenishment to the judge for a possible pro rata consideration to offset the 10% reduction; next year the project could warrant consideration of a full offset. Mr. Oliver estimated the time frame for implementation at several weeks to one month. Chair Rubio directed that the issue be sent back to the TAC for further consideration of the likelihood of in-lieu replenishment achieving any degree of prorated credit against overproduction for this water year.

b) CEO Evans reminded the Board that the submitted Declaration of Artificial Replenishment Water Available for Water Year 2009 had been due December 2008 and urged the Board to take action as recommended by staff. Mayor Pendergrass gave a status report on the Sand City desalination plant stating that complete testing
of the plant was due to commence next Monday. Director Anthony stated that CAW needed further understanding of the City of Seaside in-lieu proposal; the Sand City desalination plant had eight weeks of testing ahead; water year 2008/09 would close on September 30, 2009 and any potential reduction in overproduction from the two projects for the current water year would appear to be minimal – he felt there was no alternative but to go with the 10% reduction as required by the Decision.

Director Bruno stated that after attending the recent court hearing where he noted Judge Randall’s comment that the 10% reduction was inevitable, he had chosen not to oppose the 10% reduction. Chair Rubio directed the TAC to consider whether any amount of the 167AF of water estimated to be produced from the Sand City desalination plant in the 2009 calendar year could be credited to replenishment of the Basin for the current water year ending September 30, 2009 by amendment or future findings. Director Costa requested that staff confirm allowance in the Decision of a rollback of the 10% reduction of 420 acre-feet if replenishment water becomes available later this water year or in future water years. Don Freeman, Seaside City Attorney, recommended that staff and the TAC be authorized to notify the court immediately upon any replenishment water becoming available in an attempt to obtain a ruling allowing a rollback.

Director Anthony emphasized that Watermaster could not make any assumptions as to how CAW would be using its portion of water granted by the City of Sand City from its desalination plant once operational. He stated that Order 95-10 is the primary focus of the CAW compliance effort and felt that Watermaster staff would need to come to the Watermaster board upon replenishment water becoming available before contacting the judge for rollback consideration. Mr. Freeman felt that both the Adjudication and Order 95-10 could be addressed on a practical basis upon availability of replenishment water and could involve board members through committees and legal counsels without binding CAW to any particular course of action in its operations.

Moved by Director Anthony, seconded by Director Lehman, and unanimously carried, to declare no artificial replenishment water available for Water Year 2009, and to authorize staff and the TAC, when any replenishment water becomes available, to notify the court immediately in an attempt to obtain a ruling allowing a rollback.

IX. NEW BUSINESS
There were no new business items.

X. INFORMATIONAL REPORTS (No Action Required)
A. Timeline Schedule of Milestone Dates (Critical date monitoring)
B. Technical Advisory Committee minutes of March 11 and April 8, 2009
C. Water Production Report for Second Quarter Water Year 2009 (January 1 - March 31, 2009)
Director Anthony stated CAW is doing everything in its power to meet the conditions of Order 95-10 and the Seaside Basin Adjudication.
XI. DIRECTORS’ REPORTS
Director Bruno had attended the recent hearing regarding the MPWMD permitting process for alternative producer Security National Guaranty (‘‘SNG’’) and thanked the Board for taking a position and sending a letter to the court in support of SNG and its pumping arrangement proposed for supplying the Monterey Bayshores Ecoresort. He felt the court’s decision in favor of SNG had significant implications for all private pumpers within the Basin.

XII. EXECUTIVE OFFICER COMMENTS
The next Watermaster TAC meeting is scheduled for Wednesday, May 13, 2009 at 1:30pm at the Seaside City Hall portable building conference room. Next Budget and Finance Committee meeting to be announced by e-mail notice.

XIII. NEXT MEETING DATE – Regular Meeting to be held on June 3, 2009, at the Monterey Regional Water Pollution Control Agency (MRWPCA) Board meeting room at 5 Harris Court, Building "D" on Ryan Ranch in Monterey at 2:00 p.m.

XIV. There being no further business, Chairman Rubio adjourned the meeting at 2:44 p.m.
ITEM NO. VI.

CONSENT CALENDAR
TO: Board of Directors

FROM: Dewey D Evans, CEO

DATE: July 1, 2009

SUBJECT: Summary of Payments Authorized to be paid during May and June, 2009.

PURPOSE: To advise the Board of payments authorized to be paid during the months of May and June, 2009

RECOMMENDATIONS: Consider approving the payment of bills submitted and authorized to be paid during the months of May and June, 2009

COMMENTS and FISCAL IMPACT:

DDEvans Consulting (Professional Services Agreement—CEO)—May 1, 2009 through May 31, 2009 worked on Watermaster business a total of 66.5 hours at $100.00 per hour or $6,650.00. Reviewed and discussed TAC meeting agenda with Bob Jaques and others as appropriate. Had many telephone calls, meetings, email correspondence with a number of people regarding a wide variety of items involving the Seaside Basin. This month special interest was focused on the pending 10% reduction in water production from the Basin dictated by the Court Decision and the pending court action involving SNG and MPWMD. Considerable time spent discussing and evaluating the carry over credits with the legal counsel representing DBO Development Co. and Russ McGlothlin representing the City of Seaside. Coordinated setting up and attending a variety of Watermaster related meetings. Prepared staff action and informational reports for the May 6th regular Board meeting.

Robert “Bob” Jaques (Technical Program Manager)—April 28, 2009 through May 25, 2009 worked a total of 46 hours at $100.00 per hour or $4,600.00. Prepared TAC material, attended and transcribed minutes for meetings of April 22nd and May 13, 2009. Completed preparation of State Parks Monitrogin Well Permit application. Met with CEO and Laura Dadiw on Notice of Non-Availability document. Reviewed and edit HydroMetrics Tech. Memo No. 2. Met with Martin Feeney on design report for new monitoring well. Attended RPOG meeting in Marina. Review HydroMetrics invoices and approve for payment. Prepared and delivered contracts to Watermaster Office.

HydroMetrics, LLC—Four separate invoices were submitted and authorized for payment during the months of March and April totaling $83,467.00. The four invoices included 554 hours of time spent completing the 2008 Basin Management Plan and working on the Seaside Basin Modeling Plan preparing model geology and recharge program, converting groundwater model to new code, developing transient water budget, collect model data, attend TAC meetings and give updates on
model inputs, compile water levels, prepare progress report and update data request table, prepare water level, production, and storm water data.

Total payments authorized to be paid during January totaled $94,717.00
Seaside Groundwater Basin Watermaster

**Budget vs. Actual Administrative Fund**

Fiscal Year (January 1 - December 31, 2009)

Balance through May 31, 2009

<table>
<thead>
<tr>
<th>Available Balances &amp; Assessments</th>
<th>2009 Adopted Budget</th>
<th>Year to Date Revenue / Expenses</th>
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<td><strong>Total Available</strong></td>
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<td>Dedicated Reserve</td>
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<td><strong>Net Available</strong></td>
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</table>
Seaside Groundwater Basin Watermaster

Budget vs. Actual Monitoring & Management - Operations Fund
Fiscal Year (January 1 - December 31, 2009)
Balance through May 31, 2009

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<th>2009 Adopted Budget</th>
<th>Contract Encumbrance</th>
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**Total Appropriations & Expenses**

$683,998.00 $640,328.00 $198,834.50

**Total Available**

133,496.15 570,779.79
### Available Balances and Assessments:

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### Appropriations & Expenses:

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<td>$ 207,000.00</td>
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SEASIDE GROUNDWATER BASIN
WATERMASTER

TO: Board of Directors

FROM: Robert S. Jaques, Technical Program Manager

FORMATTED AND APPROVED BY: Dewey D Evans, CEO

DATE: July 1, 2009

SUBJECT: Request for Service to HydroMetrics to Obtain Data Necessary for the Development of the Updated Seaside Groundwater Basin Model

RECOMMENDATION: The TAC recommends that the Board approve RFS No. 2009-03, in an amount now to exceed $7,500.00, to HydroMetrics, so that HydroMetrics can continue with development of the Watermaster’s updated Seaside Basin Groundwater Model without delay. Do to the urgency of this matter the CEO approved and authorized a payment of $7,500.00 to expedite the purchase of groundwater data needed to develop the updated Model of the Seaside Groundwater Basin.

BACKGROUND AND PURPOSE: HydroMetrics is acquiring data that is needed in order to develop the updated Model of the Seaside Groundwater Basin.

DISCUSSION: HydroMetrics originally understood that the Salinas Valley groundwater data needed for use in the Model would be available from MCWRA at no cost. However, Mr. Johnson of MCWRA recently reported that MCWRA staff is not able to run their model, and that it is run by their consultant when data is needed. Consequently, MCWRA’s consultant will need to be paid to do a model run to produce the required data.

When this was learned, a scope and cost estimate for WRIME (the consultant to MCWRA who operates the Model) to generate groundwater levels from the Salinas Valley Integrated Groundwater Surface water model (IGSM) model was requested by HydroMetrics. These data would be used to represent the northern boundary condition for the Seaside model. The cost proposal from WRIME was for $7,500 lump sum (see attached). This will be a cost outside of the scope of HydroMetrics original contract with the Watermaster, since HydroMetrics did not budget to pay for this data.

This data is urgently needed by HydroMetrics in order for them to maintain their schedule for development and implementation of the updated Basin Model.

ATTACHMENTS: Attachment 1: RFS No. 2009-03 to HydroMetrics.
DATE: 6/10/2009
RFS NO. 2009-03

TO: Derrrik Williams
HydroMetrics LLC
PROFESSIONAL

FROM: Robert Jaques
Technical Program Manager
WATERMASTER

Services Needed and Purpose: Obtain additional groundwater modeling data from the Salinas Valley Groundwater Basin in order to input this data into the updated groundwater model of the Seaside Basin being developed by PROFESSIONAL. See detailed outline of work in Attachment 1.

Completion Date: All work of this RFS shall be completed not later than December 31, 2009, and shall be integrated into the Schedule for the work of RFS 2009-02.

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

Total Price Authorized by this RFS: $7,500.00 (Cost is authorized only when evidenced by signature below.) (See Table 1 in Attachment 1 for Detailed Breakdown of Estimated Costs).

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

Requested by: WATERMASTER Technical Program Manager

Authorized by: WATERMASTER Chief Executive Officer

Agreed to by: PROFESSIONAL
HydroMetrics
PROFESSIONAL has notified the WATERMASTER that data PROFESSIONAL anticipated getting from Monterey County Water Resources Agency (MCWRA) at no cost, and which is essential to use in developing the Seaside Basin updated groundwater model under RFS No. 2009-02, is not available from MCWRA. PROFESSIONAL has learned that the data will have to be obtained from the consultant MCWRA uses to operate their model. The consultant quoted PROFESSIONAL $7,500 to do a run of their model to produce the needed data, as noted in the attached Draft Scope of Work dated May 26, 2009.

PROFESSIONAL advises that there is no other way of getting the data, and that the Seaside Basin model must have this data in order to be accurate and to perform properly.

Under this RFS No. 2009-03 MCWRA’s consultant will provide to PROFESSIONAL two sets of results from the Salinas Valley SVIGSM. One set of results will consist of monthly simulated groundwater levels for a historical, calibrated model simulation (1987-1994). Simulated groundwater levels will be provided for all SVIGSM model nodes that are either overlain by, or are adjacent to, the Seaside Groundwater Basin Model. A shapefile showing the extent of the Seaside Groundwater Basin Model has already been provided to MCWRA’s consultant by PROFESSIONAL.

The second set of results will consist of simulated groundwater levels for anticipated future conditions that incorporate the Salinas Valley Project and NOAA Fisheries minimum flow requirements on the Salinas River. This simulation will cover the same 1987-2004 hydrologic period. As with the first set of results, simulated groundwater levels will be provided for all SVIGSM model nodes that are either overlain by, or are adjacent to, the Seaside Groundwater Basin Model.

The total cost to the WATERMASTER of having PROFESSIONAL obtain this data from MCWRA’s consultant shall not exceed $7,500.
HYDROMETRICS
GROUNDWATER MODEL BOUNDARY CONDITIONS
DRAFT  SCOPE OF WORK
MAY 26, 2009
PREPARED BY: WRIME, INC.

1. SCOPE OF SERVICES
Groundwater level output from the Salinas Valley Integrated Groundwater and Surface Water Model (SVIGSM) will be prepared and delivered to HydroMetrics for use as boundary conditions for their model of the Seaside Basin. The scope of services is as follows:

Monthly groundwater level data, by model layer, will be provided for the SVIGSM groundwater nodes (to be identified by HydroMetrics) for the following model scenarios and time periods:

- Historical calibration model run (1987-1994)
- Future Conditions Baseline (1987-2004), which includes the Salinas Valley Water Project

Data will be provided to HydroMetrics in a Microsoft Excel file.

The major assumptions included in the Historical calibration model run and in the Future Conditions Baseline will be summarized in a brief 1-page memorandum.

Coordination will be provided with HydroMetrics project manager via email and telephone. No meetings are included in this Scope of Work.

2. BUDGET
Total cost to perform the work outlined under this scope of work is $7,500 billed on a lump sum basis.

3. DELIVERABLES
Deliverables include the Excel spreadsheet of monthly groundwater level, by layer, and the brief 1 page memorandum documenting major assumptions in the model runs. Both are described in the Scope of Services.

4. SCHEDULE
The work described in this SOW shall be completed within 5 weeks from Notice-To-Proceed.
TO: Board of Directors

FROM: Robert S. Jaques, Technical Program Manager
FORMATTED AND APPROVED BY: Dewey D Evans, CEO

DATE: July 1, 2009

SUBJECT: Request for Service to MPWMD to Make Changes to Database Access Levels and Capabilities

-----------------------------------------------------------------------------------------------

RECOMMENDATION: The TAC recommends that the Board approve RFS No. 2009-04, in an amount not to exceed $5,000.00, to MPWMD, so that the Watermaster’s Database can be made ready for posting and access on the Watermaster’s website. In order to expedite this modification to the Watermaster’s Database the CEO authorized and approved the not to exceed price of $5,000.00.

BACKGROUND AND PURPOSE: The TAC closely examined the current Watermaster Database, as prepared by RBF Consulting, and found that some changes should be made to the Database before it is posted on the Watermaster’s website for access by Watermaster consultants, Watermaster members, and the general public. These changes largely had to do with limiting the capabilities of the persons who may access the Database, in order to ensure that the data in the Database cannot be tampered with and yet is as accessible as possible to the parties who may wish to use that data. This can be accomplished by better defining the User Access Levels, as described below.

DISCUSSION: At its meetings of April and May 13, 2009 the TAC developed the revisions to be made to the Database, as summarized in Tables 1 and 2 below.
<table>
<thead>
<tr>
<th>User Access Level</th>
<th>Password Required?</th>
<th>Persons Assigned to this User Access Level</th>
<th>General Description of User Capabilities</th>
</tr>
</thead>
</table>
| 4                 | Yes                | Database Administrators: Joe Oliver & Bob Jaques | • View and edit all data and documents in the Database  
|                   |                    |                                            | • Assign and change passwords and User Levels  
|                   |                    |                                            | • Prepare and download reports |
| 3                 | Yes                | Regular Users and Data Entry Personnel: Laura Dadiw and certain MPWMD personnel | • Enter and edit data to all of the data entry screens  
|                   |                    |                                            | • View and be able to add, but not to delete or edit, things in the Documents screen  
|                   |                    |                                            | • Prepare and download reports |
| 2                 | Yes                | TAC Members and Consultants Working for the Watermaster: All members of the TAC, and consultants such as HydroMetrics and Martin Feeney | • View only, but not be able to edit, all screens and documents contained in the Database  
|                   |                    |                                            | • Prepare and download reports |
| 1                 | No                 | General Public: Anyone who wishes to get information on issues pertaining to the Database | • View only, but not be able to edit, selected screens contained in the Database  
|                   |                    |                                            | • Prepare and download reports |
### Table 2. Revised User Capabilities

<table>
<thead>
<tr>
<th>User Access Level</th>
<th>Contacts</th>
<th>Well Database</th>
<th>Reports</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Well List</td>
<td>Gen’l Info.</td>
<td>Second’y Info</td>
</tr>
<tr>
<td>2</td>
<td>View</td>
<td>View</td>
<td>View</td>
</tr>
<tr>
<td>1</td>
<td>View</td>
<td>View</td>
<td>None</td>
</tr>
</tbody>
</table>

**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
- **View and Add** – Can view all documents in this screen, and can add documents to this screen, but cannot delete or edit the documents already in this screen
- **None** – Access is not authorized to this screen
- **Report** – Can prepare customized reports and download them
The attached Request for Service (RFS) No. 2009-04 to MPWMD will authorize MPWMD, through their computer programming consultant, to make the desired changes to improve the Watermaster’s Database. The estimated cost of this work, from MPWMD’s consultant, is $4,299.57. This RFS is written with a ceiling price of $5,000, but only allows the $4,299.57 amount to be spent unless and until the Watermaster staff authorizes an increase in this amount to cover any unforeseen additional programming work that may be found to be necessary to effect these changes. The $5,000 amount should be sufficient to cover any such additional work, and by authorizing it at this time, there will be no delay as a result of having to return to the Board for an additional authorization, if it is found that some additional programming work is necessary. Only the amount that is necessary to effect the desired changes, up to this ceiling amount, will be charged.

**ATTACHMENTS:** Attachment 1: RFS No. 2009-04 to MPWMD
ATTACHMENT 1

SEASIDE BASIN WATERMASTER
REQUEST FOR SERVICE

DATE: June 11, 2009

RFS NO. 2009-04
(To be filled in by WATERMASTER)

TO: Joe Oliver
FROM: Robert Jaques

Monterey Peninsula Water Management District
WATERMASTER

PROFESSIONAL

Services Needed and Purpose:
Make improvements to the Watermaster's database in accordance with the Scope of Work contained in Attachment 1.

Completion Date: The work of this RFS No. 2009-04 shall be completed within 90 days from the date of execution of this RFS No. 2009-04.

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

Total Price Authorized by this RFS: $5,000.00 (Cost is initially limited to $4,299.57, unless additional work is authorized by WATERMASTER. See Attachment 1 for details regarding this Total Price. Cost is authorized only when evidenced by signature below.)

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

Requested by: WATERMASTER Technical Program Manager

Authorized by: WATERMASTER Chief Executive Officer

Agreed to by: PROFESSIONAL
Scope of Work for RFS No. 2009-04

Background:

The WATERMASTER has a database into which water production, water level, and water quality data is entered and stored. This database is currently being made web-accessible through PROFESSIONAL’s local hosting site at PROFESSIONAL’s offices and maintained by PROFESSIONAL.

This RFS No. 2009-04 authorizes PROFESSIONAL to make certain improvements to the database as more fully described below.

Scope of Work:

The detailed scope of work to be performed under this RFS is described in the attached “Well Database System Revising User Access Levels Statement of Work” proposal from Zone 24X7.

Cost:

Since there may be other improvements beyond those described in the Zone 24X7 proposal which the WATERMASTER may wish to have made in conjunction with making those improvements described in this proposal, the amount of this RFS No. 2009-04 is set at $5,000.00, so that such other improvements can be undertaken, if desired by the WATERMASTER, without having to issue another RFS.

However, PROFESSIONAL’s costs for the work to be performed under this RFS No. 2009-04 are limited solely to the $4,299.57 set forth in the attached Zone 24X7 proposal, unless and until the WATERMASTER provides written authorization to PROFESSIONAL to perform additional database improvement work beyond that described in the Zone 24X7 proposal.

Zone 24X7 will act as a subcontractor to PROFESSIONAL in performing the work, and will perform the work of this RFS under the direction and management of PROFESSIONAL.
Well Database System - Revising User Access Levels
Statement of Work (SOW)

Zone24x7 Inc., 1310 Rimrock Drive, San Jose, CA95120, USA
# Table of Contents

Executive Summary ........................................ 3
1 Overview .................................................. 4
   1.1 Exposure to the Client ............................. 4
   1.2 Cost Summary and Payment Schedule .......... 4
2 Project Scope ............................................ 5
   2.1 Work Breakdown Structure ...................... 6
   2.2 Prerequisites ...................................... 7
   2.2 Assumptions ...................................... 7
3 Benefiting from Zone24x7 ......................... 8
4 Signatories .............................................. 9
Executive Summary

This work statement is raised by Zone24x7 Inc. in relation with applying the revised user access levels to Monterey Peninsula Water Management District (MPWMD) – Well Database System and would address the high-level project scope, financial aspects and other related features of the potential project.

Zone24x7 Inc. is a leading global provider of technology innovation services headquartered in San Jose, California with offices in the USA, Sri Lanka and Malaysia. Zone24x7 was recognized as a Microsoft Certified Gold Partner in Mobility Solutions, Custom Development Solutions and Data Management Solutions competencies due to our excellent technological solution delivery, commitment, expertise and superiority. Zone24x7 is also a Windows Embedded Partner with market awareness and technology advantage for Windows CE .NET and Windows XP Embedded solutions. Zone24x7 provides innovative technology solutions essential for business success with next generation technology.

Zone24x7 Inc. had been providing scalable backend solutions using J2EE technologies to leading clients in the US since its inception.

Zone24x7 has been certified as a CMMI Level 3 company by the US based Software Engineering Institute, part of Carnegie Mellon University, for its process maturity, successful project execution and delivery excellence.

Zone24x7 thrives to provide the utmost value to its clients by combining talented associates, proven world class methodologies and efficient use of technologies. To ensure seamless communication with its clients we use leading edge collaboration technologies across all our projects.
1 Overview

THIS STATEMENT OF WORK ("SOW") dated 1st June 2009, sets forth a scope and definition of the consulting services, work and/or project (collectively, the "Services") to be provided by Zone24x7, Inc. ("Zone24x7") to Monterey Peninsula Water Management District ("Client").

The provisions which are addressed by this SOW would discuss the financial aspects, high-level requirements, tentative effort estimations, and essential pre requisites of the project.

1.1 Exposure to the Client

Zone24x7 will allocate required resources to work on this project under the purview of a Project Manager who would be responsible for directing the project under the consent of the client. Zone24x7 would invoice the client for the total estimated sum of USD $4,299.57 according to the payment schedule specified in section 1.2 (table 1.2.2).

1.2 Cost Summary and Payment Schedule

<table>
<thead>
<tr>
<th>Project Phase</th>
<th>Estimated Hours</th>
<th>Total SOW Cost (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Code Study</td>
<td>40.0</td>
<td>$1,160.00</td>
</tr>
<tr>
<td>Implementation</td>
<td>98.8</td>
<td>$2,273.32</td>
</tr>
<tr>
<td>QA Testing</td>
<td>57.8</td>
<td>$866.25</td>
</tr>
<tr>
<td><strong>Total Development Cost</strong></td>
<td></td>
<td><strong>$4,299.57</strong></td>
</tr>
</tbody>
</table>

*Table 1.2.1 – Cost Summary*

<table>
<thead>
<tr>
<th>Payment #</th>
<th>Amount [USD]</th>
<th>Payment Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Payment</td>
<td>$1,299.57</td>
<td>Upon acceptance of the SOW</td>
</tr>
<tr>
<td>Second Payment</td>
<td>$1,500.00</td>
<td>Upon completion of the Phase 2</td>
</tr>
<tr>
<td>Final Payment</td>
<td>$1,500.00</td>
<td>Upon system acceptance</td>
</tr>
</tbody>
</table>

*Table 1.2.2 – Payment Schedule and Terms*
2 Project Scope

This project covers changing the existing access levels for Seaside WaterMaster Database System and following access levels will be implemented, tested and deployed:

<table>
<thead>
<tr>
<th>User Access Level</th>
<th>Password Required?</th>
<th>Persons Assigned to this User Access Level</th>
<th>General Description of User Capabilities</th>
</tr>
</thead>
</table>
| 4                 | Yes                | Database Administrators: Joe Oliver & Bob Jaques | • View and edit all data and documents in the Database  
• Assign and change passwords and User Levels  
• Prepare and download reports |
| 3                 | Yes                | Regular Users and Data Entry Personnel: Laura Dadiw and certain MPWMD personnel | • Enter and edit data to all of the data entry screens  
• View and be able to add, but not to delete or edit, things in the Documents screen  
• Prepare and download reports |
| 2                 | Yes                | TAC Members and Consultants Working for the Watermaster: All members of the TAC, and consultants such as HydroMetrics and Martin Feeney | • View only, but not be able to edit, all screens and documents contained in the Database  
• Prepare and download reports |
| 1                 | No                 | General Public: Anyone who wishes to get information on Issues pertaining to the Database | • View only, but not be able to edit, selected screens contained in the Database  
• Prepare and download reports |

Table 2.1 – Revised User Access Levels
MPWMD / WaterMaster - Well Database System – Revising Access Levels

<table>
<thead>
<tr>
<th>User Access Level</th>
<th>Contacts</th>
<th>Well List</th>
<th>Gen'l Info.</th>
<th>Sec'y Info.</th>
<th>Well Database</th>
<th>Water Quality</th>
<th>Depth</th>
<th>Production</th>
<th>Docs</th>
<th>Water Quality</th>
<th>Depth</th>
<th>Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>View</td>
<td>View</td>
<td>View</td>
<td>View</td>
<td>View</td>
<td>View</td>
<td>View</td>
<td>View</td>
<td>View</td>
<td>Report</td>
<td>Report</td>
<td>Report</td>
</tr>
<tr>
<td>1</td>
<td>View</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Report</td>
<td>Report</td>
<td>Report</td>
</tr>
</tbody>
</table>

Table 2.2 – Revised User Capabilities

Descriptions of abbreviations used in the Table 2.2
- Edit (E): 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.
- View and Edit: Can view all documents in this screen, and can add documents to this screen, but cannot delete or edit the documents already in this screen.
- None: Access is not authorized to this screen.
- Report: Can prepare customized reports and download them.

This implementation will be carried out based on the existing codebase, however this could be remodeled with configurable role-based security model at a future phase if required.

2.1 Work Breakdown Structure

<table>
<thead>
<tr>
<th>Phase</th>
<th>Task</th>
<th>Deliverables</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td>Study existing code base and identify areas of change</td>
<td>Change Log</td>
<td>1 Week</td>
</tr>
<tr>
<td>Phase 2</td>
<td>Implementation of revised user access levels</td>
<td>Updated Code</td>
<td>3 Weeks</td>
</tr>
<tr>
<td>Phase 3</td>
<td>QA / Testing</td>
<td>Refined Code</td>
<td>1 Weeks</td>
</tr>
<tr>
<td>Phase 4</td>
<td>Deployment of the updated web application to client server</td>
<td></td>
<td>2 Days</td>
</tr>
</tbody>
</table>

Table 2.2.1 – WBS MPWMD / WaterMaster - Well Database System – Revising Access Levels
2.1 Prerequisites

Zone24x7 team will require the following key dependencies from the client to kick off the project

- Availability of all the relevant documents and source code modules related to the application to be changed
- Setting up all the required servers and software (SQL and IIS server)
- Availability of a project responsible from the client for weekly project calls and meetings to clarify the requirements and to ensure the project direction

2.2 Assumptions

- Any deviation from the above specification would be upon mutual agreement between MPWMD and Zone24x7
ITEM VIII.

OLD BUSINESS
ITEM VIII. A.

COMMITTEE REPORTS
ITEM NO. VIII. A. 1.

TECHNICAL ADVISORY COMMITTEE (TAC)
TO: Board of Directors

FROM: Robert S. Jaques, Technical Program Manager

DATE: July 1, 2009

SUBJECT: Response to Board Informational Requests Regarding City of Seaside Obtaining Irrigation for its Golf Courses from the Marina Coast Water District

RECOMMENDATION: The TAC does not make any recommendations to the Board on these matters. Rather, it provides its findings and conclusions to the Board for the Board’s consideration in determining what action to take.

BACKGROUND AND PURPOSE: At its May 6, 2009 meeting the Board asked the TAC to continue to confer on the issue of how and when the MCWD replacement water for Seaside’s golf courses could begin, and how a partial offset of the required reduction could be structured. The following are excerpts from the Draft Minutes of the May 6, 2009 Board meeting containing the Board’s specific requests of the TAC:

1. Chair Rubio directed that the issue of Seaside obtaining water from MCWD to irrigate its golf courses be sent back to the TAC for further consideration of the likelihood of in-lieu replenishment achieving any degree of prorated credit against overproduction for this water year.

2. Chair Rubio directed the TAC to consider whether any amount of the 167AF of water estimated to be produced from the Sand City desalination plant in the 2009 calendar year could be credited to replenishment of the Basin for the current water year ending September 30, 2009 by amendment or future findings.

3. Director Costa requested that staff confirm allowance in the Decision of a rollback of the 10% reduction of 420 acre-feet if replenishment water becomes available later this water year or in future water years.

4. Don Freeman, Seaside City Attorney, recommended that staff and the TAC be authorized to notify the court immediately upon any replenishment water becoming available in an attempt to obtain a ruling allowing a rollback.

5. The Board passed a motion to declare no artificial replenishment water available for Water Year 2009, and to authorize staff and the TAC, when any replenishment water becomes available, to notify the court immediately in an attempt to obtain a ruling allowing a rollback.
DISCUSSION: The TAC discussed each of these items at its meeting of June 10, 2009, and developed the responses contained in Attachment 1 to this agenda item. As those responses indicate, it will not be possible for the Seaside-MCWD proposal to achieve sufficient in-lieu replenishment of the Seaside Basin during the current Water Year in order to avert imposing a pumping reduction as required by the Court Decision. Even if this project is implemented as rapidly as possible, at best there could be a small amount of in-lieu replenishment this Water Year.
Request No. 1. From discussions at previous TAC meetings on this subject, there was consensus that it will be problematic for any in-lieu replenishment to be achieved in the current Water Year, because of the need to complete negotiations between Seaside and MCWD, and to fund and construct the intertie piping needed to accomplish this. At the June 10, 2009 TAC meeting the City of Seaside’s TAC representative, Mr. Riedl, reported that there had been no recent discussions between the City of Seaside and MCWD with regard to getting water from MCWD to irrigate the Seaside golf courses. He said he believed that the Watermaster’s Budget and Finance Committee was still discussing cost issues related to this proposal. Also, he noted that the City of Seaside’s cost for getting water from its existing golf course wells is essentially zero, since the golf course contract operator is required to pay the well operation and maintenance costs. If the City of Seaside purchases water from MCWD rather than getting it from its existing wells, there would be a considerable additional expense to the City.

Mr. Riedl went on to say that while water is immediately available for the golf courses from the MCWD distribution system, the method of delivering this water would have to be manually turned on and off. Mr. True, of MCWD, said that the delivery of water would be from a hose connected to a fire hydrant, and this would be used to fill the golf course irrigation water reservoir as needed to meet irrigation demands.

Mr. Riedl said that it would take an expedited contracting process in order to begin water delivery from MCWD by September 30, 2009.

Mr. True said that MCWD is ready to immediately begin delivering water when so directed by its General Manager. There was discussion with regard whether or not a written agreement between the City of Seaside and MCWD should be developed to establish terms and conditions under which water delivery would take place. Mr. True felt that an agreement would be desirable. Mr. Riedl said that he had initially not expected an agreement to be necessary, but following discussion at today's meeting he agreed with Mr. True that it would probably be desirable to have an agreement. Mr. True and Mr. Riedl noted that the decision with regard to whether or not an agreement is needed is not theirs to make, but is a decision for their managers to make.

Mr. Anthony said that the Budget and Finance Committee is still discussing the issue of how, and by whom, paying for the water from MCWD will be handled. Mr. Riedl said that the City of Seaside will be approaching the Watermaster's Budget Finance Committee for resolution of this matter in the immediate future.

If a firm date for the intertie to become operational can be provided, then historic golf course irrigation quantities from that date up until September 30, 2009 could be used to forecast the probable amount of in-lieu recharge that could be accomplished. This will only be an estimate, since actual irrigation demand varies somewhat from year to year. However, the estimate could be used in communication with the Court, if that is the Board’s desire.

Request No. 2. There was discussion on this subject at previous TAC meetings. At the June 10, 2009 TAC meeting, CAW’s representative (Mr. Anthony) stated that no Sand City desalination plant water will be used to reduce Seaside Groundwater Basin pumping, and that all the water from the Sand City plant will be used by CAW to reduce pumping from the Carmel River basin. There was TAC consensus that since CAW will not commit to using any of the Sand City desalination plant’s production to reduce its pumping from the Seaside Basin, water that is produced by the Sand City desalination plant cannot be credited toward replenishment of the Basin.
Mr. Anthony went on to say that the eight-week acceptance test for the Sand City desalination plant starts next week (week of June 15), so the earliest that the plant could be put into full-scale operation and delivering water to the CAW system would be mid-August, 2009.

Request No. 3. The language in the Decision pertaining to the 10% cutback reads, in part:

“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).

Since this language uses the word “…unless…” it appears clear that if any one of the four sets of conditions has been met, then the 10% cutback does not have to be imposed. The language does not speak to the issue of when during a Water Year any of these sets of conditions must be met to forego the 10% cutback, rather, it just says that one or more of the sets of conditions must be met during the Water Year in order to avoid the 10% cutback. Thus, it appears that as long as any one of these sets of conditions is met at any point prior to the end of the Water Year, then the 10% cutback for that year can be avoided.

Request No. 4. Mr. Anthony, Mr. Fischer, and Mr. Oliver said they did not recall the Board taking any specific action with regard to this issue, but only that the issue had been discussed. It does not appear that the TAC can make a recommendation to petition the Court to even a partial “rollback” of the 10% pumping reduction for the current Water Year, unless and until the Seaside-MCWD golf course irrigation water project has actually been put into operation delivering water, and the City’s golf course irrigation wells have stopped pumping by an amount of water equivalent to that being provided by MCWD. Only at that time could an estimate of the amount of in-lieu replenishment being achieved be made, to serve as a basis for petitioning the Court on this matter if the Board so desired.

Request No. 5. The response to Request No. 5 is provided under the response to Request No. 4.
ITEM. IX.

NEW BUSINESS
ITEM IX. A.

COMMITTEE REPORTS
ITEM NO. IX. A. 1.

TECHNICAL ADVISORY COMMITTEE (TAC)
TO: Board of Directors

FROM: Robert S. Jaques, Technical Program Manager

FORMATTED AND APPROVED BY: Dewey D Evans, CEO

DATE: July 1, 2009

SUBJECT: Selection of Scenarios to be Evaluated by the Updated Seaside Basin Groundwater Model

BACKGROUND AND PURPOSE: HydroMetrics is developing an updated Groundwater Model of the Seaside Basin, and anticipates that the Model will become operational later this calendar year. As part of its work HydroMetrics is to evaluate a set of five Scenarios, to be selected by the Watermaster, in order to predict basin impacts such as changes to groundwater levels and flow directions resulting from implementing various management actions and supplemental water supply projects.

HydroMetrics conducted a Workshop on the issue of scenario selection at a Special TAC meeting held on April 23, 2009. The work product from that meeting was a set of five Scenarios that the TAC felt should be evaluated by the Model. This set of scenarios was reviewed and refined by the TAC at its subsequent meeting of May 13, 2009.

RECOMMENDATION: The TAC recommends that the Board approve the five scenarios described in detail under the discussion section of this report as the five scenarios to be initially evaluated using the updated Basin Model. Once these scenarios have been evaluated, the TAC and/or the Board may wish to develop additional scenarios to be analyzed by the Model. Running those additional scenarios would be beyond the scope of HydroMetrics current contract, and would be the subject of an additional contract authorization.

DISCUSSION: The attached “Seaside Groundwater Basin Groundwater Model Technical Memorandum No. 2” describes in detail the process used to select the five scenarios, which are briefly described as follows:

Scenario 1 estimates the impacts from California American Water (CAW) stopping all pumping from the Seaside Basin to obtain credit against its accumulated pumping deficit. The accumulated pumping deficit would eventually be erased through in-lieu recharge. Under this scenario 3,600 acre-feet per year is assumed to be delivered to CAW from a source outside of the Seaside Groundwater Basin. CAW would use this 3,600 AFY to meets its demands and would not pump any water from the Basin. The purpose of this scenario is to simulate a reasonable plan for repaying CAW’s pumping deficit, evaluate its impact on basin groundwater levels, and estimate when protective water elevations will be met.

Scenario 2 is similar to Scenario 1, with an added 2,000 acre-feet of injected water per year from a source outside of the Seaside Groundwater Basin used to restore groundwater to protective levels. The
purpose of this scenario is to assess how much quicker protective water elevations will be reached with supplemental injected water, compared to the 3,600 acre-feet per year in-lieu recharge only of Scenario 1. The 2,000 acre-feet of injected water is intended to stay in the Basin, and is not counted as additional supply that can be pumped from the Basin.

**Scenario 3** simulates MRWPCA’s proposed Groundwater Replenishment Project (GWRP). Under this scenario 2,800 acre-feet per year of highly treated wastewater (recycled water) would be injected or percolated into the Seaside Basin. The purpose of this scenario is to estimate the fate of the recharged water, identify which existing wells may capture recharged water, and determine how the replenishment water assists with meeting the goal of reaching protective groundwater elevations.

**Scenario 4** estimates the effects of a coastal injection barrier. The purpose of this barrier is to rapidly raise groundwater levels at the coast to protective elevations, allowing inland pumping to continue without the threat of seawater intrusion. A series of simulations may be run under this scenario: each simulation having a different quantity of injection. The initial simulation will be run using 2,600 acre-feet per year of supplemental water from outside the Seaside Groundwater Basin.

**Scenario 5** estimates the benefits from redistributing pumping in the Seaside Groundwater Basin. Under this scenario there would be no supplemental water brought into the Basin. The purpose of this scenario is to estimate whether the benefits of redistributing pumping justify the costs that may be incurred. The major benefit of pumping redistribution will be to create protective groundwater elevations at the coast. The development of cost data for this Scenario is beyond the scope of the modeling work, and would be additional work that the Watermaster may wish to pursue if this Scenario appears to be hydrogeologically advantageous.

**ATTACHMENT:** Seaside Groundwater Basin Groundwater Model Technical Memorandum No. 2.
SEASIDE GROUNDWATER BASIN
GROUNDWATER MODEL
TECHNICAL MEMORANDUM # 2

To: Seaside Groundwater Basin Technical Advisory Committee
From: Derrik Williams and Georgina King
Date: June 15, 2009
Subject: Seaside Groundwater Basin Model Scenario Development

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 what a model scenario is, 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’s 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-feet 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 two 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. The reduction will be implemented by reducing pumping from all of the Standard Allocation Producer’s wells in proportion to their pumping rates.
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 (Year 2014) and the remaining 75% implemented after 10 years (Year 2019). 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. Sand City’s desalination plant will be assumed to provide 300 AFY of water. This water, however, is not dedicated toward offsetting Seaside Basin pumping, and therefore will have no impact on the simulated pumping distribution.
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 ocean and across subarea boundaries.
- Estimation of Total Usable Storage Space.

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

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

Based on the grouping of projects in Table 1, a list of example model scenarios were presented to the TAC at their April 23, 2009 special meeting. The purpose of these example scenarios was to provide a starting point from which the TAC could develop their own scenarios. The example model scenarios are provided in Table 2.

Note that although the Seaside Groundwater Replenishment Project has the potential to supply up to 6,700 AFY, MRWPCA has suggested to only model replenishment of 2,800 AFY.
### Table 2: Example Model Scenarios

<table>
<thead>
<tr>
<th>Type of Water and Location</th>
<th>Volume (AFY)</th>
<th>Operational Changes in Basin</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-lieu, delivered to CAW</td>
<td>3,600</td>
<td>CAW reduces pumping by 3,600 AFY</td>
</tr>
<tr>
<td>Injection of water in Seaside (Seaside ASR Phase II)</td>
<td>4,000</td>
<td>Injection and extraction from new ASR wells</td>
</tr>
<tr>
<td>Injection of water in Seaside (Seaside Groundwater Replenishment Project)</td>
<td>2,800</td>
<td>New injection wells&lt;br&gt;Use existing wells to capture stored water</td>
</tr>
<tr>
<td>Surface recharge of water in Seaside (Seaside Groundwater Replenishment Project)</td>
<td>2,800</td>
<td>New vadose wells&lt;br&gt;Use existing wells to capture stored water</td>
</tr>
<tr>
<td>Both injection and surface recharge of water in Seaside (Seaside Groundwater Replenishment Project)</td>
<td>2,800</td>
<td>New injection wells and recharge ponds or vadose wells.&lt;br&gt;Use existing wells to capture stored water</td>
</tr>
<tr>
<td>Coastal injection barrier</td>
<td>?</td>
<td>New barrier wells injecting water along coast, pumping inland of the injection barrier continues at current amount</td>
</tr>
<tr>
<td>Coastal injection barrier</td>
<td>?</td>
<td>New barrier wells injecting water along coast, pumping inland of the injection barrier increases from current amount</td>
</tr>
<tr>
<td>Redistribute pumping locations</td>
<td>-</td>
<td>New wells are located optimally to ensure even distribution of pumping that eliminates major pumping depressions – pumping remains at current amount</td>
</tr>
<tr>
<td>Increase pumping in the Laguna Seca subarea</td>
<td>percentage increase</td>
<td>Increase pumping in Laguna Seca subarea wells, keep the rest of the wells in the Basin at current amounts</td>
</tr>
<tr>
<td>Do not institute the triennial 10% reduction in pumping</td>
<td>-</td>
<td>Production remains as per pre-2009 allocations, without reductions taking place</td>
</tr>
<tr>
<td>Effects of global warming</td>
<td>?</td>
<td>Sea level rise, less natural groundwater recharge</td>
</tr>
</tbody>
</table>
4. SELECTED MODEL SCENARIOS

During the meeting on April 23, TAC members commented on and discussed the example model scenarios shown in Table 2, made suggestions on alternatives, and reached consensus on five model scenarios for modeling. The five model scenarios are outlined in Table 3 and discussed in more detail thereafter.

It is important to note that these scenarios are designed to evaluate basin impacts from a number of different management actions. The assumptions made in the various scenarios do not constitute a definite plan for groundwater management in the Basin. These particular scenarios have been selected to provide a range of possible actions that could take place, using various methods to change the way the Basin is operated.

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

<table>
<thead>
<tr>
<th>Model Scenario</th>
<th>Type of Water and Location</th>
<th>Volume (AFY)</th>
<th>Operational Changes in Basin</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In-lieu, delivered to CAW</td>
<td>3,600</td>
<td>CAW stops all pumping from the Seaside Groundwater Basin and brings in 3,600 AFY of in-lieu supply until their accumulated overproduction has been paid back. Once it has been paid back, CAW will pump its Natural Safe Yield Allocation (1,474 AFY). The triennial reduction in pumping does not take place while CAW repays its overproduction debt because total pumping will be below the Natural Safe Yield.</td>
</tr>
<tr>
<td>2</td>
<td>Scenario 1 plus Injection of water in Seaside Basin</td>
<td>3,600 + 2,000</td>
<td>Scenario 1 plus new wells injecting 2,000 AFY along General Jim Moore Blvd. The injected 2,000 AFY will be used to restore protective water levels and therefore will not be recovered.</td>
</tr>
<tr>
<td>3</td>
<td>Both injection and vadose zone recharge of water in Seaside Basin</td>
<td>2,800 Nov-Mar only</td>
<td>Install new injection and vadose wells to replenish the Basin using highly treated wastewater. The recharged water will be used to restore protective water levels and therefore will not be considered as additional basin yield. The Baseline Scenario pumping with the triennial ten percent reduction</td>
</tr>
</tbody>
</table>

Table 3: Selected Model Scenarios
<table>
<thead>
<tr>
<th>Model Scenario</th>
<th>Type of Water and Location</th>
<th>Volume (AFY)</th>
<th>Operational Changes in Basin</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>will be assumed.</td>
</tr>
<tr>
<td>4</td>
<td>Coastal injection barrier</td>
<td>2,600</td>
<td>New barrier wells injecting water along the coast, pumping inland of the injection barrier continues at full Decision-allocated rates without any triennial reduction.</td>
</tr>
<tr>
<td>5</td>
<td>Redistribute pumping locations</td>
<td>No change</td>
<td>New wells are installed to move pumping troughs inland, to more evenly distribute pumping, and to eliminate major pumping depressions. Triennial reductions in pumping will take place in line with the Baseline Scenario.</td>
</tr>
</tbody>
</table>

**SCENARIO 1 – IN-LIEU RECHARGE**

Scenario 1 estimates the impacts from California American Water (CAW) stopping all pumping from the Seaside Groundwater Basin to obtain credit against its accumulated pumping deficit. The accumulated pumping deficit would eventually be erased through in-lieu recharge. The purpose of this scenario is to simulate a reasonable plan for repaying CAW’s pumping deficit, evaluate its impact on basin groundwater levels, and estimate when protective water elevations will be met.

**IMPORTED WATER QUANTITY AND SOURCE**

3,600 AFY, delivered to CAW from a source outside of the Seaside Groundwater Basin. CAW will use this 3,600 AFY to meets its demands and will not pump any water from the Seaside Groundwater Basin.

**TIMING**

For purposes of the model, it will be assumed that the supplemental supply will start in October of Year six of the predictive period, which is equivalent to year 2015. It will end the month that the deficit is paid back, which is estimated to be March 2027 (see discussion below on how this date was determined).

**IMPORTED WATER DISTRIBUTION**

Water is used to provide in-lieu recharge by offsetting all of CAW’s pumping in the Seaside Groundwater Basin.
PUMPING CHANGES

From January of year one to October of year six of the predictive model, the scheduled triennial ten percent reduction will take place as per the Baseline Scenario. Beginning in October of year six (2015), the supplemental supply becomes available, and CAW will stop all pumping in the Seaside Groundwater Basin.

Using the supplemental water supply, CAW will be able to pay off its overpumping accrued since the Adjudicated Decision. According to the Replenishment Credit Memorandum of Understanding (MOU) between the Watermaster and CAW, CAW is allowed to take a monetary credit against their Replenishment Assessments for monies CAW expends in pursuit of its Coastal Water Project. In return for being allowed to take this credit, rather than paying their Replenishment Assessments when they would otherwise be due, the MOU commits CAW, once replenishment water becomes available, to providing replenishment water back to the Basin in an amount equal to their historical over pumping of the aquifer. Based on the terms of the MOU, the estimated amount of water CAW will be required to replenish after October of 2015 is approximately 16,865 acre-feet (MPWMD, personal communication).

Turning off all of their wells allows CAW to both eliminate their current overproduction of approximately 2,100 acre-feet per year, and forgo pumping their share of the Basin’s Natural Safe Yield (1,474 AFY). The portion of the Natural Safe Yield that is not pumped effectively increases the amount of groundwater in the Basin by 1,474 AFY. Therefore, CAW’s pumping deficit is reduced by 1,474 AFY for every year they import all of their water needs. Dividing the deficit of 16,865 acre-feet by 1,474 AFY suggests that CAW will need to forgo pumping in the Seaside Groundwater Basin for approximately 11 years and 5 months to repay their pumping deficit. Thus, the cumulative over-pumping would be repaid by March 2027.

Other producers will be allowed to pump groundwater at full Decision-allocated rates without any triennial reduction during the time that CAW forgoes its pumping and is paying back its overpumping debt. This is because the non-CAW pumping is below the 3,000 acre-foot per year Natural Safe Yield.

After enough in-lieu recharge has occurred to erase CAW’s accumulated pumping deficit, all Standard Allocation Producers will be subject to the triennial
pumping reductions detailed in the Amended Decision. Assuming the in-lieu recharge ends in early 2027, the implementation dates for all of the triennial pumping reductions will have passed, and all Standard Allocation Pumpers will pump only their portion of the Natural Safe Yield. If an ongoing supplemental water supply has been implemented by this date, the need to impose any pumping reduction should be evaluated.

NEW WELLS

No new wells are necessary.

DATA NEEDED

None.

SCENARIO 2 – IN-LIEU RECHARGE AND INJECTION

Scenario 2 is similar to Scenario 1, with an added 2,000 acre-feet of injected water per year used to restore groundwater to protective levels. The purpose is to assess how much quicker protective water elevations are reached with supplemental injected water, compared to the 3,600 AFY in-lieu recharge only. The 2,000 acre-feet of injected water is intended to stay in the Basin, and is not counted as additional supply that can be pumped from the Basin.

IMPORTED WATER QUANTITY AND SOURCE

3,600 AFY delivered to CAW plus, an additional 2,000 AFY delivered to the Basin for injection.

TIMING

In-lieu recharge will occur at the same time as in Scenario 1. Injection will also start and end at the same time as in-lieu recharge.

IMPORTED WATER DISTRIBUTION

As with Scenario 1, the first 3,600 acre-feet of water is used to provide in-lieu storage by offsetting all of CAW’s pumping in the Seaside Groundwater Basin. The additional 2,000 AFY of water is used for injection into the Seaside Groundwater Basin.
PUMPING CHANGES

As with Scenario 1, CAW will forgo pumping, and import water to pay back their deficit until approximately March 2027. Other producers will be allowed to pump groundwater at Decision-allocated rates during the time that CAW forgoes pumping. The 2,000 AFY of injected water will not be pumped from the Basin, but will be used to restore protective groundwater levels.

After enough in-lieu recharge has occurred to erase CAW’s accumulated pumping deficit, all Standard Allocation Producers will be subject to the triennial pumping reductions detailed in the Amended Decision. Assuming the in-lieu recharge ends in February 2027, the implementation dates for all of the triennial pumping reductions will have been passed, and all Standard Allocation Pumpers will pump only their portion of the Natural Safe Yield.

Injection of 2,000 AFY will also stop in February 2027. If analyses of the model results show that injecting 2,000 AFY restored groundwater elevations to protective levels well before CAW erases its pumping deficit, a second model simulation may be tried under this scenario, in which the 2,000 acre-feet of injection is terminated earlier in the simulation.

NEW WELLS

Injection wells along General Jim Moore Blvd will be added. The number of wells to be added will be based on the injection capacity of the existing MPWMD’s injection wells. Estimated locations and injection rates of these new wells will be provided by MPWMD and Martin Feeney.

DATA NEEDED

The number and location of new injection wells, together with injection capacity will be provided by MPWMD and Martin Feeney.
SCENARIO 3 – GROUNDWATER REPLENISHMENT PROJECT

Scenario 3 simulates MRWPCA’s proposed Groundwater Replenishment Project (GWRP). The purpose of this scenario is to estimate the fate of the recharged water, identify which existing wells may capture recharged water, and how the replenishment assists with meeting the goal of reaching protective groundwater elevations.

IMPORTED WATER QUANTITY AND SOURCE

2,800 AFY of highly treated wastewater (recycled water).

TIMING

In order to be able to compare model scenarios appropriately, the start date for the GWRP will be in October 2015, which is the same date that supplemental supplies become available in Scenarios 1 and 2. Recharge will continue for the remainder of the predictive period.

IMPORTED WATER DISTRIBUTION

Recycled water will be recharged into the Basin through both injection wells and vadose zone wells. The potential locations of the wells are shown in Figure 1. Six vadose zone wells will inject water directly into the Paso Robles aquifer at a rate of 400 gpm each; two injection wells will inject 1,000 gpm each into the Santa Margarita aquifer. Figure 1 shows a groundwater discharge pit near monitoring well FO-7. The pit provides the means to backflush the Santa Margarita injection wells occasionally as needed to maintain specific capacity. Because backflushing needs to occur at a relatively high rate (but for a short duration – i.e., hours), this operation will be ignored for modeling purposes.

A technical memorandum produced by MRWPCA’s consultant, Todd Engineers (2009), states that “the exact number of wells and well spacing will be based on site-specific subsurface investigations and a pilot well”. As such, the locations and volumes used in this scenario should not be regarded as final project design.
PUMPING CHANGES

The GWRP’s purpose is assumed to be to restore the Basin’s groundwater levels. Therefore water provided by the GWRP will not be counted as additional basin yield. The Baseline Scenario pumping, which includes the triennial ten percent reduction for Standard Allocation Producers, will be assumed for this scenario.

NEW WELLS

Figure 1 shows the location of six vadose zone wells and two injection wells. No new extraction wells will be required.

DATA NEEDED

None.
Figure 1: Scenario 3 Project Layout
SCENARIO 4 – COASTAL INJECTION BARRIER

Scenario 4 estimates the effects of a coastal injection barrier. The purpose of this barrier is to rapidly raise groundwater levels at the coast to protective elevations, allowing inland pumping to continue without the threat of seawater intrusion. A series of simulations may be run under this scenario: each simulation having a different quantity of injection.

IMPORTED WATER QUANTITY AND SOURCE

Up to 2,600 AFY from outside the Seaside Groundwater Basin.

TIMING

As with the other model scenarios, the injection in Scenario 4 will be scheduled to start in October 2015.

IMPORTED WATER DISTRIBUTION

Water is injected into a row of wells along the coast to act as a coastal barrier.

PUMPING CHANGES

Adding 2,600 acre-feet of injected water to the Natural Safe Yield of 3,000 acre-feet will bring the Operating Yield up to 5,600 AFY. Therefore, the preliminary assumption is that pumping can remain at the full Decision-allocated rates without any triennial reduction throughout the simulation. Injecting less than 2,600 AFY will require pumping in the Basin to be reduced by an equivalent amount.

A series of hypothetical injection wells will be located along the ocean edge of the groundwater model. Injection rates will be proportioned among these wells based on the expected transmissivity of the aquifer screened by each well.

NEW WELLS

Injection wells will be added along the coast. Because these are only example wells, exact well locations will not be necessary.
DATA NEEDED

None.

SCENARIO 5 – PUMPING REDISTRIBUTION

Scenario 5 estimates the benefits from redistributing pumping in the Seaside Groundwater Basin. The purpose of this scenario is to estimate whether the benefits of redistributing pumping justify the costs that may be incurred. The major benefit of pumping redistribution will be to achieve protective groundwater elevations at the coast. The development of cost data for this Scenario is beyond the scope of the modeling work, and would be additional work that the Watermaster may wish to pursue if this Scenario appears to be hydrogeologically advantageous.

IMPORTED WATER QUANTITY AND SOURCE

This scenario involves no outside water source.

TIMING

Implementing this Scenario will involve obtaining permits and approvals, and performing construction, all of which may be time-consuming. Therefore, as with other model scenarios, redistributed pumping is assumed to start in October 2015.

IMPORTED WATER DISTRIBUTION

No water is imported in this scenario.

PUMPING CHANGES

The triennial pumping reductions included in the Baseline Scenario will be used in this scenario.

NEW WELLS

A series of new wells will be added in the former Fort Ord near existing infrastructure. The number and locations of these wells are to be determined. All wells will be modeled to produce from the Santa Margarita aquifer.
DATA NEEDED

Martin Feeney will suggest new well locations. The locations will be provided in draft form to CAW and TAC members for their review. Pumping rates for the new wells will be assumed to be similar to nearby existing wells.

5. MODEL SCENARIO RESULTS

The Baseline Scenario and the five predictive model scenarios 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,
- Total usable groundwater storage space, 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 Seaside Groundwater Basin Groundwater Model Technical Memorandum No. 1. The model goals and objectives agreed to at that workshop are attached in Appendix B.

6. REFERENCES


## APPENDIX A

**LIST OF WORKSHOP ATTENDEES**

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization/Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bob Jaques</td>
<td>Seaside Groundwater Basin Watermaster</td>
</tr>
<tr>
<td>Bob Costa</td>
<td>Seaside Groundwater Basin Watermaster and Laguna Seca subarea landowners</td>
</tr>
<tr>
<td>John Fischer</td>
<td>Public</td>
</tr>
<tr>
<td>Rick Riedl</td>
<td>City of Seaside</td>
</tr>
<tr>
<td>Brain True</td>
<td>Marina Coast Water District</td>
</tr>
<tr>
<td>Robert Johnson</td>
<td>Monterey County Water Resource Agency</td>
</tr>
<tr>
<td>Martin Feeney</td>
<td>Consultant</td>
</tr>
<tr>
<td>Tom Bunosky</td>
<td>California American Water Company</td>
</tr>
<tr>
<td>Joe Oliver</td>
<td>Monterey Peninsula Water Management District</td>
</tr>
<tr>
<td>Phyllis Stanin</td>
<td>Todd Engineers (consultant to MRWPCA)</td>
</tr>
<tr>
<td>Derrrik Williams</td>
<td>HydroMetrics LLC</td>
</tr>
<tr>
<td>Georgina King</td>
<td>HydroMetrics LLC</td>
</tr>
</tbody>
</table>
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.
TO: Board of Directors

FROM: Robert S. Jaques, Technical Program Manager

DATE: July 1, 2009

SUBJECT: Consider Approving a Request for Service (RFS) with Martin Feeney to Install a New Monitoring Well

BACKGROUND AND PURPOSE:

One of items included in the Monitoring and Management Program (M&MP) scope of work and budget for FY 2009 is to install a new monitoring well in the inland area of the former Fort Ord, where no wells currently exist.

Martin Feeney has prepared a Basis of Design report for the new monitoring well under RFS No. 2009-02 which the Board approved at its March 2009 meeting. The recommended design concept is to install, at a single location, a cluster of 3 wells, each perforated in one of these hydrogeologic units: (1) the Santa Margarita Sandstone, (2) the upper portion of the Paso Robles Formation, and (3) the lower portion of the Paso Robles Formation. The deepest of these wells, the one to be perforated in the Santa Margarita Sandstone, is to be drilled deep enough to reach the Monterey formation.

Installing this new well will provide hydrogeologic information and ongoing water level and, if desired, water quality, data that will be helpful managing the Basin’s groundwater resources.

RECOMMENDATION:

It is recommended that the Board authorize Staff to execute this RFS in the amount of $262,599 under the existing Professional Services Agreement with Martin Feeney, and that the Board also authorize the transfer of $44,199 from the Operations Budget to the Capital Budget to assist with funding this RFS.

DISCUSSION:

Staff has nearly completed acquiring the necessary documents from the U.S. Department of the Interior Bureau of Land Management (BLM) granting the Watermaster permission to install this well on a land parcel owned by BLM. This parcel is located roughly in the vicinity of Parker Flats Road and Eucalyptus Road, near train-fire impact ranges in the former Fort Ord, and is shown as the “BLM Site” on the attached Well Site Location Map.

Also shown on that map are two other sites that staff has been pursing from Monterey Peninsula College (MPC) which could be used for a future monitoring well, if desired by the Watermaster. Those sites are shown on the Well Site Location Map as the “MPC MW Proposed Location” and...
the “MPC MW Alternative Location.” Negotiations are ongoing with MPC to obtain their permission to use one of those sites for a future well.

Staff is hopeful of having the well installed by the end of the summer of 2009, pending receipt of permission for the landowner.

One of the important pieces of information to be gained by installing this monitoring well is to determine the depth of the Monterey formation at this inland location within the Basin, where essentially no other well drilling data (bore logs) exist. Determining this depth, as well as the depths and thicknesses of the formations that overlie the Monterey formation, will provide very valuable information that will improve the accuracy of the Groundwater Modeling that is being performed for the Watermaster by HydroMetrics, as well as for general management of the Basin.

The approved FY 2009 Capital Budget amount for installation of this monitoring well is $225,000. $6,600 of this amount was used to have Mr. Feeney prepare the Basis of Design report, leaving a remainder of $218,400 in this account. While available geologic information suggests that the depth of the deepest borehole will be approximately 800 feet, there is no assurance that this assumption is correct. Because of this uncertainty regarding the exact depth at which the Monterey formation will be encountered, and because of the hydrogeologic importance of drilling to that depth, Mr. Feeney has included a contingency amount to extend each of the three wells depths by up to 25% in the estimated drilling contractor costs that are included in this RFS to ensure project success. This will allow for modification of the well design based on geologic information collected from the initial deep bore. If footages are less, the overall project costs will be reduced. Including this contingency amount in this RFS is intended to avoid having to stop drilling to seek additional funds to go deeper, if the Monterey formation is found to lie deeper than currently estimated. There can be considerable costs associated with having to halt the drilling process.

Including this contingency amount brings the dollar amount of this RFS to $262,599. The approved FY 2009 Operations Budget includes a Contingency line item of $45,273. It is recommended that the additional $44,199 ($262,599-$218,400=$44,199) needed to fund this RFS be taken from that Contingency line item by transferring that amount to the FY 2009 Capital Fund Budget.

As explained in the attached RFS No. 2009-03, the cost to install the well will hopefully be considerably less than the $218,376 allocated for the well drilling contractor’s costs in the $262,599 amount. If this proves to be the case, the actual cost to complete the work of the RFS would be considerably lower than $262,599.

**ATTACHMENTS:**
(1) Well site location map
(2) RFS No. 2009-03
DATE: 7/1/2009  RFS NO. 2009-03  
(To be filled in by WATERMASTER)

TO: Martin Feeney  FROM: Robert Jaques

Martin Feeney  WATERMASTER
PROFESSIONAL

Services Needed and Purpose: Install a monitoring well in the inland area of the former Fort Ord, as described in Attachment 1.

Completion Date: All work of this RFS shall be completed not later than 90 calendar days from the date of execution of this RFS No. 2009-03, as described in Attachment 1.

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

Total Price Authorized by this RFS: $262,599.00  (Cost is authorized only when evidenced by signature below.) (See Attachment 1 for derivation of Estimated Costs).

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

Requested by: WATERMASTER Technical Program Manager

Authorized by: WATERMASTER Chief Executive Officer

Agreed to by: PROFESSIONAL
ATTACHMENT 1

SCOPE OF WORK, ESTIMATED COSTS, AND SCHEDULE

BACKGROUND

The Scope of Work for this RFS No. 2009-03 covers the performance of the work to install a clustered monitoring well and to perform related work, as described in the Seaside Groundwater Basin Watermaster 2009 Inland Monitoring Well – Basis of Design (BOD) dated June 2009 prepared by Martin B. Feeney.

WORK TO BE PERFORMED

PROFESSIONAL will perform the tasks listed below:

Task 1 – Project Management/Meetings – This task includes project management and attendance at meetings. It is assumed that the Project Manager and/or the Lead Field Geologist may be required to attend up to three Watermaster Board and/or TAC meetings in the Monterey/Seaside Area during the course of the project. This task also includes work associated with project permit conditions compliance, contractor coordination, and well permitting support.

Task 2 – Well Installation

   Task 2.1 – Well Construction/Installation – Contractor Services – This task includes construction of the three clustered wells as specified in the BOD. This includes well permitting, mobilization, drilling, geophysical logging, well construction, well development, fluid and cuttings management and disposal, surface enclosures, and site clean-up.

   Task 2.2 – Well Construction/Installation – Professional Services – This task includes hydrogeologic services for coordination of drilling contractor field activities, geologic and geophysical logging of each well, and documentation of the activities and data collected.

Task 3 – Initial Data Collection

   Task 3.1 – Initial Water Level and Water Quality Data Collection -- After completion and development of the wells, water level and water quality samples will be collected. Water quality samples collected be taken to State Certified Laboratory and analyzed for general mineral constituents.

   Task 3.2 – Well Head Survey – After installation of well vaults, reference point elevations will be established by surveying. Survey services will be provided by Central Coast Surveyors – the surveyors that provided wellhead elevations for the Watermaster last year.

Task 4 – Reporting – After completion of Tasks 1 through 3, the collected data will be tabulated and summarized in brief reports. The report will include “as-built” construction, geologic and geophysical logs, hydrogeologic interpretations and a brief summary of operations.
All work under this RFS No. 2009-03 shall be performed in compliance with the conditions of approval granted by the U.S. Bureau of Land Management which allow the well to be installed on their property. These conditions are contained in Attachment 2.

**COSTS**

**Assumptions:**

- While available geologic information suggests that the depth of the deepest borehole will be approximately 800 feet, there is no assurance that this assumption is correct. To assure project success, a contingency to extend each of the three wells depths by up to 25% is included in the estimated drilling contractor costs. This will allow for modification of the well design based on geologic information collected from the initial deep bore. If footages are less, the overall project costs will be reduced.

- That the Watermaster’s clustered monitoring well is installed sequentially, i.e. either immediately before or immediately after, the well drilling work for California-American Water Company’s (Cal-Am) Bayonet Monitoring Well. Thus, the equipment needed by the drilling contractor to install the Watermaster’s well will already have been mobilized to the Seaside area, and will therefore reduce mobilization costs for the Watermaster’s well. If the Cal-Am Bayonet Well project is not undertaken by Cal-Am in time to complete the Watermaster’s monitoring well within the scheduled time, additional mobilization costs may be required.

- For budgetary purposes, it is assumed that the wells can be drilled and developed in 10 work days.

Costs for Task 2.1 (well construction/installation contractor costs) are PROFESSIONAL’s best estimates based upon prior well drilling experience in the Seaside area, but are not directly within the control of PROFESSIONAL. Those costs include the contingency amount described above. Costs for the other tasks are directly within PROFESSIONAL’s control and thus can be accurately estimated. Total costs for project management, well construction, initial data collection and reporting are estimated at $262,599 and are summarized below, broken down by task. A detailed breakdown of these cost estimates is included in the attached table.
COST SUMMARY

<table>
<thead>
<tr>
<th>TASK</th>
<th>ESTIMATED COST</th>
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<tr>
<td>Task 1 – Project Management</td>
<td>$ 3,980</td>
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<tr>
<td>Task 2.1 – Well Construction – Contractor Services</td>
<td>$218,376</td>
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<tr>
<td>Task 2.2 – Well Construction/Installation – Professional Services</td>
<td>$ 31,130</td>
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<td>Task 3.1 – Initial Water Level and Water Quality Data Collection</td>
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<td>Task 3.2 – Well Head Survey</td>
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<tr>
<td>TOTAL</td>
<td>$262,599</td>
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</table>

SCHEDULE

The schedule will be controlled by the drilling contractor and staff availability. The selected contractor, Bradley and Sons, is currently scheduled to construct a monitoring well on Fort Ord for Cal-Am in July or August 2009. It is assumed that Bradley and Sons can install the Watermaster’s monitoring well immediately before, or immediately following, the installation of Cal-Am’s well. Therefore, the work of this RFS No. 2009-03 shall be completed not later than 90 calendar days from the date of its execution.

PROJECT PERSONNEL

Martin Feeney will serve as project manager and project geologist. Mr. Feeney will be assisted by contract personnel from Pueblo Water Resources Associates, Inc (PWR). PWR is a geologic/hydrogeologic consulting firm formed by several of Mr. Feeney’s former employees, each of whose talents and qualifications are well known to Mr. Feeney.
### Seaside Groundwater Basin Watermaster

#### 2009 Inland Monitoring Well

**PRELIMINARY BUDGET** $262,599

<table>
<thead>
<tr>
<th>TASK DESCRIPTION</th>
<th>HOURS</th>
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<tr>
<td>Task 1 Project Management/Meetings</td>
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<td>Task 2.2 Well Construction - Professional Services</td>
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<td>Task 3.2 Surveying</td>
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<td>Task 4 Reporting</td>
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**TOTAL (LABOR)** 285 39,755

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<th>Other Direct Charges (ODC)</th>
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<td>Task 3.1 Laboratory Services</td>
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**Per diem** 140 2,800

**SUBTOTAL (ODC)** 222,844

**TOTAL COST** $262,599
ATTACHMENT 2

U.S. Bureau of Land Management Conditions of Approval
EXHIBIT 2

RIGHT-OF-WAY
STIPULATIONS
WATERMASTER WELL DRILLING

1. The Right-of-Way (ROW) and Temporary Use Permit (TUP) holder agrees to comply with all the applicable regulations contained in 43 CFR 2800.

2. The ROW and TUP are issued subject to valid existing rights.

3. The ROW and TUP holder shall indemnify the United States against any liability for damage to life or property arising from the use of public lands under this grant.

4. The ROW and TUP granted herein is for the drilling of a monitoring well displayed on the attached map. The ROW and TUP holder shall conduct all activities associated with the construction, maintenance, operation and termination of the ROW and TUP within the authorized limits of the ROW and TUP.

5. Notwithstanding the expiration of this ROW or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this ROW, to the extent applicable, shall continue in effect and shall be binding on the ROW holder, its successors, or assignees, until they have fully satisfied the obligations and/or liabilities accruing herein before or on account of the expiration, or prior termination, of the ROW.

6. Failure of the ROW and TUP holder to comply with applicable law or any provision of this ROW and TUP shall constitute grounds for suspension or termination.

7. The ROW holder shall notify the Authorized Officer at least one week prior to moving equipment or vehicles onto BLM land. The Authorized Officer may require and schedule a preconstruction conference with the ROW holder and contractor prior to drilling. The contractor may not move equipment or vehicles onto BLM land more than three days prior to drilling and shall remove the same within three days after drilling.

8. Use of pesticides and herbicides shall comply with the applicable federal and state laws. Pesticides and herbicides shall be used only in accordance with their
registered uses and within limitations imposed by the Secretary of the Interior. Prior to the use of pesticides and/or herbicides, the ROW holder shall obtain from the Authorized Officer written approval of a plan showing the type and quantity of material to be used, pest(s) and/or vegetation to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the Authorized Officer. Emergency use of pesticides shall be approved in writing by the Authorized Officer prior to such use.

9. The ROW holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq.) on the ROW (unless the release or threatened release is wholly unrelated to the ROW holders activity. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

10. The ROW holder shall comply with all applicable federal laws and regulations existing or hereafter enacted or promulgated. In any event, the ROW holder shall comply with the Toxic Substance Control Act of 1976, as amended (15 U.S.C. 2601, et seq.) with regard to any toxic substance that are used, generated by or stored on the ROW or on facilities authorized under this ROW grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR, 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102B. A copy of any report required or requested by any federal agency or state government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved federal agency or state government.

11. Any cultural and/or paleontological resource (historical or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or federal land shall be immediately reported to the Authorized Officer. The ROW holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the ROW holder.

12. The ROW holder acknowledges that the BLM will identify on the ground the exact location of the site to be developed prior to drilling and will mark the said location with ground marking paint. In order to locate underground utilities, the
ROW holder shall contact the Underground Service Alert (USA) at least two workdays prior to drilling. BLM is unaware of any underground utilities at the proposed well drilling site.

13. The ROW holder shall secure the immediate premises during construction with construction flagging in consultation and agreement with the BLM Authorized Officer. The ROW holder acknowledges that the construction site is used by BLM employees and visitors as a parking area and the secured construction site shall not displace opportunities for BLM to have reasonable access for parking. Furthermore, the ROW holder acknowledges that the site is adjacent to a fire hydrant used for emergency services and construction purposes and shall not preclude access to the hydrant during construction and/or use. Finally, the ROW holder acknowledges that BLM needs access to the hose bib near the hydrant for water needs (including filling BLM herbicide tanks) and shall not preclude access to that hose bib during construction and/or use.

14. The ROW holder shall be responsible for obtaining required permits and approval from state and local governments prior to initiating construction activities. This includes securing the appropriate access to the BLM site across lands administered by the U.S. Army (i.e. Eucalyptus Road and segments of Parker Flats Road) and the Fort Ord Reuse Authority (i.e. 8th Avenue Extension Road, and segments of Parker Flats Road and Parker Flats Cutoff Road)

15. Disposal of all liquid and solid waste produced during the well drilling, shall be accomplished in an approved manner so it will not impact the air, soil, water, vegetation or wildlife.

16. The well drilling site shall be maintained in a sanitary condition at all times; waste materials at the site shall be disposed of promptly at an appropriate waste disposal location. "Waste" means all discarded matter including but not limited to, human waste, trash, garbage, refuse, oil drums and petroleum products.

17. Prior to termination of the ROW, the ROW holder shall contact the Authorized Officer to arrange a joint inspection of the well site. The purpose of the inspection will be to develop an acceptable termination (and rehabilitation) plan.

18. A copy of these stipulations shall be posted at the construction site and available to all individuals involved with the well drilling operation.

19. The monitoring well improvements shall be constructed in a manner such that no improvements will extend above the current grade of the ground surface. Requests to raise the current grade of the surface shall be approved by the BLM Authorized Officer prior to consideration and shall be accomplished at no cost to the United States should that be desired and approved.
ITEM X.

INFORMATIONAL REPORTS
(NO ACTION REQUIRED)
Each Producer is authorized to Produce its Production Allocation within the designated Subarea in each of the first three Water Years. Alternative Producers may change to Standard Production by March 27, 2009 by filing a declaration with the Court and with the other parties.

Commencing with the fourth Water Year and Triennially thereafter, the Operating Yield for both Subareas will be decreased by 10% until the Operating Yield is equivalent to the Natural Safe Yield unless by recharge or reclaimed water use results in a decrease in production of Native Water as required by the decision.

Each Water Year by November 15th, the Watermaster will determine and levy a Replenishment Assessment on each Standard Producer, with payment due from Producer by January 15th.

After the close of each Water Year, the Watermaster will determine and levy a Replenishment Assessment against all Producers that incurred Operating Yield Over Production during the Water Year, with payment due from Producer by January 15th.

California American Water to submit annually to Watermaster any augmentation to water supply for possible credit toward Replenishment Assessment.

Annual MILESTONES

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<td>APA to SPA election amended to in perpetuity</td>
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<td>30-Sep-07</td>
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ANNUAL MILESTONES

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<tr>
<td>Administrative Assessments</td>
<td>15-Jan-09</td>
</tr>
<tr>
<td>Capital Assessments</td>
<td>27-Mar-06</td>
</tr>
<tr>
<td>Summary report of water resources data to all members/parties</td>
<td>15-Nov</td>
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<td>Final EIR Release</td>
<td>30-Dec-09</td>
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<tr>
<td>SWRCB Cease Desist Order California American Water</td>
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MONTHLY MILESTONES

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<thead>
<tr>
<th>Event</th>
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<tr>
<td>Fiscal Year tentative budgets distribution to all parties</td>
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<tr>
<td>75% of the Operating Yield of 5,600 decreased 10% Jan 1, 2009 and Declaration of Replenishment Water Available</td>
<td>To TAC 11-Mar-09</td>
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<td>Administrative Assessments</td>
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<tr>
<td>Operations Assessments</td>
<td>15-Jan-09</td>
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<tr>
<td>Replenishment Assessments</td>
<td>15-Jan-09</td>
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<tr>
<td>Answers to Judge's Questions re: Annual Report</td>
<td>15-Oct-09</td>
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<td>Declaration of Replenishment Water Availability</td>
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SUMMARY PROJECT SCHEDULE

<table>
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<tr>
<th>Event</th>
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<tr>
<td>Watermaster Board Regular Meeting Schedule</td>
<td>16-Jan</td>
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<tr>
<td>SWRCB Cease Desist Order California American Water</td>
<td>15-Jan-09</td>
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OTHER EVENTS

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
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<tbody>
<tr>
<td>Program Administration, Database Management</td>
<td>1/1/09 - 12/31/09</td>
</tr>
<tr>
<td>Basin Monitor Well Construction</td>
<td>1/1/09 - 12/31/09</td>
</tr>
<tr>
<td>Enhanced Groundwater Model</td>
<td>1/1/09 - 12/31/09</td>
</tr>
<tr>
<td>Production Water Level &amp; Water Quality Monitoring</td>
<td>1/1/09 - 12/31/09</td>
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<tr>
<td>Seawater Intrusion Detection Program</td>
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REVISED MILESTONE DATES

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<tr>
<td>SWRCB Cease Desist Order California American Water</td>
<td>1/1/09 - 12/31/09</td>
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NEXT MEETING

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>Annual Milestone Review</td>
<td>15-Oct-09</td>
</tr>
<tr>
<td>Annual Milestone Review</td>
<td>15-Oct-09</td>
</tr>
</tbody>
</table>
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 - Derrik Williams and Georgina King
Martin Feeney Hydrogeologist - Martin Feeney

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

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. 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 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). 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 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 Ground Water Replenishment Project in the amount of 2,800 AFY. 1,400 AFY would be recharged into the upper (Paso Robles) aquifer using vadosz 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. 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. 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.
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
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 (via telephone)
Martin Feeney Hydrogeologist - Martin Feeney

Others:
MPWMD – Jonathan Lear

Note: Prior to the start of the meeting, Mr. Fischer asked Mr. Bunosky if Judge Randall's recent discussions had any impact on the Watermaster. Mr. Bunosky responded that he felt the Judge's direction only pertained to MPWMD and not to the Watermaster. Mr. Oliver concurred with this interpretation of the Judge's direction.

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

1. Administrative Matters:
   A. Approve Minutes from April 8, 2009 Regular Meeting
      On a motion by Mr. Bunosky, seconded by Mr. Fischer, the minutes were unanimously approved as presented.

   B. Approve Minutes from April 23, 2009 Special Meeting
      On a motion by Mr. Bunosky, seconded by Mr. Fischer, the minutes were unanimously approved as presented, with Mr. Bennett abstaining.

   C. Cancel July, 2009 TAC meeting
      The TAC was in unanimous agreement with not having a TAC meeting in the month of July.

2. Progress Reports
   A. MPWMD
Mr. Oliver briefly summarized the agenda packet materials for this item. He noted that the former U.S. Army well west of Highway 1 has now been formally added to the Watermaster’s monitoring well list via the State Parks issuance of a permit for that purpose. Mr. Fischer asked Mr. Oliver if the addition of this well will simply provide more data from this location, or whether it will avoid the need to provide another monitoring well in this area. Mr. Oliver said that it will avoid having to put in an additional well in this area. He noted that this is a coastal well, not an inland well.

Mr. Feeney and Mr. Oliver said that the well was apparently completed in the Aromas Sands (~180 foot) aquifer. Only a small amount of historical water level data in this area exists. Mr. Feeney said that a datalogger has now been installed in this monitoring well for continuous data acquisition.

B. HydroMetrics
Mr. Williams and Ms. King explained that most of their work is currently focused on model-related activities. Some layers and grids have been set up, and the recharge budget is going along well. HydroMetrics is trying to get some more data for input into the model - the boldfaced items on page 16 of today’s agenda packet are still needed. Mr. Johnson reported that he anticipates that by Tuesday May 19th he will be able to provide the Groundwater Level Data. However, for IGSM GIS data some computer program code problems have been encountered that are currently preventing being able to compile some of the data and send it to Ms. King. Following brief discussion it was agreed that Ms. King and Mr. Johnson will discuss this further separately.

Mr. Bunosky reported that the CAW monthly delivery data is not directly available, and that it would be a considerable effort to manually compile it. Mr. Oliver proposed a simpler alternative approach that would not be quite as accurate, but which may be satisfactory for the purposes of the model. It would take into account actual historical delivery patterns. Ms. King pointed out that the data is needed by service area, and Mr. Oliver said that his approach would provide that level of information. Mr. Oliver will e-mail an example of his approach to Mr. Bunosky and Ms. King for their review. Ms. King said that she also needs monthly delivery data from MCWD.

Ms. King said the model will be running by the June TAC meeting. She also reminded that the Protective Water Levels Workshop meeting will be held on May 28, and that a Technical Memorandum for that meeting will be coming out next week via e-mail to all TAC members.

C. Technical Program Manager
Mr. Jaques summarized the agenda packet materials pertaining to the Database Issues item. Mr. Oliver and Mr. Riedl recommended making Level 2 Users be able to add, but not delete, documents. Mr. Johnson recommended revising the User Access Level numbers so that the highest number has the maximum access.

Mr. Johnson asked if there is a provision to have data entry verified or checked by a separate person before it goes into the database. Mr. Oliver responded that no, this is not the case, but that the program does have a checking feature to make sure most data that is entered falls within acceptable ranges.

On a motion by Mr. Riedl, seconded by Mr. Johnson, the database recommendations as presented in the agenda packet were approved with the modifications described above. These revisions are shown in the final versions of Tables 2 and 3 (from the agenda packet) below:
<table>
<thead>
<tr>
<th>User Access Level</th>
<th>Password Required?</th>
<th>Persons Assigned to this User Access Level</th>
<th>General Description of User Capabilities</th>
</tr>
</thead>
</table>
| 4                 | Yes               | Database Administrators: Joe Oliver & Bob Jaques | • View and edit all data and documents in the Database  
|                   |                   |                                             | • Assign and change passwords and User Levels  
|                   |                   |                                             | • Prepare and download reports |
| 3                 | Yes               | Regular Users and Data Entry Personnel: Laura Dadiw and certain MPWMD personnel | • Enter and edit data to all of the data entry screens  
|                   |                   |                                             | • View and be able to add, but not to delete or edit, things in the Documents screen  
|                   |                   |                                             | • Prepare and download reports |
| 2                 | Yes               | TAC Members and Consultants Working for the Watermaster: All members of the TAC, and consultants such as HydroMetrics and Martin Feeney | • View only, but not be able to edit, all screens and documents contained in the Database  
|                   |                   |                                             | • Prepare and download reports |
| 1                 | No                | General Public: Anyone who wishes to get information on issues pertaining to the Database | • View only, but not be able to edit, selected screens contained in the Database  
|                   |                   |                                             | • Prepare and download reports |
Table 3. Revised User Capabilities

<table>
<thead>
<tr>
<th>User Access Level</th>
<th>Contacts</th>
<th>Well Database</th>
<th>Reports</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Well List</td>
<td>Gen’l Info.</td>
<td>Second’y Info</td>
</tr>
<tr>
<td>2</td>
<td>View</td>
<td>View</td>
<td>View</td>
</tr>
<tr>
<td>1</td>
<td>View</td>
<td>View</td>
<td>None</td>
</tr>
</tbody>
</table>

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
- **View and Add** – Can view all documents in this screen, and can add documents to this screen, but cannot delete or edit the documents already in this screen
- **None** – Access is not authorized to this screen
- **Report** – Can prepare customized reports and download them
Mr. Jaques summarized the agenda packet materials pertaining to the Selection of “Site for New Monitoring Well” item. Mr. Feeney commented that based on his previous work with BLM on another monitoring well, he anticipated it would probably be about three weeks from this point in the process to obtain their permit to proceed with work at their site.

Mr. Jaques summarized the agenda packet materials pertaining to the “Calibration of Production Well Meters” item. Mr. Feeney said that he has experience and information with regard to the CAW calibration reports, and he will share this with Mr. Jaques.

3. Approval of Selection of Scenarios to be Evaluated Using the Updated Groundwater Model

Mr. Williams and Ms. King opened discussion on this item, starting with the revised Draft Technical Memorandum No. 2 contained in the agenda packet. Mr. Williams asked that any editorial comments or other edits to that document be e-mailed directly to Ms. King for incorporation into the final version.

Mr. Jaques asked Mr. Williams to incorporate the "Model Scenarios" document, which had been e-mailed to the TAC prior to today's meeting, into the finalized version of Technical Memorandum No. 2. Mr. Williams will edit the "Model Scenarios" document based on today's TAC input and send it out for final TAC review. It will then be finalized and integrated into Technical Memorandum No. 2.

Mr. Bunosky asked Mr. Williams, with reference to pp. 30 and 31 of the agenda packet for today's meeting, whether the Baseline Scenario would also provide information on storage capacities and volumes. Mr. Williams responded that this is somewhat problematic, but he will do this by making certain assumptions that will be stated in the document. These items will be added to the bulleted list in this section of the Technical Memorandum.

Mr. Riedl asked if historical rainfall data was going to be used for the model, and Mr. Williams responded that it would. He said the different pumping scenarios will be superimposed on that historical rainfall data. There was discussion with regard to how to do this and what assumptions should be made.

Mr. Riedl and Mr. Williams discussed revising wording in item 2 on page 30 of the agenda packet with regard to the 10 percent pumping reduction topic, and also with regard to the intent of including Sand City's desalination plant with its 300 acre-foot-per-year production capacity.

Mr. Bunosky recommended including some background language with regard to Table 3 on page 34 of today's agenda packet.

There were several other questions and answers to and from Mr. Williams with regard to Technical Memorandum No. 2.
Discussion then moved to the "Model Scenarios" document which had been separately e-mailed to TAC members for their review prior to today's meeting.

To save time at today's meeting it was agreed to e-mail to Ms. King any "editorial" comments or edits, and focus today's discussions only substantive comments. The outcome of these discussions is summarized below:

Scenario 1:
1. Mr. Jaques requested clarifying the basis of the 1,494 AFY figure in the last paragraph on page one of this document.
2. Mr. Oliver offered to help by providing projected future CAW deficit amounts up to year 2015 when the 3,600 AFY delivery is expected to be available.
3. Mr. Jaques requested including language saying that at year 2021 all Standard Producers will have to reduce their pumping so as not to exceed their share of the Natural Safe Yield. They may be able to purchase any additional water they need from the same supplemental water source that CAW will be using.

Scenario 2:
1. Assume that the additional 2,000 AFY is available in year 2015, just as the 3,600 AFY amount is expected to be.
2. Mr. Fischer offered the general comment that economic impacts are not considered in preparing any of the scenarios. This should be noted in the Technical Memorandum.
3. Mr. Riedl requested that the TAC be allowed to examine the results of Scenario 1 before doing the possible second model simulation referred to on page 3 of the document.
4. Consensus for the injection wells to be located along General Jim Moore Boulevard. Mr. Feeney to provide specific location information to Mr. Williams for this scenario.

Scenario 3:
1. Let the model determine whether the Groundwater Replenishment Project will increase the Natural Safe Yield of the basin.
2. Assume that water from the Groundwater Replenishment Project becomes available in year 2015.
3. Recent information provided by Todd Engineers will be incorporated into the Technical Memorandum.

Scenario 4:
1. Assume that the water is available in year 2015.
2. The addition of 2,600 AFY will be initially assumed to increase the Natural Safe Yield from 3,000 AFY to 5,600 AFY, but additional runs may be made to refine this assumption. Thus, initially, the original year 2006 pumping levels will be able to be maintained.

Scenario 5:
1. Mr. Bunosky reported that CAW cannot provide the "Data Needed" as described under this scenario. Mr. Williams will talk with Mr. Feeney and develop this data for purposes of analyzing this scenario.
2. Can this scenario be implemented sooner than year 2015? Following discussion there was consensus to use year 2015 for this scenario, due to the time that will likely be required to address the permitting, jurisdictional, regulatory, cost, and other issues associated with implementing this scenario.

3. Costs to implement this scenario are not part of the modeling scope of work. Such work would be additional work to pursue, if the approach appears to be hydrogeologically attractive.

Mr. Williams will provide a revised Draft Technical Memorandum No. 2 via e-mail to the TAC for its review by Friday May 22nd. Additional final edits should then be provided via e-mail to Mr. Williams not later than May 26, so he can get a final version via e-mail to Mr. Jaques by May 28, so it can be included in the June Board meeting agenda packet.

4. Presentation of Basis of Design Report for New Monitoring Well
Mr. Feeney summarized the agenda packet materials for this item.

The Coastal Sentinel Wells are a single deep completion, since a down-hole device can be used to detect water quality changes at various depths. However, the new inland monitoring well needs to be able to obtain aquifer-specific water level data, which can only be obtained with separate completions into each aquifer.

Mr. Feeney recommended that the monitoring well be designed using the well cluster, rather than the nested-well, approach.

Mr. Feeney and Mr. Oliver said they preferred the BLM site over the MPC site, if it can be obtained, because some previous hydrogeologic work has been done based on data from the former Camp Huffman well at the BLM site. Getting current data from this location would therefore be desirable. However, the MPC site would also be able to provide useful information from the inland area. Mr. Williams commented that the BLM site, being a little further inland than the MPC site, would be slightly more valuable to the modeling work, as it would provide data in an area where there is currently no data available.

Mr. Riedl asked if the "direct-push" method could be used to install the monitoring well, and Mr. Feeney and Mr. Lear said that these wells are too deep for that technique to be used.

Mr. Riedl expressed concern about the monitoring well vault becoming full of water at the wellhead. Mr. Feeney responded that the gasket on the vault cover should avoid this problem.

Mr. Jaques asked Mr. Feeney to include cost estimates for both types of well-designs in the Basis of Design Report.

5. Update on Board’s Action Regarding Reducing the Operating Yield
Mr. Jaques reported that the Board acted to impose the 10 percent cut-back at their May Board meeting. Mr. Oliver expanded by saying that the Board also asked the TAC to continue to monitor, and keep the Board apprised of, the Seaside proposal to obtain golf course irrigation water from MCWD. Mr. Jaques asked Mr. Riedl if he would be kind enough to provide a
monthly progress report on this as a standing agenda item for future TAC meetings, and Mr. Riedl agreed to do so. The Board's motion on this matter included having certain actions taken by the TAC. Mr. Jaques will obtain the language of the actual motion from Ms. Dadiw from that Board meeting, so it can be used to guide the TAC’s actions on this matter.

Mr. Oliver asked if the pipeline work to implement this project, initially reported as having an estimated cost on the order of $150,000, could be completed within the current Water Year. Mr. Riedl responded that the MCWD staff now felt the work could be done for a much lower amount, perhaps as low as $40,000, and that Seaside could proceed with this work on MCWD's system in advance of getting the MOU between Seaside and MCWD completed.

6. Schedule
There were no questions with regard to the Schedule. Mr. Riedl asked if it would be possible for HydroMetrics to present Baseline and Scenario 1 modeling results first, before doing the subsequent scenarios. Mr. Williams responded that he will do that.

7. Other business
Mr. Riedl said he felt it would be desirable to look into getting money from grant or loan programs for Watermaster projects and other Watermaster work. There was consensus for Mr. Riedl, with assistance from Mr. Oliver, to look into this and report back at the next TAC meeting.

8. Set next meeting dates:
   A. Special Meeting (Workshop on Protective Water Levels) for Thursday May 28, 2009 at 1:30 p.m. at the MRWPCA Board Room
      This meeting was set for this date, time, and location.
   
   B. Regular Meeting for Wednesday June 10, 2009 at 1:30 p.m. at the Seaside City Hall Portable Office Buildings Conference Room
      This meeting was set for this date, time, and location.

The meeting adjourned at 4:47 PM
The meeting was called to order at 1:33 p.m.

1. **Administrative Matters:**
   
   **A. Approve Minutes from May 13, 2009 Regular Meeting**
   
   On a motion by Mr. Fischer, seconded by Mr. Oliver, the minutes were unanimously approved as presented.

   
   **B. Approve Minutes from May 28, 2009 Special Meeting**
   
   Mr. Oliver pointed out a typographical correction to change “then” to “than” on page 13 of the agenda packet. Mr. Johnson pointed out the misspelling of “Purisima” in several places in the draft minutes. With these corrections made, on a motion by Mr. Johnson, seconded by Mr.
Oliver, the minutes were unanimously approved, with Mr. Bennett abstaining because he had not attended this meeting.

2. Progress Reports
   A. MPWMD
   Mr. Oliver summarized the agenda packet materials for this item.

   Mr. Oliver notified Ms. King that MPWMD will complete responding to HydroMetrics' well location questions today.

   Mr. Oliver described proposed new sampling methods to be used at the new monitoring well at the Giggling Siding in the former Fort Ord. He handed out the attached cost analysis and photographs showing three sampling methods. He explained that the new methods appear to be less costly than the airlift method which is what has been used to date. Based on Mr. Lear's analysis, after approximately one year both the low flow and HydraSleeve methods become less costly than the airlift method. However, the HydraSleeve method is not currently an EPA-approved sampling protocol, whereas the other two are. Mr. Williams said he evaluated several sampling methods for the Soquel Creek Water District last year and will send Mr. Oliver his information on this.

   Mr. Oliver recommended making the change from the airlift to the low flow method now, in order to begin benefitting immediately from the savings that will occur. He noted there would be no increase in MPWMD's currently authorized RFS amount for this work, but that it would be appropriate to formally authorize this change in the sampling technique.

   A motion was made by Mr. Fischer, seconded by Mr. Riedl, to change from the airlift to the low flow method for the Coastal Monitoring Well Network monitoring that MPWMD does for the Watermaster, and the motion was approved unanimously. Mr. Jaques will formalize this through the issuance of an RFS to MPWMD.
Seaside Quarterly Monitoring Comparative Cost Analysis for HydraSleeve, Low Flow, and Airlift Methods

**HydraSleeve**

<table>
<thead>
<tr>
<th>Component</th>
<th>Unit Cost</th>
<th>Unit</th>
<th>No of Wks</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downhole equipment</td>
<td>$500</td>
<td>Unit</td>
<td>1</td>
<td>$500</td>
</tr>
</tbody>
</table>

**5 Year Cost for Quarterly Monitoring by Method**

<table>
<thead>
<tr>
<th>Method</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airlift</td>
<td>$65,500</td>
</tr>
<tr>
<td>Low Flow</td>
<td>$49,930</td>
</tr>
<tr>
<td>HydraSleeve</td>
<td>$48,100</td>
</tr>
</tbody>
</table>

*Environmental Protection Agency Accepted Sampling Protocol*

**QED Low Flow Sample**

<table>
<thead>
<tr>
<th>Component</th>
<th>Unit Cost</th>
<th>Unit</th>
<th>No of Wks</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downhole equipment</td>
<td>$500</td>
<td>Unit</td>
<td>1</td>
<td>$500</td>
</tr>
<tr>
<td>Tailon tubing</td>
<td>$400</td>
<td>Unit</td>
<td>100</td>
<td>$40,000</td>
</tr>
<tr>
<td>Pump Controller</td>
<td>$4,770</td>
<td>Unit</td>
<td>1</td>
<td>$4,770</td>
</tr>
<tr>
<td>Emp tube kit</td>
<td>$120</td>
<td>Unit</td>
<td>1</td>
<td>$120</td>
</tr>
</tbody>
</table>

**Airlift Method**

<table>
<thead>
<tr>
<th>Component</th>
<th>Unit Cost</th>
<th>Unit</th>
<th>No of Wks</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downhole equipment</td>
<td>$1,960</td>
<td>Unit</td>
<td>1</td>
<td>$1,960</td>
</tr>
<tr>
<td>Compressor rental</td>
<td>$100</td>
<td>Unit</td>
<td>3</td>
<td>$300</td>
</tr>
<tr>
<td>Fuel</td>
<td>$100</td>
<td>Unit</td>
<td>3</td>
<td>$300</td>
</tr>
</tbody>
</table>

Notes:
1. 25 wells sampled at Coastal Monitoring Wells and 1 well at Monterey State Beach each sampled quarterly (7x 4 = 28)
2. Time to sample wells includes downhole and set up time.
3. HydraSleeve is an EPA certified sampling method. Samples are from casing and are an average of 1 foot of casing. Method entails an ambient groundwater flow through wells screen.
4. Low Flow Sampling is an EPA certified sampling method for all TCC-22 constituents. Samples are from formation and are from a 1 foot discrete interval. Method provides the opportunity for depth vs. water quality assessment in and around the wells. One well will be purchased and used in all monitoring wells.
5. Airlift method is an EPA certified sampling method for general minerals and metals. Method samples formation but collects a flow weighted sample from the well screen.
6. Foot Galt Demonstration Monitoring well (May 23-1995) will require a dedicated pump because the casing diameter and water levels are not conclusive to the airlift method.
B. HydroMetrics
Ms. King summarized the agenda packet materials on this item. She noted that the improvements to the Protective Water Level Technical Memorandum No. 2 figures will be incorporated into the final report, not into Technical Memorandum No. 3 itself.

Ms. King said that she is seeking any further comments TAC members may have on Technical Memorandum No. 2 by the close of business today, in order to finalize the memorandum. Mr. Johnson and Mr. Oliver asked if would be possible to provide comments not later the close of business tomorrow, and Ms. King said that would be acceptable.

Ms. King explained that it will be necessary to obtain data from WRIME, MCWRA's groundwater modeling consultant, to get Salinas Valley Groundwater Basin data for use in the Seaside Basin model. This will be at additional cost as explained by Mr. Johnson. Mr. Johnson reported that MCWRA staff is not able to run their model, and that it is run by their consultant when data is needed. Consequently, the consultant will need to be paid to do a model run to produce the required data. A motion was made by Mr. Johnson, seconded by Mr. Fischer, to expend $7,500 to obtain this data through issuance of an RFS to HydroMetrics, and the motion was unanimously approved. Mr. Jaques will issue an RFS to HydroMetrics for this purpose.

Mr. Fischer requested that the figure on page 27 in the agenda packet be revised to show the location of the CDM-MW-4 well. Ms. King confirmed that this will be done, and that there will be four cross sections included in the Protective Water Level Model, those listed on page 14 of the agenda packet.

Mr. True said he had compiled the modeling data HydroMetrics had requested from MCWD, and would email it to Ms. King by tomorrow.

Ms. King said she expected the Groundwater Model to be up and running by next month.

C. Technical Program Manager
A. Database Issues: Mr. Jaques summarized the agenda packet materials for this item, and Mr. Oliver provided additional details with regard to the programming work proposed to be done to incorporate the TAC's recommendations into the database. A motion was made by Mr. Fischer, seconded by Mr. Bennett, to issue an RFS to MPWMD for $4,299.57 to have this work done, and the motion was approved unanimously.

B. Selection of Site for New Monitoring Well: Mr. Jaques summarized the agenda packet materials for this item. Mr. Feeney said he hoped to be able to coordinate the well driller's mobilization costs with the drilling work that CAW is planning for their new monitoring well coming up soon, in order to save costs for the Watermaster's monitoring well drilling work. Mr. Williams asked how the decision would be made as to whether to use the MPC or the BLM site. Mr. Jaques responded that the TAC had previously agreed that the BLM site was preferred, but that if the BLM approval process has not been completed by the time the next TAC meeting occurs in August, it would be worthwhile for the TAC to reconsider that decision, if the MPC approval has been granted by that time.
C. Calibration of Production Well Meters: Mr. Jaques summarized the agenda packet materials on this item.

There was discussion that some of the water meters are installed such a way that they may not be able to provide accurate flow metering data, and that the field calibration process may not yield results that can be counted upon to be accurate. It may only be possible to do calibration by removing the meters and sending them into the factory for calibration. However, if the meters are then reinstalled as presently configured, the piping and installation arrangements may not allow the meters to read accurately.

Mr. Anthony explained that CAW does production well pump testing, and if expected flow rates are significantly different than those indicated by their water meters, then they send the meters in to the factory for calibration.

Mr. Feeney noted that the golf courses are agricultural users, and they should be able to get pumping tests performed free of charge by PG&E. He will provide Mr. Jaques with information to pursue this.

There was much discussion on this topic leading to consensus that it is probably not worthwhile or reasonable to perform calibration work on the meters. Rather, pumping tests should be used to determine whether the meters are reading with reasonable accuracy. Also, it may not be necessary to require that pumping tests be performed on wells that have historically produced very small quantities of water.

Mr. Jaques will prepare recommendations on this topic for discussion at the August 9th TAC meeting.

[Note: Item 4 was taken up prior to taking up Item 3 at the request of Mr. True, as he had to depart to attend to another business commitment.]

3. Followup Discussion Regarding Development of Protective Water Levels
Mr. Jaques explained that this item was on the agenda in order to provide TAC and HydroMetrics personnel with a further opportunity to discuss any protective water level issues.

Mr. Riedl said he would like to explore putting in an offshore monitoring well to add data to the groundwater model. Mr. Oliver, Mr. Johnson, Mr. Anthony, and Mr. Feeney all commented that it would be very difficult, time-consuming, and expensive to get NOAA MBNMS approval to do this. Mr. Oliver described efforts being made by the Monterey Bay Aquarium to obtain approval to put in a well to get geo-chemical data, and they were experiencing these types of difficulties. Mr. Feeney briefly described the significant cost and difficulty of getting the necessary drilling equipment on-site to put in such a well. Mr. Williams noted that there are already numerous coastal monitoring wells in the Seaside Basin, and that little would be learned from putting in an offshore well. Following this discussion, Mr. Riedl said he agreed that it would not be worthwhile to pursue this further.

There were no further comments or issues discussed with regard to the Protective Water Levels Technical Memorandum No. 3, and Ms. King will proceed to finalize it.
4. Status Report on City of Seaside Negotiations with MCWD to Obtain Golf Course Water

Mr. Riedl reported that there had been no recent discussions with MCWD with regard to getting water from them to irrigate the Seaside golf courses. He said he believed that the Watermaster’s Budget and Finance Committee was still discussing cost issues related to this proposal. Also, he noted that the City of Seaside's cost for getting water from its existing golf course wells is essentially zero, since the golf course contract operator is required to pay the well operation and maintenance costs. If the City of Seaside purchases water from MCWD rather than getting it from its existing wells, there would be a considerable additional expense to the City.

Discussion then turned to the five numbered items on page 49 of the agenda packet, and the corresponding proposed responses to the Board contained on pages 51 and 52 of the agenda packet.

With regard to item No. 1, Mr. Riedl said that water is immediately available for the golf courses from the MCWD distribution system, but that it would have to be manually turned on and off. Mr. True said that the delivery of water would be from a hose connected to a fire hydrant, and this would be used to fill the golf course irrigation water reservoir as needed to meet irrigation demands.

Mr. Riedl said that it would take an expedited contracting process in order to begin water delivery from MCWD by September 30, 2009.

Mr. True said that MCWD is ready to immediately begin delivering water when so directed by its General Manager. There was discussion with regard whether or not a written agreement between the City of Seaside and MCWD should be developed to establish terms and conditions under which water delivery would take place. Mr. True felt that an agreement would be desirable. Mr. Riedl said that he had initially not expected an agreement to be necessary, but following discussion at today's meeting he said he agreed with Mr. True that it would probably be desirable to have an agreement. Mr. True and Mr. Riedl noted that the decision with regard to whether or not an agreement is needed is not theirs to make, but is a decision for their managers to make.

Mr. Anthony said that the Budget and Finance Committee is still discussing the issue of how, and by whom, paying for the water from MCWD will be handled. Mr. Riedl said that the City of Seaside will be approaching the Watermaster's Budget Finance Committee for resolution of this matter in the immediate future.

Mr. Jaques will make revisions to the proposed response on page 51 agenda packet to reflect this additional information.

With regard to item No. 2, Mr. Anthony said that no Sand City desalination plant water will be used to reduce Seaside Groundwater Basin pumping, and that all the water from the Sand City plant will be used by CAW to reduce pumping from the Carmel River basin. He went on to say that the eight-week acceptance test for the Sand City desalination plant starts next week, so the earliest that the plant could be put into full-scale operation and delivering water to the CAW system would be mid-August, 2009. Mr. Jaques will make revisions to the proposed response on page 51 of the agenda packet to reflect this additional information.
With regard to item No. 3, there was consensus that the proposed response on page 51 and 52 of the agenda packet was satisfactory as-is.

With regard to item No. 4, Mr. Anthony, Mr. Fisher, and Mr. Oliver said they did not recall the Board taking any specific action with regard to this issue, but only that the issue had been discussed. Mr. Jaques will make revisions to the proposed response on page 52 of the agenda packet to reflect this additional information.

With regard to item No. 5, there was consensus that the proposed response on page 52 of the agenda packet was satisfactory as-is.

5. Schedule
Mr. Williams commented that the only issue he could envision at this time that could impact the schedule of work that HydroMetrics is performing would be a delay in obtaining the WRIME data on the Salinas Valley Groundwater Basin.

6. Other business
There was discussion with regard to potentially appointing an additional Vice Chairman for the TAC, so that there will always be someone present to chair the meetings if Ms. Ingersoll and Mr. Bunosky are both unable to attend. Mr. Fischer recommended agendizing this topic for the next TAC meeting.

Mr. Oliver said he would like to provide a grant-fund availability update report at the next TAC meeting.

7. Set next meeting dates:
There will be no TAC meeting in July. The next regular meeting will be held on Wednesday August 12, 2009 at 1:30 p.m. at the Seaside City Hall Portable Office Buildings Conference Room

The meeting adjourned at 3:25 PM
Seaside Groundwater Basin Watermaster

Reported Quarterly and Annual Water Production (in Acre Feet) From the Seaside Groundwater Basin For All Producers Inclued in the Seaside Basin Adjudication

(All Values in Acre-Feet ([AF]))

<table>
<thead>
<tr>
<th>Producer</th>
<th>Coastal Subareas</th>
<th>Laguna Seca Subareas</th>
<th>Seaside Basin Production Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quarters</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oct-Dec 2008</td>
<td>Jan-Mar 2009</td>
<td>Apr-Jun 2009</td>
</tr>
<tr>
<td>CAW (Coastal Subareas)</td>
<td>957.6</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Seaside (Municipal)</td>
<td>69.9</td>
<td>58.6</td>
<td>128.5</td>
</tr>
<tr>
<td>Granite Rock Company</td>
<td>Exempt</td>
<td>Exempt</td>
<td>-</td>
</tr>
<tr>
<td>DBO Development No. 27</td>
<td>Exempt</td>
<td>Exempt</td>
<td>-</td>
</tr>
<tr>
<td>City of Seaside (Golf Courses)</td>
<td>96.7</td>
<td>27.1</td>
<td>123.8</td>
</tr>
<tr>
<td>Sand City</td>
<td>0.0</td>
<td>0.0</td>
<td>-</td>
</tr>
<tr>
<td>Security National Guaranty</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Cypress Pacific Investors*</td>
<td>Exempt</td>
<td>Exempt</td>
<td>-</td>
</tr>
<tr>
<td>Alderwoods Group (Mission Memorial)</td>
<td>4.2</td>
<td>1.6</td>
<td>5.9</td>
</tr>
<tr>
<td>Coastal Subarea Totals</td>
<td>1,128.4</td>
<td>87.3</td>
<td>0.0</td>
</tr>
<tr>
<td>CAW (Inland Subareas)</td>
<td>119.7</td>
<td>75.6</td>
<td>195.4</td>
</tr>
<tr>
<td>Pasadera Country Club</td>
<td>18.0</td>
<td>3.8</td>
<td>21.8</td>
</tr>
<tr>
<td>Laguna Seca/Bishop</td>
<td>37.0</td>
<td>5.7</td>
<td>42.7</td>
</tr>
<tr>
<td>York School</td>
<td>4.4</td>
<td>2.6</td>
<td>7.0</td>
</tr>
<tr>
<td>Laguna Seca Park (County)</td>
<td>5.8</td>
<td>2.9</td>
<td>8.7</td>
</tr>
<tr>
<td>Laguna Seca Subarea Totals</td>
<td>185.0</td>
<td>90.6</td>
<td>-</td>
</tr>
<tr>
<td>Cumulative Total Per Quarter</td>
<td>1,313.4</td>
<td>177.9</td>
<td>-</td>
</tr>
</tbody>
</table>

Notes:
1. The water year (WY) begins October 1 and ends September 30 of the following calendar year. For example, WY 2009 began on October 1, 2008, and will end on September 30, 2009.
2. Values shown in the table are based on reports to the Watermaster as received directly or by MPWMD by April 15, 2009.
3. All values are rounded to the nearest tenth of an acre-foot. Where required, reported data were converted to acre-feet utilizing the relationships: 325,851 gallons = 43,560 cubic feet = 1 acre-foot.
4. "Operating Yield" values based on Seaside Basin Adjudication decision as amended, signed February 9, 2007 (Monterey County Superior Court Case No. M66343).
5. Any minor discrepancies in totals are attributable to rounding. CAW = California American Water.
7. Base Operating Yield Allocations are To Be Determined "TBD" once review of the City of Seaside contention of Replenishment Assessment Calculation is complete.

*Referred to as "M.E. Calabrese 1987 Trust" in Decision

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TO: Board of Directors  
FROM: Robert S. Jaques, Technical Program Manager  
FORMATTED AND APPROVED BY: Dewey D Evans, CEO  
DATE: July 1, 2009  
SUBJECT: TAC Informational Items  

BACKGROUND AND PURPOSE: Progress reports on the following two topics are presented to the Board for their information in order to keep Board members abreast of work being performed by the TAC and the consultants working under the TAC’s direction.  

RECOMMENDATION: No recommendations – this is an informational item only.  

DISCUSSION:  

1. Groundwater Modeling – Protective Water Levels: On May 28, 2009 a Special TAC meeting was held in a workshop format for focused discussion on issues pertaining to the development of protective water levels for the Seaside Groundwater Basin. The workshop was led by Derrik Williams of HydroMetrics, LLC, the consultant that is performing this work for the Watermaster. Here are the principle conclusions and decisions reached at that meeting:  
   • The approach to be used will involve developing a series of cross-sectional models and using certain assumptions to generate protective water levels. The model results will not tell when the interface well get to a specific location, but it will provide assurance that the seawater intrusion interface will not move further inland than the indicated location. With the protective water levels known, this information can be fed into the Groundwater Model for use in determining how long it will take to reach the protective levels under the various Scenarios.  
   • With regard to the depth of protection, i.e. how deep into the aquifer protection against seawater intrusion should be provided, Mr. Williams explained that the deeper you protect, the higher the protective levels will need to be. Higher levels well require the use of more imported water. Protecting too shallow could lead to operational (water quality) problems with the production wells. Following considerable discussion the following consensus was reached:  

For the Southern Coastal Subarea: There was consensus to provide protection to the top of the Monterey formation. This will protect to the full depth of the Paso Robles and Santa Margarita aquifers in this subarea.  

For the Northern Coastal Subarea: There was consensus to protect to the top of the Monterey formation where the Santa Margarita formation exists, and in the northern part of the Basin to protect to the bottom of the extrapolated Santa Margarita formation where the Purisima formation is encountered. The intent of this is to protect to the full depth of the Paso Robles and Santa Margarita aquifers in this subarea.
Mr. Williams explained that this will also protect the Northern Inland and Laguna Seca subareas.

There was much discussion with regard to Technical Issues vs. Policy Issues and the cost consequences of differing depths and locations of protection. There was also discussion with regard to whether it was the Watermaster's responsibility just to protect the existing production wells from "material injury" or to protect the entire Basin (including possible future wells in areas where production wells do not currently exist). Direction from the Board on this issue is needed to help guide the work of developing protective water levels.

- With regard to the location (i.e. a line approximately parallel to the coastline) to which protection will be provided, following much discussion there was consensus to provide protection to the location of the existing coastal monitoring wells. These are very near the shoreline. There was discussion which led to consensus to use the following existing monitoring wells, rather relying on future monitoring wells that may be constructed: CDM-MW4, MSC, PCA-W, and SBWM-3.

- There was consensus to use a concentration of 250 milligrams per liter chloride level, which is the Drinking Water Standards Secondary Maximum Contaminant Level, as the basis for identifying the location of the seawater intrusion front.

2. Installation of New Monitoring Well: Two sites are being pursued for the installation of the new monitoring well that is included in this year’s Monitoring and Management Program scope of work and budget. One is on property that will be conveyed to Monterey Peninsula College (MPC) in the near future, and one is on property that has already been transferred to the U.S. Bureau of Land Management (BLM). Simultaneously pursing both sites was deemed by the TAC to be prudent, since it was not known how long, if at all, it would take to obtain approval to install the well on either of these sites. Currently our applications for approval are pending at both of these organizations, with approval from at least one, if not both, of them expected by the end of July. There is a preference by the hydrogeologists to use the BLM site if approval for this site comes before the end of summer, since there is some historical continuity of data that would be achieved at that site. However, the MPC site is also satisfactory and may be the one that is selected, if approval from MPC occurs and if it appears that there will be a significant delay in getting BLM approval. In either case only one new monitoring well will be installed this year.
ITEM NO. XI.

DIRECTOR’S REPORTS
ITEM NO. XII.

EXECUTIVE OFFICER

COMMENTS