

MEETING NOTICE AND AGENDA
TECHNICAL ADVISORY COMMITTEE
OF THE
SEASIDE BASIN WATER MASTER

DATE: Wednesday, August 12, 2015

MEETING TIME: 1:30 p.m.

Monterey Regional Water Pollution Control Agency Offices
5 Harris Court, Building D (Ryan Ranch)
Monterey, CA 93940

If you wish to participate in the meeting from a remote location, please call in on the Watermaster Conference Line by dialing (712) 432-1212. Use the Meeting ID 355890617. Please note that if no telephone attendees have joined the meeting by 10 minutes after its start, the conference call will be ended.

OFFICERS

Chairperson: Roger Hulbert, California American Water Company
Vice-Chairperson: Joe Oliver, MPWMD

MEMBERS

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

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The next regular meeting will be held on Wednesday September 9, 2015 at 1:30 p.m. at the MRWPCA Board Room.	

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE
* * * AGENDA TRANSMITTAL FORM * * ***

MEETING DATE:	August 12, 2015
AGENDA ITEM:	2.A
AGENDA TITLE:	Approve Minutes from the July 15, 2015 Meeting
PREPARED BY:	Robert Jaques, Technical Program Manager
SUMMARY:	
<p>Draft Minutes from this meeting was emailed to all TAC members. Any changes requested by TAC members have been included in the attached version.</p>	
ATTACHMENTS:	Minutes from this meeting
RECOMMENDED ACTION:	Approve the minutes

D-R-A-F-T
MINUTES

**Seaside Groundwater Basin Watermaster
Technical Advisory Committee Meeting
July 15, 2015**

Attendees: TAC Members

City of Seaside – Rick Riedl
California American Water – Roger Hulbert
City of Monterey – Norm Green (via telephone)
Laguna Seca Property Owners – Bob Costa
MPWMD – No Representative
MCWRA – Howard Franklin
City of Del Rey Oaks – No Representative
City of Sand City – Todd Bodem
Coastal Subarea Landowners – No Representative

Watermaster

Technical Program Manager - Robert Jaques

Consultants

None

Others

None

The meeting was convened at 1:35 p.m. after a quorum had arrived.

1. Public Comments

There were no public comments.

2. Administrative Matters:

A. Approve Minutes from the June 10, 2015 Meeting

On a motion by Mr. Costa, seconded by Mr. Riedl, the Minutes were unanimously approved.

B. Notes From June 9, 2015 Salinas River Groundwater Basin Investigation Model TAC Meeting and Recommendation to Engage HydroMetrics for Assistance in this Work

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

Mr. Franklin noted that it will be important for the work by Monterey County on its Zone 2C model update, managed by MCWRA, to recognize the Watermaster's modeling work and for there to be continuity of data and collaboration between those models.

Mr. Costa asked Mr. Franklin what the timeline was for the County's work. Mr. Franklin responded that a State of the Basin report has already been completed by the County, and that he is hopeful that the updated model can be completed in the first quarter of 2016. The model will then be updated annually,

and by 2018 will provide for a full 2030 planning horizon forecasting model. He is working closely with U.S. Bureau of Reclamation and U.S. Geological Survey on climate modeling with higher resolution for the model area.

Mr. Riedl asked Mr. Franklin when the boundary limits for the model will be set. Mr. Franklin responded that the boundary is Zone 2C per the legal settlement agreement between plaintiffs and the County of Monterey.

C. Consider Approval of RFSs to HydroMetrics and Todd Groundwater for Assistance on Modeling Issues

Mr. Jaques summarized the agenda packet materials for this item and reported that Contingency money is available to fund this work. Mr. Riedl asked Mr. Jaques why Mr. Yates was considered to be more qualified than Mr. Williams for this work. Mr. Jaques responded that he did not feel that it was a question of one party being more qualified than the other, just that it would be beneficial to have the perspectives of both of these consultants due to their extensive expertise and experience working in the Seaside Basin.

On a motion by Mr. Costa, seconded by Mr. Bodem, the TAC unanimously approved the two Requests for Service, with Mr. Franklin abstaining.

3. WL/WQ Report from MPWMD

Since no representative from MPWMD was present, Mr. Jaques summarized the agenda packet materials for this item and there was no further discussion on this item.

4. Continued Discussion of Work Plan to Address Findings of Laguna Seca Modeling Work

Mr. Jaques summarized the agenda packet materials for this item. There was unanimous agreement that the TAC Conclusions described on page 15 of the agenda packet for Management Options 1 and 2 were accurate.

Discussion of Management Option 3-Reduce Water Demand:

Mr. Costa and Mr. Hulbert explained that there is just one Laguna Seca/Pasadera wastewater treatment plant that produces reclaimed water. Mr. Costa went on to say that the Laguna Seca Golf Course uses groundwater from its one well in the amount of about 240 to 300 acre feet per year for golf course irrigation. The amount of irrigation water that could be reduced would be very small, for example a 20 percent reduction would only be about 50 acre feet per year. Mr. Costa went on to say that the golf course is doing all they can to reduce demand and irrigates only about 100 acres. They cannot take any more areas out of irrigation without degrading the quality of the golf course. He said he understood that similar conditions exist at the Pasadera Golf Course. Mr. Hulbert said he supported Mr. Costa's comments and findings with regard to there being little, if any, further irrigation reductions the golf courses could make. It was also noted that 100 percent of the recycled water is being used by the Pasadera Golf Course, and none of it is used at the Laguna Seca Golf Course because all of the reclaimed water that is being produced is used by the Pasadera Golf Course.

Mr. Franklin said he would like to try to quantify the amount of reduced pumping that might feasibly be achieved in the Laguna Seca Subarea. Mr. Costa went on to say that he would expect that all of the Laguna Seca Subarea users should also be required to cutback their water use, if the golf courses had to cutback themselves.

Mr. Franklin asked Mr. Costa what conservation practices the golf courses are currently employing, and also asked if there were any new practices that could be explored. Mr. Costa responded that they have already stopped irrigation of non-playable turf areas and have a climate station at the golf course that guides them in their irrigation practices to minimize irrigation quantities. Keeping the turf firm by minimizing irrigation is one of the techniques being used. The courses have predominantly Kikua grass which requires less water than the cool weather grasses.

Mr. Franklin asked if there were code-required water conservation requirements for the housing areas within Laguna Seca Subarea. Mr. Costa and Mr. Hulbert responded yes, these are required by California American Water under the Monterey Peninsula Water Management District's conservation program requirements. Mr. Riedl noted that these do not apply to be the Laguna Seca Golf Course irrigation well.

Mr. Hulbert commented that if we focus on the Management Options that have the greatest potential for benefit to the Laguna Seca Subarea, having golf courses reduce irrigation would not be one of the most effective ones. There was further discussion which led to consensus that the TAC will examine this Management Option and report on its findings at a future Board meeting.

Mr. Green said he understood Mr. Costa's concerns and wondered if the Judge could direct a golf course to cut-back its irrigation. Mr. Jaques responded that he thought it was more likely that if the Judge felt further pumping reductions were needed, he would issue an across-the-board order to reduce pumping by all users.

Mr. Riedl noted that California American Water told the City of Seaside that they needed to do an irrigation study to see if any landscape irrigation reduction could be achieved. Mr. Costa noted that he is certified as a water management auditor, and holds other water conservation credentials as well.

Mr. Franklin made a motion to evaluate irrigation and water use management practices to determine if water demand could be reduced in the Laguna Seca Subarea. On a vote of five in favor and one opposed the motion carried.

[Note: At this point in the meeting Mr. Costa departed.]

Discussion of Management Option 4-Change the Laguna Seca-El Toro Boundary Location:

Mr. Jaques summarized this Management Option and said he recommended that the Watermaster not pursue this Option for the reasons as stated in the two bulleted items on page 19 of the agenda packet under this Management Option. There was unanimous concurrence by the TAC to support Mr. Jaques' recommendation.

Discussion of Management Option 5-Import Water to the Laguna Seca Subarea:

Mr. Jaques summarized this Management Option.

Mr. Hulbert said that there are so many hurdles that still need to be crossed to implement the currently-defined water projects that to seek a change in projects size to provide additional water for the Laguna Seca Subarea at this point could be a cause for project delay. Following further discussion a motion by Mr. Riedl, seconded by Mr. Franklin, was unanimously approved stating that this topic is a policy issue for the Board to determine, but that from a technical perspective there was TAC consensus that pursuing a change in the size or configuration of the currently-defined water projects (MPWSP or the GWRP) would likely lead to delays in completing these projects.

Discussion of Management Option 6-Use the Sustainable Groundwater Management Act (SGMA) as a Means of Managing Areas Outside of the Seaside Basin:

Mr. Franklin said it was more likely that the Salinas Valley Groundwater Basin will be managed by a new Joint Powers Authority yet to be formed, rather than by MCWRA. There will not be a single entity to work with, rather there will be a number of entities working together as a Joint Powers Authority. Mr. Bodem made the recommendation, seconded by Mr. Riedl, that the Watermaster TAC monitor the development of the Sustainability Agency for the Salinas Basin and for the areas around the Seaside Basin and DWR's development of regulations pertaining to requesting boundary revisions with the intent to collaborate as appropriate. Those regulations are supposed to be promulgated by DWR in January 2016. There was unanimous consensus to make this recommendation to the Board with regard to this Management Option.

5. Schedule

Mr. Jaques briefly summarized this agenda packet item and highlighted that there will be no October TAC meeting but that the Board would receive the TAC's recommendations on Agenda Item 4 from today's TAC meeting at the Board's August 5th meeting.

6. Other Business

Mr. Hulbert reported that California American water had recently provided seven acre feet of water to the City of Seaside via an interconnection and he wished to know how to get credit for this water transfer. Mr. Jaques recommended that he send an e-mail or letter describing this to Mr. Evans for his consideration and processing of the request.

Mr. Riedl asked Mr. Franklin if the Department of Water Resources was working on a process for changing basin boundaries. Mr. Franklin responded that they were working on that and that he anticipated information on that matter being provided by the Department of Water Resources in early 2016.

7. Set Next Meeting Date

The next regular meeting was set for Wednesday August 12, 2015 at 1:30 p.m. at the MRWPCA Board Room.

The meeting adjourned at 3:10 p.m.

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE
* * * AGENDA TRANSMITTAL FORM * * ***

MEETING DATE:	August 12, 2015
AGENDA ITEM:	2.B
AGENDA TITLE:	Notes From July 14, 2015 Meeting of the Model Development TAC for the County's Salinas River Groundwater Basin Investigation and Recommendation to Engage HydroMetrics for Assistance in this Work
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

At the July 14, 2015 meeting of the County's Model Development TAC for its Salinas River Groundwater Basin Investigation, the following topics of interest to the Watermaster were discussed:

1. The Salinas River Groundwater Basin model will incorporate climate change impacts.
2. There was much detailed discussion amongst the TAC members who have extensive modeling knowledge and experience with regard to specific aspects of how the model will be constructed, configured, data-populated, and run. Topics included precipitation, stream and river flows, climate data, boundary conditions, flow calibration, reservoir operations, drains, wells, seawater intrusion, engineered structures, faults, and supply/demand.
3. Water demand in the Salinas River Groundwater Basin is about 90% from agriculture and 10% from urban uses.
4. There will be no August meeting of the TAC. Stakeholder meetings will be developed then.
5. TAC meetings will likely resume in September or October and continue through December 2015.

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ATTACHMENTS:	None
RECOMMENDED ACTION:	None required – information only

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MEETING DATE:	August 12, 2015
AGENDA ITEM:	3
AGENDA TITLE:	Report on Board's August 5, 2015 Discussion of Work Plan to Address Findings of Laguna Seca Modeling Work
PREPARED BY:	Robert Jaques, Technical Program Manager

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE
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SUMMARY:

At the August 5, 2015 Board meeting I presented the TAC's conclusions and recommendations regarding the technical issues and management options we discussed at our May, June, and July TAC meetings. The following is a synopsis of the Board's reactions and/or actions taken regarding each of these issues.

Specific Technical Issues

The following are the specific technical issues the TAC discussed and the TAC's conclusions/recommendations on each of them:

Issue 1: What Natural Safe Yield (NSY) value should be used for the Laguna Seca Subarea (LSSA)? Accepted TAC's conclusion that it would probably not be possible to reach agreement among all parties on a specific number to use for the NSY of the LSSA, and that efforts should focus on addressing that problem rather than seeking a universally acceptable NSY value for the LSSA.

Issue 2: Should the Watermaster's work plan address issues pertaining to monitoring wells as well as production wells, or should it only address issues pertaining to production wells? Accepted TAC's conclusion that the Watermaster should focus its efforts on protecting production wells, but should keep monitoring wells operational to provide data that can be used for future model runs.

Issues 3 and 4: Would it be useful to run the Model further out into the future with no CAW LSSA pumping to see if all the other LSSA production wells will finally achieve stabilized groundwater levels at their projected pumping rates? If this modeling finds that groundwater levels stabilize, would it be useful to determine the depth of the bottom of the aquifer at the location of each LSSA production well in order to determine if it would be feasible to lower the pump and/or casing perforations, if necessary, in order to enable the wells to continue to serve as operational production wells to meet the water demands of these producers? Accepted TAC's conclusion that it would not be desirable to do this work at this time, but that it might be worth looking into these things if climate change impacts were input into the model.

Issue 5: What would be the best way of determining more accurately the location of the southeastern boundary of the Seaside Groundwater Basin? What additional information would be needed to be able to do this? The Board requested that the TAC obtain a scope and cost proposal from HydroMetrics to use the Model to try to establish where the flow divide between the LSSA and the El Toro Subarea is located. This information could then be used to determine if any of the LSSA wells are located east of that flow divide.

AGENDA ITEM:

3 (Continued)

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Groundwater Management Options and Recommendations for the Laguna Seca-El Toro Region

Management Option: Redistribute Pumping. The Board determined that this Option should be tabled, and that no work should be done on this Option at this time.

Management Option: Reduce Water Demand. The Board felt that present conservation requirements imposed by MPWMD are already effectively reducing water demand in the LSSA, and that no significant effort should be expended researching this. They asked only that I contact MPWMD to find out what their requirements are, and to confirm that the large pumpers have complied with those requirements, and to report that information back to the Board at a future meeting.

Management Option: Change the Laguna Seca-El Toro Boundary Location. The Board accepted TAC's conclusion that this Option should not be pursued at this time, and should only be reconsidered if future information provides overwhelming reasons to seek a change in the boundary location.

Management Option: Import Water to the Laguna Seca Subarea. The Board determined that no action should be pursued at this time to import water to the LSSA, other than CAW's already-planned interconnection to its Main System to provide water to the LSSA so CAW can discontinue pumping from its LSSA wells.

Management Option: Use SGMA as a Means of Managing Areas outside the Basin. The Board concurred with the TAC's recommendation for the Watermaster to monitor the development of the Salinas Valley Groundwater Basin Sustainability Agency and the State Department of Water Resources' development of regulations pertaining to requesting boundary revisions, with the intent to collaborate with these entities as appropriate.

ATTACHMENTS:

None

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**RECOMMENDED
ACTION:**

None required – information only

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MEETING DATE:	August 12, 2015
AGENDA ITEM:	4
AGENDA TITLE:	Request for Service (RFS) to HydroMetrics WRI to Perform Modeling
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

As reported in the preceding Agenda Item the Board is interested in learning what the scope of work and cost would be to perform modeling in the vicinity of the Laguna Seca Subarea in order to determine where the current flow divide is located. In my conversation with Derrik Williams of HydroMetrics about doing this work we concluded that it would be beneficial to determine the current location as well as the projected location in 5 years, using the assumed future pumping scenario of CAW cutting back its pumping from the LSSA. We also felt it would be good to determine the location under both spring and fall conditions. These scenarios would provide an indication of whether the flow divide is moving or is remaining relatively stationary.

Attached is proposed RFS No. 2015-04 for HydroMetrics to perform this work.

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ATTACHMENTS:	HydroMetrics RFS No. 2015-04
RECOMMENDED ACTION:	Recommend approval of this RFS to the Board

SEASIDE BASIN WATERMASTER
REQUEST FOR SERVICE

DATE: September 4, 2015

RFS NO. 2015-04
(To be filled in by WATERMASTER)

TO: Derrick Williams
HydroMetrics WRI
PROFESSIONAL

FROM: Robert Jaques
WATERMASTER

Services Needed and Purpose: Groundwater Modeling - See Scope of Work in Attachment 1.

Completion Date: All work of this RFS shall be completed not later than November 1, 2015.

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

Total Price Authorized by this RFS: \$ 5,500.00 (Cost is authorized only when evidenced by signature below.) (See Attachment 1 for Estimated Costs).

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

Requested by: _____ Date: _____
WATERMASTER Technical Program Manager

Authorized by: _____ Date: _____
WATERMASTER Chief Executive Officer

Agreed to by: _____ Date: _____
PROFESSIONAL

ATTACHMENT 1

Mr. Robert S. Jaques
Seaside Groundwater Basin Watermaster
83 Via Encanto
Monterey, CA 93940

August 6, 2015

Subject: Scope and cost for estimating flow divide locations east of the Laguna Seca subarea.

Mr. Jaques:

HydroMetrics WRI is happy to provide this scope and cost for estimating the location of the flow divide east of the Laguna Seca subarea.

Groundwater divide locations may move over time in response to changes in recharge and pumping. Therefore, we will provide the Watermaster with two sets of maps showing the groundwater divide location during spring and fall conditions (1) at the current time and (2) under baseline pumping conditions five years from now. We will use the baseline future pumping conditions scenario from the previous modeling work to prepare the five year projected flow divide location. We anticipate that these four maps will provide an indication of whether the flow divide is moving or whether it is relatively stable.

The maps will be accompanied by a short letter memorandum. The letter will explain our methodology and outline the results. We have also budgeted for one attending one TAC meeting and one Board of Directors meeting via telephone conference call to review our results and answer questions.

The cost for producing the four maps, drafting a letter memorandum, and attending these meetings via telephone is \$5,500. The cost details are included in the table below.

Table 1: Cost Estimate for LSSA Groundwater Divide Mapping

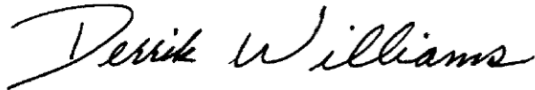
Tasks	HydroMetrics WRI Labor					Other Direct Costs	TOTALS
	Derrick Williams	Georgina King	Stephen Hundt	Labor Total			
	President	Senior Hydrogeologist	Staff Hydrogeologist	Hours	(\$)		
Rates	\$215	\$185	\$125				
Extract and Produce 20 Maps	2	4	8	14	\$ 2,170		\$ 2,170
Draft Letter Memorandum	0	2	6	8	\$ 1,120		\$ 1,120
Project Management and Meetin	2	8	0	10	\$ 1,910	300	\$ 2,210
TOTAL				\$ 32	\$ 5,200	300	\$ 5,500

Notes

Other Direct Costs includes mileage, postage, office supplies

Please call us if you have any questions.

Sincerely,



Derrick Williams
 President, HydroMetrics Water Resources Inc.

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MEETING DATE:	August 12, 2015
AGENDA ITEM:	3
AGENDA TITLE:	Initial Discussion Regarding Scope of Work for Monitoring and Management Plan (M&MP) for FY 2016
PREPARED BY:	Robert Jaques

The Schedule calls for the TAC to approve an FY 2016 Work Plan and Budget for the 2016 Management and Monitoring Program (M&MP) at its September 2015 meeting. This will then go on to the Board for approval at its October 2015 meeting.

In order to obtain TAC input and direction regarding these items, I have reviewed the FY 2015 M&MP and have edited it to reflect those work items that I anticipate being performed in FY 2016. A copy of this Proposed Work Plan is attached.

Items highlighted in **yellow** are those that I will evaluate and update as necessary, based on the TAC's input at today's meeting and discussions with our consultants.

Items highlighted in **red** are questions for the TAC to consider in determining whether, and to what extent, certain tasks from prior years need to be continued.

ATTACHMENTS:	Seaside Groundwater Basin Management and Monitoring Program - Proposed FY 2016 Work Plan
RECOMMENDED ACTION:	Approve Proposed Work Plan or Recommend Edits to It

**SEASIDE BASIN WATER MASTER
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**Seaside Groundwater Basin Management and Monitoring
Program
Proposed FY 2016 Work Plan**

- The tasks outlined below are those that are anticipated to be performed during 2016. Some Tasks listed below are specific to 2016, while others Tasks recur throughout the program, such as data collection and database entry, and Program Administration Tasks.
- Within the context of this document the term “Consultant” refers either to a firm providing professional engineering or other types of technical services, or to the Monterey Peninsula Water Management District (MPWMD). The term “Contractor” refers to a firm providing construction or field services such as well drilling, induction logging, or meter calibration.

M.1 Program Administration

**M. 1. a
Project Budget and
Controls (\$0)**

- Consultants will provide monthly or bimonthly invoices to the Watermaster for work performed under their contracts with the Watermaster. Consultants will perform maintenance of their internal budgets and schedules, and management of their subconsultants. The Watermaster will perform management of its Consultants.

**M. 1. b
Assist with Board and TAC
Agendas (\$0)**

- Watermaster staff will prepare Board and TAC meeting agenda materials. No assistance from Consultants is expected to be necessary to accomplish this Task.

**M. 1. c. & M. 1. d
Preparation for and
Attendance at Meetings
(\$7,000)**

- The Consultants’ work will require internal meetings and possibly meetings with outside governmental agencies and the public. For meetings with outside agencies, other Consultants, or any other parties which are necessary for the conduct of the work of their contracts, the Consultants will set up the meetings and prepare agendas and meeting minutes to facilitate the meetings. These may include planning and review meetings with Watermaster staff. The costs for these meetings will be included in their contracts, under the specific Tasks and/or subtasks to which the meetings relate. The only meeting costs that will be incurred under Tasks M.1.c and M.1.d will be:
 - Those associated with attendance at TAC meetings (either in person or by teleconference connection), including providing written monthly progress reports to the Watermaster for inclusion in the agenda packets for the TAC meetings, when requested by the Watermaster to do so. These progress reports will typically include project progress that has been made, problem identification and resolution, and planned upcoming work. and
 - From time-to-time when Watermaster staff asks Consultants to make special presentations to the Watermaster Board and/or the TAC, and which are not included in the Consultant’s contracts for other tasks.
 -
 - Appropriate Consultant representatives will attend TAC meetings when requested to do so by Watermaster Staff (either in person or by teleconference connection), but will not be asked to prepare agendas or meeting minutes. As necessary, Consultants may provide oral updates to their progress reports (prepared under Task M.1.d) at the TAC meetings.

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**M. 1. e
Peer Review of Documents
and Reports
(\$3,100)**

- When requested by the Watermaster staff, Consultants may be asked to assist the TAC and the Watermaster staff with peer reviews of documents and reports prepared by various other Watermaster Consultants and/or entities.

**M. 1. f
QA/QC (\$0)**

- A Consultant (MPWMD) will provide general QA/QC support over the Seaside Basin Monitoring and Management Program. These costs are included in the other tasks.
-
-

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

I. 2. a. Database Management

**I. 2. a. 1
Conduct Ongoing Data
Entry and Database
Maintenance/
Enhancement
(\$11,724)**

- The database will be maintained by a Consultant (MPWMD) performing this work for the Watermaster. MPWMD will enter new data into the consolidated database, including water production volumes, water quality and water level data, and such other data as may be appropriate. Another Consultant will periodically post database information to the Watermaster's website, so it will be accessible to the public and other interested parties. No enhancements to the database are anticipated during 2015.

**I. 2. a. 2
Verify Accuracy of
Production Well Meters
(\$0)**

- To ensure that water production data is accurate, the well meters of the major producers were verified for accuracy during 2009 and again during 2015. No additional work of this type is anticipated during 2016.

I. 2. b. Data Collection Program

**I. 2. b. 1
Site Representation and
Selection. (\$0)**

- The monitoring well network review that was started in 2008 has been completed, and sites have been identified where future monitoring well(s) could be installed, if it is deemed necessary to do so in order to fill in data gaps. No further work of this type is anticipated in 2016.

**I. 2. b. 2
Collect Monthly Manual
Water Levels. (\$5,176)**

- Each of the monitoring wells will be visited on a monthly basis. Water levels will be determined by either taking manual water levels using an electric sounder, or by dataloggers. All wells where the use of dataloggers is feasible or appropriate have been equipped with dataloggers. It is anticipated that no additional dataloggers will need to be purchased in 2016. **[DO ANY ADDITIONAL DATALOGGERS NEED TO BE PURCHASED IN 2016?]**

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**I. 2. b. 3
Collect Quarterly Water
Quality Samples.
(\$47,738)**

- Water quality data will be collected quarterly from certain of the monitoring wells. In 2012 water quality analyses were expanded to include barium and iodide ions, to determine the potential benefit of performing these additional analyses. These two parameters have been useful in analyzing seawater intrusion potential in other vulnerable coastal groundwater basins, and are briefly mentioned in the Watermaster’s annual Seawater Intrusion Analysis Reports. These parameters were added to the annual water quality sampling list for the four Watermaster Sentinel wells (SBWM-1, SBWM-2, SBWM-3, and SBWM-4), and also for the 3 most coastal MPWMD monitoring wells (MSC, PCA, and FO-09). Barium and iodide analyses will continue being performed in 2016.
-
- Water quality data may come from water quality samples that are taken from these wells and submitted to a State Certified analytic laboratory for general mineral and physical suite of analyses, or the data may come from induction logging of these wells and/or other data gathering techniques. The Consultant selected to perform this work will make this judgment based on consideration of costs and other factors.
-
- Under this Task in 2013 retrofitting to use the low-flow purge approach for getting water quality samples was completed on all of the wells that are sampled. This sampling equipment sits in the water column and may periodically need to be replaced or repaired. **[DO WE AGAIN WANT TO INCLUDE \$1,000 IN THE COST OF THIS TASK FOR PERFORMING ONGOING MAINTENANCE AND/OR REPLACEMENT OF THE SAMPLE COLLECTION EQUIPMENT?]**

**I. 2. b. 4
Update Program Schedule
and Standard Operating
Procedures.
(\$0)**

- All recommendations from prior reviews of the data collection program have been implemented. No additional work of this type is anticipated in 2016.

**I. 2. b. 5.
Monitor Well
Construction (\$0)**

- An additional monitoring well was installed in 2009. No further work of this type is anticipated in 2016. **[CONFIRM NO ADDITIONAL WELLS ARE NEEDED]**
-

**I. 2. b.6
Reports (\$5,448)**

- The groundwater level and quality monitoring will be conducted on a monthly, quarterly, and annual basis, as described in the Consultant’s Scope of Work. Reports summarizing data collected and analyzed will be submitted to the Watermaster on a schedule to be established during the year, and will consist of:
 - One combined report summarizing the water production data and summarizing and analyzing the water quality and water level data from the 1st & 2nd Quarters of the Water Year.
 - One annual report summarizing the water production data and summarizing and analyzing the water quality and water level data from the 3rd & 4th Quarters of the Water Year, and containing tables consolidating the data from the quarterly reports and a narrative summarization of the findings, conclusions, and recommendations from the quarterly reports. This annual report may include, as attachments, each of the quarterly reports.

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I. 3 Basin Management

**I. 3. a.
Enhanced Seaside Basin
Groundwater Model
(Costs listed in subtasks below)**

- The Watermaster and its consultants use a Groundwater Model for basin management purposes.

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**I.3.a.1
Update the Existing Model
(S0)**

- The existing Model, described in the report titled “Groundwater Flow and Transport Model” dated October 1, 2007, was updated in 2009 in order to develop protective water levels, and to evaluate replenishment scenarios and develop answers to Basin management questions (Tasks I.3.a.2 and I.3.a.3). The scope and budget in 2014 for again updating the Model included the following:
 - Step1: Update the model and check its accuracy - \$10,000
 - Step 2: Recalibrate the model - \$15,000
 - Step 3: Prepare report describing the work that was done - \$5,000
-
- Step 1 was completed in 2014 by incorporating recent pumping data, groundwater level data, and rainfall data, and then checking to see if the recently simulated groundwater levels match the recently measured groundwater levels. These are the principle findings and conclusions of this Step 1 work:
 - The model still provides reliable results in the Laguna Seca Subarea.
 - Although the performance of the model during the updated period is worsening, the calibration of the model remains within acceptable standards.
 - The northern boundary condition needs to be updated to reflect real groundwater elevation variations for the model period of 2005-2013. The behavior of the northern boundary will impact flows and the ability to calibrate the model for the area of the model that is adjacent to the northern boundary. An alternative method for defining this boundary condition will have to be developed that does not rely upon simulations from the Salinas Valley Integrated Groundwater Surface Water Model (SVIGSM).
 - The groundwater model should be updated in a maximum of five years and its calibration reevaluated at that time. However, if groundwater related projects are implemented in the Basin before that time, the update and calibration reevaluation may need to be performed sooner.
-
- Modeling of the Laguna Seca Subarea was performed in 2014 and a peer review of that work was performed in 2015. The peer review concluded that the model is a reasonable representation of the Seaside Basin groundwater flow system. No major errors in assumptions, data or results were identified during this peer review, and the simulated water levels generally matched observed water levels for the historical calibration simulation. The peer review recommended some aspects of the model should be explored to try to determine some differences between field-measured conditions and model-predicted conditions in some parts of the Basin, but stated that the model should be used for estimating the operational safe yield of the basin and subareas, and for simulating the effects of possible management measures. It also recommended that some additional simulations should be completed for management measures likely to be implemented. Therefore, Steps 2 and 3 will not be needed and no further work of this type is anticipated in 2016.
-

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**I. 3. a. 2
Develop Protective Water
Levels (\$0)**

- A series of cross-sectional models was created in 2009 in order to develop protective water levels for selected production wells, as well as for the Basin as a whole. This work is discussed in Hydrometrics' "Seaside Groundwater Basin Protective Water Elevations Technical Memorandum." In 2013 further work was started to refine these protective water levels, but it was found that the previously developed protective water levels were reasonable. Therefore, no further work of this type is anticipated.

**I. 3. a. 3
Evaluate Replenishment
Scenarios and Develop
Answers to Basin
Management Questions
(\$40,000)**

- In 2009 the updated Model was used to evaluate different scenarios to determine such things as the most effective methods of using supplemental water sources to replenish the Basin and/or to assess the impacts of pumping redistribution. This work is described in HydroMetrics' "Seaside Groundwater Basin Groundwater Model Report." In 2010, and again in 2013, HydroMetrics used the updated Model to develop answers to some questions associated with Basin management. Modeling performed in 2014 led to the conclusion that groundwater levels in parts of the Laguna Seca Subarea will continue to fall even if all pumping within that subarea is discontinued, because of the influence of pumping from areas near to, but outside of, the Basin boundary. Additional modeling work may be performed in 2016 to further examine this situation.

**I. 3. b.
Complete Preparation of Basin
Management Action Plan (\$0)**

- The Watermaster's Consultant completed preparation of the Basin Management Action Plan (BMAP) in February 2009. The BMAP serves as the Watermaster's long-term seawater intrusion prevention plan. The Sections that are included in the BMAP are:
 - Executive Summary
 - Section 1 – Background and Purpose
 - Section 2 – State of the Seaside Groundwater Basin
 - Section 3 – Supplemental Water Supplies
 - Section 4 – Groundwater Management Actions
 - Section 5 – Recommended Management Strategies
 - Section 6 – References
- The only work which may be performed on the BMAP in 2016 is discussed under Task I. 3. c.

**I. 3. c.
Refine and/or Update the Basin
Management Action Plan
(\$25,000)**

- During 2016 it may be beneficial to update the BMAP based on new data, and/or knowledge that is gained from the work described under Task I. 3. a. 3. Such work might involve issues pertaining to Operational and Natural Safe Yields or pumping redistribution strategies. Updating the BMAP has been scheduled and budgeted in several of the preceding years, but was not deemed to be necessary. This task is included primarily for budgeting purposes in the event such work is deemed necessary during 2016. **[IS UPDATING THE BMAP SOMETHING THE WATERMASTER SHOULD DO IN 2016?]**

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**I. 3. d.
Evaluate Coastal Wells for
Cross-Aquifer Contamination
Potential (\$0)**

- If seawater intrusion were to reach any of the coastal wells in any aquifer, and if a well was constructed without proper seals to prevent cross-aquifer communication, or if deterioration of the well had compromised these seals, it would be possible for the intrusion to flow from one aquifer to another. An evaluation of this was completed in 2012 and is described in MPWMD's Memorandum titled "Summary of Seaside Groundwater Basin Cross-Aquifer Contamination Wells Investigation Process and Conclusions" dated August 8, 2012. This Memorandum did not recommend performing any further work on this matter at this time, other than to incorporate into the Watermaster's Database data from wells that were newly identified by the work performed in 2012. That data has now been incorporated into the Database, and no further work on this matter is anticipated.

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

**I. 4. a.
Oversight of Seawater
Intrusion Detection and
Tracking (\$4,664)**

- Consultants will provide general oversight over the Seawater Intrusion detection program.

**I. 4. b.
Focused Hydrogeologic
Evaluation (\$0)**

- MPWMD attempted to compile historical and current water quality data in the coastal area to provide more in-depth evaluation of conditions in the shallow Dune Sand/Aromas Sand aquifer in the vicinity of the Sand City Public Works well, where unique water quality conditions and variability have recently been observed as discussed at TAC meetings. However, it was found that no historical water quality data from Cal Am's now-abandoned wells existed, and consequently it was not possible to answer the question of why water quality in the Sand City Public Works well differs from water quality in other wells in the Basin. The Sand City desalination plant could be affecting water quality in this area, but without the prior water quality data from now-abandoned wells, this could not be determined. The results of this work were summarized in 2013 in a brief Technical Memorandum prepared by MPWMD with conclusions and recommendations, and no further work on this matter is planned.

**I. 4. c.
Annual Report- Seawater
Intrusion Analysis
(\$25,750)**

- At the end of each water year, a Consultant will reanalyze all water quality data. Semi-annual chloride concentration maps will be produced for each aquifer in the basin. Time series graphs, trilinear graphs, and stiff diagram comparisons will be updated with new data. The annual EM logs will be analyzed to identify changes in seawater wedge locations. All analyses will be incorporated into an annual report that follows the format of the initial, historical data report. Potential seawater intrusion will be highlighted in the report, and if necessary, recommendations will be included. The annual report will be submitted for review by the TAC and the Board. Modifications to the report will be incorporated based on input from these bodies, as well as Watermaster staff. **[INCORPORATE IMPACTS FROM CLIMATE AND SEA LEVEL CHANGES IN THE SIAR THIS YEAR?]**

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**I. 4. d
Complete Preparation of
Seawater Intrusion Response
Plan (\$0)**

- The Watermaster's Consultant (HydroMetrics) completed preparation of the long-term Seawater Intrusion Response Plans (SIRP) in February 2009. The Sections that are included in the SIRP are:
- Section 1 – Background and Purpose
- Section 2 – Consistency with Other Documents
- Section 3 – Seawater Intrusion Indicators and Triggers
- Section 4 – Seawater Intrusion Contingency Actions
- Section 5 - References
- No further work on the SIRP is anticipated in 2016.

**I. 4. e.
Refine and/or Update the
Seawater Intrusion Response
Plan (\$0)**

- At the beginning of 2009 it was thought that it might be beneficial or necessary to perform work to refine the SIRP and/or to update it based on new data or knowledge that was gained subsequent to the preparation of the SIRP. However, this did not prove to be necessary, and no further work of this type is anticipated in 2016.

**I. 4. f.
If Seawater Intrusion is
Determined to be Occurring,
Implement Contingency
Response Plan (\$0)**

- The SIRP will be implemented if seawater intrusion, as defined in the Plan, is determined by the Watermaster to be occurring.

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MEETING DATE:	August 12, 2015
AGENDA ITEM:	5
AGENDA TITLE:	Schedule
PREPARED BY:	Robert Jaques, Technical Program Manager
<p>SUMMARY: As a regular part of each monthly TAC meeting, I will provide the TAC with an updated Schedule of the activities being performed by the Watermaster, its consultants, and the public entity, MPWMD, which is performing certain portions of the work.</p> <p style="text-align: right;">1</p> <p>Attached is the most recent update of the Work Schedule for FY 2015.</p>	
ATTACHMENTS:	Schedule of Work Activities for FY 2015
RECOMMENDED ACTION:	Provide Input to Technical Program Manager Regarding Any Corrections or Additions to the Schedule

Seaside Basin Watermaster Monitoring and Management Program 2015 Work Schedule

ID	Task Name	2015												2016									
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1	CRITICAL PROJECT MILESTONES ASSOCIATED WITH TAC, BOARD, AND/OR CONSULTANT WORK																						
2	2016 Administration, Operations and Replenishment Budgets																						
3	Prepare M&MP Draft Budgets (Same as Task 19)																						
4	TAC Approves M&MP Budgets (Same as Task 20)																						
5	Board Approves M&MP Budgets (Same as Task 21)																						
6	Watermaster Prepares Quarterly Water Production, Water Level, and Water Quality Reports																						
7	Watermaster Prepares Combined Quarterly Water Production, Water Level, and Water Quality Reports for 1st & 2nd Quarters (Same as Task 41)																						
8	Watermaster Prepares Annual Water Production, Water Level, and Water Quality Report for 2015 (Same as Task 42)																						
9	Replenishment Assessment Unit Costs for Water Year 2016																						
10	B&F Committee Develops Replenishment Assessment Unit Cost for 2016 Water Year																						
11	If Requested, TAC Provides Assistance to B&F Committee in Development of 2016 Water Year Replenishment Assessment Unit Cost																						
12	Board Adopts and Declares 2016 Water Year Replenishment Assessment Unit Cost																						
13	Replenishment Assessments for Water Year 2015																						
14	Watermaster Prepares Replenishment Assessments for Water Year 2015																						
15	Watermaster Board Approves Replenishment Assessments for Water Year 2015 (At November Meeting)																						
16	Watermaster Levies Replenishment Assessment for 2014																						
17	Monitoring & Management Program (M&MP) Budgets for 2015 and 2016																						

Seaside Basin Watermaster Monitoring and Management Program 2015 Work Schedule


ID	Task Name	2015												2016									
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
18	Preliminary Discussion of Potential Scope of Work for 2016 M&MP																						
19	Prepare Draft 2016 and 2017 M&MP O&M and Capital Budgets																						
20	TAC approves Draft 2016 and 2017 M&MP O&M and Capital Budgets																						
21	Board approves 2016 M&MP O&M and Capital Budgets																						
22	2015 Annual Report (Note: Schedule Reflects Court Approval of Later Submittal Date for Annual Report)																						
23	Prepare Preliminary Draft 2015 Annual Report																						
24	TAC Provides Input on Preliminary Draft 2015 Annual Report																						
25	Prepare Draft 2015 Annual Report (Incorporating TAC Input)																						
26	Board Provides Input on Draft 2015 Annual Report (At November Board Meeting)																						
27	Prepare Final 2015 Annual Report (Incorporating Board Input)																						
28	Watermaster Submits Final 2015 Annual Report to Judge																						
29	MANAGEMENT																						
30	M.1 PROGRAM ADMINISTRATION (All Work Performed by Watermaster Staff)																						
31	Prepare Initial Consultant Contracts for 2016																						
32	TAC Approval of Initial Consultant Contracts for 2016																						
33	Board Approval of Initial Consultant Contracts for 2016																						
34	IMPLEMENTATION																						
35	I.2.a DATABASE MANAGEMENT																						
36	I.2.a.1 Conduct Ongoing Data Entry/Database Maintenance																						

ASSUME NOV. BOARD MEETING ONE WEEK AFTER NOV. TAC MEETING

Seaside Basin Watermaster Monitoring and Management Program 2015 Work Schedule

ID	Task Name	2015												2016									
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
37	I.2.a.2 Verify Accuracy of Production Well Meters																						
38	Field Evaluations of Metering Facilities					Completed																	
39	Report Findings and Recommendations to the TAC					Completed																	
40	Carry Out Followup Actions if Necessary					None Required																	
41	Report Findings and Recommendations to the Board								Completed														
42	I.2.b DATA COLLECTION PROGRAM																						
43	I.2.b.2 Collect Monthly Water Levels (MPWMD)																						
44	I.2.b.3 Collect Quarterly Water Quality Samples (MPWMD)																						
45	I.2.b.6 Reports (from MPWMD)																						
46	Watermaster Prepares Combined Quarterly Water Production, Water Level, and Water Quality Reports for 1st & 2nd Quarters									Completed													
47	Watermaster Prepares Annual Water Production, Water Level, and Water Quality Report for 2015																						
48	I.3.a ENHANCED SEASIDE BASIN GROUNDWATER MODEL																						
49	Perform Peer Review of Groundwater Model and Laguna Seca Modeling Results from 2014					Completed																	
50	Initial Report to TAC on Findings and Recommendations from Peer Review					Completed																	
51	Consultant Revises Preliminary Draft Peer Review Report					Completed																	
52	Second Report to TAC on Findings and Recommendations from Peer Review					Completed																	
53	Consultant Revises Draft Peer Review Report					Completed																	
54	Report to Board on Findings and Recommendations from Peer Review					Completed																	
55	Follow-up Actions on Peer Review Direction from Board (if needed)					None Required																	

Seaside Basin Watermaster Monitoring and Management Program 2015 Work Schedule

ID	Task Name	2015												2016									
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
56	Develop Basin Management Actions for Board Consideration												Completed 										
57	Present TAC's Recommended Basin Management Actions to Board												◆ 8/5										
58	I.3.a.1 Recalibrate Existing Groundwater Model (If necessary)												DETERMINED NOT TO BE NECESSARY										
65	I.3.c Refine and/or Update the BMAP	NO WORK SCHEDULED UNTIL TAC DIRECTION PROVIDED TO RESUME DISCUSSION																					
66	I.4.c Annual Seawater Intrusion Analysis Report (SIAR)																						
67	HydroMetrics Provides Draft SIAR to Watermaster																						
68	TAC Approves Annual Seawater Intrusion Analysis Report (SIAR)																						
69	Board Approves Annual Seawater Intrusion Analysis Report (SIAR)																						
70	I.4.d Complete Preparation of Seawater Intrusion Response Plan (SIRP)																						
71	I.4.e Refine and/or Update the SIRP																						

**SEASIDE BASIN WATER MASTER
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MEETING DATE:	August 12, 2015
AGENDA ITEM:	6
AGENDA TITLE:	Other Business
PREPARED BY:	Robert Jaques, Technical Program Manager
SUMMARY: The “Other Business” agenda item is intended to provide an opportunity for TAC members or others present at the meeting to discuss items not on the agenda that may be of interest to the TAC.	
ATTACHMENTS:	None
RECOMMENDED ACTION:	None required – information only