

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

NOTE DIFFERENT MEETING DATE THAN USUAL

DATE: Wednesday, July 15, 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	Monterey County Water Resources Agency	
Monterey Peninsula Water Management District		

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The next regular meeting will be held on Wednesday August 12, 2015 at 1:30 p.m. at the MRWPCA Board Room.	

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

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

MEETING DATE:	July 15, 2015
AGENDA ITEM:	2.A
AGENDA TITLE:	Approve Minutes from the June 10, 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
June 10, 2015**

Attendees: TAC Members

City of Seaside – Rick Riedl (via telephone)
California American Water – Roger Hulbert
City of Monterey – Norm Green (via telephone)
Laguna Seca Property Owners – Bob Costa
MPWMD – Joe Oliver
MCWRA – Howard Franklin
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

None

Others

Bishop, McIntosh & McIntosh – Leonard McIntosh
MPWMD – Jon Lear

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 May 13, 2015 Meeting

Mr. Hulbert asked that the Minutes be corrected to show that Mr. Riedl had attended the meeting via telephone.

Mr. Lear asked that in the next to last sentence in the first paragraph under Agenda Item No. 2.C of the Draft Minutes, the wording to be revised to read “Mr. Lear said he felt that the backwash water would amount to approximately 12 acre feet per year, and that this would be a small amount and that the District did not think that was an appropriate comment.”

On a motion by Mr. Franklin, seconded by Mr. Costa, the Minutes were unanimously approved with these revisions.

By way of information Mr. Hulbert reported that the latest plan by Cal Am is to discontinue its pumping from the Laguna Seca Subarea once the MPWSP becomes operational, which is projected to occur in the Spring of 2019. Cal Am’s Toro No. 3 well will be taken out of service but its Ambler and other Toro wells will continue in service.

B. Notice of Availability of Draft EIR for the Monterey Peninsula Water Supply Project and Draft Watermaster Comment Letter

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

Mr. Riedl asked Mr. Oliver if all of the water extracted from the ASR Wells is counted as water extracted from storage or whether it is reduced by the quantities of water used for backflushing. Mr. Oliver responded that the water injected and the water extracted are counted on a one-for-one basis, in other words the water used for backflushing is not counted against the amount taken out of storage.

Mr. Oliver and Mr. Lear said they felt it was not feasible to filter out the backwash water and reinject it into the aquifer because of public health agency and other regulatory agency concerns.

Mr. Franklin commented that approximately 20 acre feet of water for well development may not be a significant amount. Also, it is being put back into the Basin by percolation.

Mr. Oliver said that the backflushing water from the existing ASR wells percolates rapidly into the ground and there would be insignificant evaporation. The water does not get directly back into the Santa Margarita aquifer, but does get back into the Paso Robles aquifer fairly quickly.

Mr. Hulbert said it may not be a "significant" issue given the small quantity of water involved.

Mr. Franklin felt it was worth mentioning this issue so the EIR consultant can respond and address these issues. However, he wondered if counting backwash water against a producer's allocation amount would be holding future ASR wells to a higher standard than existing ASR well practices are required to meet.

Mr. Oliver suggested that the EIR preparer be asked to comment on the significance of the water pumped out for development and backflushing.

Mr. Oliver and Mr. Hulbert suggested deleting several paragraphs from the draft comment letter as contained on pages 7 and 8 of the agenda packet.

Mr. Lear said he wondered what Cal Am's reaction would be to discounting its allocation by the quantity of extracted water used for backflushing.

Mr. Oliver and Mr. Lear noted that regular pump maintenance water used to clear system piping in order to meet bacteriological standards or for backflushing purposes does not go through the well production meters and is therefore not counted against the allocation.

Mr. Riedl noted that the City of Seaside does not get to reduce their production quantities by the amount of water that is used for maintenance purposes. That water is discharged to the sanitary sewer.

Mr. Riedl said that in the past the City had requested to get credit for storm water percolation back into the ground, but was denied by the Watermaster because it was not expected to be a true recharge method. He went on to say that to him it was unclear "what the rules are" with regard to how wells are to be operated in terms of recharge and accounting for water pumped out for well maintenance purposes.

Mr. Oliver asked Mr. Riedl if the discussion with regard to the City's proposal to get credit for percolating storm water came up during discussions of the Basin Management Action Plan in 2009. Mr. Riedl said he believed that was when the discussion occurred.

Mr. Riedl asked if development water will contain hydrogen sulfide and therefore be an odor concern. Mr. Hulbert noted that chlorine rapidly reacts with hydrogen sulfide, and Mr. Oliver commented that

hydrogen sulfide is oxidized to sulfate rapidly when exposed to the atmosphere. Mr. Riedl said the City would comment on this issue in its own comment letter.

After further discussion of revisions to be made to the draft comment letter, consensus on this issue was reached. A motion was made by Mr. Costa, seconded by Mr. Oliver and unanimously approved to forward the revised comment letter from Mr. Jaques to Mr. Evans for submittal by the Watermaster Chief Executive Officer to the Public Utilities Commission.

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

Mr. Jaques summarized each of the Issue items described in the packet under this agenda item. There was consensus that the descriptions contained in the agenda packet were accurate.

Mr. Jaques then listed each of the six Management Options discussed in Mr. Yates' letter, and discussion on these began.

With regard to Option 1-Redistribute Pumping: Mr. Hulbert said that much new infrastructure would be required to do this. There was much discussion about how this option would work and whether the captured water would be used to serve existing customers who would stop pumping their wells, or whether it would be injected to recharge the basin.

With regard to Option 2-Continue Pumping from Ryan Ranch Wells: Mr. Lear and Mr. Oliver said that the Ryan Ranch wells are low-producers due to the hydrogeologic structure of the basin in this area. They struggle to supply their existing demands. More desirable pumping areas would be to the north in the former Fort Ord area.

Mr. Franklin said he understood the intent of this option was to maintain existing production, not to increase it.

Mr. Hulbert said that water produced by these wells needs treatment for arsenic removal and that the wells produce poor water quality compared to other wells. Annual production from these wells was collectively estimated at about 60 to 70 acre feet per year.

Mr. Hulbert said that other options may be more economically viable. He went on to say that it would probably be necessary to construct new wells in a different location in order to efficiently capture groundwater that would otherwise be lost as outflow to the Southern Coastal Subarea.

Mr. Jaques said he would contact Mr. Yates to seek clarification of his intent as to how this Management Option would work.

Due to the lateness of the hour it was agreed that this topic would be continued over to the next TAC meeting and the continued discussion would begin with Management Option 3.

4. Schedule

Mr. Jaques reported that there were no significant changes to the Schedule.

5. Other Business

Mr. Jaques' provided a short oral description of the items of interest to the Watermaster which were discussed at the Salinas River Basin Updated Model Development TAC meeting held on May 12, 2015. He said he would include written notes of future meetings of that TAC in future Watermaster TAC agenda packets.

6. Set Next Meeting Date

Because several TAC members said they would not be able to attend on the next regular meeting date of Wednesday July 8, 2015, it was agreed that the next TAC meeting would instead be held on Wednesday July 15, 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:	July 15, 2015
AGENDA ITEM:	2.B
AGENDA TITLE:	Notes From June 9, 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:	
<p>At the June 9, 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:</p> <ol style="list-style-type: none"> 1. There was much discussion of how to define the vertical and horizontal boundaries of each aquifer layer, and what hydrogeologic properties to use for each aquifer. 2. Model calibration will use automatic calibration tools to get started, but will not rely on these and will make adjustments as the modelers see fit. Calibration will be discussed in more detail at the next TAC meeting. 3. The geographic extent of the analyses to be done with the Model is the County's Zone 2C, which includes about 75% of the Seaside Basin (as defined by the Adjudication Decision). 4. The County has a meeting with DWR scheduled for June 11 to discuss how to define basin boundaries for purposes of complying with the Sustainable Groundwater Management Act. 5. There was some discussion specifically on the Seaside Basin and how to coordinate the Salinas River Groundwater Basin Model work, being done for the County by their consultant Brown and Caldwell, with the HydroMetrics model that was prepared for the Watermaster. There was also some discussion about the fact that there are differences between the DWR Bulletin 118 boundaries and the Adjudication Decision boundaries. 6. The existing Model used by the County (the Salinas Valley Integrated Groundwater Surface Water Model) did not include the Corral de Tierra area, so this will be the first time that that area will be modeled. 7. The vertical depth of the Model will be to the Monterey Formation in most locations. 8. For the Seaside Basin Subarea of the Salinas Valley Basin the work will be focused on the DWR Bulletin 118, HydroMetrics, and Adjudication Decision boundaries in an effort to coordinate these data sources. <p>The geographic area that will be covered by the County's modeling work will include most if not all of the Seaside Basin. It would be very desirable to coordinate as fully as possible the modeling work the Watermaster has already performed through HydroMetrics with the work that Brown and Caldwell will be doing for the County. This would be supportive of Management Option No. 6 which is agendized for discussion under Agenda Item No. 6, and would assist the County in its modeling efforts. Under Agenda Item No. 2.C I am recommending that the Watermaster engage HydroMetrics on an on-call basis to assist with this work in order to maximize the benefit of both the existing modeling work and the new modeling work that the County is about to perform.</p>	
ATTACHMENTS:	None
RECOMMENDED ACTION:	None required – information only

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

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

MEETING DATE:	July 15, 2015
AGENDA ITEM:	2.C
AGENDA TITLE:	Consider Approval of RFS No. 2015-03 to HydroMetrics and RFS No. 2015-01 to Todd Groundwater for Assistance on Modeling Issues
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

HydroMetrics

As reported in Agenda Item No. 2.B, the geographic area that will be covered by Monterey County's Salinas River Basin Model Development work will include most if not all of the Seaside Basin. It would be very desirable to coordinate as fully as possible the modeling work the Watermaster has already performed through HydroMetrics with the modeling work that Brown and Caldwell will be doing to assist the County in its modeling efforts.

I have discussed this topic with members of the MPWMD staff (Joe Oliver and Jon Lear) to get their input and expertise. Their recommendation is to use HydroMetrics to run the model to support the work of the Salinas modeling TAC. They feel that this process will allow timely and high quality support to the Salinas TAC and will help provide a mechanism for the Watermaster to bring the model in-house. They pointed out that the Watermaster's model will need to be periodically updated and recalibrated, and that it would therefore be good to develop some in-house capabilities (i.e. local ability by MPWMD staff) to work with the model. This could be done through a contractual agreement between the Watermaster and MPWMD, whose staff has the expertise to utilize the ModFlow modeling program, to use the documentation that HydroMetrics has developed to create the Watermaster's model which uses that program. Discussion on when and if to develop that in-house capability can be deferred to the point in time when it becomes desirable to perform that work.

MPWMD feels that to effectively participate in the Salinas TAC, the Watermaster will want to evaluate Brown and Caldwell's proposed inputs into the Salinas model by running the Watermaster's model of the Seaside Basin with the Salinas model's proposed inputs. They note that it will be important for the Salinas model to correctly simulate the groundwater flow divide between the Seaside Basin (which is actually a subarea of the larger Salinas Basin) and the other subarea(s) of the Salinas Basin which adjoin the Seaside Basin.

At this time I am recommending that the Watermaster engage HydroMetrics on an on-call basis to assist with this work in order to maximize the benefit of both the existing modeling work the Watermaster has performed, and the new modeling work that the County is about to perform. The attached RFS No. 2015-03 with HydroMetrics would provide the necessary authorization to accomplish this.

Todd Groundwater

I anticipate that the Watermaster Board may wish to perform further analyses and evaluations pertaining to modeling in the Laguna Seca Subarea, modeling of the Seaside Basin as a whole, and/or the County's Salinas River Basin Model Development work. In conjunction with such work, I believe it may be helpful to have Gus Yates of Todd Groundwater available to provide assistance to the Watermaster's TAC on an as-requested basis. The attached RFS No. 2015-01 with Todd Groundwater would provide

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

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

AGENDA ITEM:

2.C (Continued)

the necessary authorization to accomplish this.

ATTACHMENTS:

HydroMetrics RFS No. 2015-03 and Todd Groundwater RFS No. 2015-01

**RECOMMENDED
ACTION:**

Recommend that the Board approve these two RFSs

SEASIDE BASIN WATERMASTER
REQUEST FOR SERVICE

DATE: August 7, 2015

RFS NO. 2015-03
(To be filled in by WATERMASTER)

TO: Derrick Williams
HydroMetrics WRI
PROFESSIONAL

FROM: Robert Jaques
WATERMASTER

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

Completion Date: All work of this RFS shall be completed not later than December 31, 2015.

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

Total Price Authorized by this RFS: \$ 6,000.00 (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

Scope of Work

On an ongoing and as-requested basis, PROFESSIONAL will provide hydrogeologic consulting services to WATERMASTER on groundwater modeling and related topics in support of WATERMASTER's participation in Monterey County's Salinas River Basin Model Development work. These may include, but not be limited to, responding to questions regarding the Seaside Basin Model that PROFESSIONAL has prepared for WATERMASTER, assisting WATERMASTER in the use of this model, and other related activities.

Providing these services may involve attending certain of WATERMASTER's Technical Advisory Committee (TAC) meetings, and/or the Salinas River Basin Model Development TAC meetings, some of which may be attended telephonically.

Estimated Costs

Consulting services provided under this RFS No. 2015-03, including attending meetings either via telephone or in-person as requested by WATERMASTER, will be billed at the following hourly rates, including all markups and other direct costs:

Derrick Williams = \$215.00/hour

Georgina King = \$185.00/hour

In addition to hourly labor costs, an allowance of \$1,000.00 is included in the estimated cost of this RFS to cover travel and other incidental costs associated with the performance of this work.

The total cost authorized by this RFS No. 2015-03 is \$6,000.00.

SEASIDE BASIN WATERMASTER
REQUEST FOR SERVICE

DATE: August 7, 2015

RFS NO. 2015-01
(To be filled in by WATERMASTER)

TO: Gus Yates
Todd Groundwater
PROFESSIONAL

FROM: Robert Jaques
WATERMASTER

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

Completion Date: All work of this RFS shall be completed not later than December 31, 2015.

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

Total Price Authorized by this RFS: \$ 6,000.00 (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

Scope of Work

On an ongoing and as-requested basis, Mr. Gus Yates, a Senior Hydrologist on PROFESSIONAL's staff, will provide hydrogeologic consulting services to WATERMASTER on groundwater modeling and related topics. These may include, but not be limited to, responding to questions regarding the Seaside Basin Model that HydroMetrics WRI has prepared for WATERMASTER, assisting in the interpretation of modeling results, and other related activities.

Providing these services may involve attending certain of WATERMASTER's Technical Advisory Committee (TAC) meetings, some of which may be attended telephonically.

Estimated Costs

Consulting services provided under this RFS No. 2015-01, including attending meetings either via telephone or in-person as requested by WATERMASTER, will be billed at the following hourly rates, including all markups and other direct costs:

Gus Yates = \$195.00/hour

In addition to hourly labor costs, an allowance of \$1,000.00 is included in the estimated cost of this RFS to cover travel and other incidental costs associated with the performance of this work.

The total cost authorized by this RFS No. 2015-01 is \$6,000.00.

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

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

MEETING DATE:	July 15, 2015
AGENDA ITEM:	3
AGENDA TITLE:	WL/WQ Report from MPWMD
PREPARED BY:	Robert Jaques, Technical Program Manager
SUMMARY:	
<p>MPWMD has recently completed preparation of the Water Level and Water Quality Report for WY 2015, Quarters 1 and 2, in partial fulfillment of Task I.2.b.6 of the Management and Monitoring Program under their RFS No. 2015-01. Their Report is posted on the Watermaster's website where TAC members may review the entire document. The following are the Conclusions and Recommendations contained in the Report.</p>	
<u>Conclusions</u>	
<ul style="list-style-type: none"> • The chemical data from the first and second quarters of WY 2015 for the MPWMD dedicated coastal monitor wells do not show significant changes relative to previous samplings, and are not indicative of seawater intrusion into the basin at the locations and depths of these monitor wells. This conclusion continues to be supported by work completed last year for the Watermaster as documented in the WY 2014 Seawater Intrusion Analysis Report prepared by HydroMetrics, LLC. • Based on the long-term water-level hydrographs for coastal monitor wells, the trend of declining groundwater levels is continuing in the deeper Santa Margarita aquifer monitor wells, whereas groundwater levels have generally stabilized, and in a few cases displayed an overall increase in the shallower Paso Robles aquifer. 	
<u>Recommendations</u>	
<ul style="list-style-type: none"> • Deploying dedicated low-flow sampling equipment in the quarterly water-quality monitoring wells should be continued. Dedicated sampling equipment left in the monitoring wells greatly reduces staff resources required to obtain quarterly water-quality samples and results in an overall cost reduction in the long run. • Reporting of water levels and water quality should continue to be conducted semi-annually. • Deployment of water-level monitoring datalogger equipment at recently converted Cal-Am Northern Coastal Subarea production wells and selected Laguna Seca Subarea dedicated monitor wells should continue. 	
Mr. Oliver will briefly describe the Report and respond to questions about it from the TAC.	
ATTACHMENTS:	None
RECOMMENDED ACTION:	None required – information only

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

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

MEETING DATE:	July 15, 2015
AGENDA ITEM:	4
AGENDA TITLE:	Continued Discussion of Work Plan to Address Findings of Laguna Seca Modeling Work
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

This item continues discussion of this topic from the May 13 and June 10 TAC meetings. At the June 10th meeting we discussed the first two of Gus Yates' six Management Options that the Watermaster could consider taking. These first two Options, and my understanding of the TAC's conclusions on each of them, are summarized below for final review and/or editing by the TAC at today's meeting.

Management Option 1: Redistribute Pumping

TAC Conclusions from June 10 Meeting: Mr. Hulbert said that much new infrastructure would be required to do this. There was much discussion about how this option would work and whether the captured water would be used to serve existing customers who would stop pumping their wells, or whether it would be injected to recharge the basin. I had a follow-up conversation with Todd Groundwater seeking clarification of how the water pumped from new wells constructed in order to redistribute where water is pumped from in the Laguna Seca Subarea would be used. They said that they did not make any specific recommendations on that, but felt that delivering the newly pumped water directly to well owners who would stop pumping from their wells as part of the redistribution process would make the most sense, since it would avoid the cost of having to also construct injection wells to put this newly pumped water back into the aquifer. However, they said that injecting it would also accomplish the same objective, but at higher cost. Therefore, it appears that, if new wells were installed as part of a project to allow pumping to be redistributed within the Laguna Seca Subarea, this project should also include piping to deliver the newly pumped water to the well owners who would in turn stop or reduce their pumping by an equivalent amount.

Management Option 2: Continue Pumping from the Ryan Ranch Wells

TAC Conclusions from June 10 Meeting: The existing Cal Am Ryan Ranch wells are low-producers, and also have poor water quality, due to the hydrogeologic structure of the basin in the area where they are located. Rather than keeping these wells in service to intercept water that would otherwise flow westward and into the Southern Coastal Subarea, it would be more effective to install new wells in other locations that would more effectively capture that water so it could be returned for use by well owners in the Laguna Seca Subarea as part of a pumping redistribution project (as described above under Option 1).

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

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

AGENDA ITEM:

4 (Continued)

Attached is Mr. Yates Memo describing all six of his Management Options. At today's meeting I would like to continue going through the remaining Options which are (3) Reduce Water Demand, (4) Change the Laguna Seca-El Toro Boundary Location, (5) Import Water to the Laguna Seca Subarea, and (6) Use the Sustainable Groundwater Management Act as a Means of Managing Areas Outside the Seaside Basin. I recognize that it will likely take more than one TAC meeting to adequately discuss all of these remaining options. In addition TAC members may wish to raise additional options for discussion.

Once the TAC feels it has sufficiently discussed these options we can develop our recommendations to the Board.

As a related matter I believe it would be beneficial to have Mr. Yates' assistance in answering questions and providing input on these and other issues that may arise as the Watermaster moves forward with developing a Work Plan to address the findings of the Laguna Seca Subarea modeling work. If the TAC concurs with this, I will prepare and present to the TAC for its approval a draft Request for Service with Todd Groundwater for on-call consulting services as requested by the Watermaster, so his services will be available to us when and if we need them.

ATTACHMENTS:

Gus Yates Memo titled *Possible Solutions to Groundwater Overdraft in the Laguna Seca Subarea*

RECOMMENDED ACTION:

Continue discussing the Management Options described in the attached Memo and see if the TAC can reach conclusions on each of them

6 April 2015

MEMORANDUM

To: Bob Jaques, Seaside Basin Watermaster Technical Program Manager

From: Gus Yates, Senior Hydrologist, Todd Groundwater

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

I recently completed a peer review of groundwater modeling studies of the Seaside Basin. During that process I became aware that the Watermaster Board would welcome input on groundwater management options for the Laguna Seca Subarea in light of the effect that nearby pumping outside the basin appears to have on groundwater levels and yield within the basin. The basin boundary assumed for the purpose of adjudication is not actually a physical boundary within the groundwater flow system. The Paso Robles and Santa Margarita Aquifers continue uninterrupted from the Laguna Seca Subarea into the El Toro Subarea. This memorandum describes my thoughts and recommendations regarding management of groundwater in the Laguna Seca and El Toro areas.

Unlike the Coastal Subareas, the Laguna Seca Subarea will not benefit from proposed projects that would import water to the Seaside Basin. The Seaside Basin Groundwater Replenishment Project (GWR Project) will import highly-treated recycled water from the MRWPCA and inject the water into the Seaside Basin near the eastern border of the Northern Coastal Subarea. The Monterey Peninsula Water Supply Project (MPWSP) would import water from a seawater desalination facility to be constructed near Marina. The water would be introduced directly into water distribution systems operated by California American Water Company (Cal-Am). Both projects are in active stages of design, permitting and environmental compliance. Together, the projects are expected to balance groundwater supply and demand in the coastal subbasins, but neither project would supply additional water to the eastern half of the Laguna Seca Subarea, where chronically declining water levels are a problem. Although Cal-Am plans to discontinue producing groundwater from the Laguna Seca Subarea, simulations by HMRWI (2014b) indicate that pumping by the remaining users (“alternative producers”) would still exceed the operational yield.

Possible solutions to groundwater overdraft in the Laguna Seca Subarea are described below at a conceptual level, along with potential obstacles to their implementation.

Management Option: Redistribute Pumping

Because of head-dependent boundary responses, decreased groundwater pumping by Cal-Am and/or other users will increase the rates of groundwater outflow to the Southern Coastal, Northern Inland and El Toro Subareas. Given that the adjudication and now the Watermaster are managing the Seaside Basin on a subarea basis, the Laguna Seca Subarea could retain some of its local yield by installing recovery wells near the three outflow boundaries to intercept any increases in outflow. Pipelines would need to be installed to convey that water back to the locations where pumping was decreased.

This concept would involve installing new municipal wells in up to three locations and constructing pipelines several miles in length from each location back to the east-central part of the subarea. It might be possible to use the Ryan Ranch water system to convey water from the Southern Coastal outflow boundary part of the way toward the eastern half of the Laguna Seca Subarea.

This approach would not eliminate the problem of water-level declines at the eastern end of the Laguna Seca Subarea caused by pumping in the El Toro Subarea. Without recovery wells, outflow to El Toro would increase. Outflow would remain the same if the water-level gradient across the boundary remained the same. If El Toro water levels decline in the future, then Laguna Seca water levels near the boundary would have to decline at the same rate to maintain a constant gradient. However, this would require pumping at a recovery well on the Laguna Seca side of the boundary, which would increase the total rate of water-level decline in the eastern part of the Laguna Seca Subarea.

Management Option: Continue Pumping from Ryan Ranch Wells

Cal-Am reportedly plans to discontinue pumping from its wells in the Ryan Ranch development in the western half of the Laguna Seca Subarea. Groundwater levels are stable in that area, and groundwater flow is toward the Southern Coastal Subarea. Eliminating production from the Ryan Ranch wells would simply increase the rate of outflow while doing little to alleviate overdraft in the eastern half of the Laguna Seca Subarea. Therefore, it would be desirable to continue using the Ryan Ranch wells and to convey the produced water to the eastern part of the subarea. Depending on how Cal-Am plans to deliver water from other sources to Ryan Ranch customers, this management option might require additional pipelines from the Ryan Ranch wells to the eastern part of Laguna Seca.

Management Option: Reduce Water Demand

Given the high cost of conveying water within Laguna Seca—much less obtaining it from external sources—reducing water demand in the eastern part of the subarea is worth a hard look. Much of the consumptive use is for golf course irrigation. A treatment plant reportedly converts nearly all locally-produced wastewater into recycled water that is used on the golf courses. However, the recycled water supply is less than the golf course irrigation demand.

Therefore, the principal variable that can easily be managed is the irrigation requirement of the golf courses. This might be accomplished by decreasing the total irrigated area or the type of irrigated ground cover.

MANAGEMENT MEASURES BEYOND THE BASIN

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

The problem of trans-boundary pumping effects could be solved by shifting the boundary location inward or outward to fully exclude or include the effects of the external pumps, which in this case are primarily the Toro and Corral de Tierra municipal wells. If the boundary were moved outward to include those wells, they would fall under the jurisdiction of the adjudication and Watermaster and would be subject to the same phased pumping reductions as other Seaside Basin users. This would theoretically halt long-term water-level declines near the current boundary location.

From a practical standpoint, there appear to be at least two major issues associated with this approach:

- It would require reopening the adjudication and having El Toro pumps join the Seaside Basin and its management program. This could prove to be a difficult and lengthy process.
- It would not permanently eliminate the fundamental problem of basin boundaries defined by flow divides, rather than physical geological boundaries. Future changes in pumping near the new basin boundaries could lead to similar problems of trans-boundary flow.

Management Option: Import Water to the Laguna Seca Subarea

Cal-Am reportedly intends to size the combined capacities of the GWR Project and the MPWSP such that they provide sufficient additional supply to enable Cal-Am to reduce its Seaside Basin pumping to comply with the Seaside Basin Adjudication Decision. The capacity of either project could conceivably be increased to obtain a new increment of supply for Laguna Seca. Additional pipelines would also be needed to convey the water from the Cal-Am system to the eastern part of Laguna Seca.

The GWR Project and the MPWSP are both already at advanced stages of environmental analysis. Changing the size of the project could delay the schedule for completion.

Management Option: Use SGMA as a Means of Managing Areas outside the Basin

The Sustainable Groundwater Management Act (SGMA) was adopted by the California Legislature and Governor in late 2014 and became effective on January 1, 2015. It profoundly changes statewide groundwater management and requires that all medium- and high-priority groundwater basins be sustainably managed, which means that overdraft is

eliminated. SGMA represents a new vehicle for managing groundwater in adjacent parts of the Salinas Valley Groundwater Basin (including the El Toro Subarea), or more specifically, to prevent external pumpers from adversely affecting groundwater levels within the Seaside Basin. Application of the SGMA to the Laguna Seca Subarea groundwater depletion problem is complicated by two factors: the existing Seaside Basin Adjudication Decision and basin boundaries.

Adjudication. Seaside Basin is adjudicated, and SGMA defers to existing management programs in basins or parts of basins that have already been adjudicated, including the Seaside Basin (Water Code Section 10720.8(a)). The Watermaster is thus equivalent to the Sustainable Groundwater Agency that in other basins must be selected from among local agencies or created by a group of agencies acting under a memorandum of agreement or as a joint powers authority. Collaboration with external agencies to manage groundwater close to its borders is obviously desirable for the Watermaster, but it might not be legally feasible for the Watermaster to join a regional joint powers authority. That would bring the Seaside Basin under the authority of the Sustainable Groundwater Agency, which could conflict with current legal authority of the court.

SGMA does allow parts of basins to be managed by separate Groundwater Sustainability Agencies under separate Groundwater Sustainability Plans, but it requires the agencies to develop “coordination agreements” that ensure consistency among the plans (Water Code Sections 10727(b)(3), 10727.6 and 10723.4). Coordination agreements must demonstrate that all of the Groundwater Sustainability Plans within a basin together achieve the objective of sustainability throughout the basin. The coordination agreement is a means by which the Watermaster could engage in managing adjacent parts of the basin without subverting or reopening the adjudication. The adjudication implementation issues are legal in nature and would require legal counsel analysis before conclusions on this could be reached.

Basin Boundaries. SGMA requires that basin and subbasin boundaries be consistent with the boundaries in California Department of Water Resources (DWR) Bulletin 118 unless revised through a formal process that includes DWR approval. The boundaries of the Seaside Basin used by the court for the purpose of adjudication do not conform at all to the Bulletin 118 boundaries, as shown in **Figure 1**. The adjudicated area straddles two Bulletin 118 subbasins of the Salinas Valley Groundwater Basin: the Seaside Area Subbasin and the Corral de Tierra Area Subbasin. The boundary between these Bulletin 118 subbasins is the inland extent of windblown dune deposits, which are unsaturated and have no bearing on the underlying groundwater flow system. However, the adjudication boundaries are equally problematic because the northern and eastern boundaries are the approximate locations of groundwater flow divides that could easily shift in response to future changes in pumping.

SGMA includes a provision for requesting changes in basin or subbasin boundaries. By January 1, 2016, DWR must adopt regulations stating the procedures for requesting boundary revisions. Several general criteria are listed in SGMA (Water Code Section 10722). The triennial update of Bulletin 118 is due to be completed by January 1, 2017, and that version is to be the basis for creating Groundwater Sustainability Agencies and Plans (Water

Code Section 10720.7). This would appear to create a one-year window—calendar year 2017—to apply for basin boundary adjustments.

Option A: Do Nothing

If the Watermaster takes no proactive steps to accelerate management of groundwater in adjacent parts of the Salinas Valley Basin, management will still occur pursuant to SGMA. Whichever entity becomes the Sustainable Groundwater Agency will need to submit a Groundwater Sustainability Plan by January 31, 2022 and to achieve sustainability by January 31, 2042.

The drawbacks to this sub-option are that the Watermaster would have no input into strategies and programs developed for managing groundwater in adjoining areas, and Seaside Basin interests might not be fully taken into account. Also, it might take 27 years to achieve sustainability.

Option B: Actively Participate in External Groundwater Management

Monterey County Water Resources Agency (MCWRA) appears to be the logical candidate to become the Groundwater Sustainability Agency for areas adjoining the Seaside Basin. At a minimum, it could certainly be a member and key player in a multi-party Groundwater Sustainability Agency. The Watermaster could approach MCWRA in the near future to initiate a collaborative effort to manage the Seaside part of the Salinas Valley Basin under SGMA. The problems with conflicts between the Bulletin 118 boundaries and adjudication boundaries would impact the external Groundwater Sustainability Agency as much as they would impact the Watermaster. A joint petition to DWR for subbasin boundary adjustments could be a useful near-term objective.

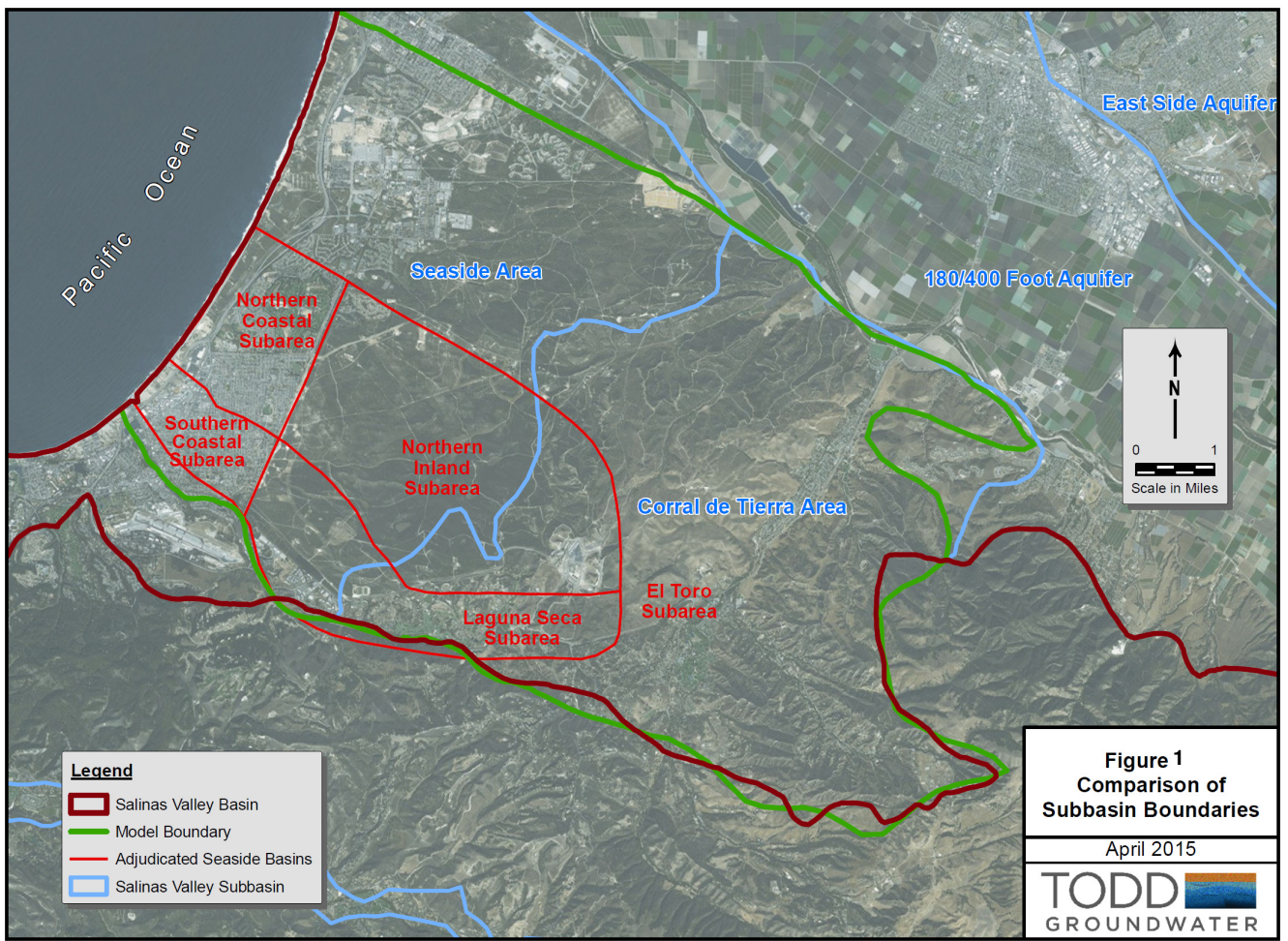
RECOMMENDATIONS

Several of the possible management options listed above seem promising in terms of feasibility and cost-effectiveness. Recommended next steps to further explore those options are as follows:

- **Quantify the costs and benefits of continued operation of Ryan Ranch wells.** The groundwater model should be used to simulate Laguna Seca water balances with and without Ryan Ranch pumping by Cal-Am, with particular attention paid to changes in outflow to the Southern Coastal Subarea. Continued operation of the Ryan Ranch wells would presumably require an agreement with Cal-Am and probably also construction of pipelines to convey the water toward the eastern part of the Laguna Seca Subarea to offset pumping reductions in that area. The feasibility and approximate cost of these measures should be estimated. The impacts of any changes in outflow from the Laguna Seca subarea to the Southern Coastal Subarea should also be evaluated for potential negative impacts.
- **Quantify the costs and benefits of recovery wells to intercept increased subsurface outflow from the Laguna Seca Subarea resulting from decreased Laguna Seca**

Subarea pumping. The groundwater model should be used to simulate the increases in outflow at the Southern Coastal, Northern Inland and El Toro boundaries and the ability of hypothetical recovery wells to capture any increases in outflow resulting from decreased pumping in the eastern part of the Laguna Seca Subarea. The cost of the wells and of pipelines needed to return the captured outflow to the central part of the Subarea could be estimated and integrated into a feasibility and cost-benefit analysis of outflow recovery wells.

- **Initiate sustainable groundwater management in areas adjacent to the Seaside Basin.** The Watermaster should meet soon with MCWRA to discuss implementation of SGMA in areas adjacent to the Seaside Basin. Issues to be discussed include:
 - whether to petition DWR for subbasin boundary revisions, and if so, what the alternative boundaries should be for the purposes of implementing SGMA (DWR will publish revision procedures by January 1, 2016);
 - which agency or agencies should become the Sustainable Groundwater Agency for the adjacent areas;
 - the elements of a coordination agreement linking water management in the Seaside Basin with the Sustainable Groundwater Plan for adjacent areas.



**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

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

MEETING DATE:	July 15, 2015
AGENDA ITEM:	5
AGENDA TITLE:	Schedule
PREPARED BY:	Robert Jaques, Technical Program Manager
SUMMARY:	<p>As a regular part of each monthly TAC meeting, I will provide the TAC with an updated 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>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												◆ 8/12										
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												◆ 9/9										
21	Board approves 2016 M&MP O&M and Capital Budgets													◆ 10/7									
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)														◆ 11/11								
26	Board Provides Input on Draft 2015 Annual Report (At November Board Meeting)														■								
27	Prepare Final 2015 Annual Report (Incorporating Board Input)															◆ 11/18							
28	Watermaster Submits Final 2015 Annual Report to Judge															■							
29	MANAGEMENT															◆ 12/3							
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													◆ 9/9									
33	Board Approval of Initial Consultant Contracts for 2016														◆ 10/7								
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																						
39	Report Findings and Recommendations to the TAC																						
40	Carry Out Followup Actions if Necessary																						
41	Report Findings and Recommendations to the Board																						
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																						
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																						
50	Initial Report to TAC on Findings and Recommendations from Peer Review																						
51	Consultant Revises Preliminary Draft Peer Review Report																						
52	Second Report to TAC on Findings and Recommendations from Peer Review																						
53	Consultant Revises Draft Peer Review Report																						
54	Report to Board on Findings and Recommendations from Peer Review																						
55	Follow-up Actions on Peer Review Direction from Board (if needed)																						

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																						
57	Present TAC's Recommended Basin Management Actions to Board																						
58	I.3.a.1 Recalibrate Existing Groundwater Model (if necessary)																						
65	I.3.c Refine and/or Update the BMAP																						
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
TECHNICAL ADVISORY COMMITTEE**

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

MEETING DATE:	July 15, 2015
AGENDA ITEM:	6
AGENDA TITLE:	Other Business
PREPARED BY:	Robert Jaques, Technical Program Manager
SUMMARY:	<p>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.</p>
ATTACHMENTS:	None
RECOMMENDED ACTION:	None required – information only