

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

DATE: Wednesday, June 10, 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 July 8, 2015 at 1:30 p.m. at the MRWPCA Board Room.	

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

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

MEETING DATE:	June 10, 2015
AGENDA ITEM:	2.A
AGENDA TITLE:	Approve Minutes from the May 13, 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
May 13, 2015**

Attendees: TAC Members

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

Watermaster

Technical Program Manager - Robert Jaques

Consultants

None

Others

Bishop, McIntosh & McIntosh – Leonard McIntosh
Cal Am - Lori Girard

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 April 15, 2015 Meeting

On a motion by Mr. Franklin, seconded by Mr. Lear, the Minutes were unanimously approved as presented.

B. Designate Watermaster Representative to Salinas River Basin Updated Model Development TAC

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

Mr. Franklin said he did not feel it would be essential to have an Alternate on this TAC, since the TAC would only provide input and would not vote or take any other action. Mr. Lear said he felt the Watermaster should get the HydroMetrics model in-house so we can share it with Monterey County's TAC. Mr. Franklin said that one of the goals of the TAC is to look at adjoining/overlapping models to avoid conflicts. He noted that approximately one-third of the Seaside Basin is within the County's Zone 2C, which is the initial boundary of the Salinas Basin model investigation. He went on to say they will want to look at the Seaside model, too. There was some discussion of having HydroMetrics serve as the Watermaster's TAC representative, but Mr. Jaques pointed out that this would be an additional cost that would have to be authorized by the Board, and he felt it was unlikely that the Board would wish to pay to have HydroMetrics attend the TAC meetings. Mr. Jaques said he would pursue with HydroMetrics

obtaining a copy of the model for in-house use. Mr. Lear said that once the Model is available in-house, we can get model input data information from it as needed.

Mr. Lear made a motion, and Mr. Green seconded it, to designate Mr. Jaques as the Watermaster's Primary Member, and that no Alternate Member needed to be designated. The motion passed unanimously.

Mr. Franklin said he would like to have Mr. Williams available occasionally, for input to the Salinas River Basin Model Update TAC if necessary, if technical issues arise.

C. Notices of Availability of Draft EIRs for the Groundwater Replenishment Project and Monterey Peninsula Water Supply Project and Draft Watermaster Comment Letter

Mr. Jaques summarized the agenda packet materials for this item and highlighted the two areas of comment pertaining to development water and back flushing water. Mr. Franklin said he felt these were good issues to raise. 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. Mr. Franklin said he felt it was still good to raise these issues.

Mr. Green asked Mr. Lear if the amount of lost water could be determined and what the system efficiency might be. Mr. Lear said the proposed injection area is over a cone of depression, so he felt it would be 100 percent efficient.

Mr. Gomez said he concurred with the comment letter. Mr. Franklin asked if the letter would come from the TAC or the Chief Executive Officer, and Mr. Jaques responded that it would come from the Chief Executive Officer, Mr. Evans. There was unanimous consensus to forward the draft letter contained in the agenda packet to Mr. Evans for finalization and submittal.

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

Mr. Jaques summarized the agenda packet materials for this item, and said he felt that discussion of this topic would probably span several TAC meetings. Mr. Hulbert said he agreed that it would be a multi-meeting discussion topic. Mr. Jaques then summarized each of the five issues listed on pages 23-25 of the agenda packet.

Issue 1: Mr. Costa asked what the Decision established as the Natural Safe Yield for the Basin. Mr. Jaques responded 3,000 acre feet per year. Mr. Costa said it would be difficult to determine what number to use. He felt it would be desirable to model all of the subareas to get their individual Natural Safe Yields just as had been done for the Laguna Seca subarea. There was much discussion on this topic. Mr. Lear said that regardless of what number is picked, water is flowing from the Northern Inland Subarea into the Laguna Seca subarea and then into the El Toro subarea. Following much discussion Mr. Hulbert noted that it would probably not be possible to reach agreement among all parties on a specific number to use.

Issue 2: Mr. Lear said the FO-6 wells are probably on the eastern side of the flow divide between the Laguna Seca subarea and the El Toro subarea. Hence, it is not possible to keep Laguna Seca water levels from falling simply by ceasing Laguna Seca subarea pumping. There was much discussion of whether monitoring wells should be included in a work plan. There was general consensus to focus on protecting production wells, but to keep monitoring wells operational to provide data input to the model.

Issue 3: Mr. Franklin did not feel that it was appropriate at this time with this model to pursue the described work, as it would not properly capture climate change impacts and therefore potentially give false conclusions. He said there are techniques to do this, and that the U. S. G. S. and D.W.R. climate change models are currently being refined. He said he felt it might be worth looking into these things if

climate change impacts were input into the model. He said it might be around two years before refinement of the climate change models is completed.

Issue 4: There was a brief similar discussion as for Issue 3.

Issue 5: Mr. Lear said that modeling could establish where the flow divide is, and that this could be one of the first steps in a work plan. Mr. Franklin said another thought would be to look at existing basin boundaries and determine how adjacent basin managers can agree to work together to resolve issues that impact both basins. In other words, rather than looking at moving the basin boundaries, it might be better to look at ways to address impacts caused by factors outside of existing basin boundaries.

There were some questions and answers regarding Cal Am's future plans to discontinue pumping from its Laguna Seca subarea wells and also what plans Cal Am had with regard to pumping from its wells in the El Toro subarea.

It was agreed that Mr. Jaques would write up these discussion points from today's meeting for further TAC review and revisions and its next meeting.

4. Schedule

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

5. Other Business

No Other Business items were discussed.

6. Set Next Meeting Date

The next regular meeting was set for Wednesday June 10, 2015 at 1:30 p.m. at the MRWPCA Board Room.

The meeting adjourned at 3:05 p.m.

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

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

MEETING DATE:	June 10, 2015
AGENDA ITEM:	2.B
AGENDA TITLE:	Draft Watermaster Comment Letter on the Draft EIR for the Monterey Peninsula Water Supply Project (MPWSP)
PREPARED BY:	Robert Jaques, Technical Program Manager
SUMMARY:	<p>The Notice of Availability of the DEIR for the MPWSP was provided for TAC members' information at the May 13 TAC meeting. As noted in that May 13 Agenda item, comments on the MPWSP DEIR are due by July 1, 2015, and a draft comment letter was to be prepared for TAC review at today's meeting.</p> <p>I have reviewed those portions of the MPWSP DEIR which appeared to pertain directly to the Seaside Basin and have attached (in the form of a draft comment letter) my recommendations regarding the questions or comments I feel the Watermaster should consider making on this document. At today's meeting we can discuss my recommendations and edit them as the TAC sees fit and also add to them any other comments or questions the TAC would like to have included in the Watermaster's comment letter. The comment letter will need to be submitted by the Watermaster's Chief Executive Officer prior to the July 1 deadline.</p>
ATTACHMENTS:	Draft DEIR Comment Letter
RECOMMENDED ACTION:	Provide input to enable the Technical Program Manager to finalize the Draft comment letter to be submitted to the Watermaster's Chief Executive Officer regarding the MPWSP DEIR

**Seaside Basin Watermaster
2600 Garden Road, Suite 228
Monterey, CA 93940**

June XX, 2015

Mr. Andrew Barnsdale
California Public Utilities Commission
c/o Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94108

Subject: Comments from the Seaside Basin Watermaster on the Draft Environmental Impact Report on California American Water's Monterey Peninsula Water Supply Project, dated April 2015.

Dear Mr. Barnsdale:

The Seaside Basin Watermaster submits the following comments and questions regarding the Subject document.

Pages ES-3, 2-6, 2-13, 3-3, 3-12, 3-56: The agreement regarding payback of Cal Am's overpumping of the Seaside Basin was formalized and executed between Cal Am and the Watermaster through Amendment No. 1 to the December 3, 2008 MOU pertaining to repayment of Cal Am's Replenishment Assessments for overpumping. This Amendment No. 1 was signed by the Watermaster on April 25, 2014 and by Cal Am on June 6, 2014. Thus, the agreement is no longer "tentative." This correction should be made by deleting the word "tentative" in Footnote "b" on pages ES-3 and 3-12, in Footnote "3" on page 3-3, and in the text on pages 2-6, 2-13, and 3-56.

Pages ES-44 (Impact 4.4-1) and 3-49 (Section 3.5.7): Development of the two ASR wells proposed by the Project will involve pumping water out of the Seaside Basin. The quantity of water is not specified, but for development of the deep injection wells proposed for the Groundwater Replenishment Project, development of that Project's four wells would involve extracting a total of approximately 45 acre-feet. Therefore, it appears that approximately half that amount, around 20+ acre-feet, would be involved in development of these ASR wells. The Adjudication Decision does not appear to make any provision for this pumping, and makes no allocation of groundwater pumping for this purpose.

In addition surface recharge at the proposed development water percolation sites will take a long period of time before the recharged water reaches the Santa Margarita (and even the Paso Robles) aquifers. Also, some of it may evaporate or remain in the overlying Aromas Sands and not reach either of the two other aquifers. Therefore, it is not reasonable to assume that allowing the development water to percolate through on-site disposal will have a less than significant impact on groundwater levels or aquifer volumes. This is particularly true since the

wells will be in close proximity to each other and the development water pumping might produce a localized groundwater depression.

One approach that would address this concern, if this is permissible by the health and other regulatory agencies involved in permitting and approving the Project, would be to filter out the sediment that is removed in the development process and then reinject the clean water back into the wells. This would ensure that this aquifer does not experience any net depletion due to development activities.

These issues should be addressed in the design of the Project and will need to be resolved to the satisfaction of the Watermaster before well development can occur.

Pages ES-45 (Impact 4.4-3) and 3-55 (Section 3.6.2): Routine back-flushing of the ASR wells is discussed in these locations in the DEIR, but no estimate of the quantity of water that will be extracted from the aquifer during these back-flushing events is mentioned. The DEIR for the Groundwater Replenishment Project states that “Based on the experience of the Water Management District in the operation of its nearby Aquifer Storage and Recovery wells, back-flushing of each deep injection well would occur about weekly...” On an annual basis the volume of water that will be extracted from the Santa Margarita aquifer by back flushing could be substantial. If that water is percolated into the Paso Robles aquifer it would likely not reach the Santa Margarita aquifer for a long time, if ever, depending on the properties of the geologic layer that separates these two aquifers. It would therefore seem that the volume extracted from the Santa Margarita aquifer for back-flushing should be subtracted from the volume that is injected by the ASR wells when determining the volume of water that Cal Am would be entitled to recover from that aquifer for potable use via these ASR wells. One approach that would address this concern, if this is permissible by the health and other regulatory agencies involved in permitting and approving the Project, would be to filter out the sediment and other material that is removed in the back-flushing process and then reinject the clean water back into the wells. This would ensure that this aquifer does not experience any net depletion due to backwashing activities.

These issues should be addressed in the design of the Project and should also be addressed in the Watermaster’s Storage Agreement with Cal Am for the ASR water from the Project.

Page 2-24 (Section 2.6.2.1): This Section notes that Cal Am’s Carmel River water rights could be further reduced by the SWRCB by an additional 895 AFY due to silting of the Los Padres Reservoir. If this occurs how will the water lost from this be replaced?

Page 2-25: Correct “747” to “774.”

Page 4.4-72: It is stated on this page that ASR Wells No. 5 and 6 will inject/extract from the shallow (Paso Robles) aquifer, but on page 3-38 (Section 3.4.4.1) and in several other places it states that they will inject/extract from the deeper (Santa Margarita) aquifer. Please correct these apparent conflicts in the wording.

If you have any questions regarding these comments, please contact Mr. Robert Jaques, Technical Program Manager, at (831) 375-0517 or by email at bobj83@comcast.net.

Sincerely,

Dewey D. Evans

DRAFT

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

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

MEETING DATE:	June 10, 2015
AGENDA ITEM:	3
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 TAC meeting. At that meeting we discussed each of the five “Issues” that were described under this agenda item and reached some tentative conclusions. These Issues, 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.

Issue 1: The LSSA Natural Safe Yield (NSY) values that are reported in the Yates 2002 and CH2M 2004 reports (referred to on page 18 of the LSSA Modeling Tech Memo of July 28, 2014) were as follows:

Yates 2002 Report: This Report estimated the LSSA NSY to be 400 AFY. However, that estimate included an assumed pumping rate of 1,000 AFY from the LSSA. The WY 2007 Production Report showed that only 961 AF was pumped from the LSSA in that year. The WY 2013 and 2014 Production Reports show that only 912 and 920 AF, respectively, was pumped from the LSSA in those years. The continuing decline in water levels with even these lower pumping levels than were assumed in the Yates 2002 Report suggest that the NSY may be less than was estimated when that Report was prepared.

CH2M 2004 Report: This Report did not break out the individual subarea NSYs, and only provided a total-Basin estimated NSY of 3,400 to 3,500 AFY. No estimate of the LSSA NSY was provided in that Report. However, if the area of the LSSA as a fraction of the area of the total-Basin was used to approximate the portion of the total-Basin NSY attributable to the LSSA, the estimated LSSA NSY would be approximately 600 AFY. Again, that Report did not contain that calculation and did not provide an estimate of the LSSA NSY.

Question: With differing NSY estimates contained in prior reports, the Decision itself (which states that the NSY for the LSSA is 608 AFY), and the more recent work by HydroMetrics, what approach should be taken to reach consensus with all affected parties on what NSY should be used for the LSSA?

TAC Conclusions from May 13 Meeting: There was consensus 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. There was also consensus that regardless of what number is picked, water is flowing from the Northern Inland Subarea into the Laguna Seca subarea and then into the El Toro subarea, and that efforts should focus on addressing that problem rather than seeking a universally acceptable NSY value for the LSSA.

Issue 2: While stopping all pumping from the LSSA is unrealistic, if all LSSA pumping were stopped by 2018 (one of the Scenarios evaluated in the HydroMetrics Tech Memo) only the eastern LSSA wells FO-6 Shallow and Deep would continue to experience falling water levels. Both of these wells are monitoring wells not production wells.

Question: Should the work plan address issues pertaining to monitoring wells as well as production wells, or should it only address issues pertaining to production wells?

TAC Conclusions from May 13 Meeting: The FO-6 wells are probably on the eastern side of the flow divide between the Laguna Seca subarea and the El Toro subarea, and it is therefore not possible to keep

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

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

AGENDA ITEM:

3 (Continued)

Laguna Seca water levels from falling simply by ceasing Laguna Seca subarea pumping. There was consensus to focus our efforts on protecting production wells, but to at the same time keep monitoring wells operational to provide data input to the model.

Issue 3: With no planned CAW pumping from the LSSA once the regional desalination project goes online, the rate of decline in LSSA groundwater levels will decrease considerably, as described in the HydroMetrics Tech Memo.

Question: Would it be useful to run the Model further out into the future (beyond 2014 where it currently ends) for the Baseline scenario 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?

TAC Conclusions from May 13 Meeting: It would not be desirable at this time with the existing model configuration to pursue the described work, as it would not properly capture climate change impacts and therefore potentially give false conclusions. However, it might be worth looking into these things if climate change impacts were input into the model.

Issue 4: If the modeling described under Issue 3 is found that groundwater levels stabilized, the stabilized groundwater levels might or might not be within the water-bearing thickness of the aquifer from which these wells are pumping.

Question: 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?

TAC Conclusions from May 13 Meeting: It would not be desirable at this time with the existing model configuration to pursue the described work, as it would not properly capture climate change impacts and therefore potentially give false conclusions. However, it might be worth looking into these things if climate change impacts were input into the model.

Issue 5: The Board at some point may conclude that the southeastern boundary of the Seaside Groundwater Basin is incorrectly shown in the Decision, and that the boundary in fact is either further to the east or further to the west.

Question: 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?

TAC Conclusions from May 13 Meeting: One of the first steps in pursuing work on this Issue would be 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 confirm or refute the hypothesis that well FO-6 is located east of that flow divide. In addition the Watermaster should pursue discussions with other agencies to look at existing basin boundaries and determine how adjacent basin managers can agree to work together to resolve issues that impact both basins. In other words, rather than looking at moving the basin boundaries, it might be better to look at ways to address impacts caused by factors outside of existing basin boundaries.

Attached is Mr. Yates Memo describing his thoughts on Basin management actions the Watermaster could consider taking. At today's meeting I would like to start going through each of his "Management Options" which are (1) Redistribute Pumping, (2) Continue Pumping from the Ryan Ranch Wells, (3)

**SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE**

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

AGENDA ITEM:

3 (Continued)

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 options.

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

ATTACHMENTS:

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

RECOMMENDED ACTION:

Discuss the Management Options described in the attached Memo and see if the TAC can reach conclusions on each of them (this process will likely take more than one TAC meeting).

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.

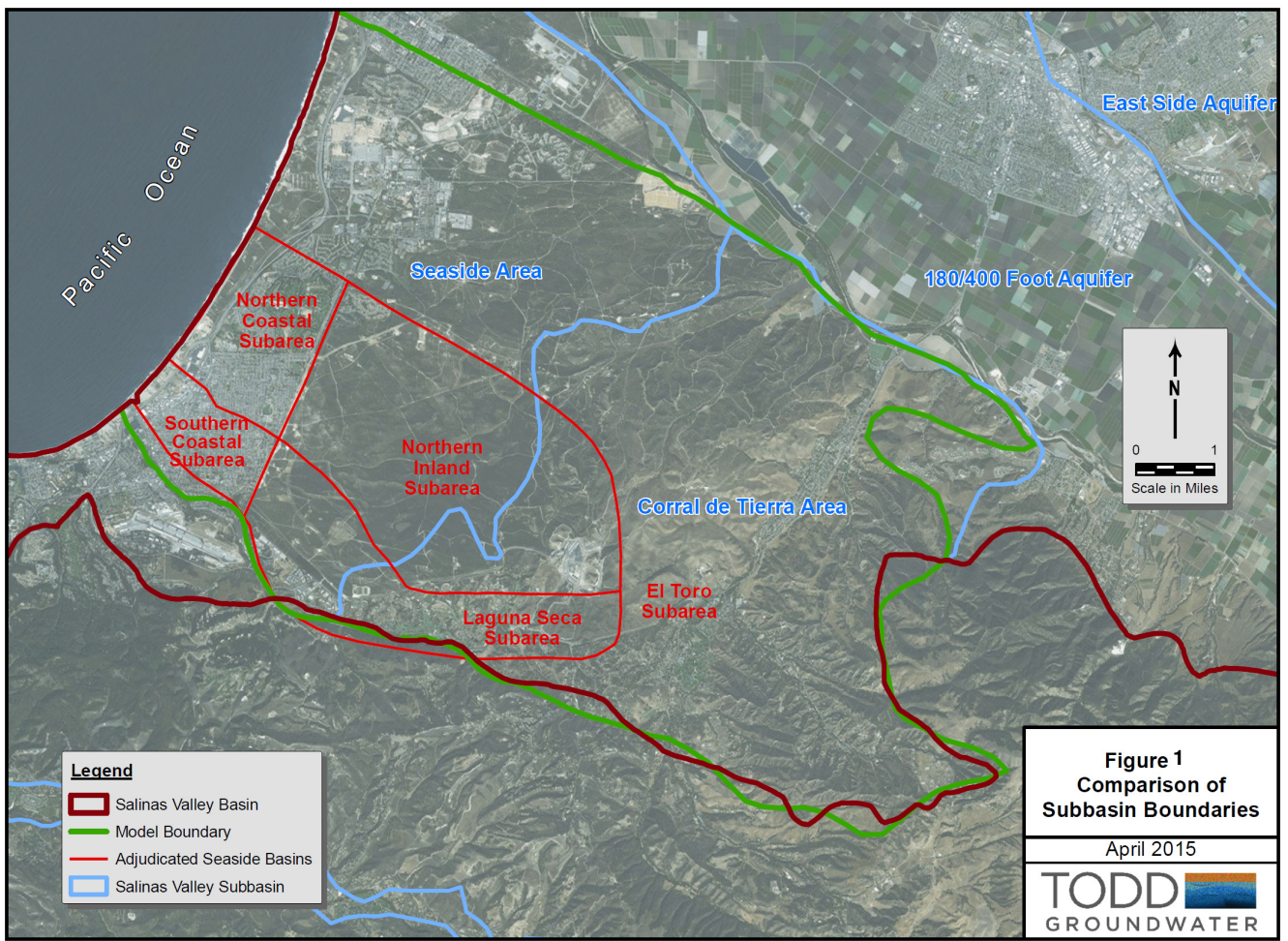
RECOMMENDATIONS

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:	June 10, 2015
AGENDA ITEM:	4
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																						F
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)																						
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																						
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:	June 10, 2015
AGENDA ITEM:	5
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