MEETING NOTICE AND AGENDA

TECHNICAL ADVISORY COMMITTEE OF THE SEASIDE BASIN WATER MASTER

[Note Revised Meeting Date] DATE: Wednesday, April 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

The next regular meeting will be held on Wednesday May 13, 2015 at 1:30 p.m. at the MRWPCA Board Room.

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SEASIDE BASIN WATER MASTER TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	April 15, 2015
AGENDA ITEM:	2.A
AGENDA TITLE:	Approve Minutes from the March 11, 2015 Meeting
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

Draft Minutes from this meeting was emailed to all TAC members. Any changes requested by TAC members have been included in the attached version.

ATTACHMENTS:	Minutes from this meeting
RECOMMENDED ACTION:	Approve the minutes

D-R-A-F-T
MINUTES

Seaside Groundwater Basin Watermaster
Technical Advisory Committee Meeting
March 11, 2015

Attendees: TAC Members

City of Seaside – Rick Riedl (via telephone)
California American Water – Roger Hulbert
City of Monterey – Norm Green
Laguna Seca Property Owners – Bob Costa
MPWMD – Joe Oliver
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
HydroMetrics - Derrik Williams
Todd Groundwater – Gus Yates

Others
Bishop, McIntosh & McIntosh – Leonard McIntosh in person and Eric Robinson (via telephone)
City of Sand City – Todd Bodem
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. Introductions were made of all TAC members present and of those attending via telephone. Mr. Hulbert proposed deferring discussion of Agenda item 4 to a future meeting, and this was further discussed under that Agenda item.

2. Administrative Matters:

A. Approve Minutes from the February 11, 2015 Meeting

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

3. Peer Review of HydroMetrics Laguna Seca Subarea Modeling Work

A. Presentation of Draft Peer Review Technical Memorandum

Mr. Jaques introduced this agenda item and Mr. Yates narrated a discussion of the Peer Review Report with the assistance of PowerPoint slides, a copy of which is attached. During his presentation some of the topics that he highlighted included:

(a) There was some discrepancy between simulated and actual data in some locations. The biggest discrepancies were in the eastern part of the Northern Coastal Subarea. A pumping trough there was not identified by the modeling.

(b) He hypothesized that there might be some problem with one or more of the five head-dependent boundaries shown in Figure 4, so he had HydroMetrics do some sensitivity modeling of these.

(c) For the Laguna Seca Subarea three sensitivity modeling runs with regard to hydraulic conductivity and initial water level issues were run.

(d) Slopes of the simulated hydrographs he requested were similar to the calibration simulation hydrograph slopes.

(e) It was found that the flow system is dominated by boundary conditions.

(f) Hydrograph slopes are directly related to yield, and since the sensitivity slopes were similar to the calibration hydrograph slopes no apparent problem with the model was found in the Northern Coastal Subarea, except as noted in item (a) above.

(g) He has some concerns about yield calculations for the Laguna Seca Subarea, specifically that too much water appears to be "leaking" out of the subarea. The water balance may need to be adjusted. This could be associated with hydraulic conductivity estimates needing to be revised.

(h) Model calibration can be done in various ways and it may need to be done differently than it was. The budget and scope did not allow for this to be done as part of the Peer Review, but it could be beneficial.

(i) He reviewed the Conclusions and Management Options contained in the attached PowerPoint slides.

Mr. Oliver asked where recovery wells might best be located. Mr. Yates said along the west, east, and northern Laguna Seca Subarea boundaries would be the logical locations. The model could be used to help identify specific locations.

Mr. Franklin asked where the outflow from the Northern Inland Subarea was going. Mr. Yates responded that is it is mainly going to the west, toward the Northern Coastal Subarea, with some to the north. Mr. Franklin asked what would be the benefit of intercepting the outflow. Mr. Yates responded that the benefit would be to capture the outflow from the Laguna Seca Subarea using recovery wells so the water could be returned and used within the Laguna Seca Subarea to meet water demands there.

Mr. Jaques said he would compile comments and questions from TAC members and submit them to Mr. Yates so he can use them to revise the preliminary draft Peer Review Report. There was consensus that comments would be provided to Mr. Jaques not later than March 25th, 2015 (two weeks from today). There was unanimous agreement to continue discussion on this topic to the next TAC meeting, and not to have the Peer Review Report go to the Board at its April 1st meeting as originally planned.

Mr. Lear and Mr. Oliver reported that Paralta well data may provide some additional information on conductivity issues in the Northern Coastal Subarea and the Ord Terrace fault.

Mr. Costa asked Mr. Williams what his reaction was to the Peer Review Report. Mr. Williams responded that he felt Mr. Yates had done a good job in preparing the report. He noted that he and Mr. Yates differ on some issues, but that is not surprising. He also noted that if a change in the model calibration was made, one would likely get different results, but there would still be the question as to whether the new results would be better than the original results.

B. Discussion of February 9, 2015 Letter from Bishop, McIntosh & McIntosh

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

Mr. Robinson commented that the letters that he had submitted on behalf of his client were a reaction of concern that the natural safe yield of the Laguna Seca Subarea is, according to HydroMetrics, much lower than previous reports say, and that there is no consensus of what the natural safe yield should be. More work is needed before reaching any conclusions on this. Basin management actions need to be based on the best data and modeling information available. He said he looks forward to continued participation in TAC discussions on these issues.

Mr. Costa said that in light of all of the discussion on these issues it will be important to communicate to the Board that they will take more time at the TAC level than originally anticipated, and thus will not go to the Board as soon as originally anticipated.

C. Develop TAC Recommendations to be Made to the Board

Mr. Hulbert and Mr. Jaques recommended that this item be deferred to a future TAC meeting and there was consensus to support this recommendation.

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

Mr. Hulbert and Mr. Jaques recommended that this item be deferred to a future TAC meeting and there was consensus to support this recommendation.

5. Continued Discussion of Application from Cal Am to Increase Storage Quantity and Number of Storage/Recovery Sites

Mr. Jaques introduced and briefly summarized the agenda packet materials for this item.

Mr. Hulbert noted that water quality from the desalination plant will meet Title-22 and Safe Drinking Water Act requirements. Regardless of the water source, i.e. desalination, ASR, etc. these requirements will be met.

Mr. Oliver said that the RWQCB has set certain ongoing requirements for water quality monitoring. A Sample Analysis Plan was required and MPWMD is working from that. It contains a specific listing of water quality parameters. He felt that getting a better understanding of future water quality interactions of water in the basin and water proposed for storage would be beneficial.

Mr. Green asked if the permit from the RWQCB is for storage. Mr. Oliver and Mr. Lear responded yes, but the specific requirements are modified on an ongoing basis as needed.

Mr. Lear said that for storage of desalination water there will likely be specific water quality requirements from the RWQCB.

Mr. Oliver suggested that the current Sample Analysis Plan parameter requirements could be used in Cal Am's application.

Mr. Jaques asked Mr. Lear and Mr. Oliver if they knew with certainty what the desalination water quality Sample Analysis Plan parameters would be, and they responded that they did not know at this time.

Mr. Oliver said he could provide the current water quality Sample Analysis Plan list to Mr. Hulbert for further discussion, and Mr. Hulbert said he would appreciate getting that information.

Mr. Hulbert said Cal Am would like to get the Watermaster's approval in advance of getting the other permits by agreeing to comply with requirements of the regulatory agencies.

Mr. Lear said that MPWMD recently finished a Salt and Nutrient Management Plan that may be useful in examining water quality issues in the basin.

Mr. Costa asked what the concern was about including multiple water resources and quantities in a single application. Mr. Oliver said that groundwater replenishment project recharge water would certainly be different than ASR or desalination water in terms of water quality. He noted that the new ASR wells are already in operation, so it would be good to get them covered now in a revised storage agreement.

Mr. Hulbert agreed that groundwater replenishment water would be a separate application, but that ASR and desalination water could be included in a single agreement, with the quantities and water quality parameters for each source being listed.

Mr. Franklin said if water quality and quantities from each source are stated in the storage application, then he was agreeable with proceeding with the application now, rather than waiting.

Mr. Hulbert said he would get data from MPWMD with regard to water quality parameters and see if revisions need to be made to the draft application.

Mr. Franklin said that if the application states that the other regulatory agencies' requirements will be complied with, then he was agreeable with going ahead now. Title-22 and Sample Analysis Plan requirements could also be cited in the application.

Mr. Hulbert said he would revise the application and resubmit it for TAC approval at a future meeting.

There was a brief discussion with regard to what sources of water are currently being stored.

6. Schedule

Mr. Jaques provided a few brief comments on this item, and there was no further discussion on it.

7. Other Business

There was no other business.

8. Set Next Meeting Date

The next regular meeting was scheduled for Wednesday April 8, 2015 at 1:30 p.m. at the MRWPCA Board Room.

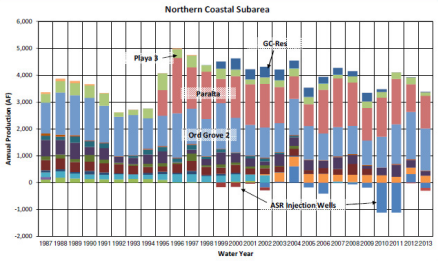
The meeting adjourned at 3:19 p.m.

Peer Review of Seaside Basin Groundwater Modeling

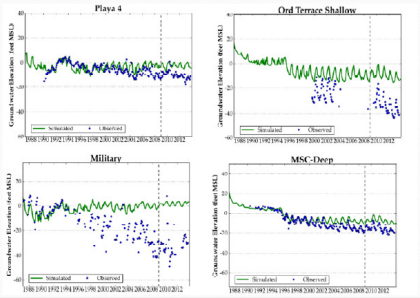
Gus Yates, PG CHG

TODD GROUNDWATER

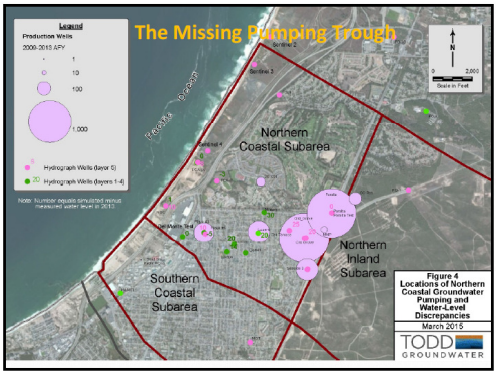
Northern Coastal Pumping History



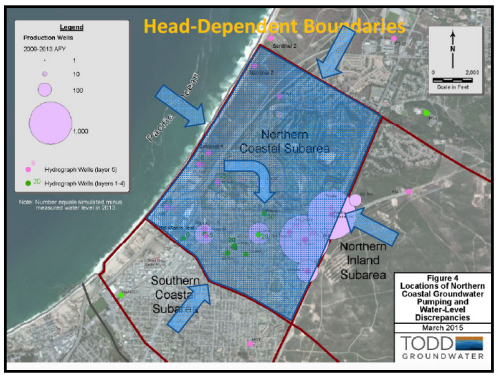
Northern Coastal Water Levels



The Missing Pumping Trough



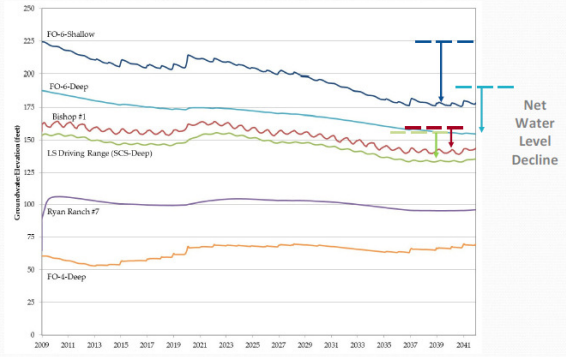
Head-Dependent Boundaries



Laguna Seca Yield

Yates and others (2002):	400 AFY
Adjudication (2006):	608
HMWRI (2014):	<240

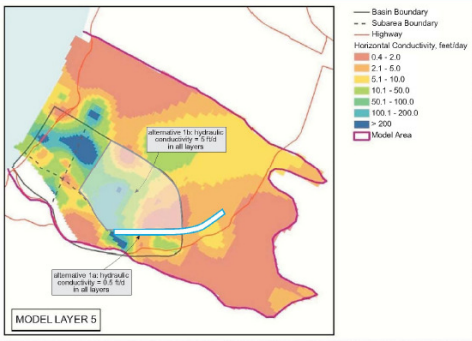
Natural Safe Yield Simulation



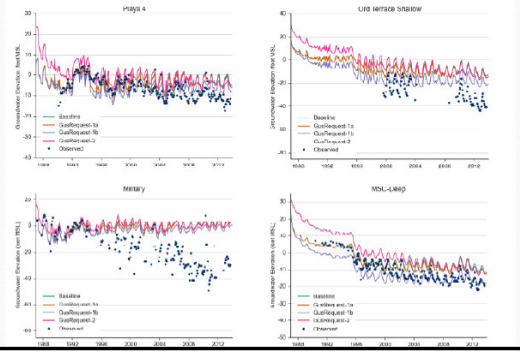
Three Sensitivity Simulations

- Low hydraulic conductivity along Laguna Seca Anticline
- Uniform low hydraulic conductivity in east-central Northern Inland Subarea
- Steady-state initial water levels

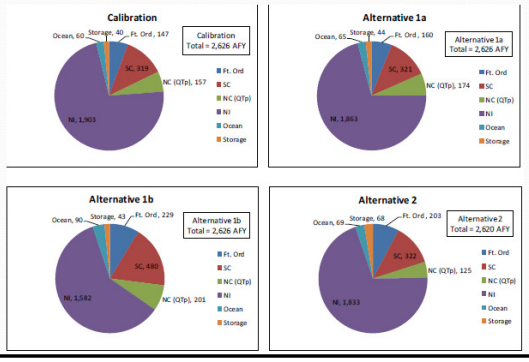
Three Sensitivity Simulations



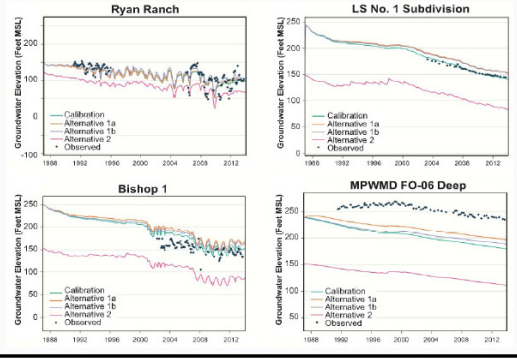
Northern Coastal Sensitivity Results



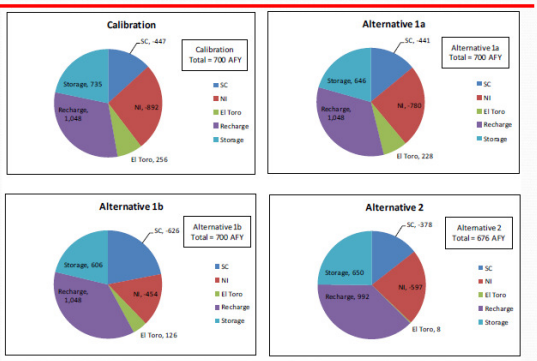
Northern Coastal Sensitivity Results



Laguna Seca Sensitivity Results



Laguna Seca Sensitivity Results



Conclusions: Northern Coastal Subarea

- None of the sensitivity tests fundamentally changed the hydrograph slopes.
- No obvious error in water balance detected.
- Local reduction in K and/or S might produce a pumping trough.

Conclusions: Laguna Seca Subarea

- None of the sensitivity tests fundamentally changed the hydrograph slopes.
- No obvious error in water balance or yield detected.
- Non-unique conceptual models: high- versus low-throughflow of groundwater

Conclusions: Management Options

- Shift adjudicated Laguna Seca-El Toro boundary westward or eastward.
- Continue production from Ryan Ranch wells.
- Install boundary outflow recovery wells.
- Decrease Laguna Seca water demand.
- Work with MCWRA on external groundwater management per Sustainable Groundwater Management Act.

"Natural Safe Yield"

NSY	=	Areal Recharge	+	Subsurface Inflow	-	Subsurface Outflow	
240	=	866	+	930	-	1,556	AFY

Problems with NSY concept:

- Equation excludes pumping and storage (incomplete water balance).
- Recharge is no longer natural: it depends on land and water use.
- Recharge not fixed.
- Head-dependent boundaries.
- In practice, annual storage change is not zero.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	April 15, 2015
AGENDA ITEM:	2.B
AGENDA TITLE:	March 10, 2015 Letter from Bishop, McIntosh & McIntosh
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY: At the March 11, 2015 TAC meeting I mentioned that a letter dated March 10, 2015 had been received from Mr. Eric Robinson, whose law firm represents Bishop, McIntosh & McIntosh, too late for inclusion in the agenda packet for that meeting.

Pursuant to my subsequent discussion with Mr. McIntosh, it is included as an informational item in today's agenda packet.

The letter has also been provided to Mr. Yates for his use in preparing his revised Draft Peer Review Report.

ATTACHMENTS:	March 10, 2015 letter from Bishop, McIntosh & McIntosh
RECOMMENDED ACTION:	No action required – informational only

KRONICK MOSKOVITZ TIEDEMANN & GIRARD
A PROFESSIONAL CORPORATION

Eric N. Robinson

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March 10, 2015

Dewey Evans
Chief Executive Officer
Seaside Groundwater Basin Watermaster
2300 Garden Road, Suite 228
Monterey, CA 93940

Robert Jaques
Technical Program Manager
Seaside Basin Watermaster
2600 Garden Road, Suite 228
Monterey, CA 93940

Re: Response to Draft Peer Review of Seaside Basin Groundwater Modeling Studies

Dear Messrs. Evans and Jaques:

This letter is submitted by Bishop, McIntosh & McIntosh ("Bishop"), which holds an alternative Production Allocation in the Laguna Seca Subarea ("LSS" or "LSSA") of the Seaside Basin. The agenda package for the March 11, 2015, Technical Advisory Committee ("TAC") meeting arrived by email at 9:15 p.m. on Friday, March 7—two business days before the Wednesday TAC meeting. The agenda package includes a draft copy of the Peer Review Technical Memorandum ("Peer Review Memo" or "Draft Memo") (agenda item 3.A), discussion of my previous correspondence to the TAC and Watermaster concerning Laguna Seca Subarea Natural Safe Yield (agenda item 3.B), and development of a TAC recommendation with regard to the raft Peer Review Technical Memorandum (agenda item 4). This letter responds to those agenda items under the constraint of the two business days available to analyze the Peer Review Technical Memorandum and other materials in the 78-page agenda packet.

The issue of the Laguna Seca Subarea's safe yield has now generated a substantial amount of paper, which creates a risk that the concerns raised in our November 12, 2014, and February 9, 2015, letters might be lost or obfuscated. To that end, we appreciate the statement in the TAC Agenda Item 3.B summary that "the Watermaster is not focusing on reducing the [Natural Safe Yield] of the LSSA, but is viewing it as one tool among many that may be required to arrest dropping groundwater levels in the LSSA." (TAC Agenda Transmittal Form, Item 3.B at p. 45 [emphasis in original].)

That statement is mildly encouraging, but we remain concerned about the potential use of recent modeling studies to support a request that the Court reduce the 608 AFY of Natural Safe Yield ("NSY") that the Seaside Basin Adjudication Judgment specifies for the Laguna Seca Subarea. The March 6, 2015, draft Peer Review Memo observes that, over the years, there have been a range of estimates for recharge, inflow and safe yield for the Laguna Seca Subarea (e.g., 400 AFY safe yield based on 990 AFY of total recharge/inflow versus 240 AFY safe yield based on 1,810 AFY of total recharge/inflow). (Draft Memo at 3.) The TAC Agenda Packet observes that a 2004 report by CH2MHill provided "a total-Basin NSY of 3,400 to 3,500 AFY" but "did

not break out the individual subarea NSYs" for the Northern Coastal Subarea, Northern Inland Subarea, Laguna Seca Subarea or the Southern Coastal Subarea. (TAC Agenda Transmittal Form, Item 4 at p. 64.) The Judgment specifies a NSY of 2,581-2,913 AFY, with 1,973-2,305 AFY of that amount earmarked for the Coastal Subarea and 608 AFY of that amount earmarked for the Laguna Seca Subarea. (Amended Decision, ¶ 17 at 13 [filed February 9, 2007].)

The Judgment's specification of NSY for the Basin and allocation of NSY between the Coastal Subarea and Laguna Seca Subarea was based on the best available science, which informed the negotiation of a stipulated judgment comprised of many different components. Among the key components are:

- Overlying groundwater rights (called "Alternative Production Allocations" in the Judgment) are "senior" to appropriative groundwater rights (called "Standard Production Allocations" in the Judgment), meaning that:
  - Pumping under Standard Production Allocations must be reduced (to zero) before pumping under Alternative Production Allocations may be reduced;[1]
  - Holders of Standard Production Allocations pay replenishment assessments to fund the "Physical Solution" that brings the Basin within its Natural Safe Yield;
- Basin and Subarea boundaries would be as established in the Judgment;
- "**The Watermaster will monitor and perform** or obtain engineering, hydrogeologic, and scientific **studies concerning** all characteristics and workings of the Seaside Basin, and **all natural and human-induced influences on the Seaside Basin, as they may affect the quantity and quality of Water available for Extraction,** that are reasonably required for the purposes of achieving prudent management of the Seaside Basin . . . ." (Amended Decision, § III(L)(3)(j)(xxi) at 39 [emphasis added].)
- "The **Watermaster may** act jointly or **cooperate with any public or private entity** to the end that the purposes of the Physical Solution may be fully and

[1] If Cal-Am's public water service systems in the El Toro area adjacent to the LSS had been encompassed by the adjudication Judgment's Basin boundary, any groundwater production rights adjudicated for Cal-Am's systems would have been defined as Standard Production Allocations, just all Cal-Am's public water service systems in the Laguna Seca Subarea and Coastal Subarea operate based on Standard Production Allocations.

economically carried out." (Amended Decision, § III(L)(3)(j)(xviii) at 38 [emphasis added].)

- "**California American shall undertake all reasonable best efforts** to promptly and diligently pursue, and if necessary collaborate with other entities, to obtain and develop sufficient long-term supplemental Water supplies **to augment the Water supply available for its service territory within Monterey County.**" (Amended Decision, § III(M)(1)(a) at 41 [emphasis added].)

If the Watermaster were to ask the Court to modify the Judgment to reduce the Laguna Seca Subarea's Natural Safe Yield by 60 percent to 240 AFY, the basis for the stipulated Judgment would be undermined. The allocation of the Basin's Natural Safe Yield between the Coastal Subarea and the Laguna Seca Subarea would be in question. Exclusion of the El Toro area and its more than 1,100 AFY of unregulated groundwater pumping by Cal-Am and others would be in question.

Put simply: To cut the Laguna Seca Subarea's Natural Safe Yield based on recent model studies assuming that Cal-Am's adjacent El Toro pumping continues unregulated and unabated would be inconsistent with the Judgment, imprudent and risky.

And there is no compelling reason to take that risk. The author, or authors, of the Peer Review Memo seem to take great care in choosing the right words to discuss whether the recent groundwater model studies compel the conclusion that the Laguna Seca Subarea's Natural Safe Yield should be reduced to 240 AFY or some other number. It is, therefore, significant that the Peer Review Memo does not say 240 AFY is the "correct" natural safe yield number that must be used for the Laguna Seca Subarea.[2]

In fact, the Peer Review Memo says "natural safe yield" "is a legal concept that conflicts with physical processes that actually occur in the Seaside Basin" and which consequently makes the term "of little practical value for basin management." (Peer Review Memo at 2.) The Peer Review Memo goes on to explain that "[d]eclining water levels in the eastern part of the Laguna Seca Subarea and presence of the Northern Coastal pumping trough both raise the issue of the geographic scale over which overdraft is calculated." (*Id.* at 15.) "[I]n the Seaside Basin . . . the adjudicated basin boundary does not include the entire groundwater flow system. Groundwater

[2] The Peer Review Memo also does not say 1,973-2,305 AFY is the correct amount for the Coastal Subarea, where the modeling studies fail to show or otherwise account for a significant groundwater pumping "trough" that actually exists in the part of the Basin that is closest to the ocean and, therefore, is far more at risk of seawater intrusion than the Laguna Seca Subarea.

in the El Toro area (officially outside the basin) is actually hydraulically coupled to the Laguna Seca subarea, so that external pumping affects internal water levels." (*Id.* at 20.) Thus:

> "The water balance and amount of overdraft in each subarea is thus dependent upon pumping and overdraft in adjacent subareas. The Laguna Seca subarea would be 'subsidizing' overdraft in the El Toro and Northern Coastal subareas if it were forced to eliminate its internal storage depletion."

(*Id.* at 20.) That is exactly our point. As the TAC and Watermaster wrestle with the challenge of conducting groundwater modeling studies to inform Basin management decisions that are faithful to the Judgment, they should heed the admonition of the Peer Review Report that: "On the basis of water levels alone, it is not possible to determine whether one water balance is more accurate than the other." (Peer Review Memo at 8.)

Rather than fixating on whether 608 AFY is the right number for the Laguna Seca Subarea's Natural Safe Yield, we respectfully request that the TAC recommend that the Watermaster take a practical approach to discharging its duties to work with Cal-Am to implement a Physical Solution for the Basin. For example, we agree with the Peer Review Memo that the Watermaster should:

- Assess continued operation of Ryan Ranch wells for the purpose of redistributing pumping pursuant to Alternative Production Allocations in the Laguna Seca Subarea;
- Assess installation of recovery wells to intercept increased subsurface outflow from the Laguna Seca Subarea;
- Cause or facilitate control of groundwater pumping in the El Toro area adjacent to the Laguna Seca Subarea (e.g., through in lieu recharge or otherwise), so that pumpers there cooperate with, and do not frustrate, the Physical Solution that the Watermaster and party pumpers are carrying out in the Seaside Basin.

If certain measures, like redistributing pumping under Alternative Production Allocations, would help to stabilize groundwater levels in the Laguna Seca Subarea while reducing the need for pumping reductions in the adjacent El Toro area, they could be part of the Physical Solution for the El Toro area, the Laguna Seca Subarea and for the overall Seaside Basin. As quoted above, the Judgment requires the Watermaster to work with Cal-Am to undertake such measures as part of the Physical Solution mandated by the Judgment.

Sincerely,

KRONICK, MOSKOVITZ, TIEDEMANN & GIRARD
A Professional Corporation

ERIC N. ROBINSON

ENR
Attachment (comments on Peer Review Memo and other Agenda package materials
cc: Laguna Seca Resort
Pasadera Country Club
York School
Monterey County

KRONICK MOSKOVITZ TIEDEMANN & GIRARD
400 Capitol Mall, 27th Floor
Sacramento, CA 95814
www.kmtg.com

ATTACHMENT

COMMENTS ON DRAFT PEER REVIEW MEMORANDUM

These comments respond to the March 6, 2015, memorandum prepared by Gus Yates of Todd Groundwater, titled "Peer Review of Seaside Basin Groundwater Modeling Studies—TAC REVIEW DRAFT."

The introduction to the memorandum states that it provides "a technical review of the [Hydrometrics] groundwater model, simulation results and conclusions drawn from those results." The peer review focused on two specific "apparent model weaknesses:" (1) discrepancy between simulated and measured historical water levels in the Northern Coastal Subarea, which results in the model failing to develop a pumping trough in this area; and (2) "the estimate of Laguna Seca Subarea safe yield is much lower than estimates in previous studies." The peer also identified the decline in water levels in the eastern part of the LSSA as a "third possible weakness in the groundwater [model]." Due to time limitations, our comments focus on the estimate of available yield in the LSSA.

The peer review included three "model sensitivity tests," which are discussed on pages 4 through 7 of the peer review. The introduction on page 4 explains the objectives for those tests:

> The objective of the tests was not to achieve fully calibrated alternative models, but simply to test whether substantial changes in parameters that affect east-to-west flow could produce qualitatively different results. Specifically, results were examined to see whether alternative parameters resulted in a more pronounced pumping trough in the Northern Coastal Subarea or in a more gradual rate of water-level decline in the Laguna Seca Subarea.

In interpreting the results, the peer review indicates that "[t]he long-term slope of the hydrograph is the principal indicator of basin yield" (pg. 5), particularly in the later years of model runs in which the initial water levels were adjusted. As I understand the peer review, changes in the slope of hydrographs between Hydrometrics' model runs and the sensitivity tests may indicate a change in the yield for the sensitivity test, while no change in the slope may indicate no change in the yield.[3]

[3] However, that is contradicted in the last full paragraph on page 6 of the peer review, which states that possible changes could be made to the model to simulate the

For the LSSA, the peer review discusses long-term groundwater trends for the sensitivity tests compared with trends estimated by Hydrometrics, and includes (on page 7) the following statements with respect to yield: (1) "Because yield is indicated primarily by long-term water-level trends, none of the alternative sensitivity tests appeared to justify a revision of the yield estimate"; and (2) "Like the other tests, Alternative 2 did not reveal an obvious error in the HMWRI estimate of Laguna Seca Yield."

While review of the three sensitivity tests apparently neither "appears to justify a revision of the yield estimate" nor "reveals an obvious error in the HMWRI estimate of Laguna Seca Yield," the peer review also does not conclude that the HMWRI estimate is correct. The absence of such a conclusion also appears to be consistent with the objectives of the sensitivity tests, which were not designed to be used to provide an evaluation of yield in the LSSA.

The discussion of continued declines in the eastern part of the LSSA is also given brief discussion on page 4 of the peer review. Two possible reasons for that decline are mentioned: (1) groundwater pumping in the El Toro area lowers levels in the eastern part of the LSSA; and (2) groundwater declines may result from "a localized calibration error." It was unclear whether there are other possible explanations that should be considered besides these two, or what Mr. Yates' conclusion was on this potential model weakness. Further, it appears to be technically plausible that if there is a calibration error in this part of the LSSA, that could impact groundwater level trends in the area and could have an effect on the yield the model estimates for the LSSA.

The "Technical Conclusions and Recommendations" for the LSSA are on page 8 of the peer review. While no recommendation is made for any revisions to the model, there is also no statement in the peer review on the adequacy of the model to address the present management issues confronting a Watermaster that must faithfully implement the Judgment. Also, the conclusions are stated with words denoting they are tentative and not firm:

- "The alternative long-term declining trends were not sufficiently different from the calibration trends to justify a revised estimate of operational safe yield" (underlining added) – this does not support the present estimate of safe yield, but rather states that review of two sensitivity runs were not "sufficiently different" to justify modifying the safe yield.

- "The relatively low estimate of Laguna Seca Subarea yield reported by HMWRI does not appear to be entirely the result of excessive amounts of groundwater

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development of a pumping trough in the Northern Coastal Subarea (which would change the slope of the hydrographs of wells in the pumping trough) without implying "a different water balance and yield for the Northern Coastal Subarea."

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> "draining" out to the Northern Inland Subarea" (underlining added) – this does not identify to what degree water draining to the Northern Inland Subarea does impact the yield, or what other factors might be resulting in the relatively low estimate of LSSA yield.

- With respect to the current model and a previous model (which had estimated a safe yield of about 400 AFY), "[o]n the basis of water levels alone, it is not possible to determine whether one water balance is more accurate than the other" (underlining added). This does not support the use of 240 AFY as the yield over possible alternative modeling constructions.

"Management Conclusions and Recommendations," which focus on the LSSA, begin on page 9 of the peer review. This discussion is characterized on page 9 as describing "[p]ossible solutions to groundwater overdraft in the Laguna Seca Subarea . . . at a conceptual level, along with potential obstacles to their implementation." That discussion does not include any specific values for yield, which is consistent with the lack of a firm conclusion from the peer review on the adequacy of the model.

The peer review expresses concern with the use of the "natural safe yield:"

> The adjudication judgment includes the term "natural safe yield," which is a legal concept that conflicts with physical processes that actually occur in the Seaside Basin. Consequently, the term is of little practical value for basin management. A discussion of the limitations of the natural safe yield concept is presented in Appendix B.

Insufficient time was provided to fully unpack and understand the subtleties that are discussed in Appendix B, that appendix seems to raise a number of the same concerns with the El Toro area that were raised in Bishop's correspondence with the Watermaster and TAC on this matter. For example, we are concerned that cutting the Laguna Seca Subarea's Natural Safe Yield to 240 AFY would lead to limiting groundwater production in the Laguna Seca Subarea to 240 AFY, which would treat the Alternative Production Allocations of overlying landowners, like Bishop, Pasadera, York School and Monterey County, as junior to groundwater pumping rights being exercised in the El Toro area by appropriators like Cal-Am or others. Shifting the burden of groundwater management from junior pumpers, like Cal-Am, to senior pumpers, like Bishop and the other overlying landowners in the Laguna Seca Subarea, would conflict with the California law of groundwater rights applied by the adjudication Judgment. This concern is clearly expressed in Appendix B of the peer review:

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> The Laguna Seca subarea would be "subsidizing" overdraft in the El Toro and Northern Coastal subareas if it were forced to eliminate its internal storage depletion. This is because groundwater flow from Laguna Seca to those other areas would increase.

Appendix B also recognizes that "[g]roundwater in the El Toro area . . . is actually hydraulically coupled to the Laguna Seca subarea, so that external pumping effects internal water levels."

COMMENTS ON TAC AGENDA PACKET
DISCUSSION OF LETTER FROM BISHOP, McINTOSH & McINTOSH

As noted in the materials for agenda item 3.B, the Seaside Watermaster Board did not make changes to the Annual Report that were suggested in our letter of November 12, 2015 "in order to allow time for the peer review of Hydrometrics' modeling work to be completed, and for the Board to discuss the findings of the peer review and then determine what actions should be taken on this matter."

With respect to our letter of February 9, 2015, we requested that the TAC and the Watermaster do three things before Mr. Yates completed and his peer review and prepared his memorandum:

1. Confirm and disclose how much groundwater Cal-Am and others are extracting from wells in the El Toro area;

2. Assess and disclose how those extractions reduce groundwater elevations in the LSSA; and

3. Assess and disclose how reducing or eliminating El Toro area groundwater extractions would benefit groundwater elevations and protect natural safe yield of the LSSA.

With respect to item one, the Agenda Transmittal Form provides a copy of Table 3 from the Hydrometrics Technical Memorandum dated July 30, 2014, which lists selected wells in the El Toro area and their average annual pumping. The Agenda Transmittal Form also states that "[w]hile these are not all of the wells in the El Toro area, they are the wells closest to the eastern boundary of the LSSA and thus the ones that most likely have the greatest impact on the LSSA." Because this is not all of the wells in the El Toro area, Table 3 does not provide a full response to the concern presented in my February 9, 2015 letter. We also are not clear whether the distance of a well from the LSSA boundary is the sole basis to decide if the well has the "greatest impact

on the LSSA" – intuitively it seems that wells more distant from the boundary but with larger production (either at individual wells or in the aggregate from several wells) might have the greater impact on the LSSA. Based on that concern, we do not agree that a full response to item 1 has been provided to date.

With respect to items 2 and 3, the Agenda Transmittal Form cites Figures 25 through 27 as showing how extractions in the El Toro area reduce groundwater levels in the LSSA, and how reducing or eliminating those extractions would benefit groundwater elevations in the LSSA (presumably through the comparison of the modeled groundwater elevations with "existing eastern pumping" to modeled elevations for the other scenarios). However, those graphs only show groundwater elevations, and do not address my questions as to the impact of reducing or eliminating the El Toro pumping with respect to yield available to the LSSA.

Finally, the end of the Agenda Transmittal Form states that: "I believe that the purpose of the peer review is to evaluate Hydrometrics' model itself to determine its accuracy and validity, but not to generate data or to evaluate additional scenarios." As discussed earlier in our comments, the peer review does not reach a definitive conclusion about the accuracy and validity of the Hydrometrics model. In fact, it concludes that there may be "non-unique" ways to calibrate the model which could result in equally valid estimates of yield that could be at least 67 percent greater than the 240 AFY yield estimated using the Hydrometrics model (i.e., the 400 AFY yield estimated by a prior model developed by Yates and others). Significant differences in estimated yield would be significant to holders of Alternative Production Allocations within the LSSA.

In summary, while we agree that the Hydrometrics study provided information of interest, we do not agree that the concerns previously raised in our February 9, 2015, letter were addressed by that study. Further, we still believe those questions need to be addressed in order to provide the Watermaster with an appropriate base of information to evaluate how to address the issue of the potential impact of pumping in the El Toro area on the LSSA water levels and yield.

DEVELOP TAC RECOMMENDATIONS TO BE MADE TO THE BOARD

The list of issues identified in the Agenda Transmittal Form for agenda item 4 should be revised to address the issue of the potential impact of pumping in the El Toro area on groundwater levels and yield in the LSSA.

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** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	April 15, 2015
AGENDA ITEM:	3.A
AGENDA TITLE:	Continued Discussion of Draft Peer Review Technical Memorandum
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

Pursuant to discussion on the Draft Peer Review Technical Memorandum at the March 11, 2015 TAC meeting, I compiled and forwarded to Mr. Yates the comments, questions, and requests for clarification that I received from TAC members, and he has addressed these in a revised Draft Peer Review Technical Memorandum. This revised Draft will be sent to you as an attachment to a separate email well in advance of this meeting.

Mr. Yates suggestions on actions the Watermaster can consider taking in response to the findings of the peer review and the modeling of the Laguna Seca Subarea were also sent to you attached to the same email that sent the Draft Peer Review Technical Memorandum. The focus of today's discussion will be on the Peer Review itself as that needs to go to the Board as soon as the TAC has completed its review and discussion. Discussion on the actions the Watermaster can consider taking can begin today, but could be continued to further discussion at a near future TAC meeting.

At today's meeting TAC members and members of the public are asked to pose to Mr. Yates any additional questions they may have, so he can prepare the Draft document for presentation to the Board, hopefully at their May 6 meeting. TAC approval of the revised Draft document at today's meeting, with any further requested edits to it, will enable him to do that.

Once he has received all input/questions from both the TAC and the Board he will prepare a final version of the Technical Memorandum addressing that input and those questions.

ATTACHMENTS:	Revised Draft Peer Review Technical Memorandum and Mr. Yates's Suggestions for Actions the Watermaster Can Consider Taking (**both sent via separate email**)
RECOMMENDED ACTION:	Approve the Revised Draft Peer Review Technical Memorandum or make further requests for revisision/clarifications

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	April 15, 2015
AGENDA ITEM:	3.B
AGENDA TITLE:	Develop TAC Recommendations to be Made to the Board
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

The Board will want to know what the TAC's recommendations are with regard to the Draft Peer Review Technical Memorandum when Mr. Yates presents it to them.

Under this Agenda item the TAC is asked to provide its recommendations and direction to the Technical Program Manager on presenting those recommendations to the Board.

Here are some possible recommendations that the TAC may wish to consider making:

1. Summarize the recommendations made in the Draft Peer Review Technical Memorandum, expanding and/or clarifying them if the TAC feels that will be helpful to the Board Members' understanding of them.
2. Recommend that additional work be done to refine the Model, beyond the work described in the recommendations of the Draft Peer Review Technical Memorandum.
3. Recommend that additional modeling work be done using either the existing Model or a refined Model.

TAC members may have other recommendations they would like to discuss.

Once this discussion has been held I will use that input to help prepare the Agenda transmittal to the Board regarding the Draft Peer Review Technical Memorandum.

ATTACHMENTS:	None
RECOMMENDED ACTION:	Provide direction to Technical Program Manager regarding TAC recommendations to be made to the Board regarding the Draft Peer Review Technical Memorandum

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

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

SUMMARY: Note: This item was originally on the TAC's March 11, 2015 agenda for discussion, but was deferred to today's meeting for discussion.

The Board has retained an attorney to prepare documents to file with the Court regarding several issues: (1) requesting a stay of the 2015 through 2018 Operating Yield reduction, (2) updating the Court concerning recent regional water supply developments pertinent to the Seaside Basin, and (3) updating the Court concerning the recent modeling results and findings concerning the Laguna Seca Subarea (LSSA) and the Watermaster's intended work plan to address long-term water reliability for the subbasin.

With regard to the 3rd of the 3 items listed above, if the Board moves forward with this work I anticipate that they will seek input from the TAC on development of the work plan. I also think it is likely that the work plan would at some point include reaching out to the pumpers in the Toro area to seek a joint means of resolving the problems associated with falling water levels in the LSSA.

In order to begin the process of developing a set of technical issues that the Board may wish to address in its work plan, below is a preliminary list of some issues upon which I would appreciate getting initial TAC input and direction. This discussion can also serve as a starting point for soliciting other issues from TAC members so they can be further discussed at future TAC meetings.

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?

SEASIDE BASIN WATER MASTER TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

AGENDA ITEM:	4 (Continued)

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?

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?

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?

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?

ATTACHMENTS:	None
RECOMMENDED ACTION:	Provide direction to the Technical Program Manager regarding further topics for TAC discussion on this issue

SEASIDE BASIN WATER MASTER TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	April 15, 2015
AGENDA ITEM:	5
AGENDA TITLE:	Continued Discussion of Application from Cal Am to Increase Storage Quantity and Number of Storage/Recovery Sites
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY: At the TAC's February 11 and March 11, 2015 meetings there was discussion of Cal Am's draft Application to amend its Storage and Recovery Agreement with the Watermaster (executed in October 2011) to include the Seaside Middle School injection and recovery wells and to increase the non-native water storage amount.

This item was included in today's Agenda to allow continued discussion of this topic if Cal Am was able to prepare its revised draft Application in time for today's meeting. Unfortunately, Cal Am was still drafting the document when this Agenda was prepared, so the item will be postponed for discussion to a future TAC meeting.

ATTACHMENTS:	None
RECOMMENDED ACTION:	None required - information only at this meeting

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	April 15, 2015
AGENDA ITEM:	6
AGENDA TITLE:	Schedule
PREPARED BY:	Robert Jaques, Technical Program Manager

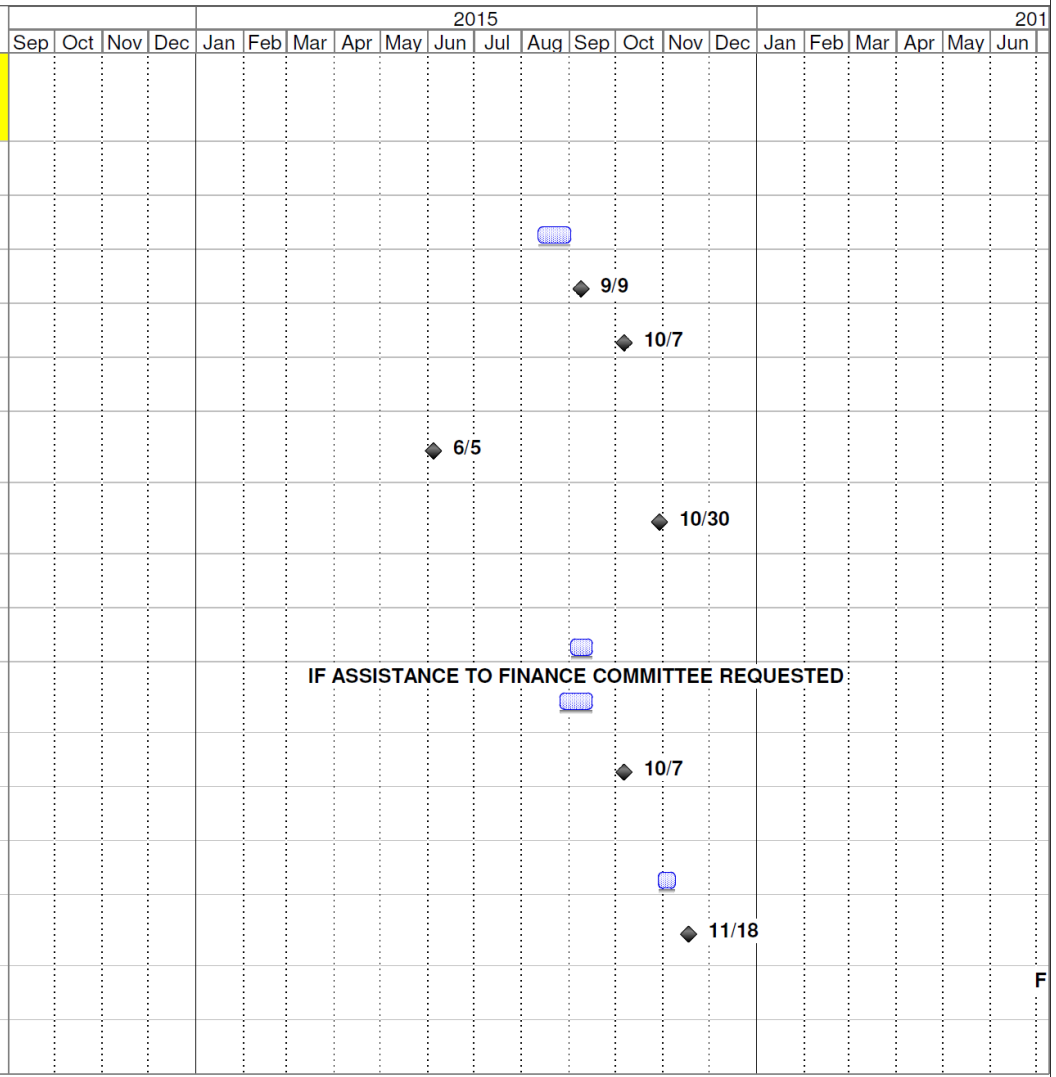
SUMMARY:
As a regular part of each monthly TAC meeting, I will provide the TAC with an updated Schedule of the activities being performed by the Watermaster, its consultants, and the public entity, MPWMD, which is performing certain portions of the work.

Attached is the most recent update of the Work Schedule for FY 2015.

ATTACHMENTS:	Schedule of Work Activities for FY 2015
RECOMMENDED ACTION:	Provide Input to Technical Program Manager Regarding Any Corrections or Additions to the Schedule

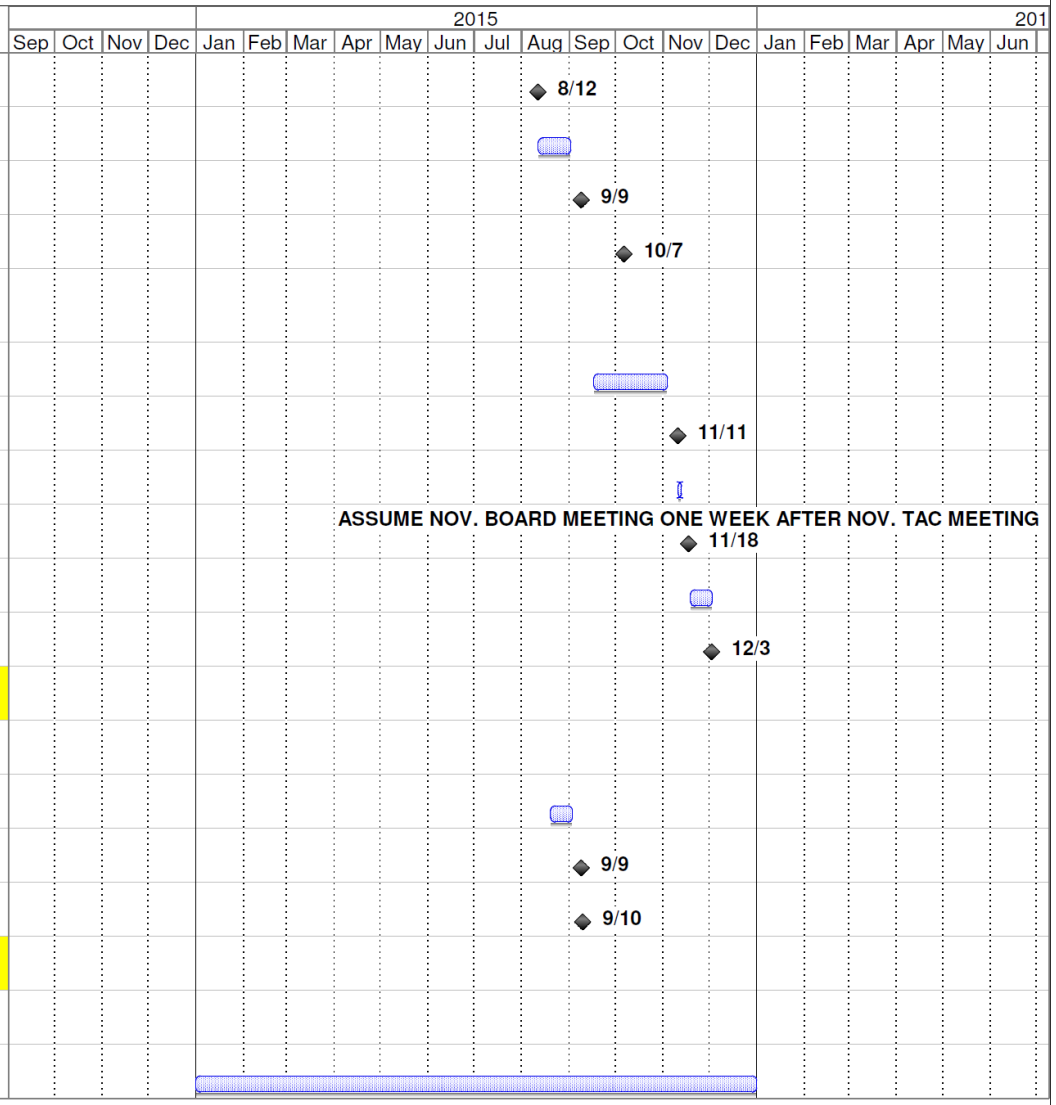
Seaside Basin Watermaster
Monitoring and Management Program
2015 Work Schedule

ID	Task Name
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**

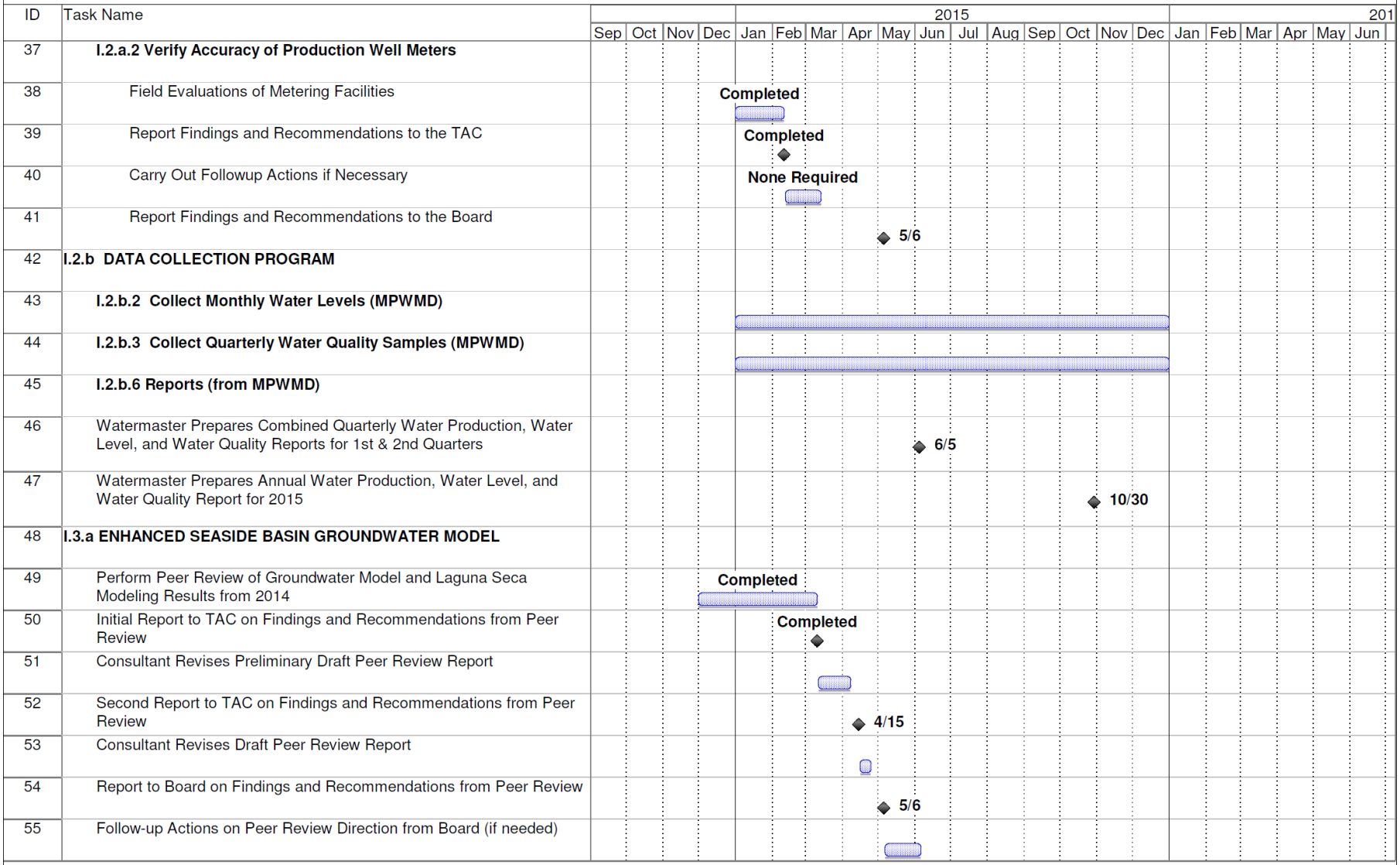


Seaside Basin Watermaster
Monitoring and Management Program
2015 Work Schedule

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

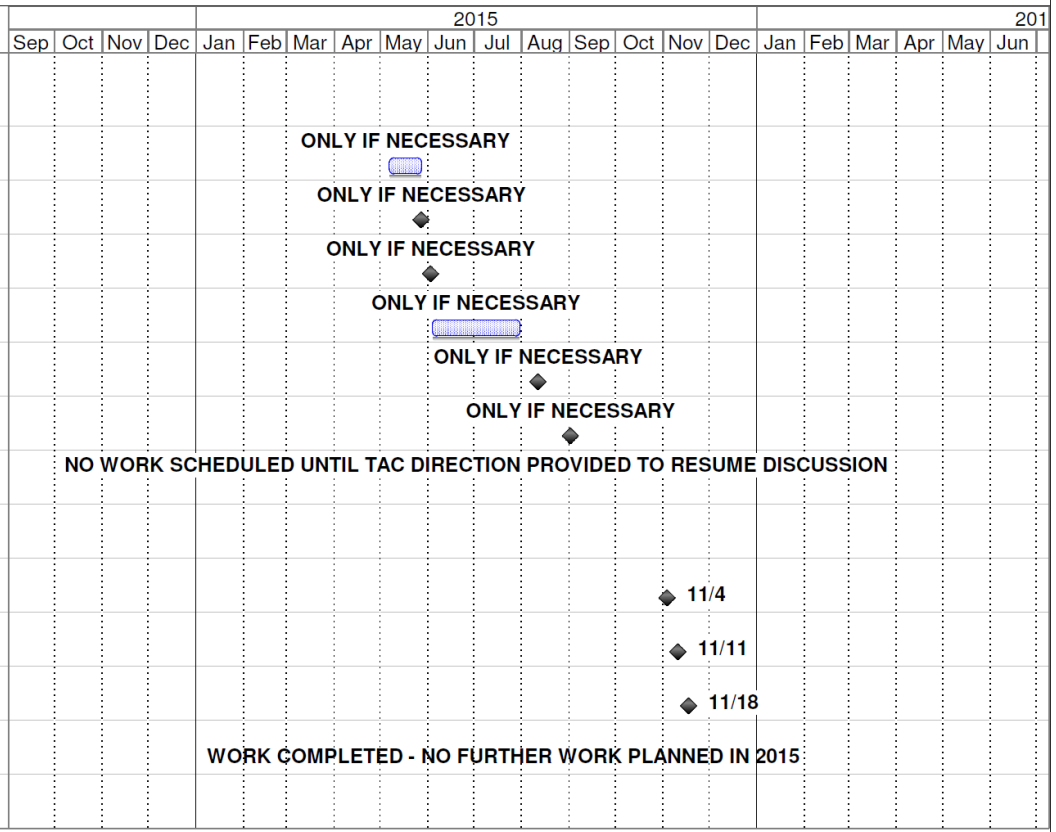


Seaside Basin Watermaster
Monitoring and Management Program
2015 Work Schedule



Seaside Basin Watermaster
Monitoring and Management Program
2015 Work Schedule

ID	Task Name
56	**I.3.a.1 Recalibrate Existing Groundwater Model (if necessary)**
57	Prepare RFS for HydroMetrics to Recalibrate Model
58	TAC Approves RFS to HydroMetrics
59	Board Approves RFS to HydroMetrics
60	HydroMetrics Recalibrates Model
61	HydroMetrics Presents Draft Model Recalibration Report to TAC
62	HydroMetrics Presents Model Recalibration Report to Board
63	**I.3.c Refine and/or Update the BMAP**
64	**I.4.c Annual Seawater Intrusion Analysis Report (SIAR)**
65	HydroMetrics Provides Draft SIAR to Watermaster
66	TAC Approves Annual Seawater Intrusion Analysis Report (SIAR)
67	Board Approves Annual Seawater Intrusion Analysis Report (SIAR)
68	**I.4.d Complete Preparation of Seawater Intrusion Response Plan (SIRP)**
69	**I.4.e Refine and/or Update the SIRP**



SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	April 15, 2015
AGENDA ITEM:	7
AGENDA TITLE:	Other Business
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:
The "Other Business" agenda item is intended to provide an opportunity for TAC members or others present at the meeting to discuss items not on the agenda that may be of interest to the TAC.

ATTACHMENTS:	None
RECOMMENDED ACTION:	None required – information only