M E E T I N G N O T I C E AND A G E N D A

TECHNICAL ADVISORY COMMITTEE OF THE SEASIDE BASIN WATER MASTER

DATE: Wednesday, February 11, 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 March 11, 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:	February 11, 2015
AGENDA ITEM:	2.A
AGENDA TITLE:	Approve Minutes from the November 12, 2014 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
November 12, 2014

Attendees: TAC Members

City of Seaside – Rick Riedl (by 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 (by telephone)
Coastal Subarea Landowners – No Representative

Watermaster
Technical Program Manager - Robert Jaques

Consultants
HydroMetrics – Georgina King (by telephone)
Todd Groundwater – Gus Yates (by telephone)

Others
Bishop, McIntosh & McIntosh – Leonard McIntosh
Monterey County Herald – Kim Smuga-Otto

The meeting was convened at 1:34 p.m. after a quorum had arrived.

1. Public Comments
There were no public comments.

2. Administrative Matters:

A. Approve Minutes from the September 10, 2014 Meeting
On a motion by Mr. Oliver, seconded by Mr. Costa, the Minutes were unanimously approved as presented.

B. Report on Geophysical Survey Meeting
Mr. Jaques summarized the agenda packet materials for this item. There were no questions or discussion.

3. Update on Preliminary Work Pertaining to Calibration of Water Meters
Mr. Oliver reported that he has been in contact with Craig Evans of CAL AM. The schedule has been delayed and will probably start in December or January. An update will be provided when more information becomes available.

Mr. Hulbert asked Mr. Oliver what is the expectation for this work. Mr. Oliver briefly reviewed the September 14th TAC meeting discussion on this in response to this question. He noted that there are on the order of 29 to 31 production wells involved, although some of these are inactive. Mr. Riedl asked if calibration of inactive wells would be expected, and Mr. Oliver responded no.

4. Discuss and Provide Recommendations on Issues Raised by the Board at its October 1, 2014 Meeting

Mr. Jaques summarized the agenda packet material for each of the Issues listed under this Item.

Issue 1 – Discussion of Letter from Attorney Regarding Laguna Seca Groundwater Modeling: Mr. Oliver said he concurred with Mr. Jaques' findings and recommendations on this Issue, as contained in the agenda packet. He went on to say that pumping east of the Seaside Groundwater Basin is contributing to lowering of ground water levels in the Laguna Seca Subarea. Mr. Costa said at the last Board meeting the Board had approved hiring an attorney to prepare documents with regard to this Issue. Mr. Costa asked Mr. Jaques if there was an update on that. Mr. Jaques briefly described the discussions at the recent Watermaster Administrative Committee meeting on this matter.

Mr. Costa and Mr. McIntosh asked that a correction be made on page 13 of the agenda packet to indicate that Bishop, McIntosh & McIntosh holds the water rights to this property and is the landowner and leaseholder of the Laguna Seca Golf Resort, not the operator. Laguna Seca Golf Resort is the operator.

A motion was made by Mr. Oliver, seconded by Mr. Franklin, concurring with the Technical Program Manager's Comments and Conclusions pertaining to this Issue as presented on pages 13 and 14 of the agenda packet, which stated:

1. With regard to the attorney's two requests, I believe it is the Board's intent to do both of these things. Although there is no Board membership position titled "alternative producer representative," there is a "Laguna Seca Subarea Landowner" representative (Mr. Costa) who is a member of both the TAC and the Board and who regularly attends the meetings of both of those bodies. Hence, the LSSA alternative producers, through Mr. Costa, are represented in all of these deliberations.
2. HydroMetrics' October 13 response letter refutes Point 1 in the attorney's letter which characterizes the 1,556 AFY of subsurface outflow from the LSSA as being only an estimate of what might be flowing out of the LSSA. HydroMetrics points out that the detailed groundwater model that was developed for the Watermaster, and which was used to perform this modeling, accurately reports and predicts groundwater levels and flows within numerous "cells" within the LSSA. The predicted values were compared to field-measured values during the model calibration process, and the modeling assumptions and parameters were adjusted until the predicted and field-measured values matched. Therefore, the model is the most accurate currently available means of predicting flows and water levels within the LSSA. Using the model the 1,556 AFY subsurface outflow was calculated, and this is the most accurate value of subsurface outflow that currently exists. I concur with HydroMetrics's response to Point 1, and that the estimated subsurface outflow of 1,556 AFY as predicted by the model is the most accurate figure currently available and should be used in calculating the NSY for the LSSA.
3. There does not appear to be any disagreement or unresolved issues associated with Points 2 and 3 in the attorney's letter. Seawater intrusion does not appear to be influenced by pumping within or to the east of the LSSA. The most significant finding of the LSSA modeling is that pumping to the east of the LSSA Decision-created boundary is contributing to the continued lowering of groundwater levels in the LSSA. The significance of this is that the Decision does not provide authority to the Watermaster to regulate that pumping.

The motion passed unanimously.

Issue 2 – Getting a Peer Review of the Modeling Work: Following Mr. Jaques' summarization of the agenda packet material for this item, it was agreed that no action was needed on this Issue at this point in the agenda, since it will be addressed under Agenda Item 4.A.

Issue 3 – Discussion of Whether or Not to Seek Relief from the 10% Pumping Reduction:
Following some discussion a motion was made by Mr. Costa, seconded by Mr. Green, concurring with

the Technical Program Manager's Comments and Conclusions pertaining to this Issue as presented on page 15 of the agenda packet, which stated: All of the modeling and water level measurement work to date demonstrates that the Basin is in an overdrafted condition, and is vulnerable to potential seawater intrusion in areas where groundwater levels are below sea level. Consequently, there appears to be no question that reducing pumping would be beneficial by reducing the rate of drawdown of groundwater levels. However, since the 10% reduction does not necessarily cause pumping to be reduced, the decision of whether or not to pursue Court approval to waive the 10% reduction appears to be a policy decision, not a technical one. I recommend that the TAC state this finding to the Board and defer to the Board on making that decision.

The motion passed unanimously.

4.A. Approve Professional Services Agreement and Request for Service No. 2014-01 with Todd Groundwater

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

Mr. Yates introduced himself and briefly described his background as it pertains to this matter. He noted that back in the mid-1980s he had worked on the Seaside Groundwater Basin and in the early 2000s he worked on studies of the Seaside Groundwater Basin and developed a Laguna Seca Subarea model himself in conjunction with that work. In 2004 he worked with Mr. Feeney and Mr. Rosenberg on some of the evaluations of the Seaside Groundwater Basin, just prior to the Adjudication Decision being issued.

He explained that his proposed peer review work would provide a separate review of how the model was developed, its inputs and assumptions, and its outputs and findings. He explained that it would be most efficient to have HydroMetrics do the modeling work necessary to answer the questions that he will ask of them. He noted that this will be the fifth peer review that he has performed in recent years of modeling work done by other consultants.

Mr. Costa asked Mr. Yates if he would be commenting on the Natural Safe Yield figure of 240 acre feet per year developed by HydroMetrics. Mr. Yates said he would comment if he found the existing (Adjudication Decision) Natural Safe Yield to be significantly incorrect, but would not be making his own calculations.

Mr. Oliver asked how this work was to be funded. There was discussion about whether it would be paid for from the 2014 or the 2015 Fiscal Year budgets. Mr. Jaques will clarify this with Mr. Evans. [Note: subsequent to the meeting Mr. Jaques learned from Mr. Evans that this work would be funded from the 2014 Fiscal Year budget, since the work would start during Fiscal Year 2014.]

A motion was made by Mr. Oliver, seconded by Mr. Costa, to approve the Professional Services Agreement and RFS No. 2014-01 as presented on pages 27-52 of the agenda packet. The motion passed unanimously.

5. Discuss and Provide Input on the 2014 Seawater Intrusion Analysis Report (SIAR)

Mr. Jaques introduced Ms. King of HydroMetrics who conducted the presentation.

The Seawater Intrusion Analysis Report has been done each year since 2007 in order to identify any potential seawater intrusion threat. A number of different types of analyses are looked at to see if they indicate seawater intrusion. She briefly described each of these analyses. As in prior years none of the analyses indicate seawater intrusion is occurring. At well SBWM-1 sodium and chloride levels changed significantly this year, and this warrants re-sampling in January 2015 to see if a sampling error occurred, or whether the results are representative and valid. If valid, HydroMetrics may have further recommendations. She noted that there was a change in the induction logging contractor which led to

different values in the logging results. This is not surprising as different tools and calibration methods are utilized. However, the induction logging patterns are the same as those from Wellenco, the contractor who has done the previous induction logging on these wells. As a result of changing contractors, HydroMetrics will start developing a new set of baseline plots for comparison from year-to-year.

Mr. Oliver said he had gotten a cost estimate from Mr. Feeney to do the additional recommended sampling recommended in the SIAR on page 55 in the agenda packet. The cost will be about $1,000 to perform the additional sampling event. There was discussion about how best to authorize this with the conclusion that an amendment would be requested for approval by the board to MPWMD's RFS for water quality monitoring work. There was a motion by Mr. Franklin, seconded Mr. Costa, to make this recommendation to the Board, and the motion was unanimously approved. The amount of the authorization would be not-to-exceed $1,000.

Mr. Hulbert said he would like to see the finding of no seawater intrusion stated up-front in the report with the explanation thereafter. Mr. Oliver added that the findings this year were similar to the findings in prior SIARs. Ms. King will make this revision. On a motion by Mr. Oliver, seconded by Mr. Green, the TAC unanimously voted to approve the Draft SIAR as being satisfactory and concurred with the recommendations therein.

6. Discuss and Provide Input on the Preliminary Draft Watermaster 2014 Annual Report

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

Mr. Costa asked Mr. Jaques if he had received Mr. Robinson's annual report comment letter. Mr. Jaques said he had not received it but said that when he did receive it he would review it and provide it, along with his own comments on it, to the Board for their review.

Mr. Hulbert asked if there was more time available for TAC members to review and submit comments and suggested edits to the Annual Report. Following some discussion there was TAC concurrence to have additional TAC comments submitted to Mr. Jaques by e-mail up until November 19. Mr. Jaques will then incorporate those into the Draft Annual Report that goes to the Board of Directors. Mr. Jaques said he would also share those edits with TAC members via e-mail.

7. Schedule

Mr. Jaques summarized the agenda packet materials on this item. There was no further discussion.

8. Other Business

There were no Other Business items to discuss.

9. Set Next Meeting Date

Because there is no business that the TAC needs to conduct in December there will be no meeting in December. The next meeting date was set for January 14, 2015.

The meeting adjourned at 2:53 p.m.

SEASIDE BASIN WATER MASTER TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	February 11, 2015
AGENDA ITEM:	2.B
AGENDA TITLE:	Possible Backup Desalination Projects
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY: In recent weeks/months there have been update articles in the news regarding two other desalination projects in addition to Cal Am's project. These are the Deep Water Project (termed the Monterey Bay Regional Water Project on their website) and the Peoples Moss Landing Water Desalination Project.

From the news coverage it appears that these other projects are being given consideration as possible backup projects in case Cal Am's project runs into problems that will be difficult to overcome.

By email I polled TAC members regarding their interest in having presentations made by the proponents of these two other projects so that TAC members would be informed and up-to-date on the status of those projects. The responses differed, but the majority felt the other projects were not yet sufficiently developed to warrant having presentations made on them at the February TAC meeting. However, it was suggested that a synopsis of those projects should be provided to the TAC and that at some future date, if appropriate, presentations might be worth while.

Attached is the Executive Summary from a report prepared for the Monterey Peninsula Regional Water Authority describing the Cal Am project as well as the two other backup projects. Jim Cullem of the MPRWA advised me that although this report was prepared in 2013 he believes the comparative costs are about the same, but that the cost of Cal Am's project will probably be less than projected in the report based on the lower price of the design-build contract and the recent passage of securitization funding which will reduce Cal Am's borrowing costs.

He also reported that all three projects, including their designs, have advanced quite a bit since that report was prepared. He noted that the City of Salinas is now partnered with Deep Water Desal. The People's Water Project website indicates that the Moss Landing Harbor District agreed to become the CEQA Lead Agency for the People's Water Project. The Deep Water Desal website shows an initial projected start-up date of late 2016 for their desal plant. I did not find a projected start-up date for the People's Water Project on their website. Cal Am's website shows initial plant start-up in mid-2018, but a news article in the February 4, 2015 Herald indicates this date has now been pushed back until 2019. These dates are updates from the 2013 report that is attached.

Mr. Cullem noted that neither of the backup projects has an approved source water intake since regulatory and approval agencies are not approving open water intakes. Consequently, he noted that everyone is waiting on the Cal Am test slant well results. If the test well results are supportive, the backup projects would be less viable. However, if the test well yields problematic results then the backup projects may remain viable alternatives.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

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

AGENDA ITEM:	2.B (Continued)

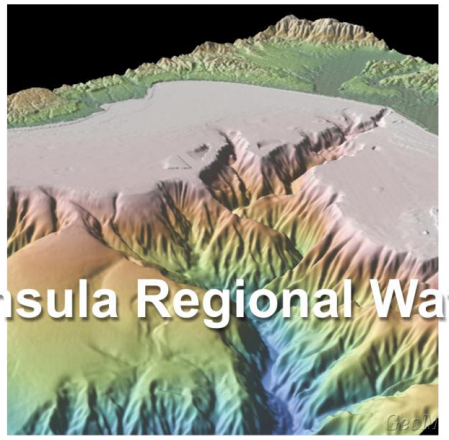
Mr. Cullem pointed out that all three of the projects have some good info on their web pages:
Cal Am's Project: http://www.watersupplyproject.org
People's Water Project: http://franklin.asmallorange.com/~peopleswater/
Deep Water Desal Project: http://www.deepwaterdesal.com/).

Mr. Cullem has provided me with contact information for the spokespersons for both of the backup desalination projects, so that a presentation on the projects could be scheduled at a future date if so desired by the TAC.

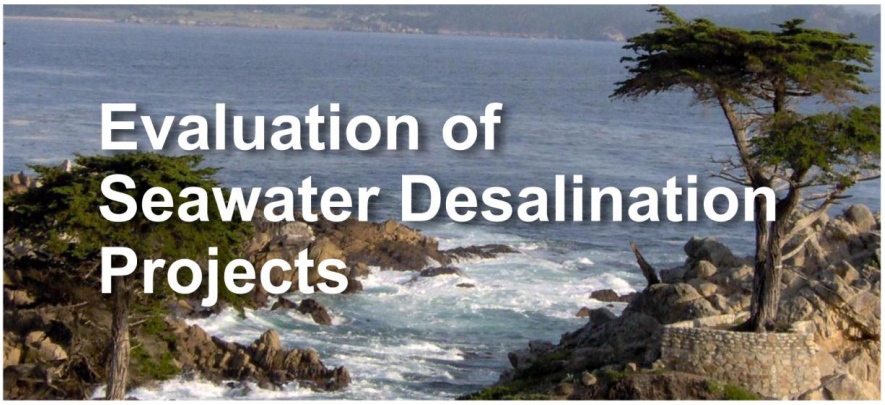
ATTACHMENTS:	Executive Summary of MPRWA Report on Desalination Projects
RECOMMENDED ACTION:	None required – information only

Prepared For:

Monterey Peninsula Regional Water Authority



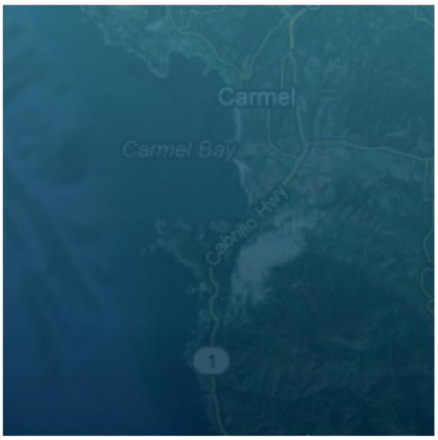
Evaluation of Seawater Desalination Projects



FINAL REPORT

Update

January 2013



Separation Processes, Inc.

3156 Lionshead Ave., Suite 2

Carlsbad, CA 92010

T: 760-400-3660

www.spi-engineering.com

EXECUTIVE SUMMARY

Separation Processes Inc. (SPI) in association with Kris Helm Consulting (KHC) is providing engineering and consulting support to the Monterey Peninsula Regional Water Authority (MPWRA) to assist with the evaluation of three candidate desalination projects on the Monterey Peninsula. This report presents the results of our evaluation of the projects, targeted at replacing supplies currently extracted from the Carmel River but subject to a 1995 order from the State Water Resources Control board to secure an alternate source of supply by December, 2016.

The proposed strategy for meeting the projected annual demand within the California American Water service area of 15,250 acre-feet is a multi-pronged approach including permitted extractions from the Carmel River and Seaside Basin, an aquifer-storage and recovery system, and the existing Sand City desalination plant--totaling 6,250 acre-feet; leaving a 9,000 acre-feet gap in supply. Two alternatives are under consideration to compose this final supply—a 9,000 acre-feet production seawater desalination plant; or a 5,500 acre-feet seawater desalination plant in concert with a groundwater water replenishment project using advanced treated recycled water of 3,500 acre-feet.

This report presents the results of our evaluation of three candidate alternatives for the seawater desalination component of the overall water supply portfolio. California American Water is actively engaged with the California Public Utilities Commission to build a facility and secure the required supply. Two other development groups have proposed alternative projects for consideration—DeepWater Desal, LLC and the People's Moss Landing Water Desal Project. The three projects were analyzed on functional, performance, economic and implementation grounds in an effort to provide a balanced evaluation for consideration by the MPRWA. This report is based on information collected on each project up through October 15, 2012. It does not cover additional project developments between that time and the date of this report.

PROJECT SUMMARIES

The three projects are in the conceptual or preliminary stage of development and all three have as their objective to provide California American Water the seawater desal component of the required replacement water supply under State Water Resources Control Board Order No. 95-10. The DeepWater Desal group proposes to provide an expandable plant capable of serving additional regional water needs as well, outside of the California American Water service area. Brief summaries of the projects follow:

Monterey Peninsula Water Supply Project (MPWSP)	
Proponent(s)	California American Water (Cal-Am)
Location	46-acre site of vacant, disturbed land west of the MRWPCA Regional Treatment Plant (RTP).
Purpose	To supply supplemental desal component of the Monterey Peninsula regional water supply This project is currently under consideration by the California Public Utilities Commission (CPUC).
Production Volume	5.4 mgd or 9.0 mgd

DeepWater Desal (DWD)	
Proponent(s)	DeepWater Desal, LLC, Dynegy Moss Landing Power Plant, ~~MFJK Partnership of the Capurro Ranch, PV2 Solar, and Ecomert Technologies~~ G3 Data Centers
Location	~~Capurro Ranch Property, north of /Elkhorn Slough~~ Moss Landing Power Plant
Purpose	Phase 1 to supply supplemental desal component of the Monterey Peninsula regional water supply Phase 2 to supply northern customers
Production Volume	Phase 1: 4.9 mgd or 9.1 mgd Phase 2: 22.0 mgd

The People's Moss Landing Water Desal Project (PML)	
Proponent(s)	DeSal America, LLC composed of Moss Landing Commercial Park, LLC; and Stanley and Patricia-Vance Lueck
Location	Moss Landing Commercial Park
Purpose	To supply supplemental desal component of the Monterey Peninsula regional water supply This project is currently proposed as alternative to the Cal-Am MPWSP.
Production Volume	4.8 mgd or 9.4 mgd

PROJECT FUNCTION

We evaluated the function of each project in terms of project purpose, customers identified, adequacy of treatment approach, residuals handling, feed water characterization, quality of project information, and any omissions or fatal flaws in the information provided. The evaluation was conducted based on information provided in response to a 56-item questionnaire prepared by the MPRWA technical advisory committee and submitted by each proponent; along with additional information each provided in response to specific questions and interviews from SPI and KHC.

All three projects have available sites for building the required treatment facilities; and credible seawater intake and brine disposal approaches, though there are substantive differences among them. Cal-Am proposes to use a group of subsurface slant intake wells (up to eight for the maximum capacity plant alternative); DWD proposes a new screened open ocean intake installed at roughly 65-ft of depth; and PML is considering options to use either an existing seawater intake pump station drawing from the Moss Landing Harbor, or potentially a new screened open

ocean intake installed coincident with an existing 51-in diameter concrete outfall pipeline owned by the Moss Landing Commercial Park. Cal-Am has projected there may up to 3 percent of groundwater from the Salinas Valley Groundwater Basin (SVGB) entrained with their intake supply that would need to be returned (as facility product water) to the basin. For brine disposal, Cal-Am and DWD propose to blend concentrated brine from the desal plants with existing outfall flows—Cal-Am blending with the existing Monterey Peninsula Regional Water Pollution Control Agency's wastewater plant outfall; and DWD using the existing cooling water return outfall at the Moss Landing Power Plant. Both sources have sufficient dilution and hydraulic capacities. PML proposes to use their existing 51-in diameter outfall, currently permitted to discharge magnesium-depleted seawater. There is some evidence of disrepair of the outfall in terms of pipeline integrity and condition of the existing diffusers which would need to be addressed along with the permitting of a non-shore diluted brine stream.

Cal-Am and PML propose to serve only the identified demand within the Cal-Am service area at the two plant capacity increments under consideration; while DWD envisions a higher capacity regional project, capable of producing up to 25,000 AFY. DWD has not yet secured agreements with any potential customers.

In terms of treatment approach—all three candidate teams propose to use reverse osmosis (RO) as the primary desalination technology. However, both DWD and PML propose a single pass RO system; while Cal-Am has proposed a partial double or two pass system—treating a portion of the product water from the first pass RO system with a second RO system and blending the supplies to form the final treated water. The issue relates to the quality of product water produced, more than treatment function; as either approach is considered functional.

Pre- and post-treatment approaches are similar. All incorporate granular media filtration of the incoming seawater, with PML following on with a low pressure membrane filtration system (microfiltration or ultrafiltration) to deal with the anticipated higher solids load from water extracted from Moss Landing Harbor. In the case of Cal-Am, the aquifer filtration provided by the slant wells could obviate the need for media filtration; but the potential presence of iron and manganese in the supply could just as well make them necessary—so the approach is considered conservative. In the case of DWD, the incoming seawater extracted at depth will be cold (roughly 15 ºC) and warmed through a proprietary warming system at the Moss Landing Power Plant prior to transmission to the treatment plant site. All three proponents propose to use calcite beds, carbon dioxide and sodium hydroxide for re-mineralization/stabilization of the RO treated product water and chlorine disinfection.

Cal-Am ~~and DWD~~ will require offsite pipelines for feed, product water and brine disposal; while PML proposes to use existing intake and outfall pipelines originating on site; requiring only a product water delivery pipeline. ~~DWD's site location north of the Elkhorn Slough is likely to entail complex issues with crossings for all three of their large diameter pipelines (one 48-in and two 36-in)~~. DWD's co-located site at the Moss Landing Power Plant will permit it to connect to existing intake and outfall facilities; requiring only on off-site product water pipeline.

All three proponents were cooperative with our original evaluation and provided all available and requested information. The Cal-Am project through past work on other regional projects as well as ongoing procedures with the California Public Utilities Commission has produced the most detailed information on their project, followed by DWD who have prepared a fair amount of predesign data on their proposed system along with active environmental investigations for

their proposed intake. PML is at a more preliminary level of engineering and planning in comparison. Their project has transitioned in ownership/proponents, with the new entity electing not to participate in this evaluation. Importantly however, we have not found any fatal flaws of a technical nature associated with any of the candidate projects.

PROJECT PERFORMANCE

Performance of each proposed system was gauged relative to categories of plant design capacity, targeted product water quality and disinfection strategy.

For plant capacity, we considered the proposed instantaneous design capacity of each treatment facility in comparison to the required annual production increment—either 5,500 AFY or 9,000 AFY. What we found were wide variations—with Cal-Am proposing capacities of 5.4 mgd and 9.0 mgd; DWD of 4.9 mgd and 9.1 mgd; and PML at 4.8 mgd and 9.4 mgd. We considered the level of equipment redundancy proposed by each team in the context of the amount of "online" time it would require a facility at a given rated capacity to deliver the required annual allotment. For Cal-Am, we gauged their planned design capacities adequate considering the need to return flow to the SVGB as well as meet the 5,500 AFY or 9,000 AFY into their distribution system. At capacities of 5.4 mgd and 9.0 mgd, the plant(s) would need to operate 98 percent of the time to meet production—not overly conservative but achievable given the level of equipment redundancy (including spare process units) in their proposed facility. DWD, with similar proposed levels of redundancy, would have equivalent minimum facility capacity requirements of 5.0 mgd and 8.2 mgd; somewhat lower than Cal-Am as they lack the requirement to return flow to the SVGB. PML did not provide a detailed equipment list indicating numbers of process units; so gauging proposed levels of equipment redundancy was uncertain. However, we feel the facility should have adequate reliability and conducted our evaluation on that basis—recommending equivalent capacity ratings to DWD of 5.0 mgd and 8.2 mgd.

The product quality produced by the proposed systems would differ based on the configuration of their proposed RO systems. Cal-Am's proposed partial two-pass system could likely achieve chloride, boron, and total dissolved solids (TDS) consistent with current Carmel River supplies; but the single pass systems would not. We consider a lower salinity product supply an asset and evaluated all three projects (from an economic perspective) as having partial two-pass RO systems. The recommended product quality goal is summarized in **Table ES-1-1**.

Table ES-1-1 – Summary of Proposed Product Water Quality

Parameter	Units	Value
Total Dissolved Solids	mg/L	380
Chloride	mg/L	60
Boron	mg/L	0.5
pH	units	≥ 8.0
Calcium	mg/L as $CaCO_3$	40
Alkalinity	mg/L as $CaCO_3$	40

For disinfection, the proposed facilities must comply with the Surface Water Treatment Rule and Long-Term 2 Enhanced Surface Water Treatment Rule. Under these regulations, pathogen removal/inactivation requirements are set on a logarithmic (log) scale, with the California Department of Public Health establishing specific log removal for priority pathogens, including giardia, cryptosporidium (crypto), and virus. The levels set will be based on source water quality and other factors, and are expected to be in the range of 3-5 for giardia, 2-4 for crypto, and 4-6 for virus, based on each of the project source waters being classified as surface waters or under the influence of surface waters. We find all three projects are likely to achieve sufficient log removal credits under their proposed treatment schemes to comply.

ECONOMICS

A primary focus of our evaluation was to provide a balanced, "apples to apples" comparison of the candidate projects from an economic perspective. We implemented this by focusing on the following principles:

- Uniformity in plant design capacity for the two non-regional approaches; equivalent capacity allocation for the proposed DWD regional project.
- Equivalency in treatment to achieve: a common RO feed water quality following pretreatment; a common treated water quality goal; and pathogen removal credits required for the applicable supply source.
- Uniformity in equipment redundancy.
- Uniformity in unit cost criteria for common items.
- Uniformity in cost factors applied to aggregated costs (e.g., contingencies; electrical and I&C costs; etc.).
- Uniformity in unit costs for chemicals and other consumables for treatment evaluations.

To implement the above, we adjusted plant capacities for the evaluation on the basis described in the Project Performance discussion, rating Cal-Am's proposed system at design capacities of 5.4 mgd and 9.0 mgd; and the DWD and PML systems at 5.0 mgd and 8.2 mgd. In terms of treatment process, we attempted to maintain the overall proposed process design of the proponents, but did evaluate all as including a partial (40 percent) capacity second pass RO system. We also assumed N+1 redundancy on all rotating equipment and major treatment process units (e.g., filters, RO membrane trains). We employed an equivalent basis in developing our capital equipment cost estimates, relying on targeted quotes for equipment and SPIs cost information from past, similar seawater RO projects. For indirect costs, we assumed fixed factors and applied them uniformly to each project.

We implemented a similar strategy on annual operating and maintenance expenses, using common chemical unit prices along with pricing on common consumables, such as the RO process membranes. The results of our evaluation are presented in **Table ES-1-2**.

Legal and financial considerations, such as water rights and payment schedules (for example, Surcharge 2 proposed by Cal-Am) were outside the scope of this evaluation and are not addressed herein. Overall, the costs presented are meant for comparative evaluation on a planning basis. They have an overall accuracy level of -30 to +50 percent.

Table ES-1-2 - Summary of Evaluated Capital and Operating Cost Estimates

Cost Element	Project Proponent					
	Cal-Am		DWD		PML	
	9 kAFY	5.5 kAFY	9 kAFY	5.5 kAFY	9 kAFY	5.5 kAFY
CAPITAL COSTS (in Millions 2012 Dollars)						
Intake/Outfall Facilities	$23.0	$17.7	$-0-	$-0-	$-0-	$-0-
Pretreatment & Residuals Handling	$10.6	$7.94	$11.2	$7.94	$20.2	$13.6
Desalination System	$22.4	$15.0	$19.4	$13.2	$19.9	$14.0
Post-Treatment	$1.48	$0.88	$1.48	$0.88	$1.66	$1.07
Distribution Facilities	$6.14	$5.08	$3.35	$3.26	$0.35	$0.26
Site Structures	$11.5	$10.8	$3.65	$2.52	$10.0	$7.00
Offsite Trenched Pipelines	$24.9	$24.9	$23.0	$22.7	$25.1	$25.1
Indirect Costs[1]	$57.5	$50.3	$52.9	$42.7	$67.9	$62.3
Contingency Allowance (30%)	$47.2	$39.8	$34.5	$28.0	$43.6	$37.0
Mitigation Allowance (1%)	$1.60	$1.30	$1.20	$0.90	$1.50	$1.20
TOTAL	**$206**	**$174**	**$151**	**$122**	**$190**	**$161**
ANNUAL O&M COSTS (in Millions 2012 Dollars)						
Energy	$5.38	$3.26	$3.44	$2.10	$3.98	$2.43
Chemicals	$0.32	$0.19	$0.81	$0.49	$0.93	$0.57
Expendables	$0.69	$0.45	$0.78	$0.52	$1.09	$0.65
Other Proponent Expenses	--	--	$1.59	$1.45	--	--
O&M Labor	$2.69	$2.36	$2.69	$2.36	$2.69	$2.36
Equipment Replacement[2]	$1.50	$1.23	$0.93	$0.76	$1.16	$0.92
TOTAL	**$10.6**	**$7.49**	**$10.2**	**$7.68**	**$9.85**	**$6.93**
ANNUAL COST OF WATER (in Millions 2012 Dollars)						
Capital Recovery[3]	$19.1	$16.2	$8.73	$7.06	$11.0	$9.37
Total Annual Cost	$29.7	$23.7	$18.9	$14.7	$20.9	$16.3
Production Cost of Water ($/AF)[4] RANGE ($/AF)	$3,300 $2,310 - $4,950	$4,310 $3,017 - $6,465	$2,100 $1,470 - $3,150	$2,670 $1,870 - $4,005	$2,320 $1,625 - $3,480	$2,965 $2,075 - $4,450

[1] Includes implementation costs at 25%; ROW easement/land costs, mobilization/demobilization at 2%; electrical and I&C systems at 18%; engineering and startup at 15%; and additional project proponent prescribed costs. All percentages applied to plant facilities costs.
[2] Calculated as 1.5% of plant facilities costs.
[3] Capital recovery factor for DWD and PML based on an interest rate of 4.0% and term of 30 years; based on an interest rate of 8.49% and 30 years for Cal-Am; see additional discussion in Section 5.
[4] Overall accuracy of costs is estimated at AACE Class 5 with an accuracy of -30% to +50%; range values indicate potential spread.

Overall, the projected capital and operating costs for each facility are fairly equivalent given the overall accuracy of the estimate and degree of project development. Cal-Am's capital cost is the highest; owing largely to its high intake system cost. PML is proposing to reuse existing intake infrastructure; while DWD has an unspecified separate business entity which will be funding its intake, outside of the assigned DWD facility budget. Cal-Am's operating cost is also relatively high, owing in large measure to higher stipulated energy costs than either DWD or PML—roughly $0.13/kW-hr vs. $0.08 kW-hr. However, Cal-Am has recently indicated they may be able to secure lower power through a direct purchase agreement with PG&E, resulting in a cost of $0.087/kW-hr. The potential impact of this change is addressed in a sensitivity analysis for Cal-Am's costs in Section 5. The overall water production costs diverge considerably in our evaluation, due to the higher cost of capital assigned to Cal-Am vs. DWD and PML; so while the base costs are similar, Cal-Am's cost of water produced is higher. An expanded discussion of how the capital recovery factor (CRF) for Cal-Am was generated is presented in Section 5.

IMPLEMENTATION CONSIDERATIONS

The three projects are at varying states of development in terms of the regulatory permitting process. Cal-Am is further along than either DWD or PML, though DWD has completed or is nearing completion of their initial CEQA compliance documents. Forecast project implementation schedules were identified for each project proponent, based on a select number of key environmental and permitting tasks, including:

1. A project description must be completed.
2. An Environmental Assessment must be made.
3. An EIR/EIS must be completed (CEQA/NEPA compliance).
4. Commercial Agreements must be negotiated/ Cal-Am must obtain a Certificate of Public Convenience and Necessity (CPCN), after certification of the EIR.
5. Jurisdictional Permits must be obtained for facilities impacting Waters of the U.S.
6. NPDES Permits must be amended/obtained.
7. Coastal Development Permits must be obtained.

It was further assumed that each proponent had the financial capacity to proceed with predesign preparation/procurement package development such that the project could be put out to final design and construction bid coincident with approval of the final project permits. The schedules are provided below as **Figure ES-1**, **Figure ES-2** and **Figure ES-3**. The project proponents were invited to provide their updated schedules following publication of the draft report. Cal-Am and DWD each elected to provide a schedule, which are included in Section 6.

Figure ES-1 – Projected Cal-Am Project Implementation Schedule

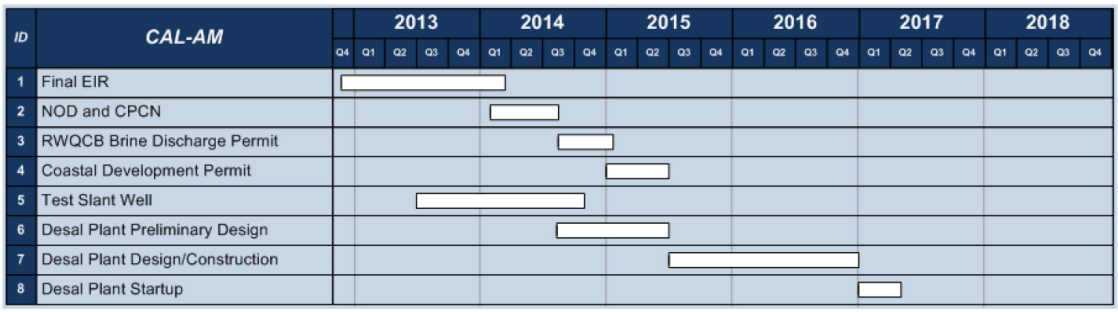


Figure ES-2 – Projected DWD Project Implementation Schedule

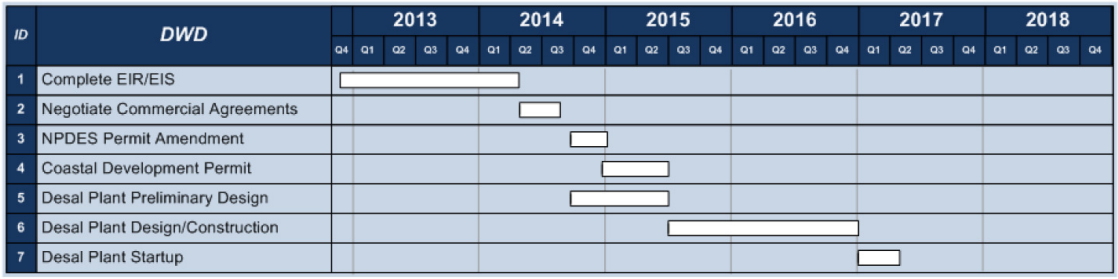
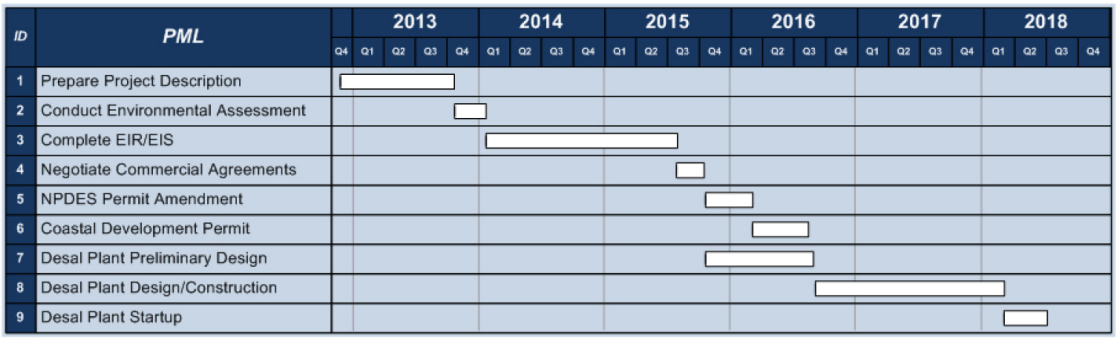


Figure ES-3 – Projected PML Project Implementation Schedule



SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	February 11, 2015
AGENDA ITEM:	2.C
AGENDA TITLE:	Progress Report on Peer Review of Modeling Data
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

The contract issued to Todd Groundwater in December 2014 to perform a Peer Review of the recent modeling work performed by HydroMetrics contains the following Tasks:

Task 1. Review Reports and Memoranda
Task 2. First Meeting with HydroMetrics WRI
Task 3. Sensitivity Testing of Groundwater Model
Task 4. Second Meeting with Hydrometrics WRI
Task 5. Prepare Peer Review Memorandum

Tasks 1 and 2 have now been completed and Task 3 is underway with completion projected on February 13. Task 4 will likely occur in late February and preparation of the Draft Technical Memorandum on the Peer Review is expected to be completed in early March so that it can be presented to the TAC at its March 11 meeting.

Thanks to the efforts of both Todd Groundwater and HydroMetrics the work is progressing ahead of schedule.

The budget for Task 5 includes an in-person presentation of the Draft Peer Review Technical Memorandum to either the TAC or the Board, but not both. Consequently I propose that we have Mr. Yates of Todd Groundwater, who is performing the Peer Review, participate in the TAC's March meeting via conference call to respond to any questions TAC members may have on the Technical Memorandum. I would then have Mr. Yates attend the April Board meeting in person to present the Technical Memorandum to them and respond to their questions. 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:	None
RECOMMENDED ACTION:	None required – information only

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	February 11, 2015
AGENDA ITEM:	3
AGENDA TITLE:	Update on Preliminary Work Pertaining to Calibration of Water Meters
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY: At the September 12 TAC meeting during discussion of the 2015 Work Plan for the Management and Monitoring Program (M&MP) there was discussion about the calibration of production well meters. Mr. Sabolsice made a motion to include $10,000 for testing services in the 2015 M&MP Budget, if such services are found to be needed based on a preliminary initial evaluation to be performed in late 2014 or early 2015.

The purpose of the preliminary well-site inspections (and possibly pump tests) would be to see if anything looks like it is not working properly such that it would affect the accuracy of metered production data on any of the production wells, and to determine if any follow-up action should be taken. There was a brief discussion of initially only doing a small sample of wells to see if more should be inspected, but there was consensus to have all production wells inspected.

Mr. Sabolsice noted that Cal Am already does this type of evaluation on its own wells, and that he could have Mr. Evans (Cal Am's meter specialist) check other well site installations in October. Cal Am and MPWMD said they would coordinate on doing this work.

Attached is a summary spreadsheet of the inspection data from the recently completed well meter inspections.

The data indicates that most meters passed the minimum installation standards. Of those that did not, there was one meter that had a non-conventional vertical installation but passed the field flow test (Sand City Public Works), and two meters had installations that did not technically conform to the recommended 5 pipe diameters upstream straight distance (Tioga and Paddock). For these two installations meter accuracy could be confirmed with follow-up field testing.

When metering accuracy was evaluated by the Watermaster in 2009 it was concluded that there would be little benefit to requiring that pumping tests be performed on wells that have historically produced very small quantities of water, since even large errors in meter readings from these pumps would have little or no impact on Basin management decisions. For this reason, because of the very small amount of flow that has historically been pumped from the Tioga well, it would probably not be worthwhile to conduct a pumping test on this well.

The Paddock well installation is only marginally less than the recommended installation configuration, and therefore it is unlikely that the meter would be appreciably inaccurate. However, since this well does pump a significant amount of flow, it could be field tested to confirm this if so desired.

SEASIDE BASIN WATER MASTER TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

AGENDA ITEM:	3 (Continued)

At today's meeting Mr. Oliver of MPWMD will provide an oral report on the preliminary well-site inspections that have been completed to date.

ATTACHMENTS:	Summary spreadsheet of preliminary well-site inspection data
RECOMMENDED ACTION:	None required – information only

WELL REFERENCE DATA				WATER METER DATA			PUMP DATA			REMARKS
Producer Name	Basin Subarea	Producer Type	Well Common Name	Water Meter Type	Water Meter Installation within Accepted Standards?	Water Meter Last Calibrated (if known)	Operational Status	Pump Efficiency Test (PET) Last Performed (if known)	Approximate AF of Water Pumped in WY 2014	Remarks
Cal-Am_Main	NCS	SPA	Luzern #2	magnetic	yes	2013	active	7/15/2014	90.6	
Cal-Am_Main	NCS	SPA	Paralta	magnetic	yes		active	9/13/2013	185.5	No calibration
Cal-Am_Main	NCS	SPA	Ord Grove #2	magnetic	yes		active	9/13/2013	2001.2	No calibration
Cal-Am_Main	NCS	SPA	Playa #3	magnetic	yes		active	7/14/2014	207.1	No calibration
Cal-Am_Main	NCS	SPA	ASR-1	magnetic	yes	4/12/2011	active	9/3/2003	0.0	
Seaside Muni	NCS	SPA	Muni No. 3	*well retired, pump & motor removed*			retired		0.0	Well used for WL monitoring only
Seaside Muni	NCS	SPA	Muni No. 4	impeller	yes	11/6/2013	active		223.6	
Seaside Golf	NCS	APA	Coe Avenue	propeller	yes		inactive	4/4/1979 (?)	0.0	Well inactive during interim while using MCWD for irrig.
Seaside Golf	NCS	APA	Reservoir	propeller	yes		inactive		0.0	Well inactive during interim while using MCWD for irrig.
DBO	NCS	SPA	Target	*well inactive, no water meter*			inactive		0.0	
Graniterock	NCS	SPA	NA	*well destroyed, no water meter*			destroyed		0.0	
Sand City	NCS	APA	Public Works	propeller	no	1/22/2015	active		0.8	Installation not to min standard but passed field flow test.
Sand City	NCS	APA	Design Center	*well inactive, no pump & motor or water meter*			inactive		0.0	
SNG	NCS	APA	PCA	*well inactive, water meter inoperable*			inactive		0.0	
Cypress Pacific	NCS	APA	Tioga	propeller	no		active		0.1	Installation marginal not to min standard upstream distance.
Mission Memorial	NCS	APA	PRTIW	propeller	yes		active		0.2	
Cal-Am	SCS	SPA	Plumas #4	magnetic	yes	2013	active	7/14/2014	179.4	
Cal-Am_Ryan Ranch	LSS	SPA	RR #7	magnetic		2013	active	7/14/2015	53.4	
Cal-Am_Ryan Ranch	LSS	SPA	RR #8	propeller	yes		active	2/2/2015	0.0	
Cal-Am_Ryan Ranch	LSS	SPA	RR #11	magnetic	yes	2013	active	9/13/2013	1.0	
Cal-Am_Bishop	LSS	SPA	Bishop #1	magnetic	yes	2012	active	9/13/2013	54.6	
Cal-Am_Bishop	LSS	SPA	Bishop #2	*well destroyed , no water meter*			retired		0.0	
Cal-Am_Bishop	LSS	SPA	Bishop #3	magnetic	yes		active	9/13/2013	103.9	
Cal-Am_Hidden Hills	LSS	SPA	Bay Ridge	magnetic	yes		active	7/14/2014	110.0	
Cal-Am_Hidden Hills	LSS	SPA	Toro #3	propeller	yes		active	2/2/2015	0.0	
Nicklaus Club Monterey	LSS	APA	Main Gate	*well inactive, used for backup only, same meter as Paddock well*			inactive		0.0	
Nicklaus Club Monterey	LSS	APA	Paddock	propeller	no		active		207.3	Installation marginal not to min standard upstream distance.
Laguna Seca Golf Resort	LSS	APA	LSGR #12	propeller	yes		active		299.9	
Laguna Seca Golf Resort	LSS	APA	LSGR-Race Track	*well inactive, currently inoperable*			inactive		0.0	
York School	LSS	APA	York	propeller	yes		active		21.9	
Laguna Seca County Park	LSS	APA	LSRA #1	propeller	yes		active		29.0	
Laguna Seca County Park	LSS	APA	LSRA #2	propeller	yes		active		0.0	

NOTES:
1. Basin Subareas: NCS = Northern Coastal Subarea; SCS = Southern Coastal Subarea; LSS = Laguna Seca Subarea.
2. WM Well No. indicates unique identifier in Seaside Basin Watermaster well database.
3. Official State well number ends with a numeral; unofficial MPWMD well number ends with a small case letter; ends in a blank where not assigned or uncertain (data not shown in compressed table).
4. Assessor's Parcel Numbers compiled for Watermaster by RBF Consulting (unless otherwise in cell notes) (data not shown in compressed table).
5. Reference Elevations from MPWMD SB WM Memorandum 2008-05 (Table 1; based on CCS 2008 wellhead surveys, adjusted with -2.97' MSL correction), unless indicated otherwise in cell notes (data not shown in compressed table).

SEASIDE BASIN WATER MASTER TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	February 11, 2015
AGENDA ITEM:	4
AGENDA TITLE:	Application from Cal Am to Increase Storage Quantity and Number of Storage/Recovery Sites
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY: Cal Am wishes 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. A draft Amended Application to incorporate these changes into its Agreement is attached.

The proposed addition of the two Seaside Middle School injection and recovery sites is straightforward and appropriate for processing at this time, since those well sites are already in operation.

With regard to the increased storage amount, there are some issues raised in the draft Amended Application upon which I would like to get TAC direction:

1. Increasing the allowable annual storage volume from the currently authorized 2,426 AFY to 8,000 AFY is in anticipation of operating Cal Am's planned regional desalination plant. That plant is not expected to become operational for several more years. Cal Am has yet to make a decision with regard to whether or not reclaimed water from the MRWPCA's planned Groundwater Replenishment Project (GWRP) will constitute a portion of the water to be stored by Cal Am in the Seaside Basin. Question: Is it appropriate to process an application this far in advance of when the additional water for storage will become available, and while the final quantity of desalinated water to be stored is still being determined?
2. Some of the water quality data provided by Cal Am in its original application, which led to adoption of its current Storage and Recovery Agreement, is not listed in the water quality data provided with the draft Amended Application. Question: Is it important to have that water quality data before processing the Amended Application?
3. Permits and approvals associated with an application for storage and recovery are to be included with the application. Not all of the permits and approvals from regulatory agencies (e.g. SWRCB, RWQCB) for Cal Am's desalination plant, which would provide the additional water for storage, have been obtained. Question: Should the Amended Application be processed for approval without first having the required permits and approvals in hand?
4. Would it be better to process an application to add the two new storage and recovery well-sites now, and to have a subsequent amendment covering the additional storage/recovery amounts when decisions about the quantities of desalinated water and reclaimed water, and their respective water qualities, have been made and the necessary permits and approvals have been obtained?

Note that a similar but separate agreement for storage of GWRP water will need to be applied for and approved at such time as a decision to store GWRP water in the Basin is made.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

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

AGENDA ITEM:	4 (Continued)

Following TAC discussion and direction on Cal Am's application, I will either ask them to (1) revise the application to address issues of concern to the TAC, or (2) will process it as-is if the TAC has no issues of concern. This will then lead to preparing an Amended Storage and Recovery Agreement for presentation to the Board at its next meeting.

ATTACHMENTS:	Draft Amended Application from Cal Am
RECOMMENDED ACTION:	Provide direction to Technical Program Manager regarding approval or modification of the Draft Amended Application

APPLICATION TO STORE AND RECOVER NON-NATIVE WATER FROM THE SEASIDE GROUNDWATER BASIN

NOTE: This Application is to amend the applicant's original Agreement for Storage and Recovery of Non-native Water from the Seaside Groundwater Basin dated October 21, 2011 (hereinafter referred to as the "Original Agreement")

INSTRUCTIONS: This Application form is for use by Standard Producers in the Seaside Groundwater Basin (Seaside Basin) for the purpose of obtaining approval from the Seaside Basin Watermaster (Watermaster) to store non-native water in, and to subsequently recover that stored water from, the Seaside Basin. The application process is as described in Section III.L.3.j.xx of the Amended Decision of the Monterey County Superior Court, Case No. M66343, filed February 9, 2007.

California-American Water Company

Name of Standard Producer (Applicant)

Contact Information for Applicant:

Contact Person: Eric Sabolsice

Address: 511 Forest Lodge Rd. Ste 100, Pacific Grove, CA 93950

Telephone: 831-646-3291

Proposed quantity of non-native water Applicant seeks to store through spreading or direct injection into the Seaside Basin (acre-feet per year):

Additional quantity to be stored: 5574
Total quantity to be stored (as amended): 8,000

Proposed location(s) where the spreading or direct injection of non-native water into the Seaside Basin will occur. If injection will be performed using one or more injection wells, provide identifying information for those wells including the aquifer(s) into which the injection will occur. If spreading will be performed, provide coordinate location information, as well as any physical street address information for the proposed location.

Locations listed in the Original Agreement:
ASR-1 injection and recovery well located at the Santa Margarita ASR site located at 1910 General Jim Moore Blvd., Seaside, CA 93955 (Santa Margarita)

ASR-2 injection and recovery well located at the Santa Margarita ASR site located at 1910 General Jim Moore Blvd., Seaside, CA 93955 (Santa Margarita)

Additional locations to be added to the Amended Agreement:
ASR-3 injection and recovery well located at Seaside Middle School, 999 Coe Ave., Seaside, CA 93955 (Santa Margarita)

ASR-4 injection and recovery well located at Seaside Middle School, 999 Coe Ave., Seaside, CA 93955 (Santa Margarita)

Proposed location(s) where the stored water may be recovered. Provide identifying information for each well from which the stored water will be recovered, including the aquifer(s) from which recovery will occur.

Locations listed in the Original Agreement:
Santa Margarita Well #1, 1910 General Jim Moore Blvd., Seaside, CA 93955 (Santa Margarita)
Santa Margarita Well #2, 1910 General Jim Moore Blvd., Seaside, CA 93955 (Santa Margarita)
Ord Grove Well #2, 1987 Park Ct., Seaside ,CA 93955 (Santa Margarita)
Paralta Well, 2014 Paralta Ave., Seaside, CA 93955 (Santa Margarita)
Luzern Well #2, 1984 Luzern St., Seaside ,CA 93955 (Paso Robles)
Playa Well #3, 1237 Playa Ave., Seaside ,CA 93955 (Paso Robles)
Plumas Well #4, 1453 Plumas Ln., Seaside ,CA 93955 (Paso Robles)

Additional locations to be added to the Amended Agreement:
Seaside Middle School Well #3, 999 Coe Ave., Seaside, CA 93955 (Santa Margarita)
Seaside Middle School Well #4, 999 Coe Ave., Seaside, CA 93955 (Santa Margarita)

Water quality characteristics of the non-native water proposed for spreading or direct injection into the Seaside Basin. Provide sufficient physical, chemical, and microbiological information about the water being proposed for storage, so that the Watermaster can determine whether or not storing such water will have any adverse water quality impacts to the Seaside Basin. Provide this information in the form of analytical results from a properly certified water testing laboratory, attached to this Application.

Also provide sufficient information to demonstrate to the Watermaster that the water quality characteristics of the water being proposed for storage will meet all of the requirements imposed on the Applicant by permits and/or approvals issued to the Applicant by the regulatory agency or agencies with jurisdiction.

Attachment A contains projected water quality characteristics of the additional water to be stored under this amended Application. This additional water will be provided by applicant's planned desalination plant.

Permits and approvals from regulatory agencies. Attach copies of all permits and approvals the applicant has received from regulatory agencies, which relate to the storage of water in the Seaside Basin. Such agencies will likely include some or all of the following:

- California Regional Water Quality Control Board
- California Department of Public Health
- County of Monterey Department of Health
- State Water Resources Control Board

Copies of permits will be provided prior to initial injection of desalinated water.

ATTACHMENT A

(Excerpted from planning and design documents for applicant's desalination plant)

APPENDIX 2 – ATTACHMENT 3

FINISHED WATER QUALITY BASIS OF DESIGN STANDARDS AND WATER QUALITY ACCEPTANCE STANDARDS AND REQUIREMENTS

Finished Water quality standards and requirements and Acceptance Standards and Requirements that will be used as the basis of design and Acceptance Testing are shown in Table 2C-1, for the pretreatment effluent (RO feed stream), the combined RO permeate, and the Finished Water after stabilization for corrosion control and disinfection with chlorine. The Design-Builder shall design the facility to meet the water quality standards and requirements shown in Table 2C-1. Acceptance Test Standards and Requirements are discussed in Appendix 7 of the draft Design-Build Agreement. During Acceptance Testing, all treatment systems will be monitored in accordance with the requirements of Appendix 7 to demonstrate continuous successful treatment as stipulated by the treated water Acceptance Standards and Requirements shown in Table 2C-1 below. Acceptance Testing of the RO system shall also be based on computer model projected future performance after 5 years, for both average and maximum raw water design concentrations (refer to Appendix 2, Attachment 2), taking into account increased salt passage over time as the membranes age.

Table 2C-1 – Treated Water Basis of Design Standards and Acceptance Standards and Requirements [10]

Parameter	Units	Pretreatment Effluent		Combined RO Permeate		Finished Water After Stabilization	
		Maximum Average Concentration [1, 2]	Not to Exceed Concentration [3]	Maximum Average Concentration [1, 2]	Not to Exceed Concentration [3]	Maximum Average Concentration [1, 2]	Not to Exceed Concentration [3]
General and Inorganic							
Total Dissolved Solids (TDS)	mg/L						300
Turbidity	NTU	0.15 [4]	1.0	0.1 [4]	0.5	0.5 [4]	1.0
Silt Density Index (SDI)	min^{-1}	3 [4]	4 [5]				
Boron [12]	mg/L			0.5	0.7	0.5	0.7
Chloride [12]	mg/L			60	100	60	100
Bromide [12]	mg/L			0.3	0.5	0.3	0.5
Sodium [12]	mg/L			35	60	35	60
Iron, total	mg/L	0.06	0.10				
Manganese, total	mg/L	0.03	0.05				
Product Water Stabilization [6]							
Hardness, total [7]	mg/L as $CaCO_3$					40 to 100 [11]	–

Parameter	Units	Pretreatment Effluent Maximum Average Concen-tration [1, 2]	Pretreatment Effluent Not to Exceed Concen-tration [3]	Combined RO Permeate Maximum Average Concen-tration [1, 2]	Combined RO Permeate Not to Exceed Concen-tration [3]	Finished Water After Stabilization Maximum Average Concen-tration [1, 2]	Finished Water After Stabilization Not to Exceed Concen-tration [3]
pH [7]	pH units					7.7 to 8.7[11]	–
Alkalinity, total [7]	mg/L as $CaCO_3$					40 to 100[11]	–
Orthophosphate [7]	mg/L as PO_4					Set by Owner within the range of 1.0 to 3.5 mg/L[11]	3.5
Disinfection and Disinfection Byproducts (DBPs)							
Total Chlorine Residual[7]	mg/L as Cl_2					Set by Owner for a target of 2 mg/L, within the range of 1.5 to 2.5 mg/L[11]	3.5 mg/L
Trihalomethanes, total (TTHM) [8]	µg/L					40	64
Haloacetic Acids, total of 5 (HAA5) [8]	µg/L					30	48
Total Nitrosamines [8, 9]	ng/L					5	8
Bromate	µg/L					5	8

[1] The **average** of the measured concentrations shall be below the Maximum Average Concentration at all times (see remaining footnotes). This footnote does not apply to (a) turbidity or SDI, or (b) finished water calcium hardness, pH, alkalinity, chlorine residual or phosphate; separate footnotes apply to these parameters.

[2] Maximum Average Concentration cannot be exceeded during the applicable period, which shall be (i) daily for continuous recording with results reported every 15 minutes (pH, chlorine residual and turbidity); (ii) annual running average for monthly samples of DBPs (TTHM, HAA5, Total nitrosamines, and bromate); and (iii) annual running average for weekly samples of the remaining parameters.

[3] No measurement shall exceed this value, at any time.

[4] Measured values must be less than the ~~m~~aximum average" concentration 95% of the time.

[5] The maximum SDI limit applies unless more stringent requirements apply based on the SWRO membrane supplier warranty.

[6] The Owner will set the conditions for product water stabilization to minimize corrosion in the existing distribution system.

[7] Finished Water shall be within the ~~ta~~rget range" at all times, where the target range is the target concentration set by the Owner, plus or minus the allowed variance shown in Appendix 7.

[8] TTHM, HAA5, and total nitrosamine concentrations shall be determined using the Simulated Distribution (SDS) test method in Standard Methods (Method 5710C). Samples of the finished water where it enters the distribution system shall be collected, with no adjustment of chlorine residual or pH, and held at the temperature of the finished water at the time of collection (±2°C) for a 48-hour holding time.

[9] Total Nitrosamines includes the 6 nitrosamine compounds on the EPA's UCMR2-List 2; NDEA, NDMA, NDBA, NDPA, NMEA and NPYR.

[10] These basis of design standards are also the Additional Finished Water Quality Acceptance Standards and requirements set forth in Appendix 7 (Table A7-7 for Finished Water, Table A7-11 for Pretreatment Filtration and Table 7-13 for Combined RO Permeate) except that the applicable periods for the Acceptance Testing are defined in Appendix 7.

[11] Compliance with ~~ta~~rget range" for calcium hardness, pH, alkalinity, chlorine residual, and phosphate shall be based on the median, rather than the average, of samples taken during the applicable monitoring period.

[12] For the Combined RO Permeate concentrations of boron, chloride, bromide and sodium, the Maximum Average and Not-to Exceed concentrations shall be met under the Average Design value and Design Maximum value shown in Table 1 of Appendix 2 Attachment 2, respectively.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	February 11, 2015
AGENDA ITEM:	5
AGENDA TITLE:	Schedule
PREPARED BY:	Robert Jaques, Technical Program Manager

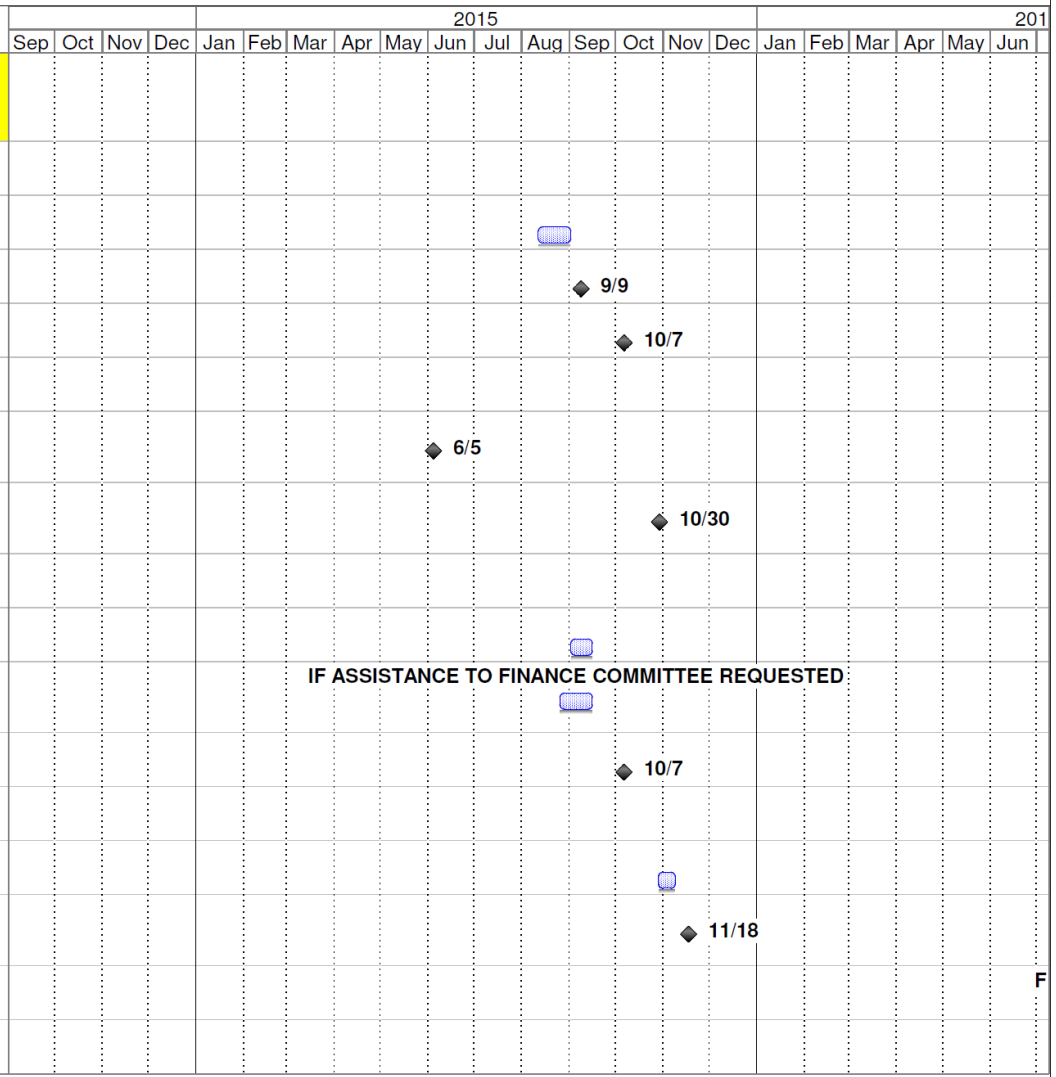
SUMMARY:
As a regular part of each monthly TAC meeting, I will provide the TAC with an updated Schedule of the activities being performed by the Watermaster, its consultants, and the public entity, MPWMD, which is performing certain portions of the work.

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

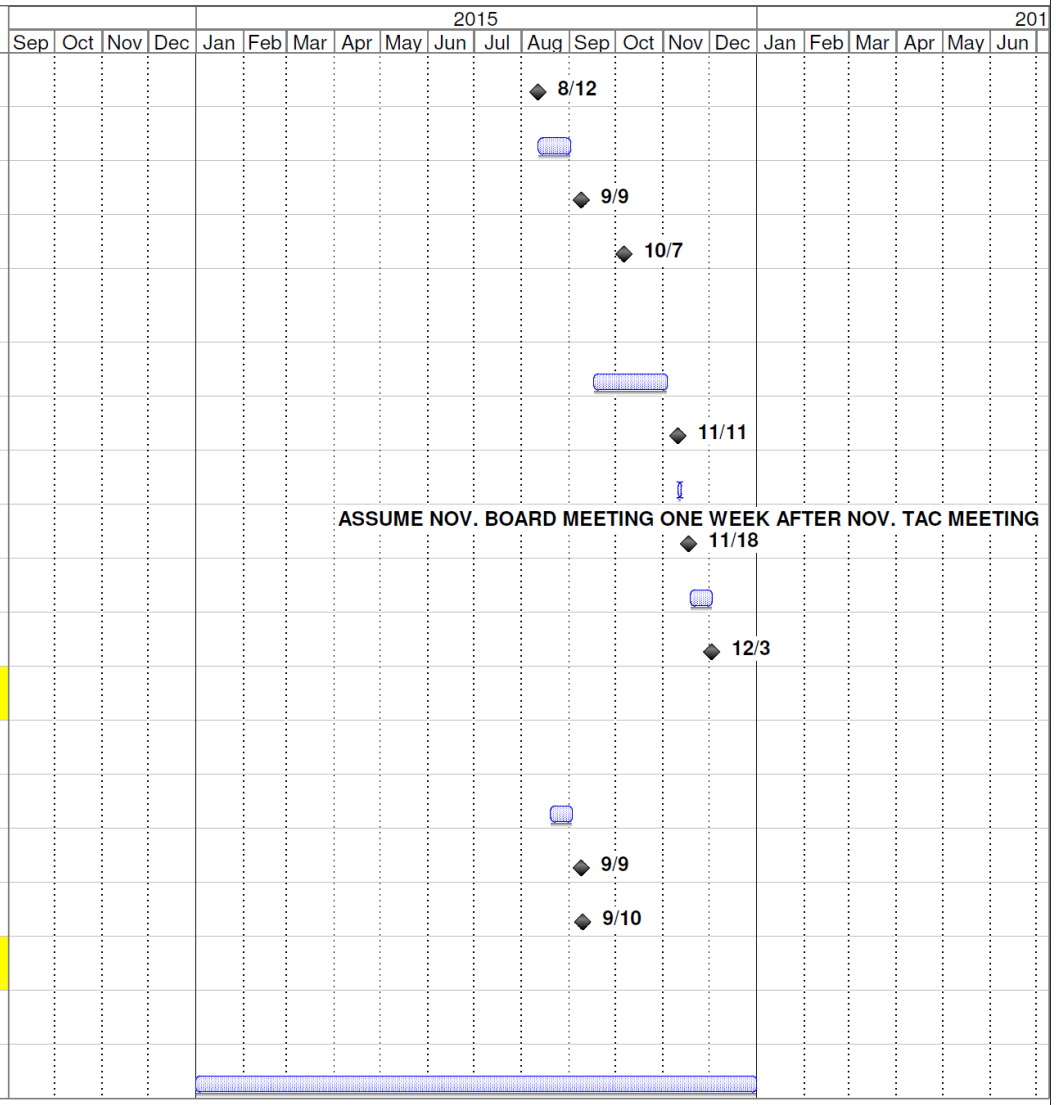
Seaside Basin Watermaster
Monitoring and Management Program
2015 Work Schedule

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**

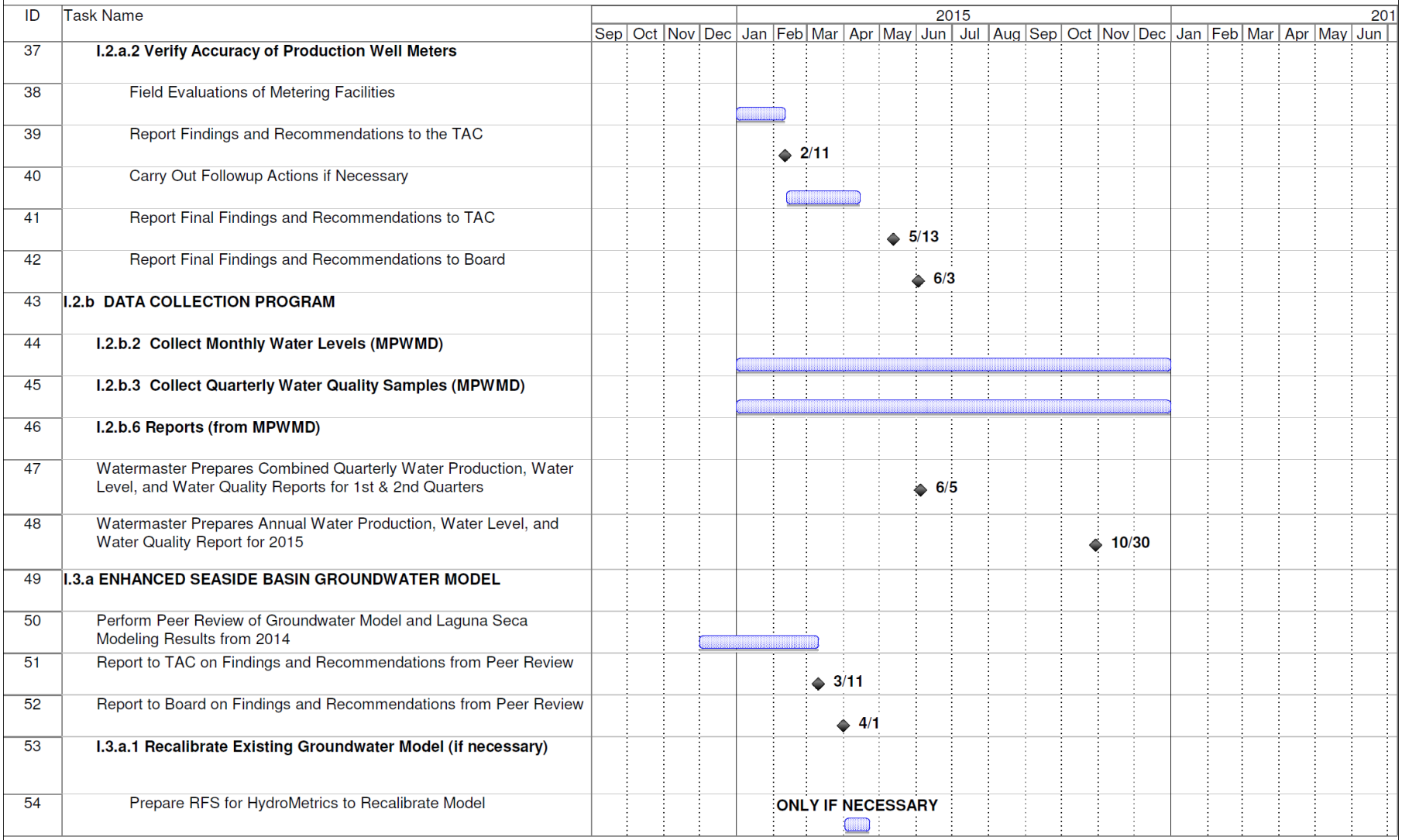


Seaside Basin Watermaster
Monitoring and Management Program
2015 Work Schedule

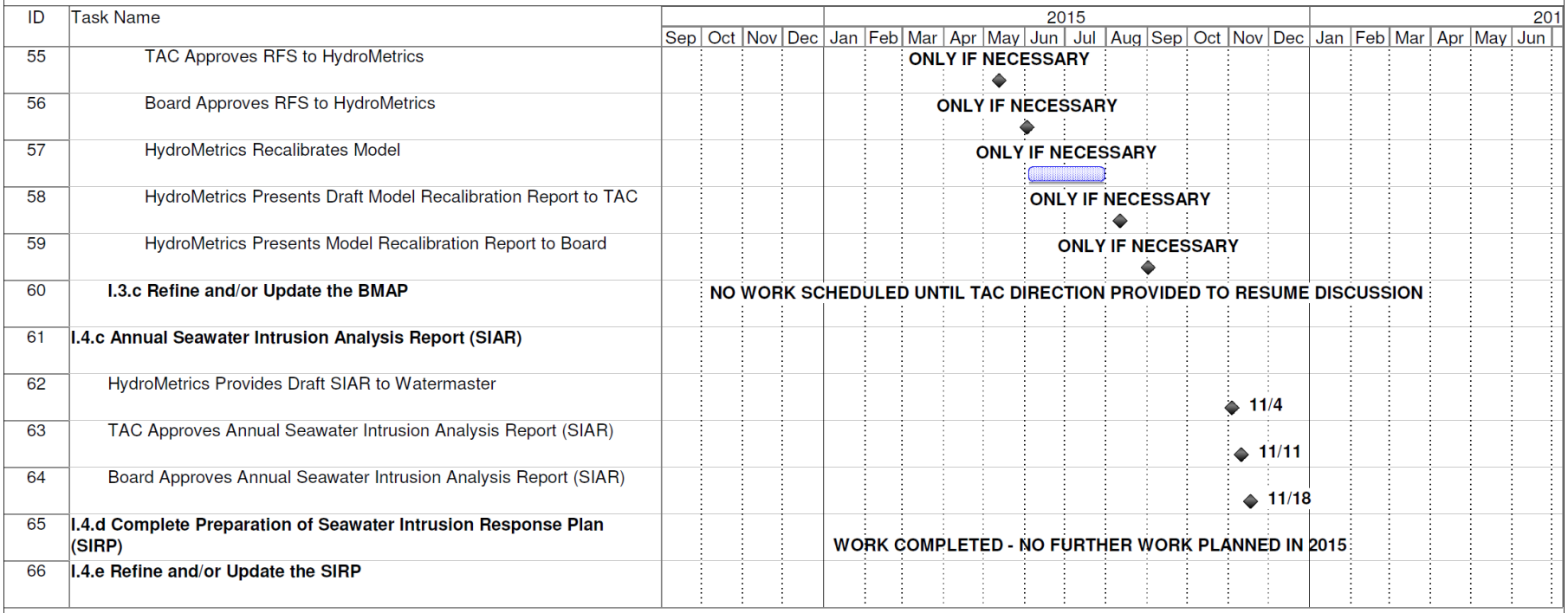
ID	Task Name
18	Preliminary Discussion of Potential Scope of Work for 2016 M&MP
19	Prepare Draft 2016 and 2017 M&MP O&M and Capital Budgets
20	TAC approves Draft 2016 and 2017 M&MP O&M and Capital Budgets
21	Board approves 2016 M&MP O&M and Capital Budgets
22	**2015 Annual Report (Note: Schedule Reflects 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



SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	February 11, 2015
AGENDA ITEM:	6
AGENDA TITLE:	Other Business
PREPARED BY:	Robert Jaques, Technical Program Manager

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

ATTACHMENTS:	None
RECOMMENDED ACTION:	None required – information only