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

TECHNICAL ADVISORY COMMITTEE
OF THE
SEASIDE BASIN WATER MASTER

DATE: Wednesday, April 9, 2014

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 (877)810-9415. Use the Access Code of 4560043. 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 May 14, 2014 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 9, 2014
AGENDA ITEM:	2.A
AGENDA TITLE:	Approve Minutes from the March 12, 2014 Meeting
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:
Draft Minutes from this meeting were 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 12, 2014

Attendees: TAC Members

City of Seaside – Rick Riedl
California American Water – Roger Hulbert
City of Monterey – Norm Green
Laguna Seca Property Owners – No Representative
MPWMD – Joe Oliver
MCWRA – Howard Franklin
City of Del Rey Oaks – Ron Langford
City of Sand City – Leon Gomez
Coastal Subarea Landowners – No Representative

Watermaster
Technical Program Manager - Robert Jaques

Consultants
HydroMetrics - Derrik Williams (via telephone)

Others
MPWMD - Jon Lear

The meeting was called to order at 1:35 p.m., once a quorum was present.

1. Public Comments

There were no public comments.

2. Administrative Matters:

A. Approve Minutes from the February 12, 2014 Meeting

Mr. Franklin requested that the names of the Chair and Vice Chair be corrected on the agenda for today's meeting, and Mr. Jaques said he would make these corrections. On a motion by Mr. Oliver, seconded by Mr. Franklin the minutes were unanimously approved as presented.

3. Continued Discussion of HydroMetrics Modeling of Laguna Seca Subarea

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

Mr. Riedl noted that there was some inconsistency in that there are wells that are outside the Basin boundary, but we have been monitoring them anyway.

Mr. Oliver stressed that the TAC needs to make a clear presentation to the Board on this topic, so that they are not confused by the technical aspects. He suggested giving the Board something tangible for example something that the TAC has considered as a possible trigger to determine whether or not Material Injury has occurred.

Mr. Hulbert noted that the quantity of groundwater available would be a good trigger. Factors such as whether well screens are put in too shallow, if the pumps are of poor quality, whether the well pump is submergible vs. shaft-driven, the elevation at which the pump was set, and other things can impact the pumping capacity of a well.

There was much discussion with regard to policy and technical issues on this topic. Technical issues are very complex and very site-specific.

Mr. Oliver noted that additional conservation measures might be applied to the Alternate Producers, such as the pumping reductions already imposed by the Decision on the Standard Producers.

There was discussion of other measures such as the percentage of water level falling and the percentage reduction in theoretical well capacity for use as triggers for more site-specific evaluations. Mr. Jaques said he felt that the HydroMetrics report had already provided some of this information.

Mr. Franklin recommended informing the Board that the model tells us that Material Injury has occurred or will occur because of "excessive pump lift."

Mr. Riedl said he liked using the theoretical well yield as a trigger to evaluate whether or not a well has been Materially Injured.

There was discussion with regard to Physical Injury being the impact on a well's ability to pump, and Material Injury being the monetary impact of this.

Following much discussion regarding the recommendations contained in the agenda packet on this item, consensus was reached as follows:

a. Under the items listed in the "Request for Direction" on page 10 of the agenda packet, delete these altogether from the TAC's presentation to the Board.

b. Under the items listed in the "Technical Recommendations" on page 11 of the agenda packet, include all of these (as-is) in the TAC's presentation to the Board.

c. Under the items listed in the "Non-Technical Issues the Board May Wish to Consider" on page 11 of the agenda packet, include all of these (as-is) in the TAC's presentation to the Board.

Mr. Jaques said he would prepare a draft agenda transmittal to the Board on this topic and email it to TAC members for their review before finalizing it and sending it to Mr. Evans for inclusion in the agenda packet for the Board's April 2, 2014 meeting.

4. Schedule

Mr. Jaques reported that there were no unusual items to discuss under this agenda item, and there was no further discussion.

5. Other Business

Mr. Franklin asked if discussion regarding the Wang Subdivision had been concluded. Mr. Jaques responded that the TAC had agreed at its last meeting to continue this matter over for further discussion after the review comments from MCWRA and MPWMD had been received. Mr. Jaques said he would

re-agendize this topic once those review comments had been received. Mr. Franklin and Mr. Oliver said they would provide their review comments to Mr. Jaques within the next week.

6. **Set Next Meeting Date**

The next regular meeting will be held on Wednesday April 9, 2014 at 1:30 p.m. at the MRWPCA Board Room.

The meeting adjourned at 3:09 p.m.

SEASIDE BASIN WATER MASTER TECHNICAL ADVISORY COMMITTEE * * * AGENDA TRANSMITTAL FORM * * *	
MEETING DATE:	April 9, 2014
AGENDA ITEM:	2.B
AGENDA TITLE:	Update on SWRCB Groundwater Action Plan
PREPARED BY:	Robert Jaques, Technical Program Manager

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

SUMMARY:

At the TAC's February 2014 meeting I reported that the State was preparing a "Groundwater Concept Paper," which is intended to serve as a guide to the State in preparing groundwater protection actions, and to most effectively use State resource for groundwater management, throughout the State. Attached is a Notice of Public Workshops pertaining to the California Groundwater Action Plan, which includes many if not all of the issues contained in the Groundwater Concept Paper. I received the attached Notice on March 13, so there was not time to discuss it at a TAC meeting prior to the date of the first workshop. However, I did forward the Notice to TAC members as soon as I received it.

This is for information only, to let the TAC know that the State is working on actions it may or will take, as well as things it will likely be devoting resources (potentially including funding) to, as it implements the elements in its Groundwater Action Plan.

Also attached is a two-page *Sustainable Groundwater Management* paper which describes groundwater management issues discussed in the Action Plan.

The Action Plan is 22 pages in length, and was therefore not included in the agenda packet. It is available for download at http://resources.ca.gov/california_water_action_plan/.

ATTACHMENTS:	1. SWRCB Notice of Public Workshops on Sustainable Groundwater Management 2. Sustainable Groundwater Management paper 3. Table of Contents of the California Groundwater Plan
RECOMMENDED ACTION:	None required – information only

NOTICE OF WATER ACTION PLAN: SUSTAINABLE GROUNDWATER MANAGEMENT WORKSHOPS

Workshops to Develop Input on Groundwater Legislative Proposal

Ideas, Proposals & Feedback
Monday, March 24, 2014 – 9:00 a.m.
Joe Serna Jr. - Cal/EPA Headquarters Building
Coastal Hearing Room
1001 I Street, Second Floor
Sacramento, CA 95814

AND

Proposed Solutions
Wednesday, April 16, 2014 – 9:00 a.m.
Joe Serna Jr. - Cal/EPA Headquarters Building
Coastal Hearing Room
1001 I Street, Second Floor
Sacramento, CA 95814

NOTICE IS HEREBY GIVEN that the California Environmental Protection Agency (Cal EPA), California Natural Resources Agency (CNRA), the California Department of Food and Agriculture (CDFA), and the Governor's Office of Planning and Research (OPR), collectively referred to as the State Agency Team, will hold public workshops at the time and location noted above to receive public input and discuss potential legislative solutions to promote sustainable groundwater management in California.

The California Water Action Plan, released on January 27, 2014, highlights the challenges for managing the State's water resources and outlines strategic goals and actions to provide more reliable water supplies, restore important species and habitat, and establish a more resilient and sustainably managed water resource system for farms, ecosystems and communities. The plan specifically identified a number of actions to implement sustainable groundwater management practices. One of those actions called for legislation to provide local and regional agencies with comprehensive authority to address their groundwater challenges and allow the State to temporarily assume groundwater management responsibilities when local agency actions have been insufficient to achieve sustainable management.

Two workshops will be held to solicit input and information and develop proposed solutions. On **March 24**, the State Agency Team is interested in hearing and providing feedback on ideas and possible approaches in response to the proposal, which is outlined in greater detail at: http://www.opr.ca.gov/docs/Sustainable_Groundwater_Management_3-7-2014.pdf. On April 16, the State Agency Team will invite input on proposed solutions. These will be informational workshops only. More detailed agendas will follow for both workshops.

In addition to the workshops described in this notice, interested parties may also submit written comment by April 25, 2014 to groundwater@gov.ca.gov.

Further information and contact information on this initiative can be found at: http://www.opr.ca.gov/s_groundwater.php .

PROCEDURAL MATTERS

The workshop will be informal. There will be no sworn testimony or cross-examination of participants, but the State Agency Team members may ask clarifying questions. A quorum of State Water Board members may be present, however no action will be taken. The workshop is an opportunity for interested persons to provide input to the State Agency Team. To ensure a productive and efficient workshop, oral comments may be limited to **five (5) minutes** or otherwise at the discretion of the State Agency Team.

QUESTIONS REGARDING THE WORKSHOP

Questions concerning this notice may be directed to Katy Landau at (916) 341-5588 or, Katheryn.Landau@waterboards.ca.gov.

PARKING, ACCESSIBILITY AND SECURITY

The Cal/EPA Building is accessible to people with disabilities. Individuals who require special accommodations at the Cal/EPA Building are requested to contact Tanya Cole, Equal Employment Opportunity Office, at (916) 341-5880.

Due to enhanced security precautions at the Cal/EPA Building, all visitors are required to register with security staff prior to attending any meeting. To sign in and receive a visitor's badge, visitors must go to the Visitor and Environmental Services Center, located just inside and to the left of the building's public entrance. Depending on their destination and the building's security level, visitors may be asked to show valid picture identification. Valid picture identification can take the form of a current driver's license, military identification card, or state or federal identification card. Depending on the size and number of meetings scheduled on any given day, the security check-in could take up to fifteen minutes. Please allow adequate time to sign in before being directed to the hearing.

California Water Action Plan
Sustainable Groundwater Management

This is a draft framework for soliciting stakeholder input on actions that can be taken to improve groundwater management in the state, consistent with the Governor's 2014 California Water Action Plan. This document is designed to inform and guide stakeholder discussions.

The California Water Action Plan highlights the challenges for managing the state's water resources and outlines strategic goals and actions to provide more reliable water supplies, restore important species and habitat, and establish a more resilient and sustainably managed water resource system for farms, ecosystems and communities.

A major objective of the Plan is to expand groundwater storage capacity and improve groundwater management. Groundwater accounts for 39 percent of the water used by cities and farms—much more in dry years, when surface supplies are scarce—and it provides a critical buffer against drought and climate change. Some of the state's groundwater basins are sustainably managed, but, unfortunately, many are not. Challenges include overdrafted basins, seawater intrusion, degraded groundwater quality, land subsidence, and the decline in ecosystem services provided by the interaction of groundwater and surface water. The California Water Action Plan proposes several actions to be implemented in the next five years:

- Collecting and sharing additional groundwater data;
- Updating California's groundwater plan (Bulletin 118);
- Increasing groundwater recharge and storage;
- Accelerating groundwater clean-up; and
- Empowering local agencies to manage groundwater sustainably.

With respect to sustainable groundwater management, the Plan calls for legislation that gives local and regional agencies comprehensive authority to address their groundwater challenges. The Plan also allows the state to temporarily assume groundwater management responsibilities to protect a basin not being managed sustainably when local agencies cannot or will not address the problem.

Over the coming months, we are soliciting input on actions that can be taken to assure that local groundwater managers have the tools and authority to sustainably manage groundwater consistent with the California Water Action Plan. When developing ideas, it may be helpful to consider the following.

Enhanced Local Agency Authority

Local agencies are most familiar with the condition of their groundwater basins and are in the best position to manage these resources locally. What do local agencies need to sustainably manage this resource? For example:

- What new or modified statutory authorities do local and regional agencies need to manage groundwater more effectively? These may include:
  - allocation of groundwater
  - ability to control pumping
  - ability to assess fees for replenishment or other groundwater activities
  - groundwater measurement and reporting
- What would help local agencies overcome barriers to funding for conservation, projects, and programs (i.e., Proposition 218)?

- What types of governance structures are most effective for managing groundwater locally, and should these models be encouraged?
- What specific data and information do local managers need to succeed? What should be done to help them obtain the data?
- What can be done to help local and regional agencies manage a basin or sub-basin that spans multiple jurisdictions?
- Are there improvements to the groundwater adjudication process that would make it more useful and cost-effective for local authorities?
- What role should groundwater management plans (GWMPs) play, and does their content need to change? For example, should GWMP's include:
    - local verification and implementation requirements
    - regular updates of GWMPs prepared for priority groundwater basins
    - specific information such as groundwater basin budgets, projections of future groundwater supply, performance measures and actions to be taken if performance measures are not met
    - requirements for annual reporting
- What incentives could local and regional agencies be given to improve groundwater management?
- Should local groundwater management planning be connected, through formal processes, to land use decisions, county general plans, or integrated regional water management plans? If so, what kind of formal processes?

State Backstop Authority when Local Action Has Not Occurred or Has Been Insufficient

The Administration is proposing to provide authority to the State Water Board to temporarily assume groundwater management responsibilities when local agency actions have been insufficient to achieve sustainable management. This authority will be available in those limited instances when local agencies have not acted, or their actions are insufficient to address this condition. How should this authority be structured, and what efforts should be taken to assist and encourage local authorities to act? For example:

- What metrics can be used to reflect sustainable management?
- What criteria or conditions should be present in determining whether a local groundwater management authority is unable to effectively manage the resource?
- What aspects of local groundwater management should the State Water Board assume responsibility for when taking over local groundwater management?
- What criteria, conditions and processes are needed for local agencies to resume responsibility of the GWMP?

Feedback regarding the questions and ideas proposed in this document may be submitted to groundwater@gov.ca.gov.

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

MEETING DATE:	April 9, 2014
AGENDA ITEM:	3
AGENDA TITLE:	Continued Discussion of New Survey Information on the Wang Subdivision Wells
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

At the February 12, 2014 TAC meeting there was discussion regarding the report prepared for the Wang subdivision titled "*Revised and Updated Project-Specific Hydrogeologic Report, Peter and Grace Wang 26-Lot Subdivision, (PLN #010422), Monterey County, California*" dated August 2, 2013. In those discussions it was pointed out that there were two reasons for the TAC's September 2012 recommendation to the Board, and the Board's subsequent concurrence, that the Watermaster not object to the use of the Wang wells to supply water to the subdivision:

1. The Wang wells are outside of the Decision-defined Basin boundary, and therefore not within the Watermaster's jurisdiction, and
2. Based on the available data at that time, it was not possible to determine whether or not hydraulic connectivity existed between the Laguna Seca subarea and the Wang wells.

This first reason is not changed by the information provided in the August 2, 2013 Report. However, based on this new survey data it appears more likely that these wells could draw water from the Laguna Seca subarea. I initially recommended at the February TAC meeting that this new survey information and its potential significance be provided to the Board, but that the TAC make no recommendation for action by the Board.

Mr. Oliver of MPWMD and Mr. Franklin of MCWRA stated that their agencies had also received this report and would be submitting comments on it to the County. Based on this I suggested obtaining the review comments from MPWMD and MCWRA and providing them to the TAC for future discussion, and there was consensus to defer making any recommendations to the Board at that time, pending receipt of those review comments. Mr. Bruno stressed that the boundary issue was the main basis for the Board's prior decision regarding the Watermaster's lack of jurisdiction with regard to the Wang wells, and that the Board may therefore not need any other information on this.

MPWMD is still in the process of finalizing their comments, but MCWRA has provided their comments, which are attached. One of MCWRA's conclusions from its review of the Report is that more information is needed to determine whether or not the Wang subdivision wells are hydraulically connected to the Laguna Seca subarea of the Seaside Basin. At today's meeting Mr. Oliver will provide an oral update on the status of MPWMD's comments.

ATTACHMENTS:	Review Comments from MCWRA on this New Survey Data

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

RECOMMENDED ACTION:	Determine whether to have further discussion on this matter after comments from MPWMD have been received, or to provide this information to the Board at this time

WATER RESOURCES AGENCY

M E M O R A N D U M

Monterey County

DATE: March 6, 2014

TO: MCDEH

FROM: Peter Kwiek, PG

SUBJECT: Mr. & Mrs. Peter and Grace Wang Property, Revised & Updated Project Specific Hydrogeologic Report

The Agency has reviewed the report "Revised and Updated Project Specific Hydrogeologic Report, Peter and Grace Wang 26-Lot Subdivision," (PLN 10422), Monterey County California (report), Stephens & Associates, Inc (consultant), January 9, 2014. Our conclusion is that the report demonstrates the likely marginal on-site availability of a water supply for the proposed project but that more data is needed to determine whether the added demand could adversely impact the overdrafted Seaside Basin.

Water Supply and Demand

The Agency feels that the consultant's finding of at least 200 acre feet (af) of accessible groundwater in storage is erroneous, and does not establish a 20-year water supply. However, the consultant also utilizes the site specific water balance criterion for determination of the availability of a long-term water supply, per the 1982 General Plan, which was in effect when the subject proposal was originally filed with the county. We have evaluated the report based on the latter approach.

Agency staff agree with the consultant that net project demand on local aquifers (12 af/y) is likely to be replenished by recharge associated with average annual rainfall, though with a smaller margin of error than implied by the consultant's analysis. Water balance calculations hinge on average annual precipitation totals. Although the report's assumed total of 18.09 inches/year is probably overstated, other parameters are reasonable and a more realistic precipitation value of 16.5 inches/year results in a close balance between supply (approximately 16 af/y) and demand (12 af/y).

On a larger scale, as the Agency stated in its 2004 review of the precursor hydrogeologic report (PES, Environmental, Inc, 2004), increased demand on the excessively overdrafted Santa Margarita Aquifer, from which extractions continue to equal 250% of safe yield, will likely add to the hydrologic imbalance of the adjudicated Seaside Basin. This would contribute to a decrease in groundwater storage and continued long-term degradation of water in the region. Despite the report's discussion of the Monterey Formation as possibly "the only source of groundwater in some parts of the upland and unnamed watersheds of Arroyo Del Rey, including the proposed Wang subdivision (page 15)", the proposed project's primary and secondary supply wells are perforated chiefly in the impacted Santa Margarita and Paso Robles formations. Only the low-yielding well 02-071 is perforated primarily within the Monterey Shale, and it is not capable of supplying water for the proposed subdivision.

Although the subject property lies just to the south of the recognized boundary of the Laguna Seca Subarea of the Seaside Basin (and therefore potentially beyond the administration of the Seaside Watermaster), available geologic cross sections and water level data presented in the subject report fail to establish the hypothesis of hydraulic separation between the subject property and the Laguna Seca Subarea. As the consultant notes, "long-term water level changes and trends are poorly documented between the proposed Wang subdivision and along the southern margin of the Laguna Seca Subarea (page 18)."

Lack of water level data proximal to the proposed subdivision but within the Laguna Seca Subarea precludes understanding of hydraulics and potential project impacts. Groundwater flow directions between aquifers underlying the subject property and the Laguna Seca Subarea of the Seaside Groundwater Basin (page 20) are speculative and lack sufficient supportive data.

The consultant's assertion concerning on-site water level trends that "water level declines for…wells [on the proposed Wang Subdivision] appear to average about a foot per year for the period 2002 to 2012 (page 18)," is unsupported by water level data presented for the four wells (Table 3 in the report). Specifically, the data is comprised of seasonally inconsistent samples covering between 2 and 5 distinct years, within the time range of the purported 10-year trend. Generally, water levels in wells tapping unconfined alluvial aquifers in Monterey County (such as within the subject property) tend to respond relatively quickly to precipitation events. Therefore, it is not always clear whether apparent year-to-year water level differences reflect actual storage change trends or the timing of measurements relative to transient seasonal fluctuations coinciding with rainfall-infiltration events. Thus, on-site water level trends are unknown.

Long term trends may only be discernable over decadal or longer timescales that account for seasonal fluctuations, wet and dry periods as well as long term trends. Monthly data for appropriately sited wells spanning decades may be needed to understand the nature of the hydraulic and hydrologic relationships between water bearing strata underlying the subject property and that of the Laguna Seca Subarea.

If, as the consultant speculates, water levels within the subject property are trending downward, the additional pumping demands of the proposed project may accelerate this trend. Also, if, as the consultant speculates, the flow direction of groundwater in wells screened within the impacted Santa Margarita Formation is from the Laguna Seca Subarea towards the Subject property, then water levels in the Subject Property may depend not merely on conditions within the subject watershed but also on conditions in the Seaside Basin and the Seaside Basin could be incrementally impacted by the subject proposal's increased demand. However, a paucity of relevant groundwater level data precludes definitive conclusions as to hydraulic connectivity, flow direction, long term changes, and trends.

Conclusion

The Agency finds that while subject report demonstrates the marginal on-site availability of a long-term water supply for the proposed project, determination of impacts to the adjudicated Seaside Basin await a better understanding of the hydraulic and hydrogeologic relationships between the subject property and the Laguna Seca Subarea. Data presented and referenced in the subject report is inconclusive as to local basin trends, gradients, flow direction and connectivity with the Seaside Basin. More data (properly located and of adequate duration and frequency) is needed to understand groundwater flow patterns and determine to what extent apparent groundwater gradients between the Laguna Seca Subarea and the Subject property actually exist and may or may not express the influence of a posited hydraulic barrier (i.e., The Chupines Fault). If the areas are hydraulically connected, the proposed project's added demand would likely add to regional overdraft and associated problems, without sufficient mitigation.

Staff concur with the report's recommended mitigation measures respecting water quantity and quality. Specifically, storm water retention, native vegetation, pervious pavement and dry wells would partially ameliorate the project's added contribution to basin overdraft. Additionally, water treatment should be required for wells on the subject property that do not meet state standards for both arsenic and total coliform bacteria.

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

MEETING DATE:	April 9, 2014
AGENDA ITEM:	4
AGENDA TITLE:	Report on the Board's April 2, 2014 Discussion of HydroMetrics Modeling of Laguna Seca Subarea
PREPARED BY:	Robert Jaques, Technical Program Manager

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

SUMMARY:

The findings of HydroMetrics's modeling of the Laguna Seca subarea (LSA) were discussed at the TAC's January, February, and March 2014 meetings, and the attached Board agenda transmittal containing the TAC's recommendations was discussed by the Board at its April 2, 2014 meeting. Here is a synopsis of the Board's April 2 discussion of this matter:

- A question was raised about the accuracy of the Model. This will be addressed in the Model accuracy evaluation and possible recalibration work that the Board approved at this meeting to have HydroMetrics perform. Mr. Williams noted that the Model did not exist when the Decision was ordered and that it provides a better tool for evaluating basin management issues than existed then.
- Board members understood that pumping from outside the Basin along the eastern and southern boundaries of the LSA is affecting groundwater levels in the LSA and that if this is not addressed then the Watermaster cannot properly manage the Basin.
- Mr. Freeman informed the Board that the likely process would be to first meet with those outside-Basin well owners to discuss the findings of the HydroMetrics work, and to pursue bringing them into the Decision, so all pumpers in this area will be subject to whatever pumping requirements the Court decides to impose.
- Mr. Freeman also encouraged the Board to notify the Court promptly of the findings of the HydroMetrics work and to inform the Court that the Watermaster is conducting additional modeling to learn more about the situation.
- Mr. Freeman also said it would be appropriate to have a peer review done of the HydroMetrics modeling work to substantiate it. This would be in anticipation of other parties (well owners outside of the current Basin boundary) needing to accept the modeling work as accurate and therefore not contest it is the Court seeks to include them in the Decision.
- There were questions about how the Basin boundary was originally established. The best recollection of those who were present during the Decision process was that it was taken from a 1982 USGS report. That report noted that this boundary was a very approximate one, based on only a cursory evaluation. Mr. Williams pointed out that there is no known hydrogeologic divide that establishes the Basin boundary in the southeastern corner of the Basin.
- Cal Am operates a number of wells in this area (outside the Basin) including the Toro, Bay Ridge, and Ambler Park wells. There was some Board discussion as to whether it would be feasible for Cal Am to reduce its pumping from these wells. Mr. Sabolsice responded that the mostly likely approach to reducing pumping would be for customers in that area to implement conservation measures. Mr. Sabolsice commented that the Corral de Tierra golf course wells likely pump considerably more than the other wells in this area.

The Board took the following action regarding the TAC's Technical Recommendations (listed in the attached Board Agenda Transmittal): The Board unanimously approved authorizing HydroMetrics to perform the additional modeling described under items 1, 2, and 3 of the Technical Recommendations.

AGENDA ITEM:	4 (Continued)

With regard to the Non-Technical Issues, the Board:

1. Directed staff to notify the Court of the findings of the HydroMetrics work and to inform the Court that the Watermaster would be conducting additional modeling to get a clearer understanding of the situation.
2. The Board chose to defer notifying producers within the LSA about those findings until the additional modeling work has been performed.
3. The Board took no action regarding making a determination as to whether Alternative Producers in the LSA should be directed to reduce their pumping, nor did it take any action regarding contacting the Court about reestablishing the Basin boundary for the LSA. These issues will likely be taken up by the Board after HydroMetrics completes the additional modeling that was authorized at this Board meeting.

ATTACHMENTS:	April 2, 2014 Board Agenda Transmittal on this Topic (not including the HydroMetrics's modeling report that was included in the TAC's prior meeting agendas)

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

RECOMMENDED ACTION:	1. Begin discussion of a scope of work for HydroMetrics to perform further modeling beyond that authorized at the April 2 Board meeting, if additional modeling is found to be necessary in order to provide sufficient information to determine what wells should be brought into the Decision in order to be able to stabilize ground water levels in the LSA. 2. Seek names of firms that could perform a peer review of the HydroMetrics modeling work, in anticipation of the Board directing that a peer review be performed at a future date.

SEASIDE GROUNDWATER BASIN
WATERMASTER

TO: Board of Directors

FROM: Robert S. Jaques, Technical Program Manager
MODIFIED AND APPROVED BY: Dewey D Evans, CEO

DATE: April 2, 2014

SUBJECT: HydroMetrics Modeling of Laguna Seca Subarea

RECOMMENDATIONS:

1. Authorize the expenditure of up to $6,518 left unspent in HydroMetrics' previously approved contract (RFS No. 2013-04 approved by the Board on September 4, 2013 for $25,060) and the full $2,209 unspent in the MPWMD's previously approved contract (RFS No. 2013-03), to perform the further modeling of the Laguna Seca Subarea (LSS) described below under the "Technical Recommendations" in this agenda transmittal.

2. Consider, and if appropriate take action and/or provide direction to the TAC regarding, the "Non-Technical Issues the Board May Wish to Consider" described below in this agenda transmittal.

BACKGROUND:

HydroMetrics' has completed the initial modeling work of the Laguna Seca subarea (LSS) of the Seaside Groundwater Basin, as directed by the Board at its September 4, 2013 meeting. There were three objectives for this modeling work:

1. Estimate impacts if Cal-Am Discontinues Laguna Seca Pumping
2. Estimate Laguna Seca subarea Natural Safe Yield
3. Estimate Laguna Seca subarea Operational Safe Yield

This work was undertaken in response to questions and concerns raised about the steady decline in water levels in the LSS, the outlook for long-term water supply in the LSS, and whether or not Cal Am's Operating Yield for the LSS would drop to zero by 2021 when all of the 10% pumping cutbacks mandated by the Adjudication Decision will be completed.

DISCUSSION

The attached HydroMetrics "*Results of Laguna Seca Safe Yield Analysis*" provides some very significant insights into the LSS and to the Seaside Basin. Mr. Williams of HydroMetrics will make a PowerPoint presentation describing the modeling work and its findings at today's Board meeting.

The principle conclusions of the Memorandum are:

1. Even if Cal-Am discontinues all pumping from its LSS wells, groundwater elevations in the subarea will continue to decline. The eastern side of the subarea will suffer the greatest and most persistent declines. With all Cal Am pumping in this subarea eliminated, groundwater elevations will fall below the top of the well screens under pumping conditions in several production wells prior to 2041.

2. The model estimates that the average annual natural safe yield from the Laguna Seca subarea is only 240 acre feet per year. This is considerably lower that the perennial safe yield of 608 acre feet per year set forth in the adjudication Decision. This finding is particularly significant because 240 acre feet per year is much less than the 644 acre feet per year of annual production the Decision allocates to the Alternate Producers alone in the LSS.

3. Even if pumping in the LSS is reduced to the natural safe yield of 240 acre feet per year, groundwater levels will not be high enough to keep levels at all wells above their well screens. This is because there are seasonal and year-to-year variations in the amount of rainfall recharge of the subarea, and the amount of pumping needed to meet seasonal demands, resulting in fluctuating groundwater levels.

4. Eliminating all pumping from the LSS (including pumping by all Alternate Producers) does not completely halt the predicted decline in groundwater elevations in the easternmost monitoring wells.

5. Pumping from wells east of the LSS influences groundwater elevations in the eastern portion of the subarea. These wells (outside of the LSS) are contributing to the subarea's inability to achieve stable groundwater elevations.

6. The influence of well pumping outside of the LSS could be evaluated using the groundwater model as follows: Multiple scenarios could be run in which pumping from individual wells outside of the LSS is either removed or their pumping is reduced. The resulting changes to groundwater levels in the LSS could then be compared to baseline conditions to determine the influence that each of these wells has on the subarea.

By way of explanation of some of these conclusions, the natural safe yield is a mass balance number that simply looks at inflows and outflows to a basin. It assumes that it is possible to extract the positive difference between inflows and outflows, and this difference constitutes the natural safe yield. However, depending on well locations, pumping this amount may still result in lowering groundwater levels. For example, if all the wells in a basin were concentrated in a single city block, one might have a natural safe yield of so many acre-feet per year based on a water balance approach, but you could not extract that much water from this tight cluster of wells without the wells going dry. This is why the concept of an "operational safe yield" was suggested by HydroMetrics. The operational safe yield accounts for the actual locations of existing (or planned) wells. The operational safe yield looks at how much water can be practically extracted without causing undesirable lowering of groundwater levels in wells. The operational safe yield is always equal to or less than the natural safe yield.

Because of the significance and complexity of the findings from this modeling work, the TAC discussed this topic at its January, February, and March 2014 meetings before reaching consensus on what recommendations to make to the Board. Much of those discussions centered on whether or not the modeling results indicate that "Material Injury" is occurring in this subarea of the Basin. Making this determination is key to knowing when the Watermaster should take any of the actions the Adjudication Decision requires the Watermaster to take when Material Injury has occurred, or is likely to occur. For example the Adjudication Decision states that the Watermaster is to revise the Operational Safe Yield if Material Injury will occur by continuing to pump at the original Operational Safe Yield established by the Decision.

The Seaside Groundwater Basin Adjudication Decision defines the term "Material Injury" to mean *"...a substantial adverse physical impact to the Seaside Basin or any particular Producer(s), including but not limited to: seawater intrusion, land subsidence, excessive pump lifts, and water quality degradation."* In the context of the LSS it appears that seawater intrusion, land subsidence, and water quality degradation are not currently of concern, so excessive pump lifts (and other consequences) resulting from falling groundwater levels should be the focus of determining whether material injury is occurring or is likely to occur. Excessive pump lifts could cause well owners to

incur increased pumping costs, and/or costs to install new pumping equipment. One other consequence of falling groundwater levels would be exposing portions of well screens that were previously continuously submerged. This can reportedly result is more rapid corrosion of the well screen material which would eventually cause well owners to incur repair costs that they would not otherwise occur.

Information was requested from the Watermasters of 20 other adjudicated groundwater basins in California to learn whether or not they had developed criteria to help establish when Material Injury occurs. The responses that were received indicated that no specific quantifiable criteria to determine when material injury has occurred have been developed by any of these Watermasters.

There are both technical and policy aspects involved in making a determination of Material Injury. The TAC has therefore developed these recommendations and listing of non-technical issues for the Board's consideration:

Technical Recommendations

There is currently $6,518 left unspent in HydroMetrics' contract, and $2,209 in the MPWMD's contract, to perform modeling of the LSS. Use some or all of this unspent amount to conduct further modeling to better determine:

1. Whether reducing or eliminating pumping by Alternative Producers in the LSS would appreciably reduce the rate at which groundwater levels are falling in the LSS.
2. The impact on groundwater levels in the LSSA of pumping from outside the eastern and southeastern boundaries of the LSS.
3. Have MPWMD do further research on wells for which well drawdown and casing elevation data was not previously available for use in HydroMetrics' modeling of the LSS, and if such data can be obtained provide it to HydroMetrics for inclusion in the final modeling report. MPWMD reports that they can perform this work without additional cost authorization, under their already-approved contract to provide general assistance to the Watermaster as requested.

Non-Technical Issues the Board May Wish to Consider

1. Should Producers in the LSS be notified of the findings of HydroMetrics's modeling work at this time, or should the additional recommended modeling first be performed in order to provide a clearer understanding of the situation, and a decision then made regarding notifying Producers?
2. What additional information would the Board need in order to make a determination regarding whether or not Alternative Producers in the LSS should be directed to reduce their pumping?
3. The findings from this modeling work indicate that the Seaside Basin's true hydrogeologic boundary of the LSS area is further to the east and southeast than the boundary shown in the Decision. What additional information would the Board need in order to make a determination as to whether or not to request that the Court provide direction regarding reestablishing the boundaries of the Seaside Groundwater Basin in the LSS to address the discrepancy.

ATTACHMENTS:

HydroMetrics "*Results of Laguna Seca Safe Yield Analysis*"

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

MEETING DATE:	April 9, 2014
AGENDA ITEM:	5
AGENDA TITLE:	Update on Seaside Basin Salt and Nutrient Management Plan
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

At the January 2014 TAC meeting a brief presentation was made on the Seaside Basin Salt and Nutrient Management Plan that was being prepared for MPWMD by HydroMetrics. Here is a brief synopsis of the discussion from that meeting:

- One significance of these Plans is that they can lead to Basin Plan amendments.
- The Plan may call for a small amount of additional monitoring in the Seaside Groundwater Basin. If so, the responsible party to perform this work will likely need to be determined and stated in the Plan.
- If more monitoring needs to be performed, it was suggested that the Watermaster should leave to MPWMD the matter of assessing the responsible party issue, and that if MPWMD felt that the Watermaster should perform any of the additional water monitoring it would contact the Watermaster to make that request.
- No new monitoring wells were expected to be needed.
- The stakeholders had been identified under the Plan, and stakeholder involvement will be undertaken by MPWMD. Many of the stakeholders are members of the Watermaster TAC.
- Future grant funds will only be available to basins if there is a completed and accepted Salt and Nutrient Management Plan.
- The Seaside Basin is one of a few basins, or the only basin, in California where groundwater quality is already showing measurable improvement.

HydroMetrics has now completed the Plan, and would like to discuss the findings with the Watermaster's TAC. MPWMD and HydroMetrics will provide an oral report on the key findings of their work at today's meeting.

ATTACHMENTS:	None

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

RECOMMENDED ACTION:	None required – information only

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

MEETING DATE:	April 9, 2014
AGENDA ITEM:	6
AGENDA TITLE:	Schedule
PREPARED BY:	Robert Jaques, Technical Program Manager

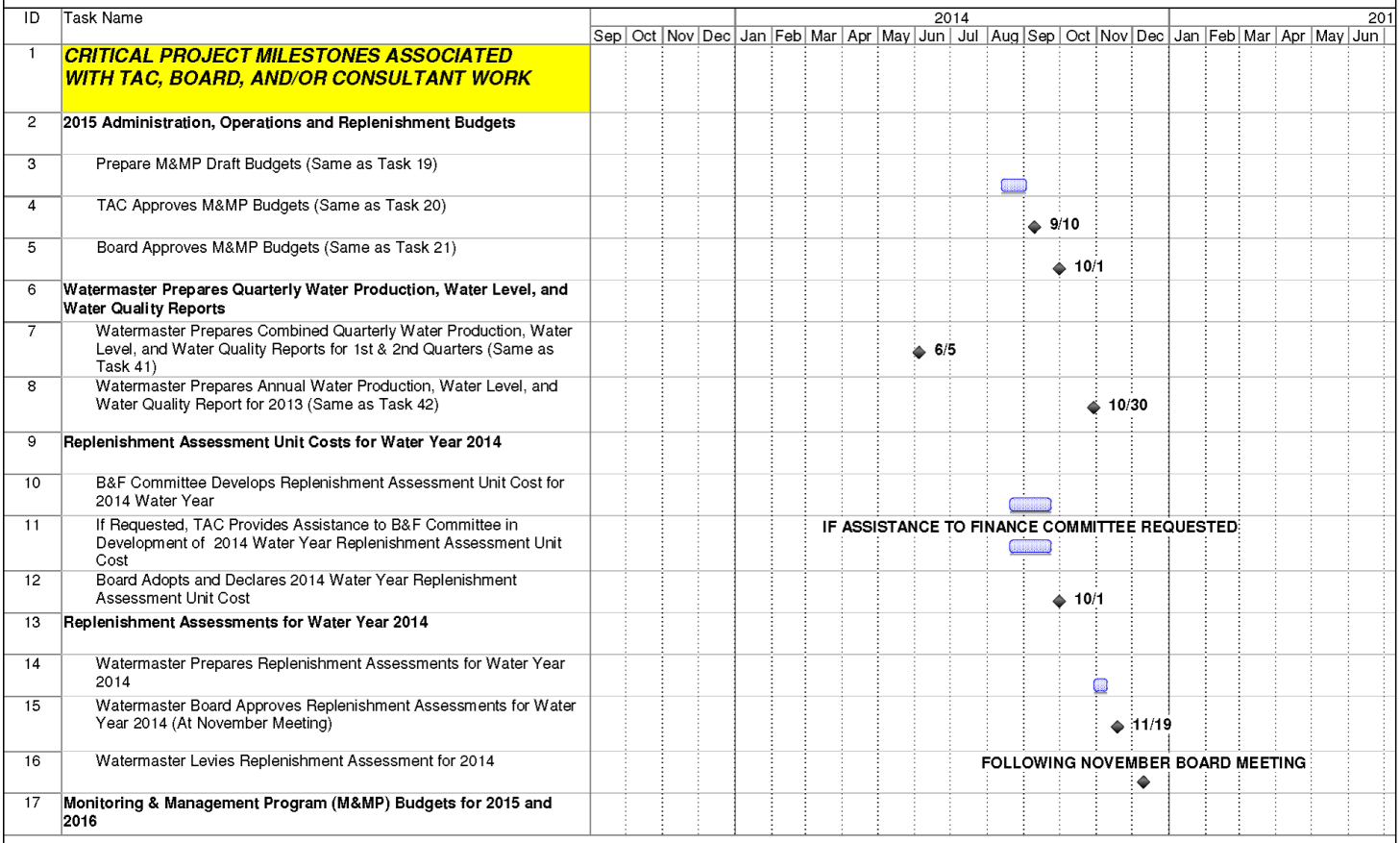
SUMMARY:
As a regular part of each monthly TAC meeting, I will provide the TAC with an updated Schedule of the activities being performed by the Watermaster, its consultants, and the public entity, MPWMD, which is performing certain portions of the work.

Attached is the most recent update of the Work Schedule for FY 2014.

This version includes new tasks for additional work, TAC discussions, and Board discussions regarding HydroMetrics modeling of the Laguna Seca subarea.

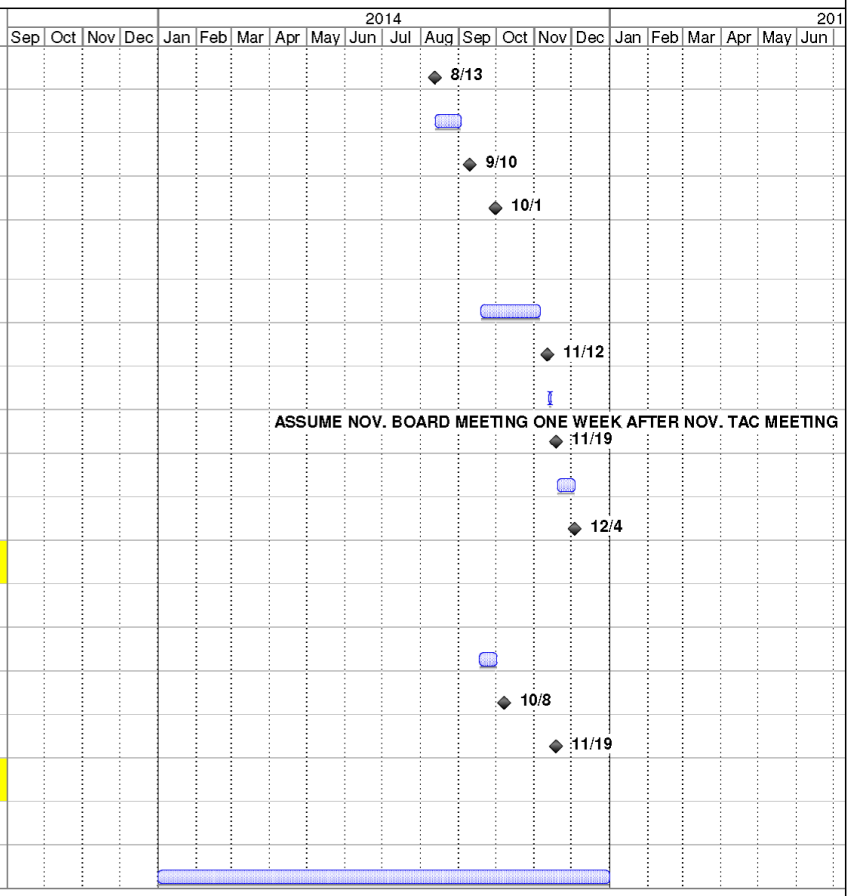
ATTACHMENTS:	Schedule of Work Activities for FY 2014
RECOMMENDED ACTION:	Provide Input to Technical Program Manager Regarding Any Corrections or Additions to these Schedules

Seaside Basin Watermaster
Monitoring and Management Program
2014 Work Schedule

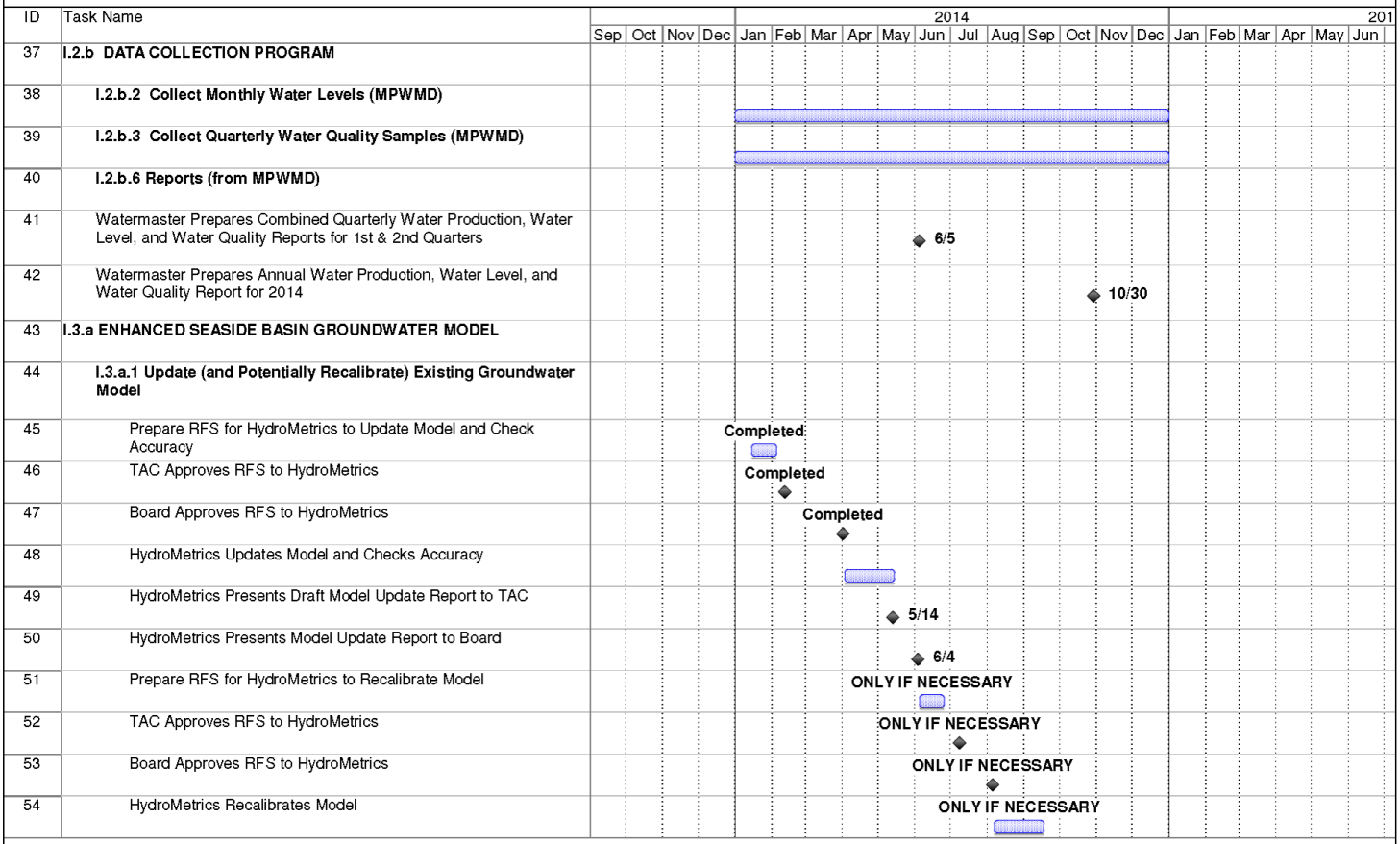


Seaside Basin Watermaster
Monitoring and Management Program
2014 Work Schedule

ID	Task Name
18	Preliminary Discussion of Potential Scope of Work for 2015 M&MP
19	Prepare Draft 2014 and 2015 M&MP O&M and Capital Budgets
20	TAC approves Draft 2015 and 2016 M&MP O&M and Capital Budgets
21	Board approves 2015 and 2016 M&MP O&M and Capital Budgets
22	**2013 Annual Report (Note: Schedule Reflects Court Approval of Later Submittal Date for Annual Report)**
23	Prepare Preliminary Draft 2014 Annual Report
24	TAC Provides Input on Draft 2014 Annual Report
25	Prepare Revised Draft 2014 Annual Report (Incorporating TAC Input)
26	Board Provides Input on Revised Draft 2014 Annual Report (At November Board Meeting)
27	Prepare Final 2014 Annual Report (Incorporating Board Input)
28	Watermaster Submits Final 2014 Annual Report to Judge
29	***MANAGEMENT***
30	**M.1 PROGRAM ADMINISTRATION (All Work Performed by Watermaster Staff)**
31	Prepare Initial Consultant Contracts for 2015
32	TAC Approval of Initial Consultant Contracts for 2015
33	Board Approval of Initial Consultant Contracts for 2015 (At November Board Meeting)
34	***IMPLEMENTATION***
35	**I.2.a DATABASE MANAGEMENT**
36	**I.2.a.1 Conduct Ongoing Data Entry/Database Maintenance**

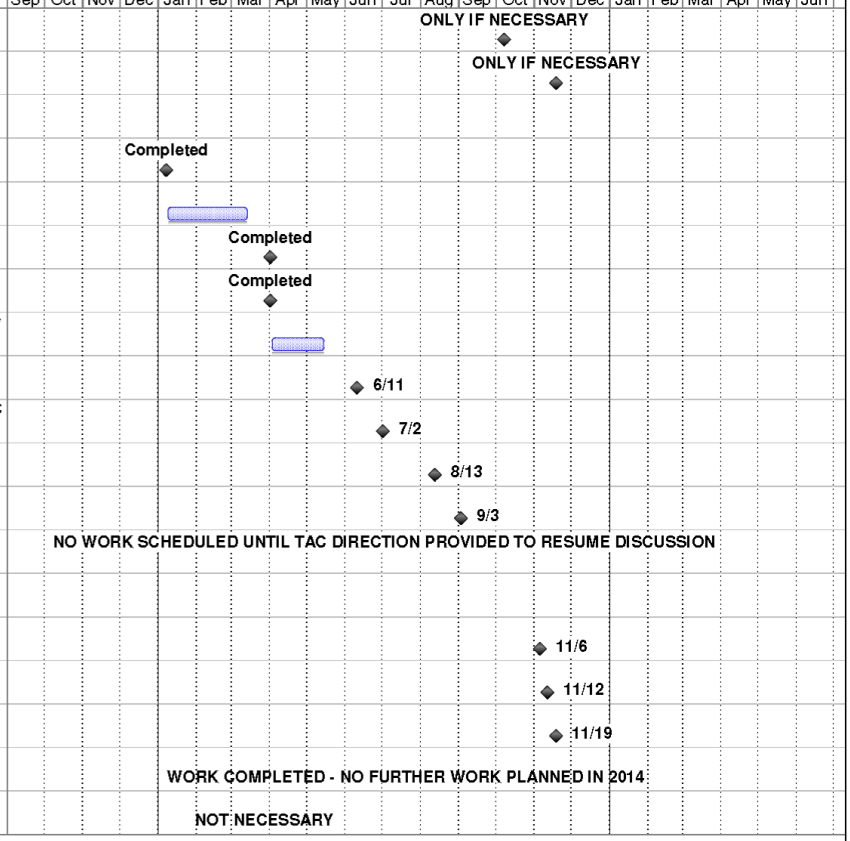


Seaside Basin Watermaster
Monitoring and Management Program
2014 Work Schedule



Seaside Basin Watermaster
Monitoring and Management Program
2014 Work Schedule

ID	Task Name
55	HydroMetrics Presents Draft Model Recalibration Report to TAC
56	HydroMetrics Presents Model Recalibration Report to Board
57	**I.3.a.3 Perform Modeling of Laguna Seca Subarea**
58	HydroMetrics Completes Draft Modeling Report and Presents Results to TAC
59	Initial TAC Discussion of Findings from Modeling Report and Preparation of Initial Recommendations to Board
60	Initial TAC Recommendations Presented to Board
61	Board Direction Provided to TAC
62	HydroMetrics Performs the Additional Modeling Recommended by the TAC
63	HydroMetrics Presents Additional Modeling Report to TAC and TAC Prepares Recommendations to Board
64	Presentation of HydroMetrics Additional Modeling Report and TAC Recommendations to Board
65	Further TAC Discussions and Preparation of Additional Recommendations to Board (if necessary)
66	Additional TAC Recommendations Presented to Board (if necessary)
67	**I.3.c Refine and/or Update the BMAP**
68	**I.4.c Annual Seawater Intrusion Analysis Report (SIAR)**
69	HydroMetrics Provides Draft SIAR to Watermaster
70	TAC Approves Annual Seawater Intrusion Analysis Report (SIAR)
71	Board Approves Annual Seawater Intrusion Analysis Report (SIAR)
72	**I.4.d Complete Preparation of Seawater Intrusion Response Plan (SIRP)**
73	**I.4.e Refine and/or Update the SIRP**



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

MEETING DATE:	April 9, 2014
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