

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

**DATE: Wednesday, January 10, 2018**

**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 (515) 739-1015. 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: Nina Miller, California American Water Company**  
**Vice-Chairperson: Jon Lear, MPWMD**

**MEMBERS**

<b>California American Water Company</b>	<b>City of Del Rey Oaks</b>	<b>City of</b>
<b>Monterey</b>	<b>City of Sand City</b>	<b>City of Seaside</b>
	<b>Coastal Subarea Landowners</b>	
<b>Laguna Seca Property Owners</b>	<b>Monterey County Water Resources</b>	
<b>Agency</b>	<b>Monterey Peninsula Water Management District</b>	

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**The next regular meeting will be held on Wednesday February 14, 2018 at 1:30 p.m. at the MRWPCA Board Room.**



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

<b>MEETING DATE:</b>	January 10, 2018
<b>AGENDA ITEM:</b>	2.A
<b>AGENDA TITLE:</b>	Approve Minutes from the November 15, 2017 Meeting
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b>	
<p>Draft Minutes from this meeting was emailed to all TAC members. Any changes requested by TAC members have been included in the attached version.</p>	
<b>ATTACHMENTS:</b>	Minutes from this meeting
<b>RECOMMENDED ACTION:</b>	Approve the minutes

**D-R-A-F-T**  
**MINUTES**

**Seaside Groundwater Basin Watermaster  
Technical Advisory Committee Meeting  
November 15, 2017**

**Attendees: TAC Members**

City of Seaside – No Representative  
California American Water – Nina Miller  
City of Monterey – Laurie Williamson (via telephone)  
Laguna Seca Property Owners –Bob Costa  
MPWMD – Larry Hampson  
MCWRA – Tamara Voss  
City of Del Rey Oaks – No Representative  
City of Sand City – Leon Gomez (via telephone)  
Coastal Subarea Landowners – No Representative

**Watermaster**

Technical Program Manager - Robert Jaques

**Consultants**

HydroMetrics – Georgina King (via telephone)  
Martin Feeney – Martin Feeney (via telephone)

**Others**

California American Water – Eric Sabolsice (via telephone)

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The meeting was convened at 1:37 p.m. after a quorum had been established.

**1. Public Comments**

There were no public comments. Nina Miller asked if an expenses-to-date summary document could be sent to her, as she had requested at the last TAC meeting. Mr. Jaques said he would have Ms. Dadiw sent that to her.

Some of the TAC members participating via telephone reported hearing noise on the conference line. Mr. Jaques briefly hung up the conference line and then redialed it. Those members then rejoined the meeting by dialing in, and reported that the noise problem had been resolved.

**2. Administrative Matters:**

**A. Approve Minutes from the September 13, 2017 Meeting**

On a motion by Ms. Voss, seconded by Mr. Gomez, the minutes from this meeting were unanimously approved as presented, with Mr. Hampson abstaining.

**B. Sustainable Groundwater Management Act (SGMA) Update**

Mr. Jaques summarized the agenda packet materials for this item. There was no other discussion.

**C. Sustainable Groundwater Management Act (SGMA) Update**

Mr. Jaques summarized the agenda packet materials for this item. There was no other discussion.

**D. Letter from MCWD Proposing to Sell Water to Replenish the Seaside Basin for Use in the Ord Community**

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

Ms. Miller said she concurred with many of the questions listed in the agenda packet.

Ms. Voss asked if the Seaside Basin needed water. Mr. Jaques responded yes, and explained that in some parts of the basin, especially near the coastline, groundwater levels are below sea level, thus making the basin vulnerable to seawater intrusion. She said she felt the Watermaster should investigate all potential supplemental water supply sources to help alleviate that problem. She noted that if 700 acre-feet of water was delivered per year at a cost of \$2,782 per acre foot, the annual cost would be nearly \$2,000,000. She questioned whether there was really “excess groundwater” in the Salinas Valley Groundwater Basin for MCWD to sell to the Watermaster, since that basin itself is over drafted and experiencing seawater intrusion. She also noted that the Salinas Valley Groundwater Basin and the Seaside Basin are hydrogeologically interconnected. She said she was not sure if the MCWD proposal was consistent with the MCWRA’s Act which prohibits exporting water from the Salinas Valley Groundwater Basin.

Mr. Feeney commented that, while he was not sure of the exact amount of the allotment or the date of the agreement, he thought that MCWD is apparently proposing to sell a portion of its Salinas Valley Basin allocation from their 1995 Agreement [actual date was subsequently determined to be 1993] with Monterey County. He thought the Agreement gave them about 1,500 acre-feet per year from the deep aquifer as their water allocation for the Ord Community area. He said he thought the agreement was originally between the MCWRA and the Army, and that after MCWD took over the Army's water system they inherited a portion of the Army’s allotment. He felt the MCWD proposal appeared to be for legal purposes.

Mr. Sabolsice noted that the MCWD letter was sent on September 27. He went on to say that Keith Van Der Maaten had submitted testimony at the Public Utilities Commission meeting about selling water to help reduce the size of the Cal Am desalination plant. He said he felt the proposal “clouds the issue” of the sizing of the desalination plant. He reported that the MCWD attorneys said the Seaside Basin is part of the Salinas Valley Groundwater Basin, and therefore not subject to the MCWRA Act that prohibits exporting water from that basin. He felt the timing and intent of the letter was suspicious, and that the questions in the agenda packet need to be answered, so the Board can give the proposal informed consideration.

Ms. Miller commented that it probably only costs MCWD about \$150 per acre foot to produce water from its wells.

Mr. Hampson commented that MCW D would need a plan for any water quality problems that might arise as a result of using their water in the Seaside Basin. He also felt that MCWD should not be allowed to make a profit from the sale of the water.

There was concurrence on forwarding the list of questions contained in the agenda packet to the Board for their consideration.

#### **E. Monterey Peninsula Stormwater Resource Plan**

Mr. Jaques summarized the agenda packet materials for this item. There was no other discussion.

### **3. Discuss Data Obtained from Conductivity and Temperature Profiling of the Sentinel Wells**

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

Mr. Feeney said that the conductivity profiling shows that the water quality samples we have been collecting are representative of the water in the casing, but this is not the same as the quality of the water in the aquifers. He explained that the wells were designed to enable conductivity (induction) logging of the aquifers, and that, although water quality samples have been collected from within the casings of these wells, the wells were not designed for taking water quality samples.

Ms. Voss reiterated Mr. Feeney's comments about the design of the wells. She noted that the induction logging shows no appreciable change in water quality conductivity in the aquifers, and that there is no practical way to get water quality data from within the aquifer itself, only from within the casing. She noted that it would be difficult to pump out a 3-times casing volume prior to sample collection, as is often done for the collection of water quality samples within wells. She said it is not surprising that the water quality in the casing is not representative of water quality in the aquifers. She was not in favor of continuing to collect water quality data that is not useful or representative.

Ms. Miller asked if we should consider discontinuing taking water quality samples from these wells, and instead to rely on the induction logging information to indicate changes in water quality within the aquifers. Ms. Voss asked if the Court Decision requires that water quality sampling be done. Mr. Jaques responded that it was part of the Monitoring and Management Program Work Plan that the Watermaster developed, but that water quality sampling from the coastal Sentinel Wells is not specifically required by the Decision itself. He went on to explain that the original intent was to put in a cluster of wells at each site, with a separate well for each aquifer depth. However, the cost for cluster wells was about \$5,000,000 more than using the multi-perforated single wells. Therefore, cluster wells were installed for purposes of performing induction logging, not water quality sampling.

Ms. King said it was not feasible to isolate the perforations within these wells with packers, in order to draw aquifer water into the perforations for sampling purposes, due to the extreme depths of the perforations, and the small 3-inch diameter of the casing that limits the pump size that can be used to extract the samples.

Mr. Jaques offered to prepare an agenda item to discuss the pros and cons of discontinuing water quality sampling for discussion at the TAC's next meeting.

### **4. Approve Initial RFSs for MPWMD, HydroMetrics, and Martin Feeney for 2018**

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

Ms. Miller asked if we should take water quality sampling out of Martin Feeney's work for 2018. There was considerable discussion on this leading to the unanimous agreement to change Mr. Feeney's scope of work to discontinue water quality sampling in 2018 in the coastal Sentinel Wells.

A motion was made by Ms. Miller to make this change and to continue only induction logging of these coastal Sentinel Wells. The motion was seconded by Ms. Voss.

Under discussion of the motion, Mr. Costa noted that the original work plan included water quality sample collection from these wells. He commented that, if the results are of little value, does water quality sampling need to be replaced with some other data collection method. Ms. Voss noted that we have tried to come up with approaches to take representative water quality samples in these wells, and have been unable to come up with a better type of water quality sampling method to use in place of the current sample collection method.

Mr. Feeney offered that fluid resistivity profiling could be performed in place of water quality sampling. Ms. King said she did not feel this would add value, as that data would not be representative of water quality in the aquifers.

Ms. Voss said she did not feel the fluid resistivity profiling (conductivity profiling within the casing) would add information that we aren't already getting from the induction logging. She felt the water quality data from these wells was "confounding" the understanding of water quality in the aquifers, and was therefore not helpful.

The motion described above passed unanimously. Mr. Jaques will add this information into the annual report. However, he requested keeping the scope and cost for water quality sampling in Mr. Feeney's RFS for the time being, in order to await the Judge's approval of deleting that work after he has reviewed the annual report. If the Judge concurs with deleting the work, Mr. Jaques will direct Mr. Feeney to discontinue water quality sampling in those wells, so those costs would not be incurred.

On a motion by Ms. Voss, seconded by Ms. Williamson, there was unanimous approval, with Mr. Hampson abstaining, of all of the initial RFSs contained in the agenda packet.

#### **5. Discuss and Provide Input on the Draft 2017 Seawater Intrusion Analysis Report (SIAR)**

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

Ms. King said she would edit the Draft SIAR sections pertaining to chloride data, and would include a revised recommendation to discontinue water quality sampling in the coastal Sentinel Wells, consistent with the action taken by the TAC on the preceding agenda item. There was consensus in support of making these revisions, and no other revisions were requested.

#### **6. Discuss and Provide Input on the Preliminary Draft Watermaster 2017 Annual Report**

Mr. Jaques briefly summarized and highlighted some items contained in the Preliminary Draft Annual Report.

Ms. Miller asked if it would be necessary to revise the wording regarding water quality sampling of the coastal Sentinel Wells in Task I.2.b.3 of the Monitoring and Management Program Work Plan. Mr. Jaques said he would make those revisions.

Mr. Hampson noted that for next year's annual report, in addition to the Salinas Valley Integrated Hydrogeologic Model, there is also going to be a basin study that will be undertaken. Mr. Jaques said that when information on that becomes available he can include it in next year's annual report.

No other revisions to the Preliminary Draft Annual Report were suggested.

**7. Set Next Meeting Date**

The TAC concurred with having no meeting in December, and having its next meeting in January.

**8. Schedule**

Mr. Jaques commented that there were no significant changes in the schedule contained in the agenda packet, and that he would be preparing a new schedule for 2018 which will be included in the TAC's next meeting agenda packet.

**9. Other Business**

There was no other business to discuss.

The meeting adjourned at 3:05 p.m.

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

<b>MEETING DATE:</b>	January 10, 2018
<b>AGENDA ITEM:</b>	2.B
<b>AGENDA TITLE:</b>	Sustainable Groundwater Management Act (SGMA) Update
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager

**At the State level:**

Since my last update, I have not received any new materials from the State that would impact the Watermaster.

**At the Monterey County level:**

The Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) approved their Advisory Committee's recommended appointment of Bob Jaques to that Committee. I will attend those meetings whenever issues pertaining to topics of interest to the Watermaster are on the agenda. The Advisory Committee held a meeting on November 16, 2017, but due to a scheduling conflict I was not able to attend. The agenda for that meeting did not appear to have any items of direct impact on, or interest to, the Watermaster. The minutes from that meeting have not yet been posted.

The next Advisory Committee meeting is scheduled for January 18, 2018.

<b>ATTACHMENTS:</b>	None
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***SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE  
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**RECOMMENDED  
ACTION:**

None required – information only

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE  
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<b>MEETING DATE:</b>	January 10, 2018
<b>AGENDA ITEM:</b>	2.C
<b>AGENDA TITLE:</b>	Letter from MCWD Proposing to Sell Water to Replenish the Seaside Basin for Use in the Ord Community
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<p>At its November 15, 2018 meeting the TAC discussed a letter from the Marina Coast Water District (MCWD) proposing to sell water to the Watermaster to help replenish the Seaside Basin. Based on input from the TAC, as well as the Board at its December 6, 2018 meeting, I sent the attached letter to MCWD asking them to provide clarification of a list of issues.</p> <p>As of the date of preparing this agenda packet, I had not received a response to that letter. As soon as a response is received I anticipate meeting with MCWD's General Manager to discuss the issues and will provide a copy of the response letter and the outcome of that meeting to the TAC at the first TAC meeting that follows.</p>	
<b>ATTACHMENTS:</b>	Letter to MCWD dated December 6, 2017

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

**RECOMMENDED  
ACTION:**

None required at this time – information only

**Seaside Basin Watermaster  
P.O. Box 51502  
Pacific Grove, CA 93950**

December 6, 2017

Mr. Keith Van Der Maaten  
General Manager  
Marina Coast Water District  
11 Reservation Road  
Marina, CA 93933-2099

Dear Mr. Van Der Maaten,

At its December 6, 2017 meeting the Board of Directors of the Seaside Basin Watermaster asked that I seek from you clarification of the following issues as they pertain to your letter dated September 27, 2017 proposing to sell to the Watermaster water to be used to replenish the Seaside Basin.

1. In paragraph 1 the letter states in part "...Nothing in this offer...restricts MCWD's or the Watermaster's discretion with respect to any activity or project developed in accordance with this offer, including MCWD's consideration of any alternatives and mitigation measures for such activities or projects." What types of activities or projects might MCWD undertake that would affect the delivery of water under the proposal? What types of alternatives or mitigation measures might be undertaken by MCWD, and how would they affect delivery of water?
2. In paragraph 1 of page 1 the letter states in part that MCWD intends that CEQA, and all other applicable environmental compliance laws, will be fully complied with prior to any binding decisions with respect to the water sale. What issues associated with the proposal would need to be addressed in the CEQA process, or in complying with applicable environmental compliance laws? How time-consuming and difficult would it be to achieve compliance with these requirements?
3. The figure attached to the letter needs to be updated to reflect the basin boundary revisions made by DWR in its Bulletin 118 to show the Adjudicated Seaside Basin.
4. In paragraph 2 of page 1 the letter states in part that MCWD has excess groundwater allocations for existing and projected near term demands and is willing to explore synergistic arrangements with the Watermaster. Is there really "excess" groundwater in the Salinas Valley Groundwater Basin from which MCWD draws its water? (That Basin is experiencing seawater intrusion from overpumping). What are these allocations? How are they determined? How long do they last? Who administers/regulates these allocations? Can the administering/regulating authority change the allocations or are they fixed and guaranteed?
5. Is the groundwater that MCWD proposes to sell of potable quality as-is, or would treatment be required before it could be used or injected into the Seaside Basin?

- a. If the water were to be injected into the basin for replenishment purposes how and where would it be injected?
  - b. Could there be adverse geochemical impacts in the aquifer from injecting this water? Who would evaluate this potential adverse impact?
  - c. What action would be taken by MCWD if adverse geochemical impacts resulted from use of the water provided by MCWD?
  - d. Who would monitor the quality of the water being provided by MCWD?
  - e. Who would meter the quantity of water being delivered, and how?
6. In paragraph 2 of page 2 the letter states that MCWD would provide 4,300 AF over a six-year period. If 700 AFY were provided this would total 4,200 AF, not 4,300 AF.
7. In paragraph 4 of page 2 the letter states in part that the water provided by MCWD would replace Cal Am's need to use 700 AFY of MPWSP desalinated water to payback the Watermaster during at least the term of this sale. Why would Cal Am want to do that, since Cal Am would still have the obligation, under its Agreement with the Watermaster, to repay 700 AFY? How would doing this benefit the Seaside Basin?
8. In paragraph 5 of page 2 the letter states in part that "...none of the water from this sale may be directly used outside of MCWD's Ord Community service area..." MCWD provides the water supply to that area. There are currently no delivery pipelines connecting Seaside Basin producers with that area, and MCWD has no wells in the Seaside Basin. How could the water be provided to the Watermaster in such a manner that it would only be delivered into that area? How would the water be delivered to the Ord Community area, and by who?
9. Related to issue No. 8, it does not appear that it would be consistent with the Adjudication Decision for MCWD to "wheel" water to Cal Am to deliver it to the Ord Community water customers, since Cal Am does not currently serve those customers (MCWD does). How would this be addressed?
10. In paragraph 5 of page 2 the letter also states that the sale of this water would need the approval of the CPUC and the SWRCB. What issues would those parties be concerned about which might affect their willingness to grant their approvals? How long would it take to get those approvals? Would the Watermaster incur any expenses associated with getting them?
11. In paragraph 5 of page 2 the letter also states that if the CPUC authorized Cal Am to acquire this water then Cal Am would have to submit to the SWRCB a revised set of milestones that would take this water into account. Would Cal Am want to do this?
12. In paragraph 2 of page 3 the letter lists three conditions of the sale.
  - a. The first condition calls for the water to be sold to the Watermaster. Where would the money come from to purchase the water?
  - b. The second condition sets a price of \$2,872 per AF which is the Watermaster's Replenishment Assessment unit price. That unit price was developed by the Watermaster through a volume-weighted blending of estimated water costs from several potential water supply projects. The Watermaster's intent in purchasing any water for replenishment would

be to acquire it at the lowest possible cost, which would presumably be no more than the supplier's cost to provide the water. MCWD's cost to supply the water would likely be much lower than \$2,782/AF.

- c. The third condition prohibits the use of any of this water on the Peninsula. Thus, while the water could be of potential benefit to the Basin, it would not benefit Cal Am in fulfilling its water supply obligations. Given this, would Cal Am be interested in accepting the offer?

13. Would the Watermaster incur any costs, other than to purchase the water, if it accepted MCWD's offer?
14. MCWD is apparently in competition with Monterey County to serve as the Groundwater Sustainability Agency for the part of the Salinas Valley Groundwater Basin to the north of the boundary of the Adjudicated Seaside Basin. Could there be any conflict between MCWD and Monterey County as a result of delivering water to the Seaside Basin under your Proposal?
15. MCWD is believed to have commitments to supply water to current and proposed future developments on the former Fort Ord. Could there be any conflict between the proposal to sell water to the Watermaster, and MCWD's commitments to supply water to these other parties?
16. How can MCWD help with mitigating the impacts of the Cease and Desist Order imposed on Cal Am for its withdrawal of water from the Carmel River Basin?
17. Would it be possible to get an agreement for a term longer than the six years that are contained in your letter of Proposal?
18. Due to the non-fixed (i.e. movable) location of the hydrogeologic divide between the Seaside Basin and the Salinas Valley Basin, can MCWD prove that the water it is offering to supply would not in fact be coming from the Seaside Basin itself, rather than from the Salinas Valley Basin.

Your responses clarifying and/or responding to these issues will be appreciated. After receiving your response, and my review of them, I will look forward to meeting with you to further discuss these issues, so I can report back to my Board.

Thank you,

Robert Jaques  
Technical Program Manager

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

<b>MEETING DATE:</b>	January 10, 2018
<b>AGENDA ITEM:</b>	2.D
<b>AGENDA TITLE:</b>	Monterey Peninsula Stormwater Resource Plan (MPSRP)
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b>	
<p>A study titled the “Monterey Peninsula Stormwater Resource Plan (MPSRP)” is being initiated by the entities participating in development of the Integrated Regional Water Management Plan for the greater Monterey Bay area. Background information on the study was included in the November 15, 2018 TAC agenda packet.</p> <p>The consultant performing the study reports that the next communication with the technical stakeholder group will be in January, to share the results of the study. I have not yet received notification of the date on which the results of the study will become available.</p>	
<b>ATTACHMENTS:</b>	None
<b>RECOMMENDED ACTION:</b>	None required

**SEASIDE BASIN WATER MASTER  
TECHNICAL ADVISORY COMMITTEE  
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<b>MEETING DATE:</b>	January 10, 2018
<b>AGENDA ITEM:</b>	3
<b>AGENDA TITLE:</b>	RFS to HydroMetrics WRI to Update the Seaside Basin Groundwater Model
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b>	
<p>In the approved Monitoring and Management Program (M&amp;MP) for 2018, and in its associated approved budget, there is a task to update and recalibrate the Seaside Basin Groundwater Model.</p> <p>Attached is RFS No. 2018-03 to HydroMetrics to perform that work. The Scope of Work and cost in the RFS were taken directly from the scope and cost proposal the TAC reviewed at its August 9, 2017 meeting. At that same meeting the TAC recommended going ahead with updating and recalibrating the model.</p>	
<b>ATTACHMENTS:</b>	HydroMetrics RFS No. 2018-03 to update and calibrate the Seaside Basin groundwater model
<b>RECOMMENDED ACTION:</b>	Approve or edit the RFS

SEASIDE BASIN WATERMASTER  
REQUEST FOR SERVICE

**DATE:** \_\_\_\_\_ **RFS NO.** 2018-03  
(To be filled in by WATERMASTER)

**TO:** Derrick Williams **FROM:** Robert Jaques  
HydroMetrics WRI WATERMASTER  
PROFESSIONAL

**Services Needed and Purpose:** Update and recalibrate the Seaside Basin Groundwater Model. This work will be comprised of Task 1 (including Subtasks 1.1, 1.2, and 1.3) as described in the Scope of Work in Attachment 1.

**Completion Date:** All work of this RFS shall be completed not later than July 31, 2018, and shall be performed in accordance with the Schedule described in Attachment 1.

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

**Total Price** Authorized by this RFS: \$ 54,370.00 (Cost is authorized only when evidenced by signature below.) (See Table 1 in Attachment 1 for Detailed Breakdown of Estimated Costs for Task 1).

**Total Price** may not be exceeded without prior written authorization by WATERMASTER in accordance with Section V. COMPENSATION.

**Requested by:** \_\_\_\_\_ **Date:** \_\_\_\_\_  
WATERMASTER Technical Program Manager

**Agreed to by:** \_\_\_\_\_ **Date:** \_\_\_\_\_  
PROFESSIONAL

# **ATTACHMENT 1**

Mr. Robert S. Jaques  
Seaside Groundwater Basin Watermaster  
83 Via Encanto  
Monterey, CA 93940

August 4, 2017

Subject: Revised Scope and Cost to Update the Seaside Basin Management Action Plan

Mr. Jaques:

Thank you for the opportunity to provide you with this scope and cost to update the Seaside Groundwater Basin's Basin Management Action Plan (BMAP). The scope we have put together addresses the BMAP items that were presented at the February 2017 Technical Advisory Committee meeting, and includes some of the recommendations made by Gus Yates of Todd Groundwater.

The Watermaster's first BMAP was completed in February 2009 (HydroMetrics LLC, 2009a). The BMAP constitutes the basic plan for managing the Seaside Groundwater Basin. The BMAP identifies both short-term actions and long-term strategies intended to protect the groundwater resource while maximizing the beneficial use of groundwater in the basin. It provides the Watermaster a logical set of actions that can be undertaken to manage the basin to its Safe Yield. Over the eight years since the BMAP was completed, the Watermaster has collected much groundwater level and quality data, and conducted various studies to improve the understanding of the basin. This improved understanding should be incorporated into an updated BMAP to facilitate ongoing responsible management of the groundwater resource.

At the time the 2009 BMAP was prepared, a groundwater model had not yet been developed for the basin, and the analysis contained in the BMAP was completed using analytical methods. Following the BMAP recommendation that a groundwater model be

constructed to assist with groundwater management decisions, a calibrated model was completed in November 2009 (HydroMetrics LLC, 2009b). The model simulated groundwater conditions in the basin between January 1987 and December 2008. In 2014, the model was updated with data through September 2013 (HydroMetrics WRI, 2014) but not recalibrated because its accuracy was still acceptable. The 2014 update found that the uncalibrated portion of the model (January 2009 – September 2013) tended to simulate higher groundwater levels than measured levels. Periodic recalibration of the model is necessary to ensure the model simulates groundwater levels within an acceptable industry standard accuracy. If simulated groundwater levels are not accurate this reduces the accuracy of all output from the model such as groundwater storage and water budget.

The scope of work provided below assumes the model will be used to develop estimates of groundwater storage, water budget, and safe yield; and to test impacts of potential management actions. The groundwater model was developed to assist in making basin management decisions, and for providing the simulated results that are required for analysis in the BMAP. As the model currently only includes input data through September 2013, groundwater storage, water budget, and safe yield estimates can only reliably be obtained from the model up through Water Year 2013. The model needs to be updated through Water Year 2016 to be used for current estimates. It is likely recalibration of the model will be required so that it more accurately simulates the historic low groundwater levels currently occurring in the basin.

The scope outlined below starts with an update and recalibration of the groundwater model, and then generally updates each of the main sections of the BMAP.

### **Task 1: Update Seaside Basin Groundwater Flow Model.**

#### ***Subtask 1.1. Update Model Input Data.***

Groundwater production, groundwater levels, injected water, and precipitation data will be sourced and compiled for input into the groundwater model. In addition to precipitation, estimates of storm water percolation, septic tank leakage, and system losses are also needed as they all contribute to the recharge of the basin. Most data are already available from MPWMD or Watermaster, but some other pumpers such as Cal Water Service and Marina Coast Water District, which do not fall under the Watermaster will be contacted for their data.

The updated model input data will be incorporated into the groundwater model. Once the model has been updated and is successfully running, hydrographs comparing measured and simulated groundwater levels will be prepared. The hydrographs produced will be the same ones used in the 2009 model report.

***Subtask 1.2. Model Recalibration.***

Model calibration is a process that involves varying relatively uncertain and sensitive parameters such as horizontal and vertical hydraulic conductivities, over a reasonable range of values. Per Mr. Yates's recommendation, we will jointly calibrate recharge and aquifer parameters. This is a change from our previous calibration approach of only calibrating aquifer parameters. Calibration will be completed when simulated results match the measured data within an acceptable measure of accuracy, and when successive calibration attempts do not notably improve the calibration statistics. Parameter Estimation (PEST) software will be used as a tool to improve calibration.

Estimating the effort involved in model calibration is difficult because there is no defined set of steps that can be followed. The costs provided with this scope reflect our best estimate, but additional costs may be necessary to complete calibration successfully.

***Subtask 1.3. Model Update Technical Memorandum.***

A Draft Technical Memorandum will be prepared documenting the model update and calibration results. After presenting the Tech Memo to the TAC and receiving comments, a Final Tech Memo will be prepared for submission to the Board. For purposes of the cost estimate, we have assumed HydroMetrics WRI will present the findings to the TAC and to the Board. One presentation will be in-person and one will be by telephone.

**Task 2: Update BMAP Section 2 - State of the Seaside Groundwater Basin.**

***Subtask 2.1. Update Basin Conceptual Model.*** Since the 2009 BMAP was completed, a significant amount of modeling has been undertaken that has assisted in improving our hydrogeologic understanding of the basin. Additionally, a few new wells have been drilled that may improve our understanding of basin geometry. Below is a list of recent developments that will be used to update our conceptual understanding of the basin:

- Modeling work we completed related to the locations of flow divides in the eastern part of the Laguna Seca subarea and how pumping outside of the basin affects groundwater within the basin.
- The concept of the Laguna Seca Anticline as only a partial barrier to groundwater flow is relatively recent. We will present data and implications related to that reconceptualization.
- New wells, such as the Pure Water Monterey ASR wells and the MPWMD ASR wells, may provide new data related to aquifer depths and bottom of the basin that could improve the conceptual understanding of the basin.
- Groundwater levels collected over the past eight years may provide an undated definition of the basin's northeastern flow-divide boundary.

**Subtask 2.2. Analyze Groundwater Levels Trends.** Since 2009, eight years of groundwater level data have been collected, some of it using data loggers that record groundwater levels multiple times a day. This has allowed us to vastly improve our understanding of both seasonal and long-term trends. The basin has also experienced a recent drought and Court-mandated pumping reductions. How groundwater levels have responded to these changes has also improved our understanding of the basin. Furthermore, protective groundwater elevations developed after the 2009 BMAP should be included and discussed in an updated BMAP.

**Subtask 2.3. Update Estimates of Groundwater Storage.** The updated BMAP will include updates of estimated total stored groundwater, usable storage space, and total useable storage space. The Watermaster is required under the Decision to recalculate Total Usable Storage Space and adjust the allocation as needed.

The groundwater model and protective groundwater elevations should be used to quantify these storage estimates for the Seaside Basin. The 2009 BMAP did not have the benefit of site specific protective elevations and thus used Ghyben-Herzberg generated elevations. This updated BMAP will instead use protective elevations developed using groundwater models that estimate onshore groundwater elevations that keeps the productive onshore aquifers fresh (HydroMetrics LLC, 2009b).

**Subtask 2.4. Update Groundwater Budget.** A long-term and current groundwater budget will be developed to enhance our understanding of the groundwater system, and how the basin has responded during the recent drought. Similar to Subtask 2.3, the groundwater budget can be readily generated from groundwater model output. However, the groundwater model needs to be updated through September 2016 and recalibrated for it be used reliably to evaluate the current and historical water budget.

**Subtask 2.5. Review Natural Safe Yield Estimates.** The State of California has experienced a recent drought which has impacted natural aquifer recharge more than was anticipated in the 2009 BMAP. Also, even though pumping in recent years has been below the amounts required under the Decision, groundwater levels have continued to fall. This suggests that the Natural Safe Yield of 3,000 AFY in the Decision may be too high.

The reevaluated Safe Yield will be compared against other Safe Yield estimates that were included in the 2009 BMAP. If appropriate, a revised Safe Yield to replace the Decision-established Natural Safe Yield of 3,000 AFY will be provided for basin management purposes.

**Task 3: Update Section 3 – Supplemental Water Supplies.**

This section will be primarily completed by Watermaster staff, and will be edited and integrated into the BMAP update by HydroMetrics WRI. Watermaster staff will update the old BMAP Section 3 with current information on projects being considered to meet the long-term water needs in the Seaside Basin. Included will be MRWPCA’s Pure Water Monterey groundwater replenishment project and Cal Am’s Monterey Peninsula Water Supply Project (MPWSP). Recent Environmental Impact Reports will be used to update the information. If any other projects are in early planning stage, they will also be included in the update.

In the revised cost estimate (Table 1), the number of hours has been reduced from our previous cost estimate in March to reflect that Watermaster staff will be responsible for the majority of this task.

**Task 4: Update Section 4 – Groundwater Management Actions.**

This section will be updated to reflect actions and interim water supplies that have already been implemented, eliminate actions that are no longer viable, and add potential future actions and interim water supplies that could be implemented to address basin imbalances in the short-term before the long-term supply projects in Section 3 of the BMAP can be permitted, built and operated.

An example of a local management action would be to identify optimal extraction well locations such that those wells can make more efficient use of useable stored groundwater. The groundwater model is the most appropriate tool for this as it is able to simulate cumulative impacts by taking into account long-term projects and any other short-term projects while optimizing well locations.

It is beyond the scope of the BMAP update to prepare preliminary costs for potential future actions and interim water supplies. However, as cost is an important factor in deciding which actions to pursue, the Watermaster may need to engage a financial expert to provide preliminary cost estimates for those actions that do not already have cost estimates associated with them.

**Task 5: Update Section 5 – Recommended Management Strategies.**

After developing the groundwater management actions, we will present the results to the TAC with the purpose of soliciting input that will allow each action to be ranked in order of preference. The top actions will become recommended management strategies that the Watermaster should consider going forward.

**Task 6: Prepare Draft, Final Draft and Final Updated BMAP.**

A Draft Updated BMAP will be prepared that follows the format of the 2009 BMAP. After the TAC has reviewed the Draft Updated BMAP, comments received will be incorporated into a Final Draft Updated BMAP that will be presented to the Board. If comments are received from the Board, these will be included in a Final Updated BMAP. Up to 15 bound hardcopies will be provided to the Watermaster. We assume that HydroMetrics WRI will attend one TAC and one Board meeting in person to present the Updated BMAP.

**Estimated Budget**

The total cost to update and recalibrate the groundwater model through September 2016, and to update the BMAP is provided in Table 1.

**Schedule**

We expect it will take two months to update and recalibrate the groundwater model. An updated BMAP draft can be completed in approximately six weeks after the model update.

**References**

HydroMetrics LLC. 2009a. Basin Management Action Plan. Seaside Groundwater Basin, Monterey County, California, prepared for Seaside Groundwater Basin Watermaster. February.

HydroMetrics LLC. 2009b. Seaside Groundwater Basin Modeling and Protective Groundwater Elevations, prepared for Seaside Groundwater Basin Watermaster. November.

HydroMetrics WRI. 2014. Technical Memorandum – 2014 Seaside Groundwater Model Update, prepared for Seaside Groundwater Basin Watermaster. July 31.

Please call if you have any questions.

Sincerely,



Georgina King  
Principal Hydrogeologist  
HydroMetrics Water Resources Inc.

Table 1: Cost Estimate for Basin Management Action Plan Update

Tasks	HydroMetrics WRI Labor			Labor Total		Other Direct Costs	TOTALS
	Derrick Williams	Georgina King	Hanieh Haeri				
	Rates	President	Principal Hydrogeologist	Hydrologist	Hours	(\$)	(\$)
<b>Task 1: Update Groundwater Model &amp; Recalibrate</b>							
Subtask 1.1. Update Model Input Data	8	24	40	72	\$ 11,640	\$ -	\$ 11,640
Subtask 1.2. Model Recalibration	46	10	140	196	\$ 30,270	\$ -	\$ 30,270
Subtask 1.3. Model Update and Recalibration Technical Memorandum	12	28	32	72	\$ 12,260	\$ 200	\$ 12,460
<b>Subtotal Task 1</b>	<b>66</b>	<b>62</b>	<b>212</b>	<b>340</b>	<b>\$ 54,170</b>	<b>\$ 200</b>	<b>\$ 54,370</b>
<b>Task 2: Update BMAP Section 2 - State of the Seaside Groundwater Basin</b>							
Subtask 2.1. Update Basin Conceptual Model	2	16	4	22	\$ 4,080	\$ -	\$ 4,080
Subtask 2.2. Analyze Groundwater Levels Trends	1	16	4	21	\$ 3,860	\$ -	\$ 3,860
Subtask 2.3. Update Estimates of Groundwater Storage	5	10	16	31	\$ 5,130	\$ -	\$ 5,130
Subtask 2.4. Update Groundwater Budget	4	8	20	32	\$ 5,040	\$ -	\$ 5,040
Subtask 2.5. Review of Natural Safe Yield Estimates	3	8	12	23	\$ 3,780	\$ -	\$ 3,780
<b>Subtotal Task 2</b>	<b>15</b>	<b>58</b>	<b>56</b>	<b>129</b>	<b>\$ 21,890</b>	<b>\$ -</b>	<b>\$ 21,890</b>
<b>Task 3: Update BMAP Section 3 – Supplemental Water Supplies</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>\$ 1,000</b>	<b>\$ -</b>	<b>\$ 1,000</b>
<b>Task 4: Update BMAP Section 4 – Groundwater Management Actions</b>	<b>8</b>	<b>20</b>	<b>12</b>	<b>40</b>	<b>\$ 7,220</b>	<b>\$ -</b>	<b>\$ 7,220</b>
<b>Task 5: Update BMAP Section 5 – Recommended Management Strategies</b>	<b>4</b>	<b>10</b>	<b>0</b>	<b>14</b>	<b>\$ 2,830</b>	<b>\$ -</b>	<b>\$ 2,830</b>
<b>Task 6: Prepare Draft, Final Draft and Final BMAP</b>	<b>6</b>	<b>40</b>	<b>20</b>	<b>66</b>	<b>\$ 11,720</b>	<b>\$ 600</b>	<b>\$ 12,320</b>
<b>TOTAL for GROUNDWATER MODEL UPDATE</b>	<b>66</b>	<b>62</b>	<b>212</b>	<b>340</b>	<b>\$ 54,170</b>	<b>\$ 200</b>	<b>\$ 54,370</b>
<b>TOTAL for BMAP UPDATE</b>	<b>34</b>	<b>132</b>	<b>88</b>	<b>254</b>	<b>\$ 44,660</b>	<b>\$ 600</b>	<b>\$ 45,260</b>
<b>TOTAL</b>	<b>100</b>	<b>194</b>	<b>300</b>	<b>594</b>	<b>\$ 98,830</b>	<b>\$ 800</b>	<b>\$ 99,630</b>

**Notes**

Other direct costs include travel expenses, office supplies, photocopies, postage, and equipment rental

HydroMetrics Water Resources Inc. · 1814 Franklin St., Suite 501 · Oakland, CA 94612  
(510) 903-0458 · (510) 903-0468 (fax)

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

<b>MEETING DATE:</b>	January 10, 2018
<b>AGENDA ITEM:</b>	4
<b>AGENDA TITLE:</b>	Draft Cost-Sharing Agreement for Seaside Basin Hydrogeologic Model Update
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<p><b>SUMMARY:</b>  The Board directed that a cost-sharing agreement be developed between the Watermaster, MPWMD, and M1W (Monterey One Water) for updating and recalibrating the Seaside Basin Groundwater Model.</p> <p>Attached is a draft agreement for this purpose. It has been reviewed with Dave Stoldt of MPWMD, and reflects his suggested edits. He stated he would coordinate with M1W on this, and would provide me any edits they suggested as well.</p> <p>As of the date of preparation of this Agenda transmittal, no further edits from M1W had been received. Therefore, the attached draft is assumed to be satisfactory to both MPWMD and M1W.</p>	
<b>ATTACHMENTS:</b>	Draft Cost-Sharing Agreement for Seaside Basin Hydrogeologic Model Update
<b>RECOMMENDED ACTION:</b>	Approve or edit the Draft Cost-Sharing Agreement



# **MEMORANDUM OF AGREEMENT**

**Between the SEASIDE BASIN WATERMASTER,**  
**the MONTEREY PENINSULA WATER MANAGEMENT DISTRICT**  
**AND**  
**MONTEREY ONE WATER**  
**TO SHARE IN THE COSTS OF UPDATING THE SEASIDE BASIN**  
**GROUNDWATER MODEL**

THIS AGREEMENT is made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2018, by and between the SEASIDE BASIN WATERMASTER, hereinafter referred to as the “WATERMASTER”, and the MONTEREY PENINSULA WATER MANAGEMENT DISTRICT, hereinafter referred to as the “DISTRICT”, and MONTEREY ONE WATER, hereinafter referred to as “M1W,” as follows.

In this Agreement the terms “Party” and “Parties” refer to the WATERMASTER, the DISTRICT, and/or M1W, either individually or collectively.

**RECITALS:**

- A. Under Case No. M66343, California Superior Court, Monterey County, on March 27, 2006 by entry of Judgment (“Judgment”) the WATERMASTER was created. The purpose of the WATERMASTER is to assist the Court in the administration and enforcement of the provisions of the Judgment.
- B. As part of carrying out its duties and responsibilities under the Judgment, the WATERMASTER had a hydrogeologic model (“Model”) of the Seaside Groundwater Basin (“Seaside Basin”) prepared by its consultant, HydroMetrics WRI. Preparation of the Model was completed by HydroMetrics in November 2009.
- C. Periodic recalibration and updating of the Model is necessary to ensure the Model simulates groundwater levels within an acceptable industry standard accuracy. The Model was last updated in 2014, and has not been recalibrated since it was originally prepared in 2009. Therefore, the WATERMASTER intends to recalibrate and update the Model in 2018.
- D. M1W and the DISTRICT are together developing a project referred to as the Pure Water Monterey Project (PWM) that will store highly treated reclaimed wastewater in the Seaside Basin for subsequent recovery and reuse.
- E. Because the Pure Water Monterey project will need to use the Model for further studies and reporting purposes, the Parties wish to enter into this Agreement to share in the cost of recalibrating and updating the Model.

## TERMS AND CONDITIONS:

In consideration of the mutual promises contained herein, the WATERMASTER, the DISTRICT, and M1W hereby agree to the following terms and conditions:

- A. **Work to be performed.** The WATERMASTER will have its consultant, HydroMetrics WRI, recalibrate and update the Model. The Scope of Work and the estimated costs to update and recalibrate the Model are described in Attachment 1 to this Agreement. The staff of each of the Parties to this Agreement will be invited to attend any key milestone meetings and conference calls that are held between the WATERMASTER and its consultant as the work is being performed, in order to enable each of the Parties to stay abreast of the work, raise pertinent questions in a timely manner, and provide input as appropriate.

The Parties hereto understand, as stated in Attachment 1, that it is difficult for HydroMetrics to accurately estimate the costs to perform the work to update and recalibrate the Model, and that the costs listed in Table 1 of Attachment 1 are HydroMetrics' best estimates. In the event it is determined, during the course of the work, that the cost to complete the work will be greater than the total cost listed in Table 1, the Parties agree to meet and confer to reach agreement on a revised cost that will be shared as described in paragraph B, so that the work can be completed. Agreement on said revised cost shall not be binding on any Party unless and until that Party formalizes its agreement to the revised cost in writing to each of the other Parties.

- B. **Costs to be shared.** The costs to be shared are listed in Table 1 of Attachment 1. These costs will be shared in the following percentages:

Watermaster share = 50% (\$27,185)

District and M1W combined share = 50% (\$27,185).

(In the event a revised cost is agreed to, as described in paragraph A, these dollar figures will change).

- C. **Documents to be provided.** After completion of Task 1 as described in Attachment 1, the WATERMASTER will provide the DISTRICT and M1W each with one copy of the Final Technical Memorandum documenting the model update and calibration results.
- D. **Payment of costs and reimbursement to the WATERMASTER.** The WATERMASTER will make progress payments to HydroMetrics as it satisfactorily performs the work described in Attachment 1. After the satisfactory completion of the work, the WATERMASTER will provide to the DISTRICT and to M1W, copies of the payments it made to HydroMetrics. Within 30 days of receiving those documents, the DISTRICT and M1W will reimburse the WATERMASTER for 50% of those costs.
- E. **Term of Agreement.** The term of this Agreement shall commence on the date of its execution, and shall continue in effect until the WATERMASTER has been reimbursed as described in paragraph D.

- F. **Hold Harmless.** Under this Agreement the DISTRICT and M1W do hereby agree to indemnify, defend, and hold the WATERMASTER and its Board members, officers, employees, agents, and representatives harmless from and against any and all liability, claims, suits, actions, damages, and causes of action of any kind arising out of the DISTRICT'S and/or M1W's use of the Model in the planning, design, and construction of the PWM Project, and for the subsequent use of the Model in operating and maintaining the PWM Project.
- G. **Venue.** In the event that suit shall be brought by any Party to this Agreement, the Parties agree that venue shall be exclusively vested in the state courts of the County of Monterey, or, if brought in federal court, in the United States District Court handling matters arising in Monterey County. Further, the prevailing Party shall be entitled to reasonable attorney fees and costs.
- H. **Notices.** Written notice shall be deemed to have been duly served if delivered in person or by mail to the individuals and at the addresses listed below:

A. WATERMASTER:      Technical Program Manager  
                                    Seaside Basin Watermaster  
                                    P.O. Box 51502  
                                    Pacific Grove, CA 93950

B. DISTRICT:            General Manager  
                                    Monterey Peninsula Water Management District  
                                    5 Harris Court, Building G  
                                    Monterey, CA 93940

B. M1W:                    General Manager  
                                    Monterey One Water  
                                    5 Harris Court, Building D  
                                    Monterey, CA 93940

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the dates shown below.

**WATERMASTER**



**ATTACHMENT 1**  
**Scope of Work and Cost**  
**to**  
**Update and Recalibrate the Model**

(Excerpted from HydroMetrics WRI Proposal Letter Dated August 4, 2017)

**Task 1: Update Seaside Basin Groundwater Flow Model.**

***Subtask 1.1. Update Model Input Data.***

Groundwater production, groundwater levels, injected water, and precipitation data will be sourced and compiled for input into the groundwater model. In addition to precipitation, estimates of storm water percolation, septic tank leakage, and system losses are also needed as they all contribute to the recharge of the basin. Most data are already available from MPWMD or Watermaster, but some other pumpers such as Cal Water Service and Marina Coast Water District, which do not fall under the Watermaster will be contacted for their data.

The updated model input data will be incorporated into the groundwater model. Once the model has been updated and is successfully running, hydrographs comparing measured and simulated groundwater levels will be prepared. The hydrographs produced will be the same ones used in the 2009 model report.

***Subtask 1.2. Model Recalibration.***

Model calibration is a process that involves varying relatively uncertain and sensitive parameters such as horizontal and vertical hydraulic conductivities, over a reasonable range of values. HydroMetrics will jointly calibrate recharge and aquifer parameters. This is a change from HydroMetrics' previous calibration approach of only calibrating aquifer parameters. Calibration will be completed when simulated results match the measured data within an acceptable measure of accuracy, and when successive calibration attempts do not notably improve the calibration statistics. Parameter Estimation (PEST) software will be used as a tool to improve calibration.

Estimating the effort involved in model calibration is difficult because there is no defined set of steps that can be followed. The costs provided with this scope reflect HydroMetrics' best estimate, but additional costs may be necessary to complete calibration successfully.

***Subtask 1.3. Model Update Technical Memorandum.***

A Draft Technical Memorandum will be prepared documenting the model update and calibration results. After presenting the Technical Memorandum to the Watermaster's Technical Advisory Committee (TAC) and receiving comments, a Final Technical Memorandum will be prepared for submission to the Watermaster's Board. For purposes of estimating costs, HydroMetrics WRI assumed it would present the findings to the TAC and to the Board. One presentation would be made to the TAC by telephone, and one presentation would be made to the Board in-person.

**Estimated Budget**

The total estimated cost to update and recalibrate the groundwater model through September 2016 is provided in Table 1.

**Schedule**

It is expected to take two months to update and recalibrate the groundwater model.

**Table 1: Cost Estimate to Update and Recalibrate the Model**

Tasks	HydroMetrics WRI			Labor Total		Other Direct	TOTALS
	Derrik	Georgina	Hanieh				
	President	Principal	Hydrologist	Hour	(\$)	(\$)	(\$)
<b>Rates</b>	\$220	\$195	\$130				
<b>Task 1: Update Groundwater Model &amp; Recalibrate</b>							
Subtask 1.1. Update Model Input Data	8	24	40	72	\$ 11,64	\$ -	\$ 11,64
Subtask 1.2. Model Recalibration	46	10	140	196	\$ 30,27	\$ -	\$ 30,27
Subtask 1.3. Model Update and Recalibration Technical Memorandum	12	28	32	72	\$ 12,26	\$ 20	\$ 12,46
<b>Task 1 Totals</b>	<b>66</b>	<b>62</b>	<b>212</b>	<b>340</b>	<b>\$ 54,17</b>	<b>\$ 20</b>	<b>\$ 54,37</b>

**Notes**

Other direct costs include travel expenses, office supplies, photocopies, postage, and equipment rental.

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

<b>MEETING DATE:</b>	January 10, 2018
<b>AGENDA ITEM:</b>	5
<b>AGENDA TITLE:</b>	Draft Cost-Sharing Agreement for Seaside Basin Geochemical Modeling
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<p><b>SUMMARY:</b>  The Board directed that a cost-sharing agreement be developed between the Watermaster, MPWMD, M1W (Monterey One Water), and California American Water (CAW) for performing geochemical modeling in the Seaside Groundwater Basin to assess the geochemical interaction effects of introducing non-native water from the storage and recovery projects proposed by MPWMD (expanded ASR project), M1W (Pure Water Monterey Project), and CAW (desalination project) into the native water in the Basin.</p> <p>Attached is a draft agreement for this purpose. It has been reviewed with Dave Stoldt of MPWMD, and reflects his suggested edits. He stated he would coordinate with M1W on this, and would provide me any edits they suggested as well. It was also sent to Eric Sabolsice of CAW for his review.</p> <p>As of the date of preparation of this Agenda transmittal, no further edits from M1W or CAW had been received. Therefore, the attached draft is assumed to be satisfactory to those parties.</p>	
<b>ATTACHMENTS:</b>	Draft Cost-Sharing Agreement for Seaside Basin Geochemical Modeling
<b>RECOMMENDED ACTION:</b>	Approve or edit the Draft Cost-Sharing Agreement

# **MEMORANDUM OF AGREEMENT**

**Between the SEASIDE BASIN WATERMASTER,  
the MONTEREY PENINSULA WATER MANAGEMENT DISTRICT,  
CALIFORNIA AMERICAN WATER,**

**AND  
Monterey ONE WATER**

## **TO SHARE IN THE COSTS OF PERFORMING GEOCHEMICAL MODELING OF THE SEASIDE BASIN GROUNDWATER BASIN**

THIS AGREEMENT is made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2018, by and between the SEASIDE BASIN WATERMASTER, hereinafter referred to as the “WATERMASTER”, and the MONTEREY PENINSULA WATER MANAGEMENT DISTRICT, hereinafter referred to as the “DISTRICT”, CALIFORNIA AMERICAN WATER, hereinafter referred to as “CAW,” and MONTEREY ONE WATER, hereinafter referred to as “M1W,” as follows.

In this Agreement the terms “Party” and “Parties” refer to the WATERMASTER, the DISTRICT, and/or M1W, either individually or collectively.

### **RECITALS:**

- A. Under Case No. M66343, California Superior Court, Monterey County, on March 27, 2006 by entry of Judgment (“Judgment”) the WATERMASTER was created. The purpose of the WATERMASTER is to assist the Court in the administration and enforcement of the provisions of the Judgment.
- B. Section L.3.j.xxi of the Judgment states in part “The Watermaster will monitor and perform or obtain engineering, hydrogeologic, and scientific studies concerning all characteristics and workings of the Seaside Basin, and all natural and human-induced influences on the Seaside Basin, as they may affect the quantity and quality of Water available for Extraction, that are reasonably required for the purposes of achieving prudent management of the Seaside Basin in accord with the provisions of this Decision.”
- C. Section L.3.j.xxiii of the Judgment states in part “The Watermaster will take any action within the Seaside Basin, including, but not limited to, capital expenditures and legal actions, which in the discretion of Watermaster is necessary or desirable to accomplish any of the following:
  - Prevent contaminants from entering the Groundwater supplies of the Seaside Basin, which present a significant threat to the Groundwater quality of the Seaside Basin, whether or not the threat is immediate;
  - Remove contaminants from the Groundwater supplies of the Seaside Basin presenting a significant threat to the Groundwater quality of the Seaside Basin;
  - Determine the existence, extent, and location of contaminants in, or which may enter, the Groundwater supplies of the Seaside Basin;

- Determine Persons responsible for those contaminants; and
  - Perform or obtain engineering, hydrologic, and scientific studies as may be reasonably required for any of the foregoing purposes.
- D. Section L.3.j.xx of the Judgment pertains to the review of storage applications, the regulation of storage, and issuance of agreements for the storage of non-native water introduced into the Seaside Basin. This Section states in part “The Storage and Recovery Agreement may include, among other possible elements and/or provisions, the following conditions to avoid Material Injury: ...the particular Water quality characteristics that are required pursuant to the Storage and Recovery Agreement, and ... any other terms and conditions deemed necessary to protect the Seaside Basin and those areas affected by the Seaside Basin.”
- E. The DISTRICT, CAW, and M1W intend to introduce non-native water for storage in the Seaside Groundwater Basin, and will therefore need to apply for permission from the WATERMASTER to store said water in the Basin. Such permission would be authorized through the issuance by the WATERMASTER of one or more Storage and Recovery Agreements to the parties wishing to store water in the Basin.
- F. As part of carrying out its duties and responsibilities under the Judgment with regard to the issuance of Storage and Recovery Agreements, it is appropriate for the WATERMASTER to require the parties wishing to store water in the Basin to demonstrate, through geochemical modeling, that the introduction of their non-native water will not degrade the quality of water in the Basin.

#### **TERMS AND CONDITIONS:**

In consideration of the mutual promises contained herein, the WATERMASTER, the DISTRICT, CAW, and M1W hereby agree to the following terms and conditions:

- A. **Work to be performed.** The DISTRICT will contract directly with its consultant, Pueblo Water Resources, Inc., to perform modeling of the proposed groundwater storage and recovery projects to assess the geochemical interaction effects of introducing the non-native water from these projects into the native water in the Basin. The Scope of Work and the estimated costs to perform this work are described in Attachment 1 to this Agreement. The staff of each of the Parties to this Agreement will be invited to attend any key milestone meetings and conference calls that are held between the DISTRICT and its consultant as the work is being performed, in order to enable each of the Parties to stay abreast of the work, raise pertinent questions in a timely manner, and provide input as appropriate.

The Parties hereto understand, as stated in Attachment 1, that it is difficult for Pueblo Water Resources to accurately estimate the costs to perform the work, and that the costs listed in the Estimated Fee Summary of Attachment 1 are Pueblo Water Resources’ best estimates. In the event it is determined, during the course of the work, that the cost to complete the work will be greater than the total cost listed in the Estimated Fee Summary, the Parties agree to meet and confer to reach agreement on a revised cost that will be shared as described in paragraph B, so that the work can be completed. Agreement on said revised cost shall not be binding on any Party unless and until that Party formalizes its agreement to the revised cost in writing to each of the other Parties.

B. **Costs to be shared.** The \$68,679 cost to be shared is contained in the Estimated Fee Summary of Attachment 1. This cost will be shared in the following percentages:

Watermaster share = 0% (\$0)

District share = 33 and 1/3% (\$22,893)

CAW share = 33 and 1/3% (\$22,893)

M1W share = 33 and 1/3% (\$22,893)

(In the event a revised cost is agreed to, as described in paragraph A, these dollar figures will change).

C. **Documents to be provided.** After completion of Tasks 1, 2, 3, 4, and 5, as described in Attachment 1, a Technical Memorandum or summary report will be prepared by Pueblo Water Resources and provided by the DISTRICT to each of the Parties. After completion of Task 6 an overall summary report will be prepared by Pueblo Water Resources and provided by the DISTRICT to each of the Parties.

D. **Payment of costs and reimbursement to the DISTRICT.** The DISTRICT will make progress payments to Pueblo Water Resources as it satisfactorily performs the work described in Attachment 1. After the satisfactory completion of the work, the DISTRICT will provide to CAW and M1W copies of the payments it made to Pueblo Water Resources. Within 30 days of receiving those documents, CAW and M1W will reimburse the DISTRICT for their respective shares of those costs.

E. **Term of Agreement.** The term of this Agreement shall commence on the date of its execution, and shall continue in effect until the DISTRICT has been reimbursed as described in paragraph D.

F. **Indemnification.** Under this Agreement the WATERMASTER, CAW, and M1W do hereby agree to indemnify, defend, and hold the DISTRICT and its Board members, officers, employees, agents, and representatives harmless from and against any and all liability, claims, suits, actions, damages, and causes of action of any kind arising out of the WATERMASTER's, CAW's and/or M1W's use of the results of the geochemical modeling in the planning, design, and construction of the groundwater recharge projects, and for the subsequent use of the geochemical modeling results in operating and maintaining those projects.

G. **Venue.** In the event that suit shall be brought by any Party to this Agreement, the Parties agree that venue shall be exclusively vested in the state courts of the County of Monterey, or, if brought in federal court, in the United States District Court handling matters arising in Monterey County. Further, the prevailing Party shall be entitled to reasonable attorney fees and costs.

H. **Notices.** Written notice shall be deemed to have been duly served if delivered in person or by mail to the individuals and at the addresses listed below:

A. WATERMASTER:        Technical Program Manager  
                                  Seaside Basin Watermaster  
                                  P.O. Box 51502  
                                  Pacific Grove, CA 93950

B. DISTRICT:           General Manager  
                              Monterey Peninsula Water Management District  
                              5 Harris Court, Building G  
                              Monterey, CA 93940

C. CAW:                 Operations Manager, Central Division  
                              California American Water  
                              511 Forest Lodge Road, Suite 100  
                              Pacific Grove, CA 93950

D. MIW:                 General Manager  
                              Monterey One Water  
                              5 Harris Court, Building D  
                              Monterey, CA 93940

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the dates shown below.

**WATERMASTER**

Date: \_\_\_\_\_

By: \_\_\_\_\_  
Ralph Rubio, Chair, Board of Directors

**DISTRICT**

Date: \_\_\_\_\_

By: \_\_\_\_\_  
David Stoldt, General Manager

**CAW**

Date: \_\_\_\_\_

By: \_\_\_\_\_  
Name and Title

**M1W**

Date: \_\_\_\_\_

By: \_\_\_\_\_  
Paul Sciuto, General Manager

B y :

\_\_\_\_\_  
Ralph Rubio, Chair, Board of Directors

Date: \_\_\_\_\_

**ATTACHMENT 1**

**Scope of Work and Cost**

**to**

**Perform Modeling**

**of**

**Proposed Groundwater Recharge Projects**

**to**

**Assess the Geochemical Interaction Effects**

**Of**

**Introducing Non-native Water from Those Projects**

**into the**

**Native Water in the Basin**



November 17, 2017  
Project No. 12-0048

Monterey Peninsula Water Management District  
5 Harris Court, Building G  
Monterey, California 93942

Attention: Mr. Jonathan Lear, Senior Hydrogeologist

Subject: Proposal for Seaside Groundwater Basin Geochemical Interaction Evaluation

Dear Mr. Lear:

In accordance with your request, Pueblo Water Resources, Inc. (PWR) is pleased to submit this proposal to provide a geochemical interaction evaluation of various managed aquifer recharge (MAR) projects currently planned to be implemented in the Seaside Groundwater Basin (SGB). Presented in this proposal is a detailed scope of work, estimated costs, and schedule to provide the requested services.

#### **PURPOSE AND SCOPE**

The purpose of the proposed work is to perform an initial geochemical interaction modeling assessment of various active and proposed MAR projects in the SGB. The only currently active MAR project is the Monterey Peninsula ASR Project, which injects treated excess Carmel River System water into 4 existing ASR wells (ASR-1 through ASR-4). Proposed MAR projects include the Pure Water Monterey and Monterey Peninsula Water Supply Project (MPWSP), which would inject advanced treated recycled water and desalinated seawater, respectively, into future injection wells in the SGB. The proposed activities and programs related to MAR in the SGB will ultimately result in the mixing and interaction of the following 4 waters:

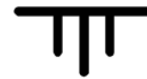
- Santa Margarita Sandstone aquifer native groundwater
- Treated and disinfected Carmel River System water
- Treated water from the Pure Water Monterey project
- Desalinated seawater from the MPWSP

All of these waters will mix together in various proportions at various times within the geologic matrix of the Santa Margarita Sandstone aquifer (Tsm) within the SGB. The intermixing of these 4 waters and their individual and combined reactions with the minerals in the Tsm formation will result in a variety of geochemical reactions – these reactions may be beneficial (e.g., stabilization of water quality and reduction in corrosivity) or potentially problematic (e.g., precipitation of cementitious scales or evolution of gasses) – and would alter the quality of the

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**PUEBLO WATER RESOURCES, INC**

4478 Market Street, Suite 705 • Ventura, CA 93003 • 805.644.0470



water recovered from the ASR wells and California American Water's (CAW) other municipal production wells in the SGB.

It is therefore prudent to investigate these geochemical reactions and to identify the potential for adverse reactions; and if present, to identify measures to avoid such adverse conditions. The investigation proposed herein will address these issues through a stepwise approach as discussed below.

### **Scope of Services**

The above scenarios can be analyzed through utilization of geochemical simulations from various interaction models and chemical equilibrium databases. A geochemical interaction model has been developed by PWR in recent years to address the interaction of the Tsm mineralogy with Carmel River System waters and Native Tsm groundwater to address these same issues, and will be expanded to cover the more complex interactions of the 4 proposed project waters. PWR's existing geochemical model is based on the USGS geochemical interaction software PHREEQC-2, version 2.15.2697 combined with the robust Lawrence Livermore National Laboratory (LLNL) geochemical equilibrium database.

Implementation of the investigation will include the following tasks, which are structured to allow assessment of results at each step and provide the opportunity to modify the investigation or drop specific lines of analysis due to either fatal flaws or findings of no potential significance. A brief overview of the proposed scope or work by task is presented below:

#### **Task 1 – Water Chemistry Data Compilation**

Characterize the complete composition and character of the 4 water sources via laboratory and field analyses, or in the case of waters that do not currently exist (ie MPWSP desal plant water and Pure Water Monterey project effluent), quantitative process modeling estimations of water quality parameters (note that these process modeling estimations are not part of our services and would be provided by the project proponent's engineers). The initial step in this effort will be the preparation of a list of water chemistry parameters necessary for geochemical interaction modeling and a request for data for the injection source waters from the Pure Water Monterey and MPWSP project sponsors (MRWPCA and CAW, respectively). Data gaps will be identified and a Sampling and Analysis Plan (SAP) will be developed to fill any data gaps. A copy of a recent SAP is attached as an example of the content and form of the proposed SAP.

Task Deliverable: A Technical Memorandum (TM) summarizing the available water quality data for each of the project sources, and a SAP to fill-in missing data. *Note that no costs for collection of field or laboratory data are budgeted in this task. If additional sampling is necessary, such costs are assumed to be the responsibility of the respective source water generators or project proponents.*

Task Duration: 4 weeks



## Task 2 – Aquifer Mineralogy Data Compilation

Characterize the mineral composition of the Tsm aquifer via empirical laboratory analysis of well cuttings and/or core samples. These data already exist for two of the ASR project wells (ASR-2 and ASR-3) that characterize the Tsm aquifer mineralogy at the two ASR facilities (Santa Margarita and Seaside Middle School, respectively); however, similar data will be needed for the Pure Water Monterey and MPWSP well facilities, and will need to be coordinated with the construction of the new wells for these projects. In addition, the older/existing mineralogical data may be incomplete for purposes of this new modeling effort. To maximize the quality and quantity of data available for this work, detailed protocols for sample collection and analytical testing will be provided.

Task Deliverable: A TM summarizing the mineral characterization of the Tsm, and protocol for the sample collection and analysis of upcoming Tsm mineralogy samples. *Note that no costs for field or laboratory analyses are budgeted for this task; but are reportedly included in the current budgets for the construction of the monitoring well for the Pure Water Monterey project in May 2018.*

Task Duration: 2 weeks

## Task 3 – Geochemical Model Development

Develop a geochemical interaction model based on the data derived from Tasks 1 and 2 above, combined with the geochemical equilibrium databases discussed previously.

To complete this work, the existing model will be upgraded and expanded, including the addition of the most recent French Geological Survey (BRGM) Thermoddem V1.1 database and the Swiss (ETH Zurich) CHEMDATA17 database. The upgrades will allow further analysis of water quality stabilization, more accurate identification of sulfate/carbonate/siliceous scaling, and assessment of corrosivity issues in recovered waters.

Task Deliverable: A summary of model base and primary settings will be provided if requested.

Task Duration: 3 weeks

## Task 4 – Model Mixing Ratios

Upon completion of Task 3, PWR will model a number of mixing ratios of the four water types. For the purpose of planning, there will be 21 mixtures of various percentage mixtures of the four water types; **Table 1** outlines the mixing ratios that will initially be modeled. The matrix of water mixtures presented in **Table 1** were chosen through discussions with MPWMD staff to bracket the potential extreme case mixing scenarios that might occur during program operations; this methodology should identify potential problem areas to avoid early in the investigation, which will allow additional efforts to analyze these scenarios if warranted.

PWR will analyze the geochemical stability of each of the individual waters, and perform the modeling of the proposed intermixing scenarios described above. The results of the



modeling will be analyzed and interpreted with specific attention to potentially adverse geochemical interactions such as mineral scale formation, gas evolution, and leaching/mobilization of deleterious compounds within the Tsm formation.

Task Deliverable: A TM summarizing the results of the geochemical interaction modeling, and recommendations for additional model scenarios based on the initial output runs.

Task Duration: 6 weeks

**Table 1. Summary of Mix Ratios for Geochemical Modeling**

Mix No.	% Native Tsm Water	% Treated Carmel River Water	% Reclaimed PWM Water	% Desal Water
1	100	0	0	0
2	0	100	0	0
3	0	0	100	0
4	0	0	0	100
5	66	33	0	0
6	66	0	33	0
7	66	0	0	33
8	33	66	0	0
9	0	66	33	0
10	0	66	0	33
11	33	0	66	0
12	0	33	66	0
13	0	0	66	33
14	33	0	0	66
15	0	33	0	66
16	0	0	33	66
17	55	15	15	15
18	15	55	15	15
19	15	15	55	15
20	15	15	15	55
21	25	25	25	25

**Task 5 – (Optional Task) Additional Focused Analysis**

Based on the results of Task 4 above, PWR will identify those mixture simulations that show undesirable geochemical reactions (ie mineral precipitation or gas evolution) and will re-run those model simulations under various modifications of mix ratios and/or aquifer conditions



to identify methods of mitigating the observed adverse reactions and to identify potential operational scenarios which would prevent such adverse geochemical reactions from occurring.

**Task Deliverable:** A TM summarizing the results of the supplemental modeling and recommendations for project design and/or operational changes associated with enhancing recovered water quality or avoiding adverse geochemical reactions.

Task Duration: 4-6 weeks

### **Task 6 – Reporting**

Upon the conclusion of tasks 1-5, PWR will develop an overall summary report and recommendations for process and/or operational changes for each project to reduce or avoid adverse geochemical reactions. PWR will also participate in two technical workshops with project stakeholders to discuss the impacts to the various regional projects, and participate in one presentation to the Watermaster Board to address questions and present findings.

Task Duration: 4 weeks

### **Task 7 – Project Management and Meetings**

Provide routine project management, including invoicing, schedule management, project coordination and communication. This will include one intermediate and one final presentation of the evaluation findings and recommendations to the SGB Water Master Technical Advisory Committee (TAC).

Task Duration: Ongoing

### **Services Not Included**

It should be noted that completion of this project will require services which are not included in our proposal; the costs for these items are presumed to be paid for by the project proponents under the provisions of the Storage Agreement. These items include (but are not limited to) the following:

- Laboratory fees;
- Construction of site facilities;
- Permit fees;
- Cost of water, electricity, or other utilities;
- Any other items not specifically included in PWR's scope of services.



**ESTIMATED FEES AND SCHEDULE**

Based on the scope of services presented herein, we estimate the fees for our services will be approximately \$51,365, which will be billed on a time-plus-expenses basis in accordance with our current Fee Schedule (attached). An estimated fee summary worksheet is attached summarizing the estimated man-hours and costs per task/work item. The spreadsheet also identifies the cost total including Optional Task 5, as well as a 10 percent contingency which has been noted in the attached budget summary in the event that unforeseen project complications or constraints arise (total with optional task and 10% contingency is \$68,679). We recommend the contingency be held for authorization by District staff upon written justification by PWR.

We understand that in order to authorize this work, your Board must first approve a formal contract amendment. Based on our current workload, we believe that we can commence work within two weeks of your authorization and that the work will be completed within approximately 4 months.

We appreciate the opportunity to provide ongoing assistance to the District on this important community water-supply project. If you require additional information regarding this or other matters, please contact me.

Sincerely,

PUEBLO WATER RESOURCES, INC.

Stephen P. Tanner, P.E.  
Principal Engineer

SPT.rcm

Attachments: Cost Estimation Spreadsheet  
2018 Fee Schedule

**MONTEREY PENINSULA WATER MANAGEMENT DISTRICT**  
Professional Services for SGB Geochemical Interaction Evaluation



PWR Project No.: 12-0048

**ESTIMATED FEE SUMMARY**

LABOR		Principal Professional	Senior Professional	Drafting	WP	Hours by Task	Estimated Task Cost
Hourly Fee		\$205	\$185	\$115	\$95		
Task No.	Task Description						
1	Water Chemistry Data Compilation	22	-	-	12	34	\$5,650
2	Aquifer Mineralogy Compilation	38	-	-	-	38	\$7,790
3	Geochemical Model Development	48	-	-	-	48	\$9,840
4	Model Mixing Ratios	67	-	-	-	67	\$13,735
5	Additional Focused Analysis (OPTIONAL)	54	-	-	-	54	\$11,070
6	Reporting	48	-	-	-	48	\$9,840
7	PM and Meetings	22	-	-	-	22	\$4,510
		-	-	-	-	0	\$0
		-	-	-	-	0	\$0
		-	-	-	-	0	\$0
<b>Hours by Labor Category:</b>		299	0	0	12		
<b>Costs by Labor Category:</b>		\$61,295	\$0	\$0	\$1,140		
<b>Total Labor Hours (not inc. Optional Task):</b>						<b>257</b>	
<b>Total Labor Costs (not inc. Optional Task):</b>						<b>\$51,365</b>	
<b>Total Labor Hours (inc. Optional Task):</b>						<b>311</b>	
<b>Total Labor Costs (inc. Optional Task):</b>						<b>\$62,435</b>	

OTHER DIRECT COSTS (ODC's)				
Item	Units	Unit Price	No. of Units	Fee
Vehicle	Daily	\$75		\$0
Travel Per Diem	Daily	\$150		\$0
				\$0
				\$0
				\$0
<b>Subtotal ODCs:</b>				<b>\$0</b>

OUTSIDE SERVICES					
Task No.	Item	Units	Unit Price	No. of Units	Fee
					\$0
					\$0
					\$0
					\$0
					\$0
<b>Subtotal Outside Services:</b>					<b>\$0</b>
<b>Subtotal Outside Services w/ Markup (15%):</b>					<b>\$0</b>

COST SUMMARY	
Labor (not inc. Optional Task)	\$51,365
Other Direct Costs	\$0
Outside Services	\$0
<b>Subtotal (not inc. Optional Task):</b>	<b>\$51,365</b>
<b>10 % Contingency (not inc. Optional Task)</b>	<b>\$5,137</b>
<b>TOTAL ESTIMATED PROJECT COST (not inc. Optional Task):</b>	<b>\$56,502</b>
Task 5 (Optional)	\$11,070
<b>Subtotal (inc. Optional Task):</b>	<b>\$62,435</b>
<b>10 % Contingency (inc. Optional Task)</b>	<b>\$6,244</b>
<b>TOTAL ESTIMATED PROJECT COST (inc. Optional Task):</b>	<b>\$68,679</b>



**PUEBLO WATER RESOURCES, INC  
2018 FEE SCHEDULE**

***Professional Services***

Principal Professional.....	\$205/hr
Senior Professional.....	\$190/hr
Project Professional.....	\$175/hr
Staff Professional.....	\$145/hr
Technician.....	\$135/hr
Illustrator.....	\$120/hr
Word Processing.....	\$100/hr

***Other Direct Charges***

Subcontracted Services.....	Cost Plus 15%
Outside Reproduction.....	Cost Plus 15%
Travel Expenses.....	Cost Plus 15%
Per Diem* .....	\$150/day
Vehicle .....	\$75/day

***Equipment Charges***

Drilling Fluid Test Kit.....	\$100/day, \$400/week
Field Water Quality Meter (Hach DR890).....	\$75/day, \$275/week
Orion ORP/pH/Temp Probe.....	\$75/day, \$275/week
Water Level Probes (In-Situ Mini-Troll/Level Troll).....	\$100/day, \$300/week
Fuji Ultrasonic Flowmeter.....	\$200/day, \$750/week

\*Regionally and seasonally specific to project.

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

<b>MEETING DATE:</b>	January 10, 2018
<b>AGENDA ITEM:</b>	6
<b>AGENDA TITLE:</b>	Schedule
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<p><b>SUMMARY:</b> As a regular part of each monthly TAC meeting, I will provide the TAC with an updated Schedule of the activities being performed by the Watermaster, its consultants, and the public entity, MPWMD, which is performing certain portions of the work.</p> <p>Attached is the new Work Schedule for FY 2018.</p>	
<b>ATTACHMENTS:</b>	Schedule of Work Activities for FY 2018
<b>RECOMMENDED ACTION:</b>	Provide Input to Technical Program Manager Regarding Any Corrections or Additions to the Schedule











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

<b>MEETING DATE:</b>	January 10, 2018
<b>AGENDA ITEM:</b>	7
<b>AGENDA TITLE:</b>	Other Business
<b>PREPARED BY:</b>	Robert Jaques, Technical Program Manager
<b>SUMMARY:</b> 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.	
<b>ATTACHMENTS:</b>	None
<b>RECOMMENDED ACTION:</b>	None required – information only