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

TECHNICAL ADVISORY COMMITTEE
OF THE
SEASIDE BASIN WATER MASTER

DATE: Wednesday, November 16, 2016
MEETING TIME: 1:30 p.m.
Monterey Regional Water Pollution Control Agency Offices
5 Harris Court, Building D (Ryan Ranch)
Monterey, CA 93940

If you wish to participate in the meeting from a remote location, please call in on the Watermaster Conference Line by dialing (712) 432-1212. Use the Meeting ID 355890617. Please note that if no telephone attendees have joined the meeting by 10 minutes after its start, the conference call will be ended.

OFFICERS
Chairperson: Roger Hulbert, California American Water Company
Vice-Chairperson: Jon Lear, 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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SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

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

MEETING DATE:	November 16, 2016
AGENDA ITEM:	2.A
AGENDA TITLE:	Approve Minutes from the September 14, 2016 Meeting
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

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

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

D-R-A-F-T
MINUTES

Seaside Groundwater Basin Watermaster
Technical Advisory Committee Meeting
September 14, 2016

Attendees: TAC Members

City of Seaside – Rick Riedl (via telephone)
California American Water – Eric Sabolsice
City of Monterey – Laurie Williamson (via telephone)
Laguna Seca Property Owners – No Representative
MPWMD – Jon Lear
MCWRA – Howard Franklin
City of Del Rey Oaks – No Representative
City of Sand City – Leon Gomez (via telephone)
Coastal Subarea Landowners – No Representative

Watermaster
Technical Program Manager - Robert Jaques

Consultants
None

Others
MCWD – Keith Van Der Maaten, General Manager
Todd Groundwater – Phyllis Stanin (via telephone)

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

1. Public Comments
There were no public comments.

2. Administrative Matters:

A. Approve Minutes from the August 10, 2016 Meeting
On a motion by Mr. Lear, seconded by Mr. Franklin, the minutes from this meeting were unanimously approved as presented.

B. Election of New Vice Chairperson
Mr. Jaques summarized the agenda packet materials for this item. Mr. Lear said he would be willing to serve as Vice Chair. Mr. Franklin nominated Mr. Lear to fill the position of Vice Chair and Mr. Sabolsice seconded that nomination. Mr. Sabolsice asked if there were any other nominations. Hearing no other nominations Mr. Sabolsice closed the nomination process. On a unanimous vote the TAC elected Mr. Lear to serve as Vice Chair.

C. Report on MRWPCA's Public Hearing for its Title 22 Engineering Report for the Pure Water Monterey Groundwater Replenishment Project
Mr. Jaques summarized the agenda packet materials for this item.
The question was asked about what the next steps will be in this process. Mr. Jaques said it was his understanding that the State Department of Drinking Water would review the comments and MRWPCA's responses to them, and determine if the Final version of the Title 22 Engineering

Report was acceptable. If it is acceptable, DDW would approve the Title 22 Engineering Report. Thereafter, the RWQCB would prepare a permit for the Project, incorporating any requirements proposed by DDW.

Ms. Stanin (who is serving as a consultant to MRWPCA on the Pure Water Monterey Project) responded that comments were received up until the comment deadline of September 2, 2016, and that no comments after that date would be considered. MRWPCA is in the process of preparing responses to comments, in a prioritized sequence, responding to the more critical comments first. Responses will be posted to the Pure Water Monterey Project's website. Mr. Jaques asked if commenters would be notified by MRWPCA when the response to their comments had been posted. Ms. Stanin said she would see that the Watermaster and the City of Seaside were notified when the responses to their comments had been posted.

Mr. Riedl asked if MRWPCA was still accepting comments. Ms. Stanin (who is serving as a consultant to MRWPCA on the Pure Water Monterey Project) responded that comments were received up until the comment deadline of September 2, 2016, and that no comments after that date would be considered. MRWPCA is in the process of preparing responses to comments, in a prioritized sequence, responding first to the comments that relate directly to the Engineering Report including comments by the Seaside Basin Watermaster and the City of Seaside. Responses to all comments will be posted to the Pure Water Monterey Project's website. Mr. Jaques asked if commenters would be notified by MRWPCA when the response to their comments had been posted. Ms. Stanin said she would see that the Watermaster and the City of Seaside were notified when the responses to their comments had been posted.

Mr. Riedl asked about the land use restrictions described in the Title 22 Engineering Report, and what area was included in those restrictions. Mr. Jaques responded that Title 22 requires that a zone of controlled well construction (control zone) be delineated around the Project injection wells based on the Response Retention Time travel time. The RRT is specified in the Title 22 Engineering Report. Mr. Stanin went on to describe the BLM Buffer Zone.

D. Sustainable Groundwater Management Act (SGMA) Update

Mr. Jaques summarized the agenda packet materials for this item. There were no questions or discussion of the item.

3. Discussion of Marina Coast Water District's Plans to Form a Groundwater Sustainability Agency

Mr. Jaques summarized the agenda packet materials for this item, and Mr. Van Der Maaten elaborated on Mr. Jaques comments.

Mr. Sabolsice asked Mr. Van Der Maaten if MCWD's proposed GAS boundary included any of California Water Service's service area. Mr. Van Der Maaten responded that the proposed boundary is only within MCWD's service area. He added that MCWD will continue to participate in the County's Collaborative Work Group that is working on developing the GSA for the other portions of the Salinas Valley Basin. He went on to say that MCWD plans to submit its GSA request to DWR this week, and that DWR has 90 days to respond to the request. If there are no objections, it is expected that DWR would then approve the request.

Mr. Sabolsice asked Mr. Jaques how coordination between the Watermaster and the GSA(s) of the subbasins adjoining the Adjudicated Seaside Basin boundary would be accomplished. Mr. Jaques responded that DWR does not lay out any requirements or guidelines on that matter, but he said he envisioned the Watermaster and the GSA(s) would meet to discuss issues of mutual interest and/or concern and try to come to agreement on the actions that these parties could take to address those issues.

In any event SGMA does require that the GSAs develop Groundwater Sustainability Plans that will ensure that the subbasins that are covered by those GSAs are managed in a sustainable manner.

4. Revise Sampling Frequency for Sand City Public Works Well

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

Mr. Lear asked Mr. Jaques how the Court would be notified of the revised sampling frequency. Mr. Jaques responded that the topic would be included in the Watermaster's 2016 Annual Report.

Mr. Riedl asked how the conclusion was drawn regarding seawater intrusion in the Public Works Well. Mr. Lear provided an explanation, since he had been involved in preparing MPWMD's report on this topic. He explained that unlike most other wells in this part of the Seaside Basin, the Public Works Well is perforated in a shallow dune formation that contains brackish water. The brackish water has shown variations in water quality that are different from the variations in seawater itself, thus indicating that the variations are not due to seawater intrusion.

On a motion by Mr. Sabolsice, seconded by Mr. Lear, the proposal to reduce the water quality monitoring frequency for the Public Works Well from quarterly to annually was unanimously approved. Mr. Lear added that MPWMD takes monthly conductivity readings at this well when it is there to get water level measurements, and is thereby monitoring the salinity of the well on a regular basis.

5. Approve Work Plan for FY 2017 Management and Monitoring Program (M&MP) and FY 2017 and 2018 M&MP Operations and Capital Budgets

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

Mr. Riedl asked if the Watermaster's Budget and Finance Committee would be considering these documents at its September 16 meeting and Mr. Jaques said yes.

On a motion by Mr. Riedl, seconded by Mr. Sabolsice, the Work Plan for the FY 2017 Management and Monitoring Program (M&MP) and the FY 2017 and 2018 M&MP Operations and Capital Budgets were unanimously approved.

6. Schedule

Mr. Jaques highlighted that there will not be a need for the TAC to meet in October, and that the next TAC meeting would be in November, probably on November 16 which is the 3rd, not the 2nd, Wednesday in November. However, an email will be sent out in early November confirming the meeting date.

7. Other Business

There was no other business to discuss.

8. Set Next Meeting Date

There will be no TAC meeting in October. The next regular meeting date will be in November, tentatively set for November 16. However, the date will be confirmed via email to TAC members in early November. The meeting will be held on a Wednesday at 1:30 p.m. at the MRWPCA Board Room

The meeting adjourned at 2:16 p.m.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

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

MEETING DATE:	November 16, 2016
AGENDA ITEM:	2.B
AGENDA TITLE:	Update on MRWPCA's Title 22 Engineering Report for the Pure Water Monterey Groundwater Replenishment Project
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY: The Watermaster, along with a number of other entities and individuals, submitted comments to MRWPCA regarding the Draft version of the Title 22 Engineering Report for the Pure Water Monterey Groundwater Replenishment Project.

Attached is a copy of the comments the Watermaster submitted, and MRWPCA's responses to these comments. Also attached are excerpts from the pertinent sections of the Draft and Final versions of the Title 22 Engineering Report, showing the revisions that MRWPCA made in response to the Watermaster's comments.

MRWPCA's letter to the Division of Drinking Water (DDW) is also attached, in which they provide some amplifying information and request approval by DDW as quickly as possible. MRWPCA has indicated they are hopeful of receiving DDW's approval by the end of October 2016.

Also attached are emails to/from MRWPCA and the Watermaster, as well as comments provided to us by the City of Seaside.

Our comments on Topics #7 and #9 both pertain to the amount of time MRWPCA estimates it will take to respond if water that has been produced by MRWPCA's Advanced Water Treatment (AWT) facilities is found to not meet the quality required by their DDW permit. I found their responses to these two Topics to be inadequate in that they simply stated that they consider the response times they are proposing are realistic. However, they did not elaborate on or explain how they arrived at those times. Rather, they pointed to some other replenishment projects that have shorter response times provided in them in order to justify the response times they are proposing.

The email response provided by Todd Groundwater (see Attachment 5) does elaborate beyond what is contained in the formal response document on the Pure Water Monterey website.

However, based on my experience in working with State regulatory agencies, I continue to believe it would be highly unlikely that those agencies (DDW and the RWQCB) and MRWPCA could reach agreement on, and for MRWPCA to then implement within the very short response times they are proposing, the appropriate response action(s) to be taken in the event inadequate water quality is being produced by the AWT facility.

I felt that MRWPCA's responses to our other comments were satisfactory and clarified their plans to address them.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

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

AGENDA ITEM:	2.B (Continued)
ATTACHMENTS:	1. Comments submitted by the Watermaster 2. MRWPCA's responses to the Watermaster's comments 3. Revisions made to the Title 22 Engineering Report in response to comments received by MRWPCA 4. MRWPCA's transmittal letter to DDW 5. Emails between the Watermaster and MRWPCA's groundwater consultant (Todd Groundwater) regarding the Watermaster's comments 6. Comments from City of Seaside
RECOMMENDED ACTION:	None required

Letter D

Seaside Groundwater Basin Watermaster
PO Box 51502
Pacific Grove, CA 93950

August 22, 2016

Yohana Vargas
Contracts Administrator
Monterey Regional Water Pollution Control Agency
5 Harris Court, Building D
Monterey, CA 93940

Subject: Pure Water Monterey Project Title 22 Engineering Report

The Seaside Basin Watermaster submits the following comments on this document:

The proposed RRT plan may be overoptimistic in terms of the time that will be required to (1) assess results with DDW and RWQCB (only 1 week is provided for this process), and (2) procure a safe interim drinking water supply (only 1 week is provided for this process).

D-8

- The Report states that the time required for MRWPACA, DDW, and RWQCB to assess the sample results and make decisions regarding the appropriate response(s) is estimated to be 1 week. It seems unlikely that those two regulatory agencies could meet with project staff, review the findings, and reach agreement on decisions to address the findings in such a short time.

D-9

- The Report states that the time required for MRWPCA to collaborate and coordinate with regulatory agencies and stakeholders to suspend replenishment operations and, if necessary, to provide relief measures or an alternative water supply is estimated to be one week. The Report describes the steps that would be carried out in this process as:
    - Notify Well Owner and Coordinate Appropriate Actions
    - Confirmation Sampling in Monitoring Wells Adjacent to Injection Well Field
    - Initiate Accelerated Groundwater Quality Sampling in Downgradient Monitoring Wells and Water Supply Wells: Anticipate Downgradient Water Supply Wells that may be Impacted
    - Suspend Operation of the Drinking Water Well if Impacted
    - Consider Blending Options
    - Shift Production from Impacted Well to other Existing Wells
    - Initiate Wellhead Treatment Planning and Secure Wellhead Treatment as Appropriate
    - Continue Well Suspension, Provide Bottled Water, and/or Consider Additional Wells

It is difficult to believe that all of these steps could be carried out in a one week period. In particular, initiating and procuring wellhead treatment systems and putting them into

operation, installing additional wells, and blending water sources. The Report uses the term "…replace the potable water supply in some other manner…" but does not identify what those might be. This suggests that no other manner(s) could be identified by the authors of the Report.

D-7 It would be good for the Project sponsor to reexamine these issues and to revise its RRT analysis accordingly to reflect more realistic timelines for certain of the actions.

The Report notes that routine groundwater monitoring reports and other types of Project reports will be submitted to the State. It would be good to have the Seaside Basin Watermaster included in this distribution so the Watermaster can stay abreast of impacts and actions associated with the Project and its compliance with applicable regulatory requirements.

Thank you for your attention to these comments. If you have any questions please contact me at (831) 375-0517 or by email at bobj83@comcast.net.

Sincerely,

Robert Jaques, PE
Technical Program Manager
Seaside Basin Watermaster

Additional Comments: Bob Jaques

I just found in my notes from the Watermaster TAC's recent meeting at which the TAC received Mr. Holden's presentation and discussed the Engineering Report, that two additional comments had been raised.

D - 10

1. The California American Water representative commented that use of "bottled water" as a response action in the event of groundwater quality problems being discovered was not a realistic or viable response action.

D- 11

2. The City of Seaside representative commented that asking well owners to discontinue use of their well as a response action in the event of groundwater quality problems being discovered was not a viable action in situations where there is no other source of water that could be used to supply the demand. That is the case in the City of Seaside's Municipal Water System.

Can you please include these comments along with those in the letter I sent you?

Thanks,

Bob Jaques

Technical Program Manager

Seaside Basin Watermaster

83 Via Encanto

Monterey, CA 93940

Office: (831) 375-0517

Cell: (831) 402-7673

ATTACHMENT 2: MRWPCA'S RESPONSES TO WATERMASTER'S COMMENTS

Comment (Letter D Topic #7): The proposed Response Retention Time (RRT) is overly optimistic. MRWPCA should re-examine the issues and revise the RRT to reflect more realistic timelines.
MRWPCA Response: The proposed RRT for the Pure Monterey Project (5.25 months) is more conservative than plans approved for other groundwater replenishment projects. For example, the Alamitos Barrier Recycled Water Project (5 months), Dominguez Gap Barrier Recycled Water Project (5 months), the Orange County Water District Groundwater Replenishment System (3 months), and Montebello Forebay Groundwater Recharge Project (3.75 months) have shorter RRTs.

Engineering Report Location: The Response Retention Time is described in Section 6. The components are summarized in Table 6-5. No revisions are needed.

Comment (Letter D Topic #8): The time identified for MRWPCA to work with the Regional Water Board and Division of Drinking Water to assess sample results and make decisions on appropriate responses is too short.
MRWPCA Response: The 1-week timeframe is intended to mean the time necessary after all data are available from the confirmation sampling. The Division of Drinking Water and Regional Water Board will actually be involved from the onset of implementing the RRT plan and throughout its duration. As a comparison, timing for sampling/analyses and regulatory consultation for the Alamitos Barrier Recycled Water Project (4 to 6 weeks) and Orange County Water District Groundwater Replenishment System (1.3 weeks) is less than the 11.3 weeks provided for the Pure Water Monterey Project RRT.

Engineering Report Location: The RRT is described in Section 6. The time to assess sample results and make decisions is discussed in Section 6.1.3. Revisions made to Sections 6.1.1 and 6.1.3.

Comment (Letter D Topic #9): The time identified for MRWPCA to collaborate and coordinate with regulatory agencies and stakeholders to suspend operations and provide relief measures is too short.
MRWPCA Response: The 1-week time period discussed in Section 6.1.4 is considered sufficient and refers only to the timeframe for regulatory/stakeholder notification and regulatory approval in implementing initial steps of the Plan. This short response time commits MRWPCA to address any water quality problem immediately. Regulatory approval of the Engineering Report and the Plan commits the regulators to work proactively with MRWPCA in Plan implementation. By comparison, the timeframe allotted to relief measures for this project is conservative. For example, both the Alamitos Barrier Recycled Water Project and Orange County Water District Groundwater Replenishment System Project allot only 1 to 2 days. As documented in Section 6.1.4 of the Engineering report, MRWPCA has prepared an eight-step action plan for procuring a safe interim drinking water supply ("Plan") in the unlikely event that a water quality problem bypasses the multiple fail-safe measures associated with the AWT and injection facilities. The eight steps of the Plan provide a systematic and comprehensive approach for addressing a water quality issue in the Seaside Basin on both a short-term and long-term basis. Portions of the Plan text in Section 6.1.4 of the Engineering report have been revised to clarify the notification process and initial steps for coordinating with well owners, Project Partners, stakeholders, and regulators. Please see responses to Topics #10, #11, and #21 for more information regarding the Plan.

Engineering Report Location: The Plan for procuring a safe interim drinking water supply is described in Section 6.1.4. Revisions made to Section 6.1.4.

Comment (Letter D Topic #9): Providing bottled water to the public in the event of groundwater quality problems is not a realistic or viable response action.
MRWPCA Response: The provision of bottled water is one action in a multi-faceted plan for procuring a safe interim drinking water supply (Plan). The Plan includes eight steps to ensure aggressive action by MRWPCA if a water quality problem develops despite the numerous fail-safe measures already incorporated into the AWT Facility. In addition, once the problem is identified the AWT Facility would

be shut down until the issue could be remedied. MRWPCA included the bottled water option in the last step of the Plan to demonstrate its commitment to a comprehensive response Plan that considers all possibilities to provide a backup water supply. This option is not presented as a stand-alone permanent measure, but rather as one potential option among many to consider in addressing a localized issue on a short-term or emergency basis. As presented in the Plan, long-term potential actions associated with Step 8 (a combination of installing additional wells, securing bottled water, and/or replacing water supply in some other manner) would only be considered after sampling, containment, blending, treatment, and use of alternative production wells have all been considered and/or implemented. The multiple steps in this Plan, including the obligation to supplement water supply with bottled water, demonstrates MRWPCA's commitment to ensuring a long-term safe drinking water supply from the Project. For context, the Plan is developed as a back-up to many of the water quality measures already incorporated into the Project. The AWT Facility is being designed to standards developed by the Division of Drinking Water based on experience with GRRPs over the last 50 plus years. In its design of the AWT Facility, MRWPCA is going above and beyond the already conservative requirements for indirect potable reuse GRRPs by also including ozonation in addition to reverse osmosis, advanced oxidation, and membrane filtration. In addition, the Division of Drinking Water's recycled water regulations require an Operational Optimization Plan (OOP) be developed prior to operation, which will detail alarms, setpoints, and other operating conditions and procedures for ensuring a water protective of public health is produced. Should the numerous continuous monitoring programs identify a water quality problem, the AWT Facility can be immediately shut-down, with product water being re-routed as necessary.

Engineering Report Location: The Plan for procuring a safe interim drinking water supply is described in Section 6.1.4. Revisions made to Section 6.1.4.

<u>Comment (Letter D Topic #10):</u> Asking well owners to discontinue use of their wells in the event of groundwater quality problems is not viable in situations where there is no other source of water available.

<u>MRWPCA Response:</u> This comment was also submitted by the City of Seaside in Letter H. See response to Topic #21, which provides more specific information regarding actions to ensure a safe continued drinking water supply to the City of Seaside.

Engineering Report Location: The Plan for procuring a Safe Interim drinking water supply is described in Section 6.1.4. Revisions made to Section 6.1.4.

<u>Comment (Letter H Topic #21):</u> How will City of Seaside (City) consumers be supplied water if the groundwater replenishment project forces shutdown of a City well?

<u>MRWPCA Response:</u> The AWT Facility is being designed to standards developed by the California Division of Drinking Water based on experience with GRRPs over the last 50 plus years. In its design of the AWT Facility, MRWPCA is going above and beyond the already conservative requirements for indirect potable reuse GRRPs by also including ozonation in addition to reverse osmosis, advanced oxidation, and membrane filtration. In addition, the Division of Drinking Water's recycled water regulations require an Operational Optimization Plan (OOP) be developed prior to operation, which details alarms, setpoints, continuous monitoring programs, and other operating conditions and procedures for ensuring a water protective of public health is produced. In addition, the AWT Facility operators will have the ability to re-route the product water away from the injection wellfield at several locations, if necessary. Notwithstanding safety features at the AWT Facility, regulations also require a rigorous backup plan to ensure that drinking water supply is protected from any water quality issue that may arise. Therefore, an additional response plan for procuring a safe interim drinking water supply has been prepared that builds on the other multiple, fail-safe measures. This Plan is presented in Section 6.1.4 of the Engineering Report. The Plan includes eight steps to be taken by MRWPCA, in coordination with well owners, to protect drinking water wells. The Plan focuses on potential impacts to downgradient wells with the fastest travel times from the injection wells (i.e., ASR-1 and ASR-2). However, the Plan also notes that these steps will be taken for any downgradient well that could be impacted by a water quality problem. Although the City of Seaside Well No. 4 was not mentioned directly, that well would

also be subject to all actions in the Plan including notification, confirmation sampling, and possible suspension of the well, if necessary. If the City's well production is impacted, various steps are included in the Plan for provision of drinking water. In particular, step number 6 provides assistance for shifting production from any impacted well to other existing wells. This step includes the potential use of an intertie between the City of Seaside water system and the CalAm water system. This intertie, located near the intersection of LaSalle Avenue and Lincoln Street in Seaside, could be used by the City to access the CalAm water system and un-impacted wells, if needed. MRWPCA has discussed this matter with CalAm and determined that this is a feasible option. The intertie has been used in the recent past when the City needed to take wells offline for maintenance. The Engineering Report is being revised to specifically include the City of Seaside wells and information regarding the intertie in the Plan. The coordination required between MRWPCA, MPWMD, CalAm, and the City is also acknowledged in the revised text. See also the response to Topics #9, #10 and #11.

Engineering Report Location: The Plan for procuring a safe interim drinking water supply is described in Section 6.1.4. Revisions made to Section 6.1.4.

ATTACHMENT 3: REVISIONS MADE TO THE TITLE 22 ENGINEERING REPORT FOR THE PURE WATER MONTEREY PROJECT IN RESPONSE TO COMMENTS RECEIVED BY MRWPCA

(Note: In the Section numbers below from the Title 22 Engineering Report, the language contained in the Draft Version, which was circulated for public comment during the summer of 2016, is shown first, and the revised language in the Final Version, which was released in September 2016, in response to comments received by MRWPCA is shown second.

6.1.3. Time to Assess Water Quality Results with DDW and RWQCB

Draft Version Language: The time required for MRWPACA, DDW, and RWQCB to assess the sample results and make decisions regarding the appropriate response(s) is estimated to be 1 week.

Final Version Language: MRWPCA will inform DDW and RWQCB if RRT response is initiated and will keep the regulators abreast of the findings. After the last set of results are available, the time required for MRWPACA, DDW, and RWQCB to assess the sample results and make decisions regarding the appropriate response(s) is estimated to be 1 week.

6.1.4. Time to Procure Safe Interim Drinking Water Supply

Draft Version Language: The time required for MRWPCA to collaborate and coordinate with regulatory agencies and stakeholders to suspend replenishment operations and, if necessary, to provide relief measures or an alternative water supply is estimated to be one week. MRWPCA has a response plan with remedial actions for plant operators if the product water cannot meet reuse or discharge standards, including immediate shutdown of recycled water deliveries. MRWPCA also has contingency plans for disposal of "off-specification" recycled water via the ocean outfall (this water will meet NPDES permit effluent limitations). In addition to actions at the AWT Facility, MRWPCA will immediately implement appropriate steps in the proposed action plan (plan) outlined below to mitigate any potential impacts to the drinking water supply. Explanation and assumptions for each step of the plan are also provided.

Examples given in the plan focus on potential impacts to the closest downgradient drinking water wells, ASR-1 and ASR-237, both of which are located about 1,000 feet from the injection wellfield. However, the plan also applies to other potentially impacted downgradient wells. For other downgradient wells, the actions associated with the plan remain the same, but additional time would be available to mitigate impacts (given the longer travel times to other wells). Although the plan provides protection for both aquifers receiving injectate, actions target the Santa Margarita Aquifer first due to faster travel times, closer drinking water wells, and higher reliance on the deeper aquifer for water supply. Because the AWT Facility will be shut down if the water quality problem cannot be immediately remedied, any potential impacts to the groundwater supply are anticipated to be of relatively short duration. However, the plan also covers the potential for long-term impacts through wellhead treatment and other actions (Steps 7 and 8).

1. Notify Well Owner and Coordinate Appropriate Actions Once a water quality issue is identified, downgradient well owners will be notified immediately. The closest downgradient drinking water wells, ASR-1 and ASR-2, are operated by MPWMD for injection on behalf of CalAm. Both of these entities are also involved in the Project as Project Participants (see Table 2-1). Because the most likely affected well owners and operators are Project partners, selection and implementation of effective actions will be more easily coordinated. It is noted that ASR-1 is operated by CalAm for production of drinking water into their distribution system. Well ASR-2 is not yet permitted for drinking water production, but when that occurs, it will also be operated by CalAm through their water system permit. In the event that a problem is identified that could impact the quality of produced water from ASR-1 or ASR-2, MRWPCA will notify CalAm as soon as possible.

2. Confirmation Sampling in Monitoring Wells Adjacent to Injection Well Field Monitoring wells adjacent to impacted Project injection wells will be sampled for the constituent(s) of concern. Recognizing that these monitoring wells are located within about a one-month travel time from injection, these wells function as sentry wells, allowing early detection of water quality problems. They provide a lead-time of about one year before injected product water would reasonably be assumed to arrive downgradient at a Santa Margarita Aquifer drinking water well (with even longer travel times for the Paso Robles Aquifer). This underground travel time will provide time for planning the necessary actions to prevent impacted groundwater from entering the drinking water supply.

3. Initiate Accelerated Groundwater Quality Sampling in Downgradient Monitoring Wells and Water Supply Wells; Anticipate Downgradient Water Supply Wells that may be Impacted Additional downgradient monitoring wells, along with the closest water supply wells, will also be analyzed for the constituent(s) of concern. Depending on the circumstances associated with the impact, wells will be monitored at an appropriate frequency – weekly to monthly – until impacts are fully addressed. Detections at these monitoring wells would be expected to occur within about five months of the sentry wells and approximately six months prior to the anticipated arrival of impacted water at ASR-1 or ASR-2. Again, travel times will be much longer for other downgradient drinking water wells, especially those in the Paso Robles Aquifer. Also, any recent injection at the ASR wells will likely increase this lead time. Depending on the constituent and concentrations, this lead time would be sufficient for potential remedies such as taking preparatory actions to shut down a well, arrange for blending options, or secure wellhead treatment. Analyses for these constituents will also be conducted at other nearby monitoring wells, as appropriate (e.g., ASR-MW-1).

4. Suspend Operation of the Drinking Water Well if Impacted Well production will be suspended if constituents of concern are detected in the drinking water well or adjacent monitoring well at concentrations deemed by DDW to make the well unsuitable as a drinking water source as a result of the Project. The drinking water well will be taken offline and sampled periodically (likely weekly, depending on concentrations) to examine changes over time and to determine if concentrations are returning to acceptable levels. For impacts to ASR wells, the well will be pumped to the adjacent backflushing basin, which has been shown to readily accommodate several hours of pumping (as is conducted periodically for backflushing the ASR well). The backflushing basin at the ASR-1 well site holds about 245,000 gallons of water and infiltrates at rates of more than 0.5 feet per hour. In addition, there are plans to expand the basin to more than 700,000 gallons. This capacity is more than sufficient for ongoing weekly sampling of the well as needed. While these actions are occurring, production will be shifted among other wells as described in Step 6.

5. Consider Blending Options Depending on concentrations, blending is a potentially viable option that would allow the water supply to be quickly restored. This approach has been used throughout the state as a solution to dealing with groundwater contamination. Water quality sampling of the impacted well, in addition to previous and ongoing groundwater quality analyses at upgradient monitoring wells, will provide data to assess whether concentrations have been sufficiently diluted in the groundwater system. Data will also be used to determine when concentrations are reasonably expected to rise or dissipate and to determine if the blending (and the blending ratio) would allow for a well to be used for drinking water. Sampling will occur at a frequency selected in consultation with DDW in any well selected for blending to ensure that impacts are not seen in the blending well. For example, if ASR-1 (the closest drinking water supply well) is impacted, concentrations may be sufficiently low at nearby ASR-2 to consider blending to meet water quality goals. ASR-2 well could be pumped for blending without significantly spreading the impacted groundwater. By capturing the impacted groundwater locally at the ASR-1/ASR-2 well site, problematic constituents could be contained in a manner that prevents additional downgradient wells from being impacted, while meeting drinking water standards in the CalAm distribution system.

6. Shift Production from Impacted Well to other Existing Wells A review of existing well capacities in the vicinity of the Project indicates that some excess capacity is likely available at any given time to shift production to a non-impacted well. This was the result of an analysis conducted in support of the Project EIR. That analysis considered specific capacities of existing wells along with

reasonable assumptions for CalAm demand requirements from the Seaside Basin. The analysis also considered times when existing ASR wells would be required for ASR injection or recovery. Results of the analysis indicated that existing wells provide excess capacity under almost all of the recharge and recovery scenarios over a 32-year simulation period. Data provided by CalAm to support the EIR analysis indicated that a total minimum capacity of 3,653 gpm is available from the five existing CalAm wells in coastal subareas: Luzern #2, Ord Grove #2, Paralta, Playa #3, and Plumas #4 (not including capacities of two low-capacity wells planned for abandonment by CalAm). Additional capacity is available from four existing ASR wells drilled at two well sites: ASR-1 and ASR-2 at the Santa Margarita well site; and ASR-3 and ASR-4 at the Seaside Middle School well site. It is recognized that only one ASR well (ASR-1) is permitted currently for drinking water supply, but additional permitting is anticipated to occur prior to Project operation. ASR wells are capable of pumping up to about 3,000 gpm each for backflushing purposes. However, both wells at each well site would not be pumped simultaneously due to hydraulic interference associated with the relatively close well spacing. Further, well capacities decrease with ongoing injection. As a conservative assumption, an ASR capacity of 1,750 gpm is assumed for each ASR well site (total 3,500 gpm for the two sites). Even with these reduced rates, existing CalAm basin wells and ASR wells are capable of more than 7,153 gpm, a rate more than sufficient to meet anticipated future CalAm demand in the Seaside Basin of approximately 9,100 AFY (about 5,642 gpm). Further, it is noted that ASR wells are not operated full time. For example, the ASR wells were not operated in 2014 for either injection or recovery. If the closest downgradient wells (ASR-1 and ASR-2) were impacted during these time periods, no additional capacity within the system would be required until ASR injection and recovery began again. This would provide additional time for planning and remediation if such an impact occurred in the future. In addition, several wells in the Seaside Basin are capable of providing potable water if permitted and recommissioned to do so. These wells represent a potential backup water supply to accommodate demand if a drinking water well is offline temporarily. Several of these wells include the Reservoir Well, the MMP well, and the PRTIW well (among others). Most of these wells are screened in the Paso Robles Aquifer, where travel times from injection wells to drinking water wells are orders of magnitude longer (more than 8 years as indicated by groundwater modeling (see Table 5-3) and represent much lower amounts of Product water injectate. Although the capacity of these wells is relatively low, collectively, they could combine with other steps in the plan to shift production away from an impacted well while not exacerbating groundwater quality conditions.

7. Initiate Wellhead Treatment Planning and Secure Wellhead Treatment as Appropriate Ongoing remedial actions by the U.S. Army in the former Fort Ord area demonstrate the ability for granular activated carbon or air stripping to remediate volatile organic chemicals (VOC) contamination. Such treatment facilities are commonplace and can be secured within several weeks on an emergency basis if needed. Permitting and re-routing of lines can be accomplished within a few months at the affected well site. Ion exchange and other technologies such as RO are also available within similar time frames. The type of treatment needed will be known approximately one year in advance, providing sufficient time for planning and implementation.

8. Continue Well Suspension, Provide Bottled Water, and/or Consider Additional Wells It is unlikely that a water quality failure could not be remediated in a relatively short time frame (within months of detection) using the steps described above. Nonetheless, in the event that the options described above cannot be sufficiently implemented in the desired time frame, MRWPCA will work with project partners to secure bottled water, install additional wells, and/or replace the potable water supply in some other manner to ensure that drinking water demands can be met.

<u>Final Version Language</u>: As discussed in previous sections, MRWPCA has a response plan with remedial actions for plant operators if the product water cannot meet reuse or discharge standards, including immediate shutdown of recycled water deliveries. MRWPCA also has contingency plans for disposal of “off-specification” recycled water via the ocean outfall (this water will meet NPDES permit effluent limitations). In this section, MRWPCA presents an additional response plan for procuring a safe interim drinking water supply (plan) in the unlikely event that a water quality problem by-passes the

multiple fail-safe measures associated with the AWT and injection facilities. The eight steps of the plan, discussed in this section, provide a systematic and comprehensive approach for addressing a water quality issue in the Seaside Basin on both a short-term and long-term basis. The time required for MRWPCA to notify and coordinate with regulatory agencies and stakeholders on a water quality problem and initiate steps of this plan is estimated to take one week.

In addition to actions at the AWT Facility, MRWPCA will immediately implement appropriate steps in the plan outlined below to mitigate any potential impacts to the drinking water supply. Explanation and assumptions for each step of the plan are also provided. The plan focuses on potential impacts to the downgradient drinking water wells associated with the fastest subsurface arrival time of Project water; these two wells, ASR-1 and ASR-237, are located about 1,000 feet from the injection wellfield. However, the plan also applies to other potentially impacted downgradient wells, including the City of Seaside Well No. 4, located southwest of the injection wellfield. Although this well is also located about 1,000 feet from the wellfield, it is not directly downgradient and is associated with much longer travel times from the injection wells. For all other downgradient wells, the actions associated with the plan remain the same, but even more time would be available to mitigate impacts (given the longer travel times to other wells). Although the plan provides protection for both aquifers receiving injectate, actions target the Santa Margarita Aquifer first due to faster travel times, closer drinking water wells, and higher reliance on the deeper aquifer for water supply. Injection can also be transferred from one aquifer to the other, if appropriate. Because the AWT Facility will be shut down if the water quality problem cannot be immediately remedied, any potential impacts to the groundwater supply are anticipated to be of relatively short duration. However, the plan also covers the potential for long-term impacts through wellhead treatment and other actions (Steps 7 and 8).

1. Notify Well Owners and Key Stakeholders, and Coordinate Appropriate Actions Once a water quality issue is identified, downgradient well owners will be notified immediately. The downgradient drinking water wells with the fastest travel times, ASR-1 and ASR-2, are operated by MPWMD for injection on behalf of CalAm. Both of these entities are also involved in the Project as Project Participants (see Table 2-1). Because the most likely affected well owners and operators are Project partners, selection and implementation of effective actions will be more easily coordinated. In addition, the City of Seaside will be included in all notifications and planning steps; the City operates a downgradient drinking water supply well and has been cooperating with MRWPCA on Project development and implementation for several years. Finally, the Seaside Basin Watermaster will also be included in the notification process and subsequent response actions. Although the Watermaster is not a well owner, it has groundwater basin management responsibilities and the Watermaster Technical Advisory Committee has closely tracked and supported the Project. It is noted that ASR-1 is operated by CalAm for production of drinking water into their distribution system. Well ASR-2 is not yet permitted for drinking water production, but when that occurs, it will also be operated by CalAm through their water system permit. In the event that a problem is identified that could impact the quality of produced water from ASR-1 or ASR-2, MRWPCA will notify CalAm as soon as possible.

2. Confirmation Sampling in Monitoring Wells Adjacent to Injection Well Field Monitoring wells adjacent to impacted Project injection wells will be sampled for the constituent(s) of concern. Recognizing that these monitoring wells are located within about a one-month travel time from injection, these wells function as sentry wells, allowing early detection of water quality problems. They provide a lead-time of about one year before injected product water would reasonably be assumed to arrive downgradient at a Santa Margarita Aquifer drinking water well (with even longer travel times for the Paso Robles Aquifer). This underground travel time will provide time for planning the necessary actions to prevent impacted groundwater from entering the drinking water supply.

3. Initiate Accelerated Groundwater Quality Sampling in Downgradient Monitoring Wells and Water Supply Wells; Anticipate Downgradient Water Supply Wells that may be Impacted Additional downgradient monitoring wells, along with the closest water supply wells, will also be analyzed for the constituent(s) of concern. Depending on the circumstances associated with the impact, wells will be monitored at an appropriate frequency – weekly to monthly – until impacts are fully addressed.

Detections at these monitoring wells would be expected to occur within about five months of the sentry wells and approximately six months prior to the anticipated arrival of impacted water at ASR-1 or ASR-2. Again, travel times will be much longer for other downgradient drinking water wells, especially those in the Paso Robles Aquifer. Also, any recent injection at the ASR wells will likely increase this lead time. Depending on the constituent and concentrations, this lead time would be sufficient for potential remedies such as taking preparatory actions to shut down a well, arrange for blending options, or secure wellhead treatment. Analyses for these constituents will also be conducted at other nearby monitoring wells, as appropriate (e.g., ASR-MW-1).

4. Suspend Operation of the Drinking Water Well if Impacted Well production will be suspended if constituents of concern are detected in the drinking water well or adjacent monitoring well at concentrations deemed by DDW to make the well unsuitable as a drinking water source as a result of the Project. The drinking water well will be taken offline and sampled periodically (likely weekly, depending on concentrations) to examine changes over time and to determine if concentrations are returning to acceptable levels. For impacts to ASR wells, the well will be pumped to the adjacent backflushing basin, which has been shown to readily accommodate several hours of pumping (as is conducted periodically for backflushing the ASR well). The backflushing basin at the ASR-1 well site holds about 245,000 gallons of water and infiltrates at rates of more than 0.5 feet per hour. In addition, there are plans to expand the basin to more than 700,000 gallons. This capacity is more than sufficient for ongoing weekly sampling of the well as needed. While these actions are occurring, production will be shifted among other wells as described in Step 6.

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well capacities decrease with ongoing injection. As a conservative assumption, an ASR capacity of 1,750 gpm is assumed for each ASR well site (total 3,500 gpm for the two sites). Even with these reduced rates, existing CalAm basin wells and ASR wells are capable of more than 7,153 gpm, a rate more than sufficient to meet anticipated future CalAm demand in the Seaside Basin of approximately 9,100 AFY (about 5,642 gpm). Further, it is noted that ASR wells are not operated full time. For example, the ASR wells were not operated in 2014 for either injection or recovery. If the closest downgradient wells (ASR-1 and ASR-2) were impacted during these time periods, no additional capacity within the system would be required until ASR injection and recovery began again. This would provide additional time for planning and remediation if such an impact occurred in the future. Potential use of an existing intertie between the CalAm system and the City of Seaside water system is also incorporated into this step. The intertie provides additional flexibility for the plan, allowing the ability to suspend production from an impacted City well and provide access to the CalAm system. This intertie, located near the intersection of LaSalle Avenue and Lincoln Street in Seaside, has been used recently while a City well was offline for maintenance. MRWPCA will coordinate plan implementation steps with the City, CalAm, and MPWMD so that all parties are informed of any water quality issue in advance of potential impacts to any drinking water well. Finally, several additional wells in the Seaside Basin are capable of providing potable water if permitted and re-commissioned to do so. These wells represent a potential emergency backup water supply to accommodate demand if a drinking water well is offline temporarily. Several of these wells include the Reservoir Well, the MMP well, and the PRTIW well (among others). Most of these wells are screened in the Paso Robles Aquifer, where travel times from injection wells to drinking water wells are orders of magnitude longer (more than 8 years as indicated by groundwater modeling (see Table 5-3) and represent much lower amounts of Product water injectate. Although the capacity of these wells is relatively low, collectively, they could combine with other steps in the plan to shift production away from an impacted well while not exacerbating groundwater quality conditions.

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ATTACHMENT 4: MRWPCA'S TRANSMITTAL LETTER TO DDW

Monterey Regional Water Pollution Control Agency

"Dedicated to meeting the wastewater and reclamation needs of our member agencies, while protecting the environment."

Administration Office:
5 Harris Court, Bldg. D, Monterey, CA 93940-5756
(831) 372-3367 or 422-1001, FAX: (831) 372-6178
Website: www.mrwpca.org

September 16, 2016

Sherly Rosilela, P.E.
Water Resource Control Engineer
Recycled Water Unit
Division of Drinking Water
State Water Resources Control Board
1001 I Street, 13th Floor
Sacramento, CA 95814
By Email: sherly.rosilela@waterboards.ca.gov

SUBJECT: Pure Water Monterey Groundwater Replenishment Project Public Hearing – Comments Received and Planned Engineering Report Revisions

Dear Sherly,

Thank you for your guidance and help preparing for the August 22, 2016 Pure Water Monterey Groundwater Replenishment Project Public Hearing. We appreciated the presence of Division of Drinking Water (DDW) staff during the demonstration facility tour and involvement at the public hearing. Monterey Regional Water Pollution Control Agency's (MRWPCA) extensive efforts at public outreach and noticing for the hearing were evident based on the hearing attendance, participation, and comments received on the Pure Water Monterey Project (Project). The feedback assists us in identifying issues of concern within the community and providing suitable public outreach and technical responses to address those concerns.

There were approximately 75 attendees at the hearing. During the hearing, 15 attendees provided oral comments and 10 submitted comment cards. After the hearing, MRWPCA received 8 letters during the designated public comment period. MRWPCA assigned a designation letter to each person that provided comments whether they submitted a single written comment or both a comment card and a letter. MRWPCA identified 22 topics/questions (Letters A-H) related to the "Revised Draft Engineering Report: Pure Water Monterey Groundwater Replenishment Project (July 1, 2016)." The topics are addressed in Attachment 1 along with MRWPCA's response, location of relevant information in the Engineering Report, and references to MRWPCA's revisions (if needed)

to the Engineering Report. For brevity, comments were paraphrased and similar comments were combined. All written comments received during the public comment period are provided in Attachment 2 (Letters A-O). Letters A-H include topics related to the Engineering Report. MRWPCA is preparing responses to the remaining public hearing comments (Letters I-O) that will be posted along with the Engineering Report comments (Letters A-H) on the agency's website (www.mrwpca.org) by September 30, 2016.

The Engineering Report revisions are shown as underline/strikethrough text in Attachment 3. In addition to these technical changes, MRWPCA will be revising the Engineering Report to include the Maximum Contaminant Level (MCL) for chromium (VI) in accordance with DDW comments. The timeline for regulatory review and funding approvals is critical to project success. Therefore, we respectively request your review of these proposed revisions as quickly as possible. After receiving approval, MRWPCA will finalize the Engineering Report for your records. The current project schedule is based on adoption of the Water Recycling Requirements at the December 8, 2016 Central Coast Regional Water Board Hearing to assist with timely project funding and meeting the region's needs for replacement water supplies in compliance with State Water Board Orders.

Please contact Bob Holden at (831) 372-3367 or bobh@mrwpca.com if you have any questions about the comments, MRWPCA's responses, and the Engineering Report revisions.

Sincerely,

Paul A. Sciuto
General Manager

Cc: Brian Bernados, DDW, brian.bernados@waterboards.ca.gov
Randy Barnard, DDW, randy.barnard@waterboards.ca.gov
Jan Sweigert, DDW, jan.sweigert@waterboards.ca.gov
Stefan Cajina, DDW, stefan.cajina@waterboards.ca.gov
Jon Rokke, Central Coast RWQCB, jon.rokke@waterboards.ca.gov
Harvey Packard, Central Coast RWQCB, harvey.packard@waterboards.ca.gov
Sheila Soderberg, Central Coast RWQCB, sheila.soderberg@waterboards.ca.gov

Attachments:

(1) MRWPCA Responses to August 22, 2016 Public Hearing Comments - Related to Pure Water Monterey Groundwater Replenishment Project Engineering Report
(2) August 22, 2016 Public Hearing Comment Cards and Letters Received (A to O)
(3) Excerpted Pages showing Revisions to the "Revised Draft Engineering Report: Pure Water Monterey Groundwater Replenishment Project (July 1, 2016)"

ATTACHMENT 5: EMAILS BETWEEN THE WATERMASTER AND MRWPCA'S GROUNDWATER CONSULTANT TODD GROUNDWATER

Excerpt from Watermaster's email to MRWPCA:
I didn't feel that the response to our concern about some steps in the RRT time development were realistic. The response basically only said that the RRT for the Pure Water Project was longer than for several other reuse projects so therefore it was considered to be adequate. Getting agreement with MRWPCA, DDW, and the RWQCB if there is a water quality problem will certainly take more than one week. It is hard just to get them to return your call in a few days! Also, getting on onsite mobile treatment unit to treat contaminated water so it can be fed into the Cal Am distribution system will certainly take some time. They aren't sitting around ready to go on a moment's notice like things you'd get from a U-Haul yard. And the capacity of the unit would need to be quite large as Cal Am pumps a lot of water from the Basin.

Things like that are what give us concern that, if a WQ problem in the groundwater did actually occur, the time to take steps to protect the contaminated wells would be realistic so the public is protected.

I think more discussion on that is appropriate in both the response to comments and in the revised T-22 Report. Similarly, it was the Cal Am rep on our TAC who provided the comment about bottled water not being an acceptable response action. I think his point was that people can't be expected to cook and conduct personal hygiene activities using bottled water – it is only suitable for short term individual consumption purposes.

Bob Jaques
Technical Program Manager
Seaside Groundwater Basin Watermaster

Todd Groundwater Response to email above:
Thank you for letting me know of these concerns Bob. I'm attaching responses to Topics 7, 8, 9, and 10 to make sure that you saw all detailed responses related to your concerns below – response to Topic #7 was the short response comparing our RRT to others that you mentioned in the email. But if you'll review the related responses for topics 8, 9, and 10, you'll see that we truly did not dismiss a potential problem as casually as you indicate. In addition, for some of these comments, we made significant revisions and clarifications in the Final ER.

Specific to your concern below - note that the one-week time limit is only the time for alerting regulators and stakeholders about a potential issue and getting an o.k. to proceed with next steps (which they have already approved) – the one-week doesn't suggest that the fix is in place (see topic #9, also #8). Obviously, MRWPCA will shut down the plant if a water quality exceedance arises that can't be immediately remedied. There are so many "fail-safe" control measures that are embedded in the plant and conveyance systems, including numerous locations where Project water can be held, diverted, and/or be re-routed back to the plant to prevent injection into the groundwater. We took this issue very seriously and the technical team conducted a systematic step-wise risk examination of the entire system from source water to groundwater.

Regarding bottled water, we recognize your concern and would never have identified bottled water to be the "fix" for a problem (see item #10 attached). But by including every possible interim and emergency measure that could be identified (including bottled water), we effectively commit MRWPCA to doing anything and everything to address a problem, even the provision of bottled water in the short term (hours-days) to prevent exposure during some unlikely but catastrophic event. This only occurs while MRWPCA is also working on both a replacement interim remedy and a long-term solution. Note that there are a lot of actions in the plan prior to and during the bottled water emergency provision (see plan

in Section 6.1.4 of the ER). We also worked with MPWMD and CalAm (Eric Sabolsice was kind enough to assist us) on identifying capacity in other wells for short-term shifting of production, blending options (depending on the issue), interties with other systems, etc. I have to admit that it is hard to have multiple redundancies for a backup water supply because there is a shortage of backup water supplies – evidence that this project is urgently needed. But I really believe that we have a robust plan in place in the unlikely event of a problem.

The regulations require so many numerous control measures to be in place for a water quality issue. Again, any problem would likely be identified at the plant through numerous monitoring and warning systems (and alarms), but we also wanted to provide a realistic approach to addressing any problem that accidentally bypasses all of the control measures. If all of these controls fail together and a constituent exceeds effluent limits at the monitoring well, we still have about one year (or more) to aggressively address the problem before the constituent could potentially reach the closest water supply well (and we'll be tracking it with additional downgradient groundwater monitoring in the interim). If you have downloaded the Final Engineering Report (yes, I know, it's huge), the plan is outlined in Section 6.1.4. The control measures and monitoring for the plant are included throughout the document, but monitoring is summarized in Section 12.

I hope you will agree that we have sincerely attempted to address all of the concerns in the comment letter. Let me know if you have any additional questions.
Thanks, Phyllis

Phyllis S. Stanin, Vice President and Principal Geologist, Todd Groundwater

ATTACHMENT 6: COMMENTS FROM THE CITY OF SEASIDE

Below is an excerpt from an email from Rick Riedl of the City of Seaside regarding MRWPCA's responses to the City's comments and questions about the Title 22 Engineering Report**:**

I am sending responses to comments made by Watermaster TAC members and others. I am concerned that the responses given to date do not adequately address our concerns. Therefore, I have told MRWPCA that the City of Seaside will not consider granting them access to the proposed Pure Water Monterey site in Seaside until all of our concerns are addressed. If you have any additional concerns, please let me know if you would like me to add it to the list, below. If necessary, MRWPCA should meet with us to adequately address our concerns.

1) Would the water injected into the aquifer be regulated by the surface water treatment rule? If so, would all entities using the Seaside Basin be subject to this rule including reporting requirements? If so, please describe potential additional monitoring, treatment, analytical, and/or reporting requirements. Also, who would be responsible for any associated costs?

2) It was reported that a possible response action to an upset in the GWR process was to shut down the production wells. The City of Seaside has a production well in the Seaside Basin that serves many consumers. How will these consumers be supplied water if the GWR project forces a shut-down of the City of Seaside's sole source of water?

3) Has it been demonstrated that there is not an aquitard or aquiclude between the vadose zone and the Santa Margarita aquifer within the area being considered for the injection wells? If not, how would production wells installed in the Santa Margarita formation, including the Cal Am well(s), benefit from water injected into the vadose zone? What is the estimated transient time for water injected at the vadose wells to the Santa Margarita aquifer?

4) Delivering bottled water in the event that the wells are shut down is not an adequate long term response action. And the method and schedule of getting alternative water (e.g. a mobile treatment unit or alternative Cal Am wells) to Seaside Muni is not adequately addressed.

Thank you
Rick

Below are "Other General Public Comments and Responses" posted on MRWPCA's Pure Water Monterey website and provided by Mr. Riedl along with his email. Some of the responses pertain to the City of Seaside's comments on the report:

Issue #1 - Absence of Cost Estimates and Engineering Trade - Offs - How much is the production of AWTF expected to cost to build and operate? Is it competitive with alternatives? The Advanced Water Purification Facility (AWPF) component of the Pure Water Monterey (PWM) Project will cost approximately $46 million. Operation is expected to cost approximately $2.5 million per year. The overall "Soft Cap" cost listed in the Water Purchase Agreement for the first year is $1,720 per acre-foot. That cost is competitive with the life cycle cost of the incremental desalination facility costs as agreed to by California American Water (Cal Am) and the Office of Ratepayer Advocates.	Comment Letter F

Issue #2 - What is the status of the California Public Utilities Commission (CPUC) Draft Water Purchase Agreement (WPA)? On September 15, 2016, the California Public Utilities Commission (CPUC) voted 4-0 to authorize Cal Am to enter into a revised Water Purchase Agreement (WPA) between Monterey Peninsula Water Management District (MPWMD) and the Monterey Regional Water Pollution Control Agency (MRWPCA). This agreement was part of the Phase 2 resolution to allow the PMW Project to move forward. The entire decision can be viewed at: http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M167/K189/167189425.pdf This Water Purchase Agreement between the three agencies was executed on September 19, 2016. The Water Purchase Agreement can be viewed at: http://purewatermonterey.org/wp/wp-content/uploads/Water-Purchase-Agreement.pdf	Comment Letter F

Issue #3 – Will superior alternative sources of water be evaluated? The PWM Project is a critical component to the solution for Monterey Peninsula's chronic water shortage and comply with the State Water Resources Control Board's (SWRCB) mandate to reduce pumping from the Carmel River. Under current schedule projections, 3,500 acre-feet per year of water will be available to supplement the Monterey Peninsula water supply by 2018. In addition, the PWM Project is advanced in its planning process and thus is well-positioned to provide an additional source of water. California Environmental Quality Act (CEQA) review has been completed through a certified Final Environmental Impact Report (Final EIR) and the Project is well on its way through the permitting process.	Comment Letter F

During the CEQA process, MRWPCA completed an exhaustive alternatives analysis in Chapter 6 of the PWM Project's Final EIR, which built upon decades of water supply planning in Cal Am's Monterey District. The Salinas River diversion alternative suggested by the commenter was analyzed and rejected in the Final EIR as infeasible for technical and legal reasons. See PWM Project Final EIR at 6-7 to 6-9. This finding is consistent with prior examinations of potential diversions from the Salinas River.	

Issue #4 - What is the extent of the pollution from the Salinas Basin (including Blanco Drain) water and the implication of these pollutants to human health? California has established numerous state laws, regulations and policies governing the use of recycled water for groundwater replenishment to protect groundwater quality and public health. Studies have been conducted for other potable reuse projects similar to the PWM Project, including epidemiology studies, risk assessments, and investigations that analyze and compare the toxicological properties of recycled water to those of drinking water. These studies have shown that (1) there is no association between the use of recycled water and adverse health outcomes in individuals consuming groundwater containing recycled water; and (2) purified recycled water from an appropriately designed and operated AWPF Facility, such as the PWM Project, presents less risk to human health in terms of regulated chemicals, pathogens, and trace organics compounds compared to the risk from conventional drinking water sources. Based on analytical results of the source waters to be used for the PWM Project, the pilot plant testing, information on the predicted performance and water quality of the proposed full-scale AWPF Facility, and other existing groundwater replenishment projects and related research/studies: • The PWM Project will comply with all applicable groundwater replenishment regulations and will meet all Central Coast Basin Plan standards, objectives, and guidelines. • An independent advisory panel of technical experts (including experts in the areas of public health, groundwater, treatment technologies and water recycling), and staff from the State Water Resources Control Board Division of Drinking Water (DDW) have thoroughly reviewed and commented multiple times on design and planned operation of the PWM Project. The technical experts and DDW staff have found the PWM Project for its intended purpose of supplying water for indirect potable reuse. On October 6, 2016, the DDW has no additional comments on the submitted summary of public comments and revisions to the Engineering	Comment Letter G

Report. DDW will prepare an Engineering Report acceptance letter and recommendations on permit provisions to the Central Coast Regional Water Quality Control Board (Regional Water Board). The Regional Water Board is now developing a permit for Groundwater Replenishment with Recycled Water (Waste Discharge Requirements/Water Recycling Requirements) that will ensure operation of the PWM Project will comply with laws, regulations, and policies protecting public health. • The full-scale AWPF Facility and injection of purified recycled water will provide the required reliability and redundancy through use of multiple, sequential treatment barriers and environmental barriers (i.e. underground storage, attenuation and response time).	

Issue #5 – Why hasn't nanofiltration been considered since this is the gold standard for water purification? Reverse osmosis (RO), which will be implemented in the AWPF facility, yields better water quality than nanofiltration because RO rejects both divalent and monovalent ions, whereas nanofiltration primarily rejects divalent ions (large ions) and passes monovalent ions (small ions). Likewise, RO also does a better job of removing organics and other constituents when compared with nanofiltration. Because RO provides better performance, DDW requires the use of RO for groundwater injection projects like the PWM Project. MRWPCA verified RO performance during the six-month long pilot study, which demonstrated that the RO permeate water quality is protective of public health when combined with the ultraviolet light advanced oxidation process (UV/AOP).	Comment Letter G

Issue #6 – Have environmental justice concerns been addressed for the PWM Project? Human health effects were evaluated in the PWM Project Final EIR and in the soon to be approved by DDW, the Engineering Report. As noted in Issue #4, studies have shown that (1) there is no association between the use of recycled water and adverse health outcomes in individuals consuming groundwater containing recycled water; and (2) purified recycled water from an appropriately designed and operated AWPF, presents less risk to human health in terms of regulated chemicals, pathogens and trace organic compounds compared to the risk from conventional drinking water sources. As such, there are no disproportionately high and adverse human health or environmental effects on minority populations and low-income populations that would occur from the use of PWM Project water.	Comment Letter G

Issue #7 - Is this decision being made with a sense of what it might mean to future generations? Pure Water Monterey provides both purified potable water for domestic use, which reduces the risk of saltwater intrusion in the Seaside Basin, as well as additional recycled water for irrigating one of the state's most fertile agricultural areas in the Salinas Valley. Both supplies will be benefiting future generations in the area. Additionally, MRWPCA carefully considered the future potential impacts of the PWM Project. On October 8, 2015, the MRWPCA Board approved the PWM Project, after certifying that the PWM Project's Final EIR was prepared in compliance with CEQA and the CEQA Guidelines, which are found in Title 14 of the California Code of Regulations, commencing with section 15000. The MRWPCA Board Findings regarding significant impacts on the environment, mitigation for those impacts, and alternatives that may avoid or reduce significant environmental impacts in accordance with CEQA and CEQA Guidelines are located in the Consolidated Final EIR Volume IV. No lawsuit was filed within the 30-day statute of limitations to challenge the PWM Project's approval or the adequacy of the Final EIR. In addition, the CPUC approved the Water Purchase Agreement between Cal Am, MPWMD, and MRWPCA on September 15, 2016. The CPUC also adopted the required CEQA findings concerning environmental impacts, mitigation measures, and alternatives.	Comment Letter G

Issue #8 - Is the City of Seaside as a stakeholder? Yes, MRWPCA and the Fort Ord Reuse Authority (FORA) have always considered each land use agency a stakeholder in the PWM Project as assured by FORA Master Resolution which provides that each land use agency shall include policies and programs in their respective applicable general, area, and specific plans to address water supply and water conservation, including "active participation in support of the development of "reclaimed" or "recycled" water supply sources by the water purveyor and the Monterey Regional Water Pollution Control Agency to ensure adequate water supplies for the territory within the jurisdiction of the Authority." To that end, MRWPCA has solicited City of Seaside input on the PWM Project's CEQA process, through contact with the Water Master, through the Drinking Water Permit process, and the easement acquisition process.	Comment Letter H

Issue #9 - Considering there are several users with wells that produce water from the Seaside Basin, how would you ensure that all of the water injected into the Seaside Basin would be extracted by Cal Am? Water injected into the Seaside Basin will mix with ambient groundwater and flow in a downgradient direction as controlled by hydraulic gradients and groundwater pumping. As soon as the PWM Project water is injected into the aquifer, it immediately contributes to the groundwater in storage and increases the basin yield by an equal amount. Regardless of which wells actually recover the molecules of PWM Project water, Cal Am can increase pumping in an equal amount and the safe yield of the groundwater basin is maintained. Nonetheless, most of the PWM Project water is expected to be recovered directly by Cal Am wells due to the patterns of groundwater flow in the basin. Current hydraulic gradients direct groundwater beneath the injection facilities area toward the large, nearby Cal Am pumping wells, including Paralta, Ord Grove, and the four ASR wells. Nonetheless, some PWM Project water molecules may bypass these wells and migrate downgradient to other wells, depending on the then-current pumping patterns in the Seaside Basin.	Comment Letter H

Issue #10 - Is it necessary or possible for the City of Seaside to enter into a water purchase agreement with MRWPCA and MPWMD? No, the Water Purchase Agreement is a CPUC-approved agreement between Cal Am, MPWMD and MRWPCA.	Comment Letter H

Issue #11 - Will the water injected into the Seaside Basin aquifer be regulated by the surface water treatment rule? Water injected into the aquifer will be regulated by the California's Title 22 Regulations for Indirect Potable Reuse: Groundwater Replenishment, effective June 18, 2014.	Comment Letter H

SEASIDE BASIN WATER MASTER TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	November 16, 2016
AGENDA ITEM:	2.C
AGENDA TITLE:	Sustainable Groundwater Management Act (SGMA) Update
PREPARED BY:	Robert Jaques, Technical Program Manager

At the State level:
The California Department of Water Resources (DWR) has released the final 2016 modifications to California's groundwater basin boundaries. Of the 54 requests for changes to basin boundaries, DWR approved 39, denied 12, and three were deemed incomplete. Most of the modifications were made to basins in the Central Valley and included refinements reflecting waterways, county lines and geologic information. The boundary modification request submitted by MPWMD to remove some areas near Monterey from the Salinas Valley Groundwater Basin, and to recognize the boundaries of the Adjudicated Seaside Basin, was approved. These modifications are reflected in the basin boundary map that is now posted on the DWR website.

The new basin boundaries will be included in the interim update of Bulletin 118, due out by January 1, 2017. Another basin boundary modification request period may be held in 2018 based on demand from local agencies and/or GSAs. Other important near-term dates on the SGMA timeline include:

- December 31, 2016 –DWR will post a report on Water Available for Replenishment on its website.
- November 14-17, 2016 – DWR will conduct public meetings for input on its draft topic of Best Management Practices (BMPs).
- January 1, 2017 – DWR will post BMPs on its website.
- June 30, 2017 – Date by which local agencies in high- and medium-priority basins must form GSAs that cover the entire basin in order to avoid potential intervention by the State Water Resources Control Board.

At the Monterey County level:
Meetings of Monterey County's Collaborative Work Group and Stakeholders continue to be held. Monterey County intends to establish one or more Groundwater Sustainability Agencies for the portion of the Salinas Valley Groundwater Basin that does not lie within the Adjudicated Seaside Basin by the June 2017 DWR deadline for the establishment of GSAs.

Marina Coast Water District (MCWD) has filed a Notification with DWR that it wishes to serve as the GSA for the portion of the Salinas Valley Groundwater Basin that lies within their service area, and which does not lie within the Adjudicated Seaside Basin. This topic was discussed at the TAC's September meeting, and by briefly the Board at its October meeting. Followup email information that was sent to the Board on this topic is attached. The Board intends to agendize this topic for a more in-depth discussion at its next meeting.

ATTACHMENTS:	Email information provided to Board members
RECOMMENDED ACTION:	None required – information only

Watermaster Board Members:

At your October 5, 2016 there was a brief discussion under Agenda Item X.I.e, pertaining to Marina Coast Water District's (MCWD's) Notification to the Department of Water Resources (DWR) to become a Groundwater Sustainability Agency (GSA) under the Sustainable Groundwater Management Act. I indicated it was my expectation that the Department of Water Resources would accept comments on that Notification before making its determination on it. I have since been informed by DWR that there actually is no "comment period" for Notifications. Rather, if, within 90 days after a Notification to become a GSA is filed, no other entity applies to be the GSA for that same basin (or portion thereof) then DWR approves the Notification and the filing entity becomes the exclusive GSA for that basin (or portion thereof).

It appears that there only two other entities that might logically apply to become the GSA for the two portions of the Salinas Valley Groundwater Basin for which MCWD is seeking to become the GSA (the area north of, and the area northeast of, the adjudicated Seaside Basin). Those other entities are the Monterey Peninsula Water Management District (MPWMD) and Monterey County.

MPWMD has formally notified DWR that it is opting out of being the GSA for either of those areas. Thus far Monterey County has not filed an application to become the GSA of either of those areas, but has not notified DWR that it is opting out. I inquired as to the County's intentions in this regard, but have not yet received a response.

So in summary, while the Watermaster Board can certainly agendize this topic for discussion at its next meeting, there is no opportunity to submit comments to DWR on MCWD's Notification. It appears that at most the Watermaster could ask the County to submit a GSA Notification to DWR for either or both of these same two areas, and that would apparently lead DWR to hold off on designating the GSAs until the conflict between the two notifying entities is resolved.

In any event there is no immediate urgency in meeting to discuss this topic, since the 90-day period before DWR will act on MCWD's Notification will not run out until December 28, 2016. Therefore, this topic can be placed on the Board's agenda at either its November or its December meetings.

SEASIDE BASIN WATER MASTER TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	November 16, 2016
AGENDA ITEM:	2.D
AGENDA TITLE:	Progress Update on Salinas River Groundwater Basin Investigation Model TAC
PREPARED BY:	Robert Jaques, Technical Program Manager

The Salinas River Groundwater Basin Investigation Model TAC held its most recent meeting on September 13, 2016. Below is a brief listing of issues which may be of interest to TAC members:

- The agricultural stakeholder meetings were held and more meetings are planned to get additional input and data.
- There was discussion about development of the hydrologic models that are being used and the data that they have acquired to input into the models. The models are now 50% to 60% complete. Model testing is ongoing. Calibration will begin in the near future - probably October or November. Much effort is being put into getting accurate and reliable data, and this is proving to be time-consuming.
- They will be running the Watermaster's model for the Seaside Basin. The Seaside Basin is being excluded from the water balance accounting and will not be included in the Salinas Valley Integrated Hydraulic Model (SVIHM). It will use a general-head boundary approach based on measured water levels. It will use our model's findings to interface with the new SVIHM, so they will not be "remodeling" the adjudicated Seaside Basin area that we have already modeled. The objective is to have the SVIHM and the Watermaster's model match as closely as possible along the boundary between the two models.
- In the SVIHM model area about 90% of the pumping is agricultural and about 10% is municipal/industrial.
- The next Salinas River Groundwater Basin Investigation Model TAC meeting is scheduled for December 13, 2016.

ATTACHMENTS:	None
RECOMMENDED ACTION:	None required – information only

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

MEETING DATE:	November 16, 2016
AGENDA ITEM:	3
AGENDA TITLE:	Approve PSA for Martin Feeney and Initial RFSs for MPWMD, HydroMetrics, and Martin Feeney for 2017
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY: Attached are the proposed initial contracts for each of the Watermaster's consultants that are expected to work on M&MP activities during 2017. MPWMD and HydroMetrics are both currently working under a master form of agreement with the Watermaster called a "Professional Services Agreement" (PSA). Mr. Feeney's prior work for the Watermaster predated the use of the PSA, so a PSA for his 2016 (and potential other future) work is attached to this agenda item. Actual work assignments are made through the issuance of Requests for Service (RFS) under the umbrella language of the PSA. The attached RFSs constitute the proposed initial 2017 work assignments for each of these consultants as follows:

- MPWMD RFS No. 2017-01 covering their anticipated 2017 M&MP tasks. The differences in the tasks anticipated in 2017 compared to 2016 were discussed in a prior TAC meeting and were included in the approved 2017 M&MP Work Plan. These tasks are similar to those in preceding years, and also include performing work recommended in their WY 2016 Water Quality and Water Level Report (which is contained in the Preliminary Draft 2016 Annual Report) and performing verification sampling of the Ord Terrace Shallow Well as recommended in the 2016 SIAR.
- MPWMD RFS No. 2017-02 covering their obtaining water quality and water level data from private producers who ask the Watermaster collect this data for them. The costs for this work are reimbursed by the private producers, and there is no net cost to the Watermaster for work performed under this RFS.
- HydroMetrics RFS No. 2017-01 covering their providing general hydrogeologic consulting services and for providing assistance in preparing documents that the Watermaster will need to submit to fulfill its reporting requirements under the Sustainable Groundwater Management Act.
- HydroMetrics RFS No. 2017-02 covering their preparing the 2017 SIAR.
- Martin Feeney PSA and RFS No. 2017-01 covering his performing induction logging of certain of the Watermaster's monitoring wells and providing that data as well as water quality data to MPWMD for their use in preparing the 2017 Water Quality and Water Level Report.

These consultants have reviewed the cost and scope details of these proposed contracts and their input has been included in the attached versions of the contracts.

If requested by the TAC, I will develop additional RFSs for HydroMetrics during 2017 to perform further groundwater modeling or other work.

These contracts are on today's TAC meeting agenda to provide the TAC with the opportunity to raise questions or make suggestions for changes to the scopes-of-work or costs, before they are presented to the Board for approval at the Board's December 7, 2016 meeting, to ensure the contacts can be in effect at the start of 2017.

ATTACHMENTS:	6 - Proposed Consultant Contracts for FY 2017 (2 RFSs – HydroMetrics, 2 RFSs – MPWMD, 1 PSA and 1 RFS – Martin Feeney)
RECOMMENDED ACTION:	Discuss and either modify or approve the proposed contracts

SEASIDE BASIN WATERMASTER
REQUEST FOR SERVICE

DATE: January 1, 2017

RFS NO. 2017-01
(To be filled in by WATERMASTER)

TO: Derrik Williams
HydroMetrics WRI
PROFESSIONAL

FROM: Robert Jaques
WATERMASTER

Services Needed and Purpose: See Scope of Work in Attachment 1.

Completion Date: All work of this RFS shall be completed not later than December 31, 2017, and shall be performed in accordance with the Schedule contained in Attachment 2.

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

Total Price Authorized by this RFS: $ 11,400.00 (Cost is authorized only when evidenced by signature below.) (See Attachment 1 for Estimated Costs).

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

SCOPE OF WORK

On an ongoing and as-requested basis, PROFESSIONAL will provide general hydrogeologic consulting services to WATERMASTER on a variety of topics. These may include, but not be limited to interpretation of water level and water quality data collected by WATERMASTER, BMAP and SIRP implementation issues, and preparation of documents for WATERMASTER's use in fulfilling its Sustainable Groundwater Management Act reporting requirements.

Providing these services will likely involve attending certain of WATERMASTER's Technical Advisory Committee (TAC) meetings, most of which will be attended telephonically. These TAC meetings do not include special TAC or other meetings which may be required as part of performing other work which may be authorized under other RFSs issued to PROFESSIONAL by WATERMASTER. Any such other scope and cost proposals will incorporate costs for those meetings.

The Tasks in WATERMASTER's 2017 Monitoring and Management Program (M&MP) to which this RFS No. 2017-01 pertains are:

M. 1. c - Preparation and Attendance of Meetings
M. 1. e - Peer Review of Documents and Reports
M.1.g – Sustainable Groundwater Management Act Documentation Preparation

ESTIMATED COSTS

General Consulting Services, including working on the Tasks listed above and attending some TAC and other meetings either via telephone or in-person in Seaside, as requested by WATERMASTER, will be billed at the following hourly rates, including all markups and other direct costs:

Derrik Williams = $220.00/hour Georgina King = $195.00/hour

In addition to hourly labor costs, an allowance of $1,000.00 is included in this RFS to cover travel and other incidental costs associated with the performance of this work.

The total cost authorized by this RFS No. 2017-01 is $11,400.00.

ATTACHMENT 2
SCHEDULE

HydroMetrics RFS No. 2017-01
Work Schedule

ID	Task Name	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	A
				2017															
1	**M. 1. c - Preparation and Attendance of Meetings**																		
2	**M. 1. e - Peer Review of Documents and Reports**																		
3	**M.1.g - SGMA Document Preparation**																		
4																			
5																			
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11																			
12																			
13																			
14																			

Work Schedule for HydroMetrics RFS No 2017-01 8-27-16 Page 1

SEASIDE BASIN WATERMASTER
REQUEST FOR SERVICE

DATE: 1/1/2017

RFS NO. 2017-02
(To be filled in by WATERMASTER)

TO: Derrik Williams
HydroMetrics WRI
PROFESSIONAL

FROM: Robert Jaques
WATERMASTER

Services Needed and Purpose: Prepare the Seawater Intrusion Analysis Report for 2017. See Scope of Work in Attachment 1.

Completion Date: All work of this RFS shall be completed not later than December 31, 2017, and shall be performed in accordance with the Schedule contained in Attachment 2.

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

Total Price Authorized by this RFS: $ 20,890.00 (Cost is authorized only when evidenced by signature below.) (See Attachment 3 for Detailed Breakdown of Estimated Costs).

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

SCOPE OF WORK

The scope consists of providing professional consulting services to WATERMASTER for preparation of the 2017 Seawater Intrusion Analysis Report (SIAR).

To promote efficiency, much of the text and graphics from the 2016 SIAR will be incorporated directly into the 2017 SIAR.

Preparing the 2017 SIAR will involve analyzing all water quality data at the end of Water Year 2017 (October 1, 2016 to September 30, 2017) and producing semi-annual (2nd and 4th quarters 2017) chloride concentration maps for each aquifer in the Basin. Time series graphs, trilinear graphs, and stiff diagram comparisons will be updated with new data. Second and fourth quarter groundwater elevation maps will also be produced. The annual EM logs will be analyzed to identify changes in seawater wedge locations. A determination of whether there is any evidence of seawater intrusion will be made, and recommendations will be included as warranted.

A Draft 2017 SIAR will be provided to WATERMASTER in electronic (not printed) form for review. WATERMASTER will provide its review comments and those of its TAC members through direct discussions with PROFESSIONAL at a TAC meeting. In addition to these oral comments, some TAC members may also provide recommended editorial changes electronically directly to PROFESSIONAL. These comments will be addressed in a Final 2017 SIAR. A CD containing an electronic version of the entire Final 2017 SIAR in MS Word and up to 15 printed and bound copies of the Final 2017 SIAR (quantity to be determined by WATERMASTER) will be provided to WATERMASTER.

ATTACHMENT 2

HydroMetrics RFS No. 2017-02
Work Schedule

ID	Task Name	2017																	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Ju
1	**I.4.c Annual Seawater Intrusion Analysis Report (SIAR)**																		
2	HydroMetrics Provides Draft SIAR to Watermaster											**11/8**							
3	TAC Approves Annual Seawater Intrusion Analysis Report (SIAR)											**11/15**							
4	Board Approves Annual Seawater Intrusion Analysis Report (SIAR)												**12/6**						

HydroMetrics RFS No 2017-02 Work Schedule 8-26-16 Page 1

ATTACHMENT 3

DETAILED BREAKDOWN OF ESTIMATED COSTS

Note: Regardless of the use of the term "Estimated Cost" in this RFS, if the work of this RFS is to be compensated for using Lump Sum Payment method, it is understood and agreed to by PROFESSIONAL that the Total Price listed on page 1 of this RFS is binding and limiting as defined in Section V of the Agreement.

Task	Hours		Costs			
2017 Seawater Intrusion Analysis Report	**Georgina King ($195 per hr)**	**Nick Byler ($120 per hr)**	**Georgina King**	**Nick Byler**	**Expenses**	**Total Costs**
Produce 2017 SIAR	32	100	$ 6,240	$ 12,000	$ 500	$ 18,740
Attend One TAC Meeting in Monterey	10	0	$ 1,950	$ -	$ 200	$ 2,150
TOTALS	**42**	**100**	**$ 8,190**	**$ 12,000**	**$ 1,200**	**$ 20,890**

SEASIDE BASIN WATERMASTER
REQUEST FOR SERVICE

DATE: January 1, 2017 **RFS NO.** 2017-01 .
(To be filled in by WATERMASTER)

TO: Jonathan Lear
Monterey Peninsula Water Management District
PROFESSIONAL

FROM: Robert Jaques .
WATERMASTER

Services Needed and Purpose:
Perform certain Tasks contained within the Watermaster's Monitoring and Management Plan for 2017 (See detailed Scope of Work in Attachment 1).

Completion Date: The work of this RFS No. 2017-01 shall be completed in accordance with the schedule contained in Attachment 2.

Method of Compensation: Time and Expense Payment Method (As defined in Section V of Agreement.)

Total Price Authorized by this RFS: $ 52,134.00 (See Attachment 3 for a Breakdown of this Total Price. Cost is authorized only when evidenced by signature below.)

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

Detailed Scope of Work for RFS No. 2017-01

Background:

The Watermaster Board approved the Budget for the 2017 Management and Monitoring Program Work Plan (hereinafter referred to as the "2017 M&MP Work Plan") at its meeting of October 5, 2016. The work and cost authorized by this RFS No. 2017-01 is slightly revised from the work and cost originally described under Task I.2.b.3 of the 2017 M&MP Work Plan when it was approved by the Board. The revisions consist of (1) deleting the water quality sampling at the Sentinel Wells (that work is now being performed by another contractor) and (2) performing one additional verification sampling event at the Ord Terrace Shallow Well.

Performing the verification water quality sampling of the Ord Terrace Shallow Well is being recommended in the 2016 Seawater Intrusion Analysis Report (SIAR), prepared by HydroMetrics. This results from the finding, as discussed in the SIAR, that there has apparently been a change in water quality in this well as detected in the 2016 sampling event. The change in water quality is indicative of the possible beginning of seawater intrusion at that well location.

The first step listed in the Watermaster's Seawater Intrusion Response Plan (SIRP) is to resample, as soon as possible, any well which is found to have water quality that may be indicative of seawater intrusion. Therefore, in accordance with the SIRP resampling of the Ord Terrace Shallow Well has been included in the scope and cost of this RFS. The net cost impact of these two revisions is a reduction of $4,175 from the amount that was budgeted for this work in the Watermaster's approved M&MP Operations Budget for 2017.

This RFS No. 2017-01 authorizes PROFESSIONAL to perform certain work on certain of the Tasks described in the 2017 M&MP Work Plan. The Task numbers listed in Table 1 of this Detailed Scope of Work for RFS No. 2017-01 correspond to the Task numbers in the 2017 M&MP Work Plan.

Table 1

M&MP TASK NO.	TASK DESCRIPTION	WORK TO BE PERFORMED
I. 2. a.1	Conduct ongoing data entry/ database maintenance	PROFESSIONAL will perform water production, water level, and water quality data entry into WATERMASTER's database, and data editing as necessary, and will provide appropriate quality control and quality assurance for this data. Upon request from WATERMASTER, PROFESSIONAL will also enter other data into the database, such as updated information pertaining to well records. WATERMASTER will provide PROFESSIONAL with water production data. PROFESSIONAL will review the water production data provided by WATERMASTER for quality assurance and quality control purposes, and will notify WATERMASTER of any discrepancies PROFESSIONAL observes in this data. WATERMASTER will followup as appropriate with the water producers to resolve any such discrepancies. PROFESSIONAL will also host and maintain the Watermaster's Database. Any changes to WATERMASTER's database will be authorized under a separate agreement for performing such work for WATERMASTER. That agreement will either be with PROFESSIONAL or with another consultant. PROFESSIONAL will prepare quarterly water production, water level, and water quality tabulations in Excel format and will provide those tabulations to another WATERMASTER Consultant who will post them to the WATERMASTER's website, so it will be accessible to the public and other interested parties.
I. 2. b. 2	Collect Monthly Water Levels	The monitoring wells from which water level data is to be collected by PROFESSIONAL are listed under the heading "MONITORING TO BE PERFORMED BY PROFESSIONAL" in the column titled "Level" in Table 2. PROFESSIONAL will visit each of the indicated wells at the frequencies shown in Table 2 in order to obtain the water level data. At these visits PROFESSIONAL will measure and record water levels by either taking manual water levels using an electric sounder, or by dataloggers. Dataloggers which have been installed on the four Coastal Sentinel, the four ASR monitoring, and the inland (BLM site) monitoring wells will be used to measure the levels at those wells. This Task budget amount includes the possible replacement of up to 2 dataloggers at a unit price of $750, plus $100 for installation parts. All of the other wells will be manually measured.

M&MP TASK NO.	TASK DESCRIPTION	WORK TO BE PERFORMED
I. 2. b. 3	Collect Quarterly Water Quality Samples	The monitoring wells from which water quality data is to be collected by PROFESSIONAL are listed under the heading "MONITORING TO BE PERFORMED BY PROFESSIONAL" in the column titled "Quality" in Table 2. PROFESSIONAL will visit each of the indicated wells at the frequencies shown in Table 2 in order to obtain the water quality samples, and will perform water quality analyses on these samples. The water quality constituents that will be measured in these analyses are: Specific Conductance (micromhos/cm), Total Alkalinity (as $CaCO_3$), Bicarbonate (as HCO_{3-}), pH, Chloride, Sulfate, Ammonia Nitrogen (as NH_3), Nitrate Nitrogen (as NO_3), Total Organic Carbon, Calcium, Sodium, Magnesium, Potassium, Iron, Manganese, Orthophosphate, Total Dissolved Solids, Hardness (as $CaC0_3$), Boron, Bromide, and Fluoride. For the following wells listed in Table 2, Barium and Iodide will also be measured quarterly: MSC Shallow, MSC Deep, PCA-W Shallow, PCA-W Deep, MPWMD #FO-09 Shallow, and MPWMD #FO-09 Deep. The data may either come from water quality samples that are collected by the airlift method, by the positive displacement method during induction logging of these wells and/or other data gathering techniques, or combinations of these methods, at the discretion of PROFESSIONAL, and will be submitted to a State-certified analytical laboratory for analysis. Under this Task in 2013 retrofitting to use the low-flow purge approach for getting water quality samples was completed on all of the wells that are sampled. This sampling equipment sits in the water column and may periodically need to be replaced or repaired. Accordingly, an allowance to perform maintenance on previously installed equipment has been included in this Task. Also, in the event a sampling pump is found to be no longer adequate due to declining groundwater levels, an allowance of $2,000 to purchase a replacement sampling pump has been included in this Task. Performing one additional water quality verification sampling at the Ord Terrace Shallow Monitoring Well has been included under this Task, as recommended in the 2016 SIAR.

M&MP TASK NO.	TASK DESCRIPTION	WORK TO BE PERFORMED
I. 2. b. 6	Reports	PROFESSIONAL will prepare and submit reports to WATERMASTER according to the following schedule. 1. PROFESSIONAL will review the water quality and water level data at the end of each quarter of the Water Year and will provide to WATERMASTER tabularized data summaries of the WQ/WL data twice per year, once for the Q1 and Q2 period and once for the Q3 and Q4 period, so this data can be posted to WATERMASTER's website. These two reports will be accompanied by brief cover letters describing any missing data or data collection irregularities that are encountered during the reporting periods. No reporting on a quarterly basis is required. However, PROFESSIONAL will promptly notify WATERMASTER in writing if PROFESSIONAL identifies any missing data or data collection irregularities that were encountered during the quarterly reporting periods. 2. PROFESSIONAL will prepare one annual report summarizing the water quality and water level data for the Water Year, and containing tables of this data for the complete Water Year. The report will include a brief cover letter describing any missing data or data collection irregularities that were encountered during the reporting period, and any recommendations for changes to be made to the data collection program.
I.2.b.7	CASGEM Data Submittal	PROFESSIONAL will compile and submit data on the Watermaster's "Voluntary Wells" into the State's CASGEM groundwater management database. The term "Voluntary Well" refers to a well that is not currently having its data reported into the CASGEM system, but for which the Watermaster obtains data. This will be done in the format and on the schedule required by the Department of Water Resources under the Sustainable Groundwater Management Act.
I.4.c	Review Seawater Intrusion Analyses	WATERMASTER will have another consultant perform analyses and prepare mapping and other documents pertaining to seawater intrusion detection. PROFESSIONAL may participate in meetings with that consultant during the course of its work, and may provide review comments and recommendations to WATERMASTER regarding this work as it is being carried out by that consultant.

Table 2. Monitoring Wells

WELL NAME AND SUBAREA LOCATION[8]	MONITORING NETWORK[1]		MONITORING REQUIRED BY DECISION[2]		MONITORING CURRENTLY BEING PERFORMED BY PROFESSIONAL NOT SUBJECT TO THIS RFS[3]		MONITORING TO BE PERFORMED BY PROFESSIONAL UNDER THIS RFS[4]			
					Level Frequency		Level Frequency		Quality Frequency	
	Professional's	Watermaster's	Level (Monthly)	Quality (Annually)	Monthly	Quarterly	Monthly	Quarterly	Annually	Quarterly
Northern Coastal Subarea (and vicinity)										
MSC-Shallow		X					X			X
MSC-Deep		X					X			X
PCA-W Shallow		X						X		X
PCA-W Deep		X						X		X
PCA-E (Multiple) Shallow	X				X				X	
PCA-E (Multiple) Deep	X				X				X	
Ord Grove Test-Shallow /Deep	X				X					
Paralta Test-Shallow /Deep	X				X					
Ord Terrace-Shallow [11]	X				X				X	
Ord Terrace-Deep	X				X				X	
MPWMD #FO-09-Shallow	X				X					X
MPWMD #FO-09-Deep	X				X					X
MPWMD #FO-10-Shallow		X					X		X	
MPWMD #FO-10-Deep		X					X		X	
Fort Ord Monitor MW-B-23-180-Dune/Aromas		X					X		X	
CDM MW-1-Dune/Aromas		X					X			
CDM MW-2-Dune/Aromas		X					X			
CAW Del Monte Observation-Shallow		X							X	
SBWM MW-1-Deep (Purisima)[6]		X						X		
SBWM MW-2-Deep (Purisima)[6]		X						X		
SBWM MW-3-Deep (Purisima)[6]		X						X		
SBWM MW-4-Deep (Purisima/Santa Margarita)[6]		X						X		
Northern Inland Subarea (and vicinity)										
MPWMD #FO-01-Shallow	X					X				
MPWMD #FO-01-Deep	X					X				
MPWMD #FO-07-Shallow	X					X				
MPWMD #FO-07-Deep	X					X				
MPWMD #FO-08-Shallow	X					X				
MPWMD #FO-08-Deep	X					X				
MPWMD #FO-11-Shallow	X					X				
MPWMD #FO-11-Deep	X					X				
SBWM MW-5-Shallow (Paso Robles)[6]		X						X	X	
SBWM MW-5-Deep (Santa Margarita)[6]		X						X	X	

Table 2 (Continued)

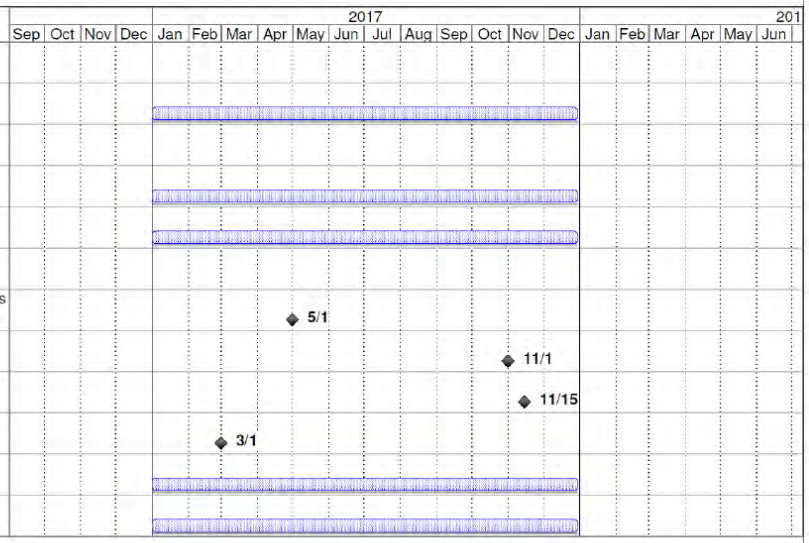
Southern Coastal Subarea (and vicinity)										
Plumas '90 Test-Deep		X					X			
K-Mart-Dune/Aromas		X					X			
CDM MW-3-Dune/Aromas		X					X			
CDM MW-4-Dune/Aromas		X					X			
MW-BW-08A-Dune/Aromas		X					X			
MW-BW-09-180-Shallow		X					X			
Shea		X						X		
Laguna Seca Subarea (and vicinity)										
MPWMD #FO-03-Shallow	X					X				
MPWMD #FO-03-Deep	X					X				
MPWMD #FO-04-Shallow (E)	X					X				
MPWMD #FO-04-Deep (W)	X					X				
MPWMD #FO-05-Shallow	X					X				
MPWMD #FO-05-Deep	X					X				
MPWMD #FO-06-Shallow	X					X				
MPWMD #FO-06-Deep	X					X				
Justin Court (RR M2S)-Shallow	X					X				
LS Pistol Range (Mo Co TH-1)-Deep	X					X				
York Rd-West (Mo Co MW-1 D)-Deep	X					X				
Seca Place (Mo Co MW-2)-Deep	X					X				
Robley Shallow (North) (Mo Co MW-3S)-Shallow	X					X				
Robley Deep (South) (Mo Co MW-3D)-Deep	X					X				
LS No. 1 Subdivision-Deep	X					X				
Blue Larkspur-East End-Believed to be Deep	X					X				
York School-Shallow		X	X						X	
Laguna Seca Driving Range (SCS-Deep)-Shallow		X						X	X	
Laguna Seca County Park #2-Shallow		X	X						X	
CAW Granite Construction-Deep		X					X			
CAW Ryan Ranch (RR) #7-Deep		X	X						X	
Laguna Seca Golf New #12-Deep[9]		X							X	
Pasadera Main Gate-Deep		X	X						X	
No. of Wells in Each Network[5]=	32	30	4	0	8	24	14	10	20	6

Notes:
(1) The wells within the Professional's Monitoring Well Network are the wells that PROFESSIONAL monitors as part of PROFESSIONAL's own monitoring program. The wells within the Watermaster's Monitoring Well Network are the wells to be monitored under this RFS.
(2) Monitoring required by the Decision is the monitoring described in the Monitoring and Management Program which was incorporated by reference in the Decision of the Court dated February 9, 2007.
(3) Monitoring currently being performed by PROFESSIONAL not subject to this RFS is monitoring work PROFESSIONAL is performing under other monitoring programs. This monitoring is not a part of this RFS.
(4) Monitoring to be performed by PROFESSIONAL is the monitoring to be performed under this RFS.
(5) The Watermaster's Monitoring Well Network includes the wells recommended in the Enhanced Monitoring Well Network report prepared by PROFESSIONAL, dated October 23, 2007, plus the 4 new Sentinel Wells installed in 2007 and the BLM well installed in 2011.
(6) The Seaside Basin Watermaster (SBWM) wells are all equipped with dataloggers that obtain measurements at least daily, but will be manually sounded for water level on a quarterly basis for calibration purposes.
(7) Not used.
(8) Shallow=Paso Robles; Deep=Santa Margarita or Purisima.
(9) This well is so close to the Laguna Seca Old No. 12 well that no water level monitoring is necessary.
(10) CAW East Fence Shallow well can no longer be sampled and was therefore dropped from this list.
(11) The Ord Terrace Shallow well will be verification-sampled early in WY 2017 as recommended by the 2016 SIAR.

ATTACHMENT 2
SCHEDULE

MPWMD RFS No. 2017-01 Work Schedule

ID	Task Name
1	**I.2.a DATABASE MANAGEMENT**
2	**I.2.a.1 Conduct Ongoing Data Entry/Database Maintenance**
3	**I.2.b DATA COLLECTION PROGRAM**
4	**I.2.b.2 Collect Monthly Water Levels (MPWMD)**
5	**I.2.b.3 Collect Quarterly Water Quality Samples (MPWMD)**
6	**I.2.b.6 Reports (from MPWMD)**
7	Water Level and Water Quality Data Summaries for 1st & 2nd Quarters
8	Water Level and Water Quality Data Summaries for 2nd & 3rd Quarters
9	Annual Water Production, Water Level, and Water Quality Report for 2017
10	Watermaster Prepares Report Regarding Long-Term Trends in Water Levels in Monitoring Wells
11	**I.2.b.7 CASGEM Data Submittal**
12	**I.4.c MPWMD Provides Assistance in Seawater Intrusion Detection**



Work Schedule for MPWMD RFS No 2017-01 Draft 7-31-16 Page 1

ATTACHMENT 3 SUMMARY OF ESTIMATED COSTS

M&MP TASK NO.	LABOR HOURS		HOURLY	SUPPLIES AND MATERIALS		TOTAL
	BREAKDOWN	TOTAL	RATE	BREAKDOWN	TOTAL	
I. 2. a. 1	12 mo. @ 8 hrs/mo.	96	$112	Other services needed to host and maintain Watermaster's Database, estimate $300 for the year.	$300	$11,052
I. 2. b. 2.	12 mo. @ 4 hrs/mo.	48	$89	2 replacement dataloggers @ $750, plus $100 for installation parts	$1,600	$5,872
I. 2. b. 3.	Quarterly WQ wells (Table 2): MPWMD Coastal wells (6 wells - shallow and deep aquifers @ 3 sites: MSC, PCA-W, FO-09), plus one additional verification WQ sample at Ord Terrace Shallow Well. Labor: 4 events @ 16 hrs/event	64	$89	Fuel: 4 events @ $10/site x 3 sites = $120; Lab costs: 4 events @ $225/well x 7 wells = $6,300; plus one verification sample lab cost = $225.	$6,645	$12,341
	Annual WQ wells (Table 2): 1 event @ 28 hrs/event = 28 hrs	28	$89	BLM site: Eductor setup (use MPWMD portable unit): $0 x 1 site = $0; Airlift equip.: $100 x 1 site x 1 event = $100; Fuel: $20 x 1 site x 1 event = $20. Lab cost (annual WQ wells): $175 x 15 wells x 1 event = $2,625; maintenance on previously installed sample collection equipment = $1,000. One-time cost, if necessary for replacing a well sampling pump if the existing pump is found to be inadequate due to dropping groundwater levels = $2,000.	$5,745	$8,237
	WM Sentinel and Northern Inland wells: download/store dataloggers, 4 events @ 2 hrs/event	8	$89	N/A	$0	$712
	Compile data: 4 events @ 24 hours/event	96	$89	N/A	$0	$8,544
I. 2. b. 6	Data summaries and 1-annual report	24	$112	N/A	$0	$2,688
I.2.b.7	CASGEM Data Submittal for Watermaster's Voluntary Wells	16	$112	N/A	$0	$1,792
I. 4. c	Provide SWI supplemental data and review.	8	$112	N/A	$0	$896
					TOTAL ESTIMATED COST =	**$52,134**

Notes:

1. Vehicle mileage is included in the labor costs above.
2. Regardless of the use of the term "Estimated Cost" in this RFS, if the work of this RFS is to be compensated for using Lump Sum Payment method, it is understood and agreed to by PROFESSIONAL that the Total Price listed on page A-1 of this RFS is binding and limiting as defined in Section V of the Agreement.

SEASIDE BASIN WATERMASTER
REQUEST FOR SERVICE

DATE: January 1, 2017 **RFS NO.** 2017-02 .
(To be filled in by WATERMASTER)

TO: Jonathan Lear
Monterey Peninsula Water Management District
PROFESSIONAL

FROM: Robert Jaques .
WATERMASTER

Services Needed and Purpose:
Perform water level and water quality data collection for specified wells within the Seaside Basin in accordance with the Scope of Work contained in Attachment 1.

Completion Date: The work of this RFS No. 2017-02 shall be completed on an as-directed basis from the Watermaster during 2017. All work under this RFS will be completed not later than December 31, 2017.

Method of Compensation: Time and Expense Payment Method (As defined in Section V of Agreement.)

Total Price Authorized by this RFS: $4,788.00 (See Attachment 1 for details regarding this Total Price, and how costs will be authorized on an as-directed basis. Cost is authorized only when evidenced by signature below.)

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
Scope of Work for RFS No. 2017-02

Background:

The WATERMASTER Board authorized its staff to contract with the PROFESSIONAL to collect water level and water quality data from certain wells located within the Seaside Basin, if the owners/operators of those wells expressed this desire to the WATERMASTER. The procedures for this data collection are described in the January 17, 2008 "Notice to Well Owners" that was sent out by the Watermaster to well owners in the Seaside Groundwater Basin.

This RFS No. 2017-02 authorizes PROFESSIONAL to perform this data collection work on an as-directed basis, with formal authorization from the WATERMASTER to the PROFESSIONAL being required prior to the PROFESSIONAL performing such work on any specified well. This will provide the WATERMASTER with full control over which wells are provided this service, as well as over the costs for having this work performed.

The wells to which these services may be provided are listed in Table 1.

The estimated costs, per well, to perform these services are as follows:

Monthly Water Levels - It is estimated that it will take approximately 0.5 hour/well to perform a water level measurement. This time estimate is based on the assumption that the water level measurements will be performed at the time that a field person is already out and about collecting data from other wells, and the fact that the distance between wells located within the Basin is not that great. This labor would be billed at the field rate of $89/hr, so the estimated cost per water level measurement would be $44.50.

The total estimated cost would be $534 per year per well for 12 monthly measurements.

Annual Water Quality Sampling - Assuming that annual water sample collection would coincide with water level collection at a well, it is estimated that it will take approximately 0.5 hr to collect the water quality sample, including sampling time, bottle labeling, custody forms, delivery to laboratory, etc. There will also be an estimated 0.5 hr for receipt, review and computer entry of laboratory data, and an estimated $175 per sample for the laboratory analysis. The sampling work would be billed at the field rate of $89/hr, so the estimated cost per annual water quality sample would be $89 for labor, and $175 for laboratory services, for a total cost per sample of $264. Only one sample per well per year will need to be collected and analyzed. This sample will be collected in the fall.

The total estimated cost for collecting and analyzing the sample per well is $264.

Combined Water Level Measurements and Water Quality Sampling: For combined water level and water quality monitoring, the total estimated cost, per well, for the 12-month period is $798.

Of the wells listed in Table 1 it is assumed that not more that 6 will ask to have data collected for them by the WATERMASTER, the total estimated cost would be:

Potential No. of Wells Needing Water Level Data Collected	= 6 @ $534 =	$3,204
Potential No. of Wells Needing Water Quality Data Collected	= 6 @ $264 =	$1,584
	TOTAL =	$4,788

Table 1

APN	DETAILS	COMPANY	Watermaster "Producer" Well?	MPWMD Assigned Well #	Monthly Water Levels Required	Monthly Water Levels Being Collected?	Annual Water Quality Analyses Required?	Annual Water Quality Data Being Collected?
Within MPWMD Boundaries								
012-432-004	CAW - Plumas #4	California American Water Co.	Y	T15S/R1E-27Jg	Y	Y	Y	N
012-843-013	CAW - Darwin	California American Water Co.	Y	T15S/R1E-23Ea	Y	Y	Y	N
011-041-018	CAW - Military	California American Water Co.	Y	T15S/R1E-14Nd	Y	Y	Y	N
011-061-004	CAW - Ord Grove #2	California American Water Co.	Y	T15S/R1E-23Bc	Y	Y	Y	N
011-071-018	CAW - New Luzern	California American Water Co.	Y	T15S/R1E-23De	Y	Y	Y	N
011-091-017	CAW - Playa #3	California American Water Co.	Y	T15S/R1E-22Bc	Y	Y	Y	N
011-091-017	CAW - Playa #4	California American Water Co.	Y	T15S/R1E-22Bf	Y	Y	N	
011-493-028	CAW - Paralta	California American Water Co.	Y	T15S/R1E-14Ra	Y	Y	Y	N
031-151-010	Reservoir Well	City of Seaside	Y	T15S/R1E-13Na	Y	?	Y	N
031-231-062	Coe Avenue Well	City of Seaside	Y	T15S/R1E-14Ma	Y	?	Y	N
011-181-014	Public Works Corp. Yard	City of Sand City	Y	T15S/R1E-22Ed	Y	?	Y	N
011-011-020	Cypress Pacific	Monterey Peninsula Engineering	Y	T15S/R1E-22Dd	Y	N	Y	N
011-236-010	Robinette -Design Ctr.	City of Sand City	Y	T15S/R1E-22Mc	Y	?	Y	N
011-041-043	(in front of Target)	DBO Development	Y	T15S/R1E-22Ce	Y	N	N	
011-061-022	MMP prod well	Mission Memorial Park	Y	T15S/R1E-23Ab	Y	Y	N	
011-061-022	PRTIW -operated by MMP	Mission Memorial Park	Y	T15S/R1E-23Ac	Y	N	Y	N
011-501-014-500		Security National Guaranty, Inc.	Y	T15S/R1E-15K1	Y	N	Y	N
011-532-005		Granite Rock Company	Y	T15S/R1E-22Eb	Y	?	N	
012-511-005	Shea Well	City of Del Rey Oaks	Y	T15S/R1E-26Mc	Y	N	N	
012-115-017	City #4	Seaside Municipal Water System	Y	T15S/R1E-23Gc	Y	?	Y	?
012-653-003	City #2	Seaside Municipal Water System	Y	T15S/R1E-23Pb	Y	?	N	
012-664-017	City #1	Seaside Municipal Water System	Y	T15S/R1E-23Lb	Y	?	N	
012-115-017	City #3	Seaside Municipal Water System	Y	T15S/R1E-23Ga	Y	?	Y	?
173-071-052	East Well (Lot #9)	CAW - Bishop Unit	Y	T16S/R2E-05Fa	Y	N	N	
173-072-034	well lot Bishop #1 (west)	CAW - Bishop Unit	Y	T16S/R2E-05Ea	Y	Y	N	
173-072-041	well lot Bishop #2 (east)	CAW - Bishop Unit	Y	T16S/R2E-05Fb	Y	Y	N	
416-111-002	Mutual	CAW - Hidden Hills Unit	Y	T16S/R2E-09Cb	Y	N	N	
416-111-004	Standex	CAW - Hidden Hills Unit	Y	T16S/R2E-09Cc	Y	N	N	
416-111-004	Bay Ridge	CAW - Hidden Hills Unit	Y	T16S/R2E-09Cd	Y	Y	N	
259-031-011	RR#7	CAW - Ryan Ranch #7	Y	T15S/R1E-36Nb	Y	Y	N	
259-031-012	RR#8	CAW - Ryan Ranch #8	Y	T16S/R1E-01Cb	Y	Y	N	
259-031-012	RR#11	CAW - Ryan Ranch #11	Y	T16S/R1E-01Cd	Y	Y	N	
173-071-056	Old Main Gate (Lot #12)	Pasadera - New Cities Developme	Y	T16S/R2E-05Mg	Y	Y	N	
173-071-051	Paddock #1(Lot #11)	Pasadera - New Cities Developme	Y	T16S/R2E-05Mf	Y	N	N	
203-031-034	01-349	York School	Y	T15S/R1E-36Qa	Y	?	N	
173-071-048	(new #12)	Laguna Seca Golf Resort	Y	T16S/R2E-06Hb	Y	Y	N	
173-071-048	(racetrack)	Laguna Seca Golf Resort	Y	T16S/R2E-06Ga	Y	Y	N	
Outside MPWMD Boundaries								
173-011-025, -026	LS Cnty Park #3	MPRPD	Y	T16S/R2E-05Gd	Y	?	N	
173-011-025, -026	LS Cnty Park #4	MPRPD	Y	T16S/R2E-05Ge	Y	?	N	
					Y = 38	**N or ? = 21**	**Y = 16**	**N or ? = 16**

PROFESSIONAL SERVICES AGREEMENT

THIS AGREEMENT TO PROVIDE PROFESSIONAL SERVICES is made and entered into on _____ by and between SEASIDE GROUNDWATER BASIN WATERMASTER, hereinafter referred to as "WATERMASTER," and MARTIN BLAIR FEENEY, hereinafter referred to as "PROFESSIONAL," as follows:

SECTION I: ADHERENCE TO TERMS OF AGREEMENT

WATERMASTER intends to literally interpret and strictly apply all terms and conditions of this Agreement. All approvals which are required to be in writing must be in writing to be valid and binding. PROFESSIONAL is encouraged to raise to WATERMASTER any questions with regard to interpretation or applicability of any provision of this Agreement before undertaking the work.

SECTION II: EMPLOYMENT

WATERMASTER hereby employs PROFESSIONAL, as an independent contractor to furnish the professional services covered by this Agreement, and the Requests for Service issued under it, in accordance with the terms and conditions set forth below, and PROFESSIONAL hereby accepts such employment.

SECTION III: WORK ASSIGNMENTS

It is the intent of WATERMASTER and PROFESSIONAL to authorize the performance of work under this Agreement by executing a series of written work assignments setting forth the specific description, scope, and costs of the work to be performed. Such assignments shall be called "Requests For Service" (RFS) and shall be numbered consecutively. Each RFS, upon execution by PROFESSIONAL and by WATERMASTER, shall become and be considered as a part of this Agreement, and all provisions herein shall apply to said RFSs. The RFS form to be used is contained in Attachment A to this Agreement.

SECTION IV: TIME OF PERFORMANCE

A. General - Time is of the essence on the work of the RFSs issued under this Agreement. Therefore, PROFESSIONAL shall perform its services in a

timely manner. Specific performance times shall be specified for each individual RFS under this Agreement. PROFESSIONAL shall make every reasonable effort, including assigning of additional personnel to the work and/or working overtime, to complete the authorized work within these stipulated time periods. The taking of such additional measures to complete the work within the stipulated time periods will not entitle PROFESSIONAL to additional compensation, if the work is being performed under the Lump Sum Payment Method, except as provided for in Section V, Paragraph B.

B. Subcontracted Services - For subcontracted services PROFESSIONAL shall contract for and schedule such services in a timely fashion in accordance with the requirements of the work, and shall be fully responsible for the performance and quality of all work performed by its subcontractors.

C. Extensions of Time - The time of performance established for a particular RFS may be extended at any time prior to completion of the work by mutual agreement in writing between WATERMASTER and PROFESSIONAL.

SECTION V: COMPENSATION

A. General - WATERMASTER and PROFESSIONAL shall negotiate the costs and fees for each specific RFS. The method of payment of said costs and fees shall be either on a lump-sum basis, on a cost-plus-a-fixed-fee basis, or on a time-and-expense basis. The method of payment will depend on the specific conditions, the scope of work, and the services to be performed for each specific RFS.

B. Projected Cost Overruns Under Cost-Plus-a-Fixed-Fee or Time-and-Expense Payment Methods - If, at any time in the performance of the work of a specific RFS under the Cost-Plus-a-Fixed-Fee or Time-and-Expense payment methods, PROFESSIONAL has reason to believe that the costs which it expects to incur to complete the work of that RFS will exceed the total amount authorized for that RFS, PROFESSIONAL shall notify WATERMASTER in writing to that effect. The notice shall:

(1) State the reason(s) why PROFESSIONAL anticipates a cost overrun;

(2) State the estimated amount of additional funds beyond the

total amount currently authorized that will be required to complete the work authorized by the RFS; and

(3) Provide recommendations of how the overrun can be avoided;

If, after such notification, additional funds are not allotted, WATERMASTER will, if required in writing by PROFESSIONAL, terminate the work of that particular RFS pursuant to the provisions in Section VI, TERMINATION.

C. Lump-Sum Payment Method - WATERMASTER may elect to pay PROFESSIONAL a lump sum Total Price amount to be determined for a specific RFS. In addition to this lump sum amount, a Special Services allowance, as defined in this section, may also be established.

1. Lump Sum Total Price - PROFESSIONAL shall perform all work authorized by a lump sum type of RFS for the lump sum Total Price amount. No additional payments for said work will be requested by PROFESSIONAL or authorized by WATERMASTER, unless both parties agree that there is additional work, beyond the scope of services authorized by the RFS, which must also be performed. Before any such additional work is undertaken, WATERMASTER and PROFESSIONAL shall execute a separate amendment to the RFS setting forth the scope and costs of the additional work to be performed.

2. Special Services Allowance - To cover unforeseen circumstances, WATERMASTER and PROFESSIONAL may negotiate a Special Services allowance. PROFESSIONAL shall provide WATERMASTER with written notification stating the reasons for requiring the utilization of any or all of the Special Services allowance. No utilization of any portion of the allowance shall occur without the prior written approval of the WATERMASTER. Special Services costs will be charged in accordance with the Time-and-Expense Payment Method as defined in Paragraph D of this section.

D. Cost-Plus-A-Fixed-Fee Payment Method - WATERMASTER may elect to pay PROFESSIONAL on a cost-plus-a-fixed-fee basis which shall be the sum of (1) Direct Salaries, (2) Overhead Costs, (3) Direct Non-Salary

Expenses, and (4) A Fixed Fee.

1. Direct Salaries - Shall be the amount paid by PROFESSIONAL to its employees for time directly chargeable to a given RFS, exclusive of costs for fringe benefits for said employees and other payroll costs not paid to the employee.

2. Overhead Cost - Shall be a percentage of the Direct Salaries. The percentage to be charged shall be negotiated between WATERMASTER and PROFESSIONAL, and it shall be stipulated in each RFS for which this type of payment method will be used.

3. Direct Non-Salary Expenses - Shall be all identifiable costs directly chargeable to each RFS including, but not limited to: travel and subsistence expenses; work subcontracted to others; reproduction of plans, specifications, reports and other documents; equipment rental; and, drafting and stenographic supplies used in the work. The chargeable rate for automobile mileage for the work to be performed under this shall be stated in the RFS.

4. Fixed Fee - Shall be a fixed amount for interest on invested capital, readiness to serve, and profit. A fixed fee shall be established for each specific RFS for which the cost-plus-a-fixed-fee payment method will be used. This fixed fee will not change regardless of whether the Total Estimated Cost is greater than or less than the actual costs, unless both parties agree that there has been a change in scope. In such instance, the fixed fee will be renegotiated.

5. Total Estimated Cost - Is the sum of categories (1), (2), and (3) above.

6. Total Price - Is the sum of categories (1), (2), (3), and (4) above.

7. Invoices - Invoices shall include the costs incurred in categories (1), (2), and (3), plus a proportionate amount of the category (4) Fixed Fee.

E. Time-and-Expense Payment Method - For tasks for which the scope of work is not readily definable, WATERMASTER may elect to pay

PROFESSIONAL on a time-and-expense basis in accordance with the PROFESSIONAL's most current Standard Schedule of Compensation. The hourly rates set forth in the Standard Schedule of Compensation shall be inclusive of all direct and indirect salary costs, overhead, fringe benefits, profit, and other costs, and shall reflect the total hourly charge for each listed job category. Other direct non-salary expenses for the performance of work authorized under the Time-and-Expense Payment Method shall be all identifiable costs directly chargeable to each RFS including, but not limited to: travel and subsistence expenses; work subcontracted to others; reproduction of plans, specifications, reports and other documents; equipment rental; and, drafting and stenographic supplies used in the work. The chargeable rate for automobile mileage for the work to be performed under this Agreement shall be stated in the RFS. Direct non-salary expenses shall be compensated for at their actual cost, unless otherwise stated in the RFS, providing they have been authorized in advance by WATERMASTER. A Total Price, which may not be exceeded without WATERMASTER's prior written approval, will be established for each specific RFS for which this payment method will be used.

F. Terms of Payment - PROFESSIONAL shall invoice WATERMASTER monthly for work completed during the previous month, unless a different invoicing frequency is agreed to by both parties to this Agreement. All invoices shall be due and payable within thirty (30) days of the date of receipt by WATERMASTER, provided all costs included in the invoice are adequately supported by documentation accompanying the invoice. If payment is not made within sixty (60) days of the date of receipt by WATERMASTER, interest on the unpaid balance will accrue beginning with the sixty-first day at the rate of 1.0 percent per month, or the maximum interest rate permitted by law, whichever is the lesser. Such interest shall become due and payable at the time said overdue payment is made.

G. Penalty for Late Performance - The PROFESSIONAL is not responsible for delays in the schedule caused by events outside PROFESSIONAL's reasonable control. However, in the event PROFESSIONAL fails to properly complete work within thirty (30) days of the date such work is due (pursuant to schedules developed in accordance with Section IV of this Agreement), because of events within PROFESSIONAL's reasonable control, WATERMASTER SHALL reduce the total compensation established for the work of that RFS by ten percent (10%). Said reduction shall be deemed

liquidated damages for the untimely performance of work required by this Agreement. PROFESSIONAL shall be deemed to have waived any claim for such amount by reason of his failure to perform in a timely fashion.

SECTION VI: TERMINATION

Notwithstanding the above, WATERMASTER reserves the right to terminate any RFS to this Agreement at any time prior to the completion of the services to be furnished by PROFESSIONAL under said RFS by giving a written Notice of Termination to PROFESSIONAL, in which event WATERMASTER shall pay PROFESSIONAL only for work done and direct costs incurred by PROFESSIONAL under said RFS prior to receipt of such notice of termination. Such costs will include reasonable costs to bring the work to a halt, and costs to deliver to WATERMASTER the documentation described in the following paragraph. Termination of a particular RFS will not affect any other operative RFS.

Upon receipt of a Notice of Termination, PROFESSIONAL shall (1) promptly discontinue all services affected (unless the notice directs otherwise), and (2) deliver to WATERMASTER all data, drawings, specifications, reports, estimates, summaries, and such other information and materials as may have been accumulated by PROFESSIONAL in performing work under this Agreement, whether completed or in process.

Upon termination WATERMASTER may take over the work and prosecute the same to completion by agreement with another party or otherwise. Any work taken over by WATERMASTER for completion will be completed at WATERMASTER's risk, and WATERMASTER will hold harmless PROFESSIONAL from all claims and damages arising out of improper use of PROFESSIONAL's work.

SECTION VII: WATERMASTER LIABILITY

PROFESSIONAL understands that this Agreement is with WATERMASTER alone, and that none of the members of WATERMASTER are liable for any sums which may be payable hereunder, or for any debts of WATERMASTER.

SECTION VIII: CHANGES

WATERMASTER may, at its discretion and from time to time, revise, correct, or modify the work to be performed under an RFS. All such changes shall be made formally and in writing to PROFESSIONAL. PROFESSIONAL shall comply with such changes.

Should PROFESSIONAL determine that said changes will result in an increase or decrease in costs to PROFESSIONAL, these costs shall be evaluated by WATERMASTER and PROFESSIONAL for negotiation as to adjustment in the compensation due PROFESSIONAL, and written agreement as to said adjustment shall be reached between the parties prior to commencement of any work that will cause an increase or decrease in PROFESSIONAL's costs. Any increased costs in excess of the Total Price incurred by PROFESSIONAL prior to execution of a written agreement covering said increased costs shall not be compensable.

SECTION IX: DUTIES OF WATERMASTER

WATERMASTER agrees to perform duties in connection with this Agreement and RFS issued under it as follows:

A. To assist PROFESSIONAL in obtaining any available information concerning location and details of facilities under control of WATERMASTER that may affect the work of an RFS, and to render reasonable assistance to PROFESSIONAL;

B. To examine within a reasonable time so as not to delay the work of PROFESSIONAL, all studies, reports, sketches, drawings, specifications, cost estimates, proposals and other documents presented by PROFESSIONAL to WATERMASTER for such purpose;

C. To give prompt written notice to PROFESSIONAL whenever WATERMASTER observes or otherwise becomes aware of any defect in the work of PROFESSIONAL;

SECTION X: DATA FURNISHED BY WATERMASTER

For the purpose of aiding PROFESSIONAL in the performance of its obligations under this Agreement and RFS issued under it, WATERMASTER shall furnish PROFESSIONAL all relevant data in its possession and shall render all reasonable assistance to PROFESSIONAL in connection with its performance hereunder. WATERMASTER is responsible for the reasonable correctness of data so furnished, but it shall likewise be the responsibility of PROFESSIONAL to apply reasonable caution in its use and interpretation of the data and to promptly advise WATERMASTER of any incorrectness or suspected incorrectness in the data furnished.

WATERMASTER shall provide to PROFESSIONAL in a timely manner all materials, decisions, and direction which are necessary to the progress of the work and which are basically the prerogative of WATERMASTER, but which PROFESSIONAL is not required to determine or provide under the terms of this Agreement.

SECTION XI: RESPONSIBILITIES OF PROFESSIONAL

PROFESSIONAL is employed to render a professional service only, and any payments made to him are compensation solely for such services as he may render and recommendations he may make in carrying out the work. PROFESSIONAL shall follow professional practices to make findings, opinions, factual presentations, and professional advice and recommendations.

PROFESSIONAL's review or supervision of work prepared or performed by other individuals or firms employed directly by WATERMASTER shall not relieve those individuals or firms of complete responsibility for the adequacy of their work.

PROFESSIONAL shall be responsible for the professional quality, technical accuracy, timely completion, and the coordination of all designs, drawings, specifications, reports and other services furnished by PROFESSIONAL under this Agreement. PROFESSIONAL shall, without additional compensation, correct or revise any errors, omissions or other deficiencies in his designs, drawings, specifications, reports and other services.

PROFESSIONAL shall perform such professional services as may be necessary to accomplish the work required to be performed under this Agreement and in accordance with this Agreement.

Approval by WATERMASTER of drawings, designs, specifications, reports, and incidental engineering work or materials furnished hereunder shall not in any way relieve PROFESSIONAL of responsibility for the technical adequacy of his work. Neither WATERMASTER's review, approval or acceptance of, nor payment for, any of the services rendered under this Agreement shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement.

PROFESSIONAL shall be and remain liable in accordance with applicable law for all damages to WATERMASTER caused by PROFESSIONAL's negligent performance of any of the services furnished under this Agreement. The only exception in this regard will

be for errors, omissions or other deficiencies to the extent attributable to WATERMASTER, WATERMASTER-furnished data or any third party not under the control of PROFESSIONAL. PROFESSIONAL shall not be responsible for any time delays in the project caused by circumstances beyond PROFESSIONAL's control.

SECTION XII: SUBCONTRACT

WATERMASTER has entered into this Agreement in order to receive the professional services of PROFESSIONAL. PROFESSIONAL will therefore not make an assignment to a third party of all or any portion of the services required of PROFESSIONAL under this Agreement and RFSs thereto without first obtaining the written consent of WATERMASTER. PROFESSIONAL may, however, make use of the part-time assistance of other experts possessing unique skills, the utilization of which will, in the opinion of PROFESSIONAL, enhance the quality of its service to WATERMASTER under this Agreement provided, however, that any such additional assistants, part-time or otherwise, shall be considered employees of PROFESSIONAL or of PROFESSIONAL's subcontractor(s), and the responsibility for same shall rest with PROFESSIONAL.

SECTION XIII: INDEPENDENT PROFESSIONAL

PROFESSIONAL shall perform the services hereunder as an independent contractor, and nothing herein contained shall be construed to be inconsistent with this relationship or status. The employees of PROFESSIONAL shall not be deemed to be the employees of WATERMASTER, and WATERMASTER shall have no right to control the physical conduct of PROFESSIONAL's employees.

SECTION XIV: USE OF DOCUMENTS

For all work performed under this Agreement and all RFSs thereto, PROFESSIONAL shall provide to WATERMASTER copies of all plans, drawings, specifications, studies, reports, analyses, calculations, and all other work products and supporting documentation developed in the course of performing the work authorized by these agreements. The costs for reproducing, assembling, and delivering said copies of these documents to WATERMASTER shall be considered to have been included in the price for performing each RFS, whether or not specifically stated therein. Unless stated otherwise in the RFS, one paper copy, and the electronic file on disc or on CD (e.g. in MS Word, MS Excel, etc.), of each document shall be provided by PROFESSIONAL to WATERMASTER. WATERMASTER shall have the right, and permission of PROFESSIONAL, to use any such document for any purpose which WATERMASTER

deems appropriate. Use of documents for other than their intended purpose shall be at WATERMASTER's risk. WATERMASTER shall hold PROFESSIONAL harmless from all claims and damages arising out of improper use of said documents.

SECTION XV: AMENDMENTS AND SCOPE OF AGREEMENT

WATERMASTER hereby reserves the right to amend the provisions of this Agreement from time to time as may be in the best interest of WATERMASTER. Such amendments, upon acceptance by PROFESSIONAL and by WATERMASTER, shall become and be considered as part of this Agreement, and all provisions herein shall apply to such amendments.

This Agreement constitutes the entire agreement between the parties relative to the subject matters hereof, and no modifications thereof shall be effective unless and until such modifications are evidenced by written amendments, signed by both parties, to this Agreement. There are no understandings, agreements, conditions, representations, warranties, or promises with respect to the subject matter of this Agreement which are not actually contained in the Agreement, except those expressly contained in such written amendments.

SECTION XVI: SUCCESSORS AND ASSIGNS

This Agreement and all amendments thereto shall be binding upon and inure to the benefit of any successors and assigns of the respective parties hereto.

SECTION XVII: ATTORNEYS' FEES

If any legal action is necessary to enforce or interpret the terms or provisions of this Agreement and all amendments thereto, and the respective rights and duties of the parties hereunder, the prevailing party shall be entitled to reasonable attorneys' fees in addition to any other relief to which he may be entitled.

SECTION XVIII: JURISDICTION

This Agreement shall be administered and interpreted under the laws of the State of California. Jurisdiction of litigation arising from this Agreement shall be in this state. If any part of this Agreement is found to be in conflict with applicable laws, such part shall be inoperative, null and void insofar as it is in conflict with said laws, but the remainder of the Agreement shall be in full force and effect.

SECTION XIX: INSURANCE

PROFESSIONAL shall procure and maintain for the duration of this Agreement insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by PROFESSIONAL, his agents, representatives, employees or subcontractors.

A. Minimum Scope and Limits of Insurance

PROFESSIONAL shall maintain the types of insurance with limits no less than those set forth below, and having no deductibles, except as noted.

The coverage shall be at least as broad as:

1. Insurance Services Office Commercial General Liability coverage (occurrence Form CG 0001).
2. Insurance Services Office Form No. CA 0001 covering Automobile Liability, Code 1 (any auto).
3. Workers Compensation insurance as required by the State of California and Employer's Liability Insurance.
4. Errors and Omissions Liability insurance appropriate to the consultant's profession. For architects and engineers this coverage shall be endorsed to include contractual liability.

Required coverage:

1. General Liability Insurance: Combined single limit of $1,000,000 per occurrence and $2,000,000 annual aggregate for bodily injury, personal injury, and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location, or the general aggregate limit shall be twice the required occurrence limit.

2. Automobile Liability Insurance: $1,000,000 per accident for bodily injury and property damage.

3. Employer's Liability Insurance: $1,000,000 per accident for bodily injury or disease. If PROFESSIONAL has no employees, this coverage is not required.

4. Workers' Compensation Insurance: As required by the State of California.

5. Errors and Omissions Insurance: PROFESSIONAL shall procure and maintain errors and omissions liability insurance appropriate to the type of professional services that PROFESSIONAL will be providing under this Agreement. The minimum coverage shall be $1,000,000 per claim and in the aggregate.

B. Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to and approved by WATERMASTER before any work under this Agreement is performed.

C. Other Insurance Provisions

The general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

1. WATERMASTER, its officers, officials, employees, and volunteers are to be covered as insureds as respects: liability arising out of activities performed by or on behalf of PROFESSIONAL; products and completed operations of PROFESSIONAL; premises owned, occupied or used by PROFESSIONAL; or, automobiles owned, leased, hired or borrowed by PROFESSIONAL. The coverage shall contain no special limitations on the scope of protection afforded to WATERMASTER, its officers, officials and employees.

2. For any claims related to this project, PROFESSIONAL's insurance coverage shall be primary insurance as respects WATERMASTER, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by WATERMASTER, its officers, officials, employees, or volunteers shall be excess of PROFESSIONAL's insurance and shall not contribute with it.

3. Any failure to comply with reporting or other provisions of the policies including breaches of warranties shall not affect coverage provided to WATERMASTER, its officers, officials and employees.

4. PROFESSIONAL's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the

insurer's liability.

5. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after thirty (30) days' prior written notice by certified mail, return receipt requested, has been given to WATERMASTER.

6. Coverage shall not extend to any indemnity coverage for the active negligence of the additional insured in any case where an agreement to indemnify the additional insured would be invalid under Subdivision (b) of Section 2782 of the Civil Code.

E. Acceptability of Insurers

Insurance is to be placed with insurers with a current A. M. Best's rating of no less than A:VII, unless otherwise acceptable to WATERMASTER.

F. Verification of Coverage

PROFESSIONAL shall furnish WATERMASTER with original certificates and amendatory endorsements effecting coverage required by this section. The endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. All endorsements are to be received and approved by WATERMASTER before work commences. If this is not possible due to time constraints prior to commencement of work, PROFESSIONAL may initially furnish Certificates of Insurance in lieu of endorsements, as long as the endorsements are provided within forty-five (45) days from the date of execution of this Agreement.

G. Subcontractors

PROFESSIONAL shall include all subcontractors as insureds under its policies or shall furnish separate evidence of coverage and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

SECTION XX: INDEMNIFICATION

PROFESSIONAL shall indemnify and hold harmless WATERMASTER and its officers, officials, employees and agents from and against all losses, claims, demands,

payments, suits, actions, recoveries, and judgments of every nature and description brought or recoverable against it or them by reason of any negligent act, negligent error, or negligent omission of PROFESSIONAL, his agents, or employees for work performed under this Master Agreement. The only exception in this regard will be for errors, omissions or other deficiencies to the extent attributable to WATERMASTER, WATERMASTER-furnished data or any third party not under the control of PROFESSIONAL.

SECTION XXI: WRITTEN NOTICE

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
83 Via Encanto
Monterey, CA 93940

B. PROFESSIONAL: Martin Feeney
1825 San Pascual St.
Santa Barbara CA 93101

IN WITNESS WHEREOF, the parties hereto have executed this Agreement consisting of fifteen (15) pages and one (1) Attachment in duplicate on the date hereinabove written.

WATERMASTER	PROFESSIONAL
SEASIDE BASIN WATERMASTER	MARTIN BLAIR FEENEY
By _____	By _____
Robert S. Jaques	Martin Feeney
Technical Program Manager	

ATTACHMENT A
SEASIDE BASIN WATERMASTER
REQUEST FOR SERVICE

DATE: _____ **RFS NO.**_____
(To be filled in by WATERMASTER)

TO: _____ **FROM**:_____

Services Needed and Purpose:

_____
_____
_____
_____

(Provide detailed scope of work description on page A-2, or attach Scope of Work marked "Attachment 1".)

Completion Date:_____ (Attach schedule marked "Attachment 2" if appropriate.)

Method of Compensation:_____(As defined in Section V of Agreement.)

Total Price Authorized by this RFS: $_____(Cost is authorized only when evidenced by signature below.)

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

Authorized by: _____ Date:_____.
WATERMASTER Chief Executive Officer

Agreed to by: _____ Date:_____.
PROFESSIONAL

Detailed Scope of Work for RFS No.____:

ESTIMATED COST SUMMARY

Job Category*	Hours	Hourly Rate*	Cost

* Per Standard Schedule of Compensation attached hereto.

Subtotal:

$_____

Other Direct Costs (description): _____

_____

_____

_____

_____

Vehicle mileage @ $ /mile _____ $_____

Total Estimated Cost: **$**_____

Note: Regardless of the use of the term "Estimated Cost" on this page A-3 of this RFS, if the work of this RFS is to be compensated for using Lump Sum Payment method, it is understood and agreed to by PROFESSIONAL that the Total Price listed on page A-1 of this RFS is binding and limiting as defined in Section V of the Agreement.

SEASIDE BASIN WATERMASTER
REQUEST FOR SERVICE

DATE: January 1, 2017 **RFS NO.** 2017-01 .
(To be filled in by WATERMASTER)

TO: Martin Feeney
Martin Feeney
PROFESSIONAL

FROM: Robert Jaques .
WATERMASTER

Services Needed and Purpose:
Perform certain Tasks contained within the Watermaster's Monitoring and Management Plan for 2017 (See detailed Scope of Work in Attachment 1).

Completion Date: The work of this RFS No. 2017-01 shall be completed in accordance with the schedule described in Attachment 1.

Method of Compensation: Time and Expense Payment Method (As defined in Section V of Agreement.)

Total Price Authorized by this RFS: $ 25,685.56 (See Attachment 3 for a Breakdown of this Total Price. Cost is authorized only when evidenced by signature below.)

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

Authorized by: _____ Date:_____.
WATERMASTER Technical Program Manager

Agreed to by: _____ Date:_____.
PROFESSIONAL

ATTACHMENT 1

Detailed Scope of Work for RFS No. 2017-01

Background:
The Watermaster Board approved the Budget for the 2017 Management and Monitoring Program Work Plan (hereinafter referred to as the "2017 M&MP Work Plan") at its meeting of October 5, 2017. The work and cost authorized by this RFS No. 2017-01 is slightly revised from the work and cost originally described under Task I.2.b.3 of the 2017 M&MP Work Plan when it was approved by the Board. The revision consists of performing semi-annual, rather than annual, water quality sampling of well SBWM-2.

Increasing the water quality sampling of this well is being recommended in the 2016 Seawater Intrusion Analysis Report (SIAR), prepared by HydroMetrics. The increase in sampling frequency is caused by the finding, as discussed in the SIAR, that there has apparently been a change in water quality in this well as detected in the July 2016 sampling event. The change in water quality is indicative of the possible beginning of seawater intrusion at that well location.

The first step listed in the Watermaster's Seawater Intrusion Response Plan (SIRP) is to resample, as soon as possible, any well which is found to have water quality that may be indicative of seawater intrusion. Therefore, in accordance with the SIRP resampling of well SBWM-2, by having it analyzed in the January 2017 sampling event, has been included in the scope and cost of this RFS. The increase in cost for this revision is $1,000, and will be funded from the Contingency line item in the Watermaster's approved M&MP Operations Budget for 2017.

Scope of Work
This RFS No. 2017-01 authorizes PROFESSIONAL to perform the work described in PROFESSIONAL's Revised Proposal for Hydrogeologic Services, dated November 9, 2016 and contained in Attachment 2, with the following clarifications and/or additions:

PROFESSIONAL will collect water quality and water level data from the wells identified as SBWM-1 Deep (from two discrete depth zones), SBWM-2 Deep (from two discrete depth zones), SBWM-3 Deep (from two discrete depth zones), and SBWM-4 Deep (from two discrete depth zones). PROFESSIONAL will also perform induction logging on each of these wells. These wells are commonly referred to as WATERMASTER's Sentinel Wells. Water level data collection, water quality analyses, and induction logging will be performed on each of these wells as described below and according to the schedule described below:

Induction Logging
Induction logging will be performed on each of these wells semi-annually.

Water Level
Water levels in each of the four Sentinel Wells will be continuously measured by data loggers and will be downloaded semi-annually when induction logging is being performed.

Water Quality Analyses
The water quality constituents that will be measured in these analyses are: Specific Conductance (micromhos/cm), Bicarbonate (as HCO_{3-}), pH, Chloride, Sulfate, Nitrate Nitrogen (as NO_3), Calcium, Sodium, Magnesium, Potassium, Iron, Manganese, Orthophosphate, Total Dissolved Solids, Boron, Bromide, Barium, Iodide, and Fluoride. The samples collected for analysis will be submitted to a State-certified analytical laboratory for analysis.

Schedule

Well SBWM-3 will be sampled annually (nominally in July) for water quality. Wells SBWM-1, SBWM-2, and SBWM-4 will be sampled twice during the year (nominally in January and July) for water quality. This will constitute a total of 14 water quality samples taken during the year.

PROFESSIONAL will transmit the digital water level and water quality data to the Monterey Peninsula Water Management District (MPWMD) promptly after the data is acquired, so MPWMD can use that data in preparing its reports to the WATERMASTER. Digital induction data will provided to MPWMD. Digital induction data will also be reduced and presented graphically and provided to HydroMetrics WRI for use by HydroMetrics WRI in preparing reports for WATERMATER.

ATTACHMENT 2

Professional's Proposal for Hydrogeologic Services for RFS No. 2017-01

Martin B. Feeney
Consulting Hydrogeologist

P.G. 4634
C.E.G. 1454
C.Hg 145

November 9, 2016

Seaside Basin Watermaster
PO Box 51502
Pacific Grove CA.
93950

Attention: Bob Jaques, PE

Subject: Sentinel Well Data Collection Program 2017– Revised Proposal for Hydrogeologic Services

Dear Bob:

Following up on our recent discussions, I'm pleased to provide this revised proposal to assist the Seaside Basin Watermaster (Watermaster) with data collection from the Sentinel Wells for the upcoming year. Presented in this proposal are an outline of the revised data collection plan and an estimate of associated costs.

The data collection program for the Sentinel Wells will change slightly from the way it was described in my July 28, 2016 Proposal with the addition of semi-annual water quality sampling at certain of the wells as detailed below. The data collection program will include semi-annual induction logging and continuous water level data collection. This basic program is supplemented with the periodic collection of depth-specific downhole water quality sampling. The subcontractors for the induction logging/downhole sampling and laboratory services remain unchanged.

The components of this program are as follows:

Data collection from each well:

- Semi-Annual down-loading of water level data logger.
- Semi-Annual induction logging.
- Annual depth-specific sample collection at two depths in one well (SBWM #3) with additional sampling of the other three wells (SBWM #1, #2, and #4). 14 samples total – SBWM #3 in July, the other three wells also in January.
- Water quality analysis (MPWMD "Sentinel Well Suite" – General Mineral plus Iodide) of collected water quality samples.

It is understood that, as in the past, the Monterey Peninsula Water Management District (District) will share some of the data collection and analysis tasks of the overall data collection program. The District will collect water level data from the array of data loggers on the alternate quarters. Water level data from the data loggers will be collected as part of this scope of services only when induction logging is performed. Collected water level data will be transmitted to the District for compilation and processing. Induction logging data will continue to be compiled and processed by this author.

Annual costs for the data collection program are estimated at $ 25,685.56 (Say $25,700) inclusive of outside services. A breakdown of costs is presented in the table below.

P.O. Box 23240, Ventura, CA 93002 · **Phone: 805/643-7710** · e-mail mfeeney@ix.netcom.com

SENTINEL WELLS LOGGING/SAMPLING WL DATA COLLECTION PROGRAM					
2017					
Pacific Surveys	Unit Cost	Number	Semi-Annual Cost	# per annum	Annual Cost
Service Charge	$1,085.00	1	$1,085.00	2	$2,170.00
Induction Logging	$0.75	5310	$3,982.50	2	$7,965.00
Rinse Only Depth Specific Samples	$275.00	14	$3,850.00	1	$3,850.00
E-file generation/transmittal	$115.00	1	$115.00	2	$230.00
mileage	$0.99	422	$417.78	2	$835.56
per diem	$175.00	3	$525.00	1	$525.00
					$15,575.56
Lab Costs					
General Mineral Analysis plus Ba and I	$225.00	14	$3,150.00	1	$3,150.00
Professional Services					
Supervise Logging/Download Data Loggers	$165.00	14	$2,310.00	2	$4,620.00
Process Induction Data	$195.00	4	$780.00	2	$1,560.00
Transmit Water Level Data	$195.00	2	$390.00	2	$780.00
					$6,960.00
				Total	$25,685.56

The opportunity to present this proposal is appreciated. Please call if you have any questions.

Sincerely,

Martin B. Feeney

P.O. Box 23240, Ventura, CA 93002 · **Phone: 805/643-7710** · e-mail mfeeney@ix.netcom.com

SEASIDE BASIN WATER MASTER TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	November 16, 2016
AGENDA ITEM:	4
AGENDA TITLE:	Discuss and Provide Input on the 2016 Seawater Intrusion Analysis Report (SIAR)
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

HydroMetrics has completed preparing the Draft Seawater Intrusion Analysis Report (SIAR) for Water Year 2015-2016 and the Executive Summary, which contains conclusions and recommendations, is attached. The complete Draft SIAR is lengthy, so rather than including it in this agenda packet it has been posted on the Watermaster's website so TAC members wishing to review the entire document can do so.

The SIAR examines the "health" of the Basin with regard to whether or not there are any indications that seawater intrusion is either occurring or is imminent. Previous SIARs have stated that depressed groundwater levels, continued pumping in excess of recharge and fresh water inflows, and ongoing seawater intrusion in the nearby Salinas Valley all suggest that seawater intrusion could occur in the Seaside Groundwater Basin. In spite of these factors, the previous SIARs stated that neither the Piper nor the Stiff Diagrams nor any of the other parameters indicated the presence of seawater intrusion in the existing monitoring wells. However, this year for the first time HydroMetrics has reported that the <u>potential</u> onset of seawater intrusion has been detected in some of the coastal monitoring wells.

The Draft 2016 SIAR contains a number of recommendations pertaining to this finding, as well as other recommendations pertaining to other basin management issues. These are contained in the attachment to this agenda item. The first of the recommendations, to perform verification water quality sampling and analysis for Sentinel Well SBWM-2, Sentinel Well SBWM-4, and the Ord Terrace Shallow Monitoring Well, has been added to the scope of work and costs for the Martin Feeney and MPWMD RFSs for 2017. Those RFSs were discussed under Agenda Item No. 3. From discussions with Mr. Feeney, who will be the contractor that will obtain and analyze the verification samples from the two Sentinel Wells, the verification sampling of those wells will be performed in early January 2017 in conjunction with the 2nd Quarter sampling and induction logging event. From discussions with Mr. Lear of MPWMD, who will be the contractor that will obtain and analyze the verification sample from the Ord Terrace Wells, the verification sampling of that well will be performed as soon as possible, probably before the end of 2016.

A representative from HydroMetrics will participate in today's TAC meeting via telephone to provide an oral summary of the report and to respond to questions by TAC members.

ATTACHMENTS:	Executive Summary from the Draft 2016 SIAR
RECOMMENDED ACTION:	Discuss and either modify or approve the Draft SIAR and forward the document to the Board with the TAC's recommendation for approval

Executive Summary

This annual report addresses the potential for, and extent of, seawater intrusion in the Seaside Groundwater Basin. Continued pumping in excess of recharge and fresh water inflows, coastal groundwater levels well below sea level, and ongoing seawater intrusion in the nearby Salinas Valley all suggest that seawater intrusion could occur in the Seaside Groundwater Basin.

Up until this water year, seawater intrusion has not been observed in existing monitoring and production wells in the Seaside Groundwater Basin. However, this year for the first time two of the Watermaster's sentinel wells show indications that seawater intrusion may be starting to occur. From the most recent samples taken in late July 2016 the following has been observed:

- Water samples for sentinel wells SBWM-2 (1,470 ft) and SBWM-4 (900 ft) experienced a shift in water chemistry that plots closer to seawater on Piper diagrams than historical samples.
- Stiff diagrams for sentinel wells SBWM-2 (1,470 ft) and SBWM-4 (900 ft) show a chloride spike somewhat similar to Stiff diagrams of seawater intruded wells in the Salinas Valley.
- July 2016 chloride concentrations in sentinel wells SBWM-2 (1,470 ft) and SBWM-4 (900 ft) are at 336 and 284 mg/L respectively. This is an increase of 270 mg/L for sentinel well SBWM-2 (1,470 ft) over the past year and 26 mg/L for sentinel well SBWM-4 (900 ft) from February to July 2016.
- The sodium/chloride molar ratios of both SBWM-2 (1,470 ft) and SBWM-4 (900 ft) have dropped, and are below 0.86.
- The deep aquifer maps of chloride concentrations in the basin show that higher chloride concentrations are being observed in the sentinel wells along the coast.
- Groundwater elevations in sentinel wells SBWM-2 (1,470 ft) and SBWM-4 (900 ft) are at historical lows.

In addition to the above, the following groundwater level and production data suggest that conditions in the basin continue to provide a potential for seawater intrusion:

- Northern Coastal subarea groundwater levels in the deep aquifer remain below sea level (**Error! Reference source not found.** and **Error! Reference source not found.**). The 4th quarter deep aquifer groundwater levels along the coast are in some cases greater than 30 feet below sea level and are at historical lows.
- Groundwater levels remain below protective elevations in all deep target monitoring wells (MSC deep, PCA-W, and sentinel well SBWM-3). Two of the three shallow wells' groundwater levels are above protective elevations: PCA-W shallow and CDM-MW4. The MSC shallow well remains below protective elevations.
- Groundwater production in the Seaside Groundwater Basin for Water Year 2016 was 2,913.5 acre-feet, which is 848.5 acre-feet less than Water Year 2015. This amount is less than the Court-mandated operating yield of 3,920 acre-feet per year that is required between October 1, 2014 and September 30, 2017, and the current safe yield of 3,000 acre-feet. Although pumping in Water Year 2016 was below the current safe yield, many groundwater elevations in deep monitoring wells continue to decline. It seems likely that the long-term effects of pumping over the safe yield and the dry climatic conditions of the past five years have a greater impact on groundwater levels than one year of reduced pumping,

These analyses included in the SIAR do not show evidence of seawater intrusion:

- Maps of chloride concentrations for the shallow aquifer do not show chlorides increasing towards the coast.
- Induction logging data at the coastal sentinel wells do not indicate changes indicative of seawater intrusion.
- Other than the sentinel wells SBWM-2 (1,470 ft) and SBWM-4 (900 ft) samples, no other monitoring or production wells in the basin have water quality that is indicative of seawater intrusion.
- Groundwater levels in the Laguna Seca subarea are continuing to decline at the same rate since 2001 despite triennial reductions in allowable pumping. The shallow groundwater levels are declining at a rate of approximately 0.6 feet per year, while the deep groundwater levels in the eastern portion of the subarea are declining at a much faster rate of between two and three feet per year. The cause of this decline is due in part to the safe yield of the subarea being incorrect and in part due to the influence of wells to the east of the groundwater basin. The rate of decline in groundwater levels in the western portion of the subarea is between one and two feet per year.

Based on the findings of this report, the following recommendations should be implemented to continue to monitor and track potential seawater intrusion, and to verify recent results in sentinel wells SBWM-2 and SBWM-4.

1. Verification Water Quality Sampling and Analysis for Sentinel Well SBWM-2, Sentinel Well SBWM-4, and the Ord Terrace Shallow Monitoring Well

Multiple lines of evidence indicate that incipient seawater intrusion may be occurring at sentinel wells SBWM-2 (1,470 ft) and SBWM-4 (900 ft). Additionally, increasing chlorides have been observed at the Ord Terrace Shallow well; although other geochemical evidence suggests this may not be incipient seawater intrusion. In accordance with the Watermaster's Seawater Intrusion Response Plan (SIRP), these wells should be resampled immediately to verify the changes. Re-sampling should include the full suite of major cations and anions, which will allow all of the indicators used in this SIAR to be verified. Laboratory analyses should be conducted with an expedited turnaround time.

2. Potentially Analyze Additional Water Quality Constituents for Seawater Intrusion

As outlined at the end of Section 2 of this SIAR, other water quality constituents may indicate the presence of seawater intrusion. Contingent on the results of the verification sampling, Watermaster should regularly sample for and analyze these additional water quality constituents: iodide, bromide, boron, and barium in wells that indicate incipient seawater intrusion.

3. Increase Water Quality Sampling and Analysis for Sentinel Well SBWM-2

Currently sentinel wells SBWM-1 and SBWM-4 are sampled twice a year, in the 2nd and 4th quarters. If verification sampling shows the sentinel well SBWM-2 has elevated chloride concentrations, at the very least this well should be sampled twice a year, in the 2nd and 4th quarters.

4. Potentially Increase Water Quality Sampling and Analysis for Sentinel Well SBWM-2 and SBWM-4

Contingent on the results of verification sampling, it may be necessary to increase the sampling frequency of SBWM-2 and SBWM-4 to more frequent than twice a year. If indeed the chloride concentrations at these wells is increasing rapidly, monthly sampling may be needed.

5. Potentially Implement Follow up Actions Outlined in the Seawater Intrusion Response Plan

If verification sampling confirms that incipient seawater intrusion is occurring along the coast, additional actions that are outlined in the SIRP will need to be implemented. These actions need not be implemented if verification sampling does not indicate incipient seawater intrusion.

6. **Install a Data Logger in the monitoring well, PCA West Shallow**
   The PCA West Shallow well is a coastal monitoring well that is an important part of the monitoring system for the basin and is one of the wells used to monitor protective groundwater elevations. Because of limited access to this well site, groundwater levels were not measured this water year. A dedicated logger, like that installed in PCA West Deep, at this well will continuously record groundwater levels much more reliably.

7. **Continue to Document Declining Groundwater Levels in the Laguna Seca Subarea**
   Although this recommendation is not one that is related to seawater intrusion because of the inland location of the wells, it is important for the sustainability of the groundwater basin. The state of groundwater levels in monitoring wells in the Laguna Seca subarea needs to be reported at least annually to the Watermaster. The current rate of decline, particularly in the eastern portion of the subarea, is not acceptable. For the sustainability of the subarea, the Watermaster should consider options in the next water year to address the situation.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

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

MEETING DATE:	November 16, 2016
AGENDA ITEM:	5
AGENDA TITLE:	Discuss and Provide Input on the Preliminary Draft Watermaster 2016 Annual Report
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

The Watermaster submits an Annual Report to the Court after the end of each Water Year to fulfill one of its obligations under the Court Decision that created the Watermaster.

A Preliminary Draft Annual Report for 2016 is being presented to the TAC for its review and input, in as complete a form as it can be as of today's TAC meeting. Due to its large file size, a complete copy of the Preliminary Draft 2016 Annual Report cannot be included with the agenda packet. However, a copy of the body of the Preliminary Draft is attached. A copy of the complete Preliminary Draft Annual Report is posted on the Watermaster's website for anyone that would like to examine the entire document.

At today's meeting I will review with the TAC the principle components of the Preliminary Draft and provide an opportunity for the TAC to raise questions, provide input, and provide suggested edits to the document. A few items highlighted in yellow will be completed after the Board's December meeting.

ATTACHMENTS:	Preliminary Draft 2016 Annual Report (Body only)
RECOMMENDED ACTION:	Provide input to the Technical Program Manager regarding any edits to the Preliminary Draft Annual Report that the TAC wishes to propose

SEASIDE BASIN WATERMASTER

ANNUAL REPORT – 2016

December 9, 2016

Note: Yellow-highlighted items in this Preliminary Draft version are still under development or are subject to change. They will be included in the final version of this report before it is submitted to the Court

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SEASIDE BASIN WATERMASTER

ANNUAL REPORT – 2016

Integral to the Superior Court Decision (Decision) rendered by Judge Roger D. Randall on March 27, 2006 is the requirement to file an Annual Report. This 2016 Annual Report is being filed on or before December 15, 2016, consistent with the provisions of the Decision, as amended by the Annual Report Review and Order dated January 7, 2011. This Annual Report addresses the specific Watermaster functions set forth in Section III. L. 3. x. of the Decision. In addition this Annual Report includes a section pertaining to Water Quality Monitoring and Basin Management.

A. Groundwater Extractions

The schedule summarizing the Water Year 2016 (WY 2016) groundwater production from all the producers allocated a Production Allocation in the Seaside Groundwater Basin is provided in Attachment 1, "Seaside Groundwater Basin Watermaster, Reported Quarterly and Annual Water Production from the Seaside Groundwater Basin for all Producers Included in the Seaside Basin Adjudication During Water Year 2016." For the purposes of this Annual Report Water Year 2016 is defined as beginning October 1, 2015 and ending on September 30, 2016.

B. Groundwater Storage

Monterey Peninsula Water Management District (MPWMD), in cooperation with California American Water (CAW), operates the Seaside Basin Aquifer Storage and Recovery (ASR) program. Under the ASR program, CAW diverts water from its Carmel River sources during periods of flow in excess of NOAA-Fisheries' bypass flow requirements, and transports the water through the existing CAW distribution system for injection and storage in the Seaside Basin at the MPWMD's Santa Margarita ASR site and CAW's Seaside Middle School ASR site. During WY 2016, 699 AF was diverted and stored in the Seaside Basin under the ASR program. Rainfall in the area was about 105% of normal, but due to the rainfall distribution pattern throughout the season, Carmel River flow was only 67% of normal. WY 2016 was classified as "Below Normal" by MPWMD.

Based upon production reported for WY 2016, the following Standard Producers are entitled to Free and Not-Free Carryover Credits to 2017 in accordance with the Decision, Section III. H. 5:

Producer	Free Carryover Credit (Acre-feet)	Not-Free Carryover Credit (Acre-feet)
Granite Rock	151.43	83.89
DBO Development	293.06	161.66
Calabrese (Cypress)	7.26	1.22
CAW	00.00	430.99
City of Seaside Muni	00.00	00.00

C. Amount of Artificial Replenishment, If Any, Performed by Watermaster
Per the Decision, "Artificial Replenishment" means the act of the Watermaster, directly or indirectly, engaging in contracting for Non-Native Water to be added to the Groundwater supply of the Seaside Basin through Spreading or Direct Injection to offset the cumulative Over-Production from the Seaside Basin in any particular Water Year pursuant to Section III.L.3.j.iii. It also includes programs in which Producers agree to refrain, in whole or in part, from exercising their right to produce their full Production Allocation where the intent is to cause the replenishment of the Seaside Basin through forbearance in lieu of the injection or spreading of Non-Native Water (referred to herein as "In-lieu Replenishment").

During Water Year 2016 the Watermaster indirectly engaged in In-lieu Replenishment of the Basin. A minimal amount (0.06 acre-feet) of non-native water was made available to the Basin during Water Year 2016 under the Memorandum of Understanding and Agreement entered into by Watermaster with the City of Seaside for its golf course irrigation program creating in-lieu replenishment water. Currently, the City of Seaside is working to reconcile with Marina Coast Water District the balance remaining of the 2,500 acre-feet to be delivered under the program, estimated by the City of Seaside to be 89.94 acre-feet. Once reconciled, Watermaster will make any necessary adjustments to the acre-feet credited to the City of Seaside by the Watermaster under the terms of the Memorandum of Understanding and Agreement referred to above.

As reported in the 2014 Annual Report, this in-lieu replenishment program was extended by the Board in 2013 and made retroactive to January 1, 2013. The City of Seaside estimated that its remaining Marina Coast Water District entitlement would provide sufficient irrigation water to satisfy the irrigation demands of the golf courses through WY 2018. The extended MOU will continue until all of the City's remaining MCWD entitlement has been used within the Program, and all of the City's Replenishment Assessment Credit has either been used by the City or by another party if the City transfers its Replenishment Assessment Credit. A copy of the extended MOU was contained in Attachment 13 of the 2013 Annual Report.

D. Leases or Sales of Production Allocation and Administrative Actions
The City of Seaside transferred/assigned seven and one half acre-feet (7.50 AF) of its Standard Production Allocation within the Seaside Groundwater Basin to California American Water Company for the Water Year ending 2015 applied to Water Year 2016. The purpose of this transfer of water allocation was to offset the transfer of 7.50 AF of water from California American Water Company to the City due to the city's well failure that occurred within the Seaside Groundwater Basin between June 25, 2015 and July 20, 2015. Attachment 11 contains a copy of the notice from the City of Seaside of the requested transfer/assignment of water allocation via letter correspondence dated March 29, 2016.

During WY 2016 the Watermaster Board did not make any revisions to its *Rules and Regulations*.

During WY 2016 the Watermaster Board was comprised of the following Members and Alternates:

MEMBER	ALTERNATE	REPRESENTING
Director Paul Bruno	N/A	Coastal Subarea Landowner
Eric Sabolsice	Roger Hulbert	California American Water
Director Bob Costa	N/A	Laguna Seca Subarea Landowner
Director Bob Brower	Jeanne Byrne	MPWMD
Mayor Dave Pendergrass	Todd Bodem	City of Sand City
Supervisor Dave Potter	Jane Parker	Monterey County (MCWRA)
Mayor Jerry Edelen	Kristin Clark	City of Del Rey Oaks
Vice Mayor Libby Downey	Mayor Clyde Roberson	City of Monterey
Mayor Ralph Rubio	Dennis Alexander	City of Seaside

In January of 2016 the Watermaster received notice from the Court that the Honorable Leslie C. Nichols had been assigned to replace the Honorable Roger D. Randall who had previously been assigned to the Seaside Groundwater Basin Adjudication case. At its May 4, 2016 meeting the Board approved having Mr. Russ McGlothlin of the law firm of Brownstein, Hyatt, Farber, and Schreck file a Motion with the Court requesting a status conference to provide background information on the Adjucication Decision (for the benefit of the new Judge that had been assigned this Case) and to discuss several issues. These issues were (1) Updating the Court concerning recent regional water supply developments pertinent to the Seaside Basin, (2) Potentially at some future date requesting a stay of the 2018 Operating Yield reduction, and (3) Updating the Court concerning the modeling results and findings concerning the Laguna Seca Subarea (LSSA) and the Watermaster's intended work plan to address long-term water reliability for the subbasin. The motion was granted and a Status Conference with the Court was held on June 17, 2016. The transcript of the Status Conference Hearing is available for viewing on the Watermaster web site at http://www.seasidebasinwatermaster.org/ under Postings and Records on the June 16, 2016 date line in the Court Docs column.

E. Use of Imported, Reclaimed, or Desalinated Water as a Source of Water for Storage or as a Water Supply for Lands Overlying the Seaside Basin

The CAW/MPWMD ASR Program operated in WY 2016 and accordingly 699 acre-feet of water was injected into the Basin as Stored Water Credits and 609 acre-feet was extracted.

During WY 2016 0.06 acre-feet of imported water was used to irrigate golf courses owned by the City of Seaside overlying the Seaside Basin, as discussed above in **Section C**. The terms and conditions under which this in-lieu replenishment water was used to generate a credit to be applied against the City of Seaside's overproduction replenishment assessments is described in the "Memorandum of Understanding Between the Seaside Basin Watermaster and the City of Seaside" which was contained in Attachment 3 to the Watermaster's 2010 Annual Report.

F. Violations of the Decision and Any Corrective Actions Taken

Section III. D. of the Decision enjoins all Producers from any Over-Production beyond the Operating Yield in any Water Year in which the Watermaster declares that Artificial Replenishment is not available or possible. Section III. L. 3. j. iii. requires that the Watermaster declare the unavailability of Artificial Replenishment in December of each year, so that the Producers are informed of the prohibition against pumping in excess of the Operating Yield.

The Watermaster made a declaration regarding the availability of Artificial Replenishment for WY 2016 at its Board meeting of December 7, 2016 [Scheduled date for this action to be taken]. A copy of this declaration is contained in Attachment 2. In WY 2016 the Watermaster continued the previously implemented 10% water production reductions required under Section III.B.2 of the Decision. No additional water production reductions were implemented in WY 2016.

Total pumping for WY 2016 did not exceed the Operating Yield (OY) for the Seaside Basin, but it did exceed the Natural Safe Yield (NSY) of the Basin.

The City of Seaside reported annual pumping quantities that exceeded their Standard Production NSY allocation by 37.87 acre-feet, and reported annual pumping quantities that exceeded Operating Yield allocation by 17.70 acre-feet. The City of Seaside did not exceed its Alternative Production NSY. The Watermaster will assess the City of Seaside a Replenishment Assessment for these over productions, as further described in Section H, below.

G. Watermaster Administrative Costs

The total estimated Administrative costs through the end of Fiscal Year 2016 amounted to $80,000 including a $25,000 dedicated reserve. Costs include the Chief Executive Officer and Administrative Officer salaries, and legal counsel fees. The "Fiscal Year 2016 Administrative Fund Report" is provided as Attachment 3.

H. Replenishment Assessments

At its meeting of October 5, 2016 the Watermaster Board determined that, based on updated cost information for the water supply projects used in calculating it, a new Replenishment Assessment unit cost of $2,872 per acre-foot should be adopted for use beginning in WY 2017. This replaces the unit cost of $2,702 which had been used since

WY 2014. The Agenda transmittal from that meeting discussing this determination is contained in Attachment 4.

Alternative and Standard Producers report their production amounts from the Basin to the Watermaster on a quarterly basis. Based upon the reported production for WY 2016, the City of Seaside's Replenishment Assessment for its Municipal System for Overproduction in excess of its share of the Natural Safe Yield is $102,330.46, and for overproduction in excess of its share of the Operating Yield is $11,959.38. The City of Seaside did not exceed its Alternative Production Allocation for its Golf Course System production. A summary of the calculations for Replenishment Assessments for WY 2016 is contained in Attachment 5.

I. All Components of the Watermaster Budget

The Watermaster budget has four separate funds: Administrative Fund; Monitoring & Management–Operations; Monitoring and Management–Capital Fund and; Replenishment Fund. Copies of the budgets adopted for Fiscal Year 2017 are contained in Attachment 6. The Watermaster Board is provided monthly financial status reports on all financial activities for each month with year-to-date totals.

J. Water Quality Monitoring and Basin Management

Water Quality Analytical Results

Groundwater quality data continued to be collected and analyzed on a quarterly basis during WY 2016 from the enhanced network of monitoring wells. The low-flow sampling method implemented in 2009 continued to be used in 2016 and is expected to continue to be used in the future to improve the efficiency of sample collection. As discussed in the 2013 Annual Report, the Watermaster reduced the frequency of water quality sampling at SBWM-MW5 to once every 3 years.

No modifications to the quarterly data collection frequency from the enhanced network of monitoring wells were made during WY 2016. One modification is being proposed for WY 2017. This is to revert sampling the Sand City Public Works well on an annual basis. The rationale for making this modification is described below under Task I.2.b.3 in the section titled "Management and Monitoring Program Work Plan," and is discussed in detail in Attachment 10.

Up until WY 2010 quarterly geophysical (induction) logging was performed at the four coastal Watermaster Sentinel wells that were installed in 2007. The induction logging results showed very little variations and trends were steady since that monitoring began, indicating that the coastal water quality conditions were not changing at this sample frequency. Therefore, beginning in WY 2010 the Court approved reducing the induction logging frequency to semi-annually at these wells. Water samples from these wells continue to be collected on an annual basis.

The expanded water quality analyses begun in WY 2012 were continued in WY 2016, and will be continued in WY 2017, for the four coastal Watermaster Sentinel wells

(SBWM-1, SBWM-2, SBWM-3, and SBWM-4), and also for the 3 most coastal MPWMD monitoring wells (MSC, PCA, and FO-09).

Copies of the sampling results are contained in the report in Attachment 7.

Management and Monitoring Program Work Plan

The Management and Monitoring Program (M&MP) 2017 Work Plan contained in Attachment 9 includes the types of basin management activities conducted in prior years as well as revisions approved by the Board at its October 5, 2016. The major changes from the 2017 M&MP Work Plan are:

The major changes from the 2016 M&MP Work Plan are:

Task M.1.e (Peer Review of Documents and Reports): This Task has not been used in recent years. Its budget amount was reduced, but not eliminated, in case some work of this type is necessary in 2017.

Task M.1.g (Prepare Documents for SGMA Reporting): This Task is new this year and is a result of the implementation by the State of the Sustainable Groundwater Management Act.

Task I.2.a.2 (Verify Accuracy of Production Well Meters): This task that was completed in 2015 and no further work on this Task is expected to be required in 2017.

Task I.2.b.3 (Collect Quarterly Water Quality Samples): In 2012 a concern was identified through monitoring data that there was something different about the City of Sand City's Public Works Well that was causing it to exhibit different water quality characteristics than other wells in the same general vicinity within the Seaside Basin. As a result the Watermaster had MPWMD perform an analysis to try to determine the cause of these differences, and also increased the water quality sampling frequency of this well from annually to quarterly.

Due to a lack of historical data, MPWMD was not able to reach a definitive conclusion as to the cause of the differences. However, several years of quarterly data on this well have now been acquired. The well does not appear to be showing any indications of seawater intrusion, and its water quality is generally staying within a reasonable range of variation. This is confirmed in the 2015 Seawater Intrusion Analysis Report. Task I.2.b.3 reflects reverting the monitoring frequency for the Sand City Public Works Well back to annually beginning in 2017.

In WY 2017 the BLM monitoring well site (SBWM-5) is to again be sampled. It was previously determined that this site would be sampled every 3 years, and WY 2014 was the last year it was sampled it. The cost for this sampling work is included under Task I.2.b.3.

MPWMD recommended that the Watermaster directly contract with the contractor that performs induction logging to obtain some of the water quality data under this Task. This recommendation was made due to a reduction in available staff at MPWMD to manage that work, and because it would result is a cost savings to the Watermaster. The Watermaster contacted the induction logging contractor and his cost for performing this work under a contract directly with the Watermaster is included in

this Task. This Task also reflects a reduced cost by MPWMD due to not having to manage the contract for that portion of the work.

The net result in these changes is a small increase in the budget for this Task in 2017.

Task I.2.b.6 (Reports): MPWMD reported they no longer have the staff to prepare one of the reports that was originally listed under this Task in the 2016 M&MP Budget. That report was described as follows: "One report containing a compilation of the available water level records for monitor wells that are part of the Seaside Basin Monitoring & Management Plan (M&MP) in a format to allow assessment of the long-term trends in water levels in each of the wells. This report will contain a table showing pertinent well construction data, existing average annual water level changes, and projected future water level changes. This will be accompanied by a brief description and recommendations regarding those monitor wells for which future monitoring complications may arise due to falling water levels."

In view of this situation the Watermaster decided not perform this work at all. This would have been a "nice to do" evaluation to provide a "heads-up" on the possible need to purchase new higher head sampling pumps if some more wells had their levels drop too far. However, $2,000 has already been included in this Task to purchase one new sample pump if necessary. If more are found to be needed during the year, funding the purchase of additional pumps can be done from the Contingency line-item that is set up in the M&MP Operations Budget. Handling this matter in this way will avoid the expense of having one of the Watermaster's other consultants perform this evaluation.

This results in a decrease in the budget for this Task in 2017.

Task I.2.b.7 (CASGEM Data Submittal): Submitting groundwater data to the State's California Statewide Groundwater Elevation Monitoring (CASGEM) Program is a new Task this year and is a result of the implementation by the State of the Sustainable Groundwater Management Act.

Task I.3.a.1 (Update the Existing Model Groundwater Model of the Seaside Basin): Updating of the Watermaster's groundwater model of the Seaside Basin is not expected to be necessary in 2017.

Task I.4.c (Annual Report- Seawater Intrusion Analysis): In 2016 the amount budgeted for this Task was $28,678. However, when the cost for HydroMetrics to prepare the 2016 Seawater Intrusion Analysis Report (SIAR) was being negotiated they found that they always had considerable unspent budget left over in prior years. Consequently, their 2016 RFS was reduced accordingly and the actual amount spent on this Task in 2016 was considerably lower than the budgeted amount.

For 2017 the budget for this Task was increased slightly to reflect an increase in the hourly rate for one of HydroMetrics' staff members who works on this assignment. However, the budget was also decreased to reflect (1) fewer hours needed by MPWMD to interface with HydroMetrics in the preparation of the SIAR, and (2) needing fewer hard copies of the SIAR than previously budgeted. Thus, the overall result is a reduction in the budget for this Task compared to 2016.

Contingency: The Contingency line items in the 2017 and 2018 M&MP Operations Budgets reflect a reduction from 20% to 10% as recommended by the Budget and Finance Committee.

The 2017 Budget is $57,657 lower than the 2016 Budget, for the reasons described above.

No new monitoring wells are planned for installation in 2017. Consequently no monies are budgeted in the M&MP Capital Budget for 2017.

Basin Management Database

Pertinent groundwater resource data obtained from a number of sources has been consolidated into the Watermaster's database to allow more efficient organization and data retrieval. No modifications or enhancements to the database are planned in FY 2017.

Enhanced Monitoring Well Network

The Seaside Basin M&MP uses an Enhanced Monitoring Well Network to fill in data gaps in the previous monitoring well network used by the Monterey Peninsula Water Management District (MPWMD), and others, in order to improve the Basin management capabilities of the Watermaster. The Enhanced Monitoring Well Network has been described in detail in previous Watermaster Annual Reports. It continues to be used to obtain additional data that is useful to the Watermaster in managing the Basin.

Basin Management Action Plan (BMAP)

HydroMetrics LLC was hired by the Watermaster to prepare the BMAP which contains these Sections:

- Executive Summary
- The Background and Purpose of the Plan
- The State of the Basin
- Supplemental Water Supplies (long-term water supply solutions)
- Groundwater Management Actions (to be taken as interim measures while long-term supplies are being developed)
- Recommended Management Strategies
- References

The Final BMAP was approved by the Watermaster Board at its February 2009 meeting, and the Executive Summary from the BMAP was contained in Attachment 9 of the 2009 Annual Report. The complete document may be viewed and downloaded from the Watermaster's website at: http://www.seasidebasinwatermaster.org/.

Updating of the BMAP may be performed in FY 2017, but only if new data or other information warrants doing so. It is Task I.3.c in the M&MP Work Plan contained in Attachment 9.

Seawater Intrusion Response Plan

HydroMetrics LLC was hired by the Watermaster to prepare a long-term Seawater Intrusion Response Plan (SIRP), as required in the M&MP.

The Final SIRP was approved by the Watermaster Board in 2009 and a summary of the Seawater Intrusion Contingency Actions from the SIRP were contained in Attachment 10 of the 2009 Annual Report. The complete document may be viewed and downloaded from the Watermaster's website at: http://www.seasidebasinwatermaster.org/. No modifications to the SIRP are planned in 2017.

Seawater Intrusion Analysis Report

The Watermaster retained HydroMetrics LLC to prepare the WY 2016 Seawater Intrusion Analysis Report (SIAR) required by the M&MP. The WY 2016 SIAR provides an analysis of data collected during this Water Year.

The SIAR examines the "health" of the Basin with regard to whether or not there are any indications that seawater intrusion is either occurring or is imminent. Previous SIARs have stated that depressed groundwater levels, continued pumping in excess of recharge and fresh water inflows, and ongoing seawater intrusion in the nearby Salinas Valley all suggest that seawater intrusion could occur in the Seaside Groundwater Basin. In spite of these factors, the previous SIARs stated that neither the Piper nor the Stiff Diagrams nor any of the other parameters indicated the presence of seawater intrusion in the existing monitoring wells. However, this year for the first time HydroMetrics has reported that the potential onset of seawater intrusion has been detected in some of the coastal monitoring wells.

The SIAR is lengthy, but the full *Executive Summary Section* from it is provided in Attachment 8. A complete copy of the document is posted for viewing and downloading from the Watermaster's website at: http://www.seasidebasinwatermaster.org/. All recommendations contained in the SIAR are being or will be carried out and are included in the budgeted activities contained in Attachment 6 and described in Attachment 9.

The 2016 SIAR contains a number of recommendations pertaining to the potential onset of seawater intrusion in some of the coastal monitoring wells, as well as other recommendations pertaining to other basin management issues. The first of the recommendations, to perform verification water quality sampling and analysis for Sentinel Well SBWM-2, Sentinel Well SBWM-4, and the Ord Terrace Shallow Monitoring Well, have been included in the scopes of work and costs for the contractors who will be performing work for the Watermaster in 2017 (under Task I.2.b.3 in Attachment 9). It is anticipated that the verification sampling of those wells will be performed in early January 2017. After the data from the verification sampling has been received the Watermaster will determine what additional steps, if any, should be taken.

The Watermaster continues to analyze the data that is being gathered at the various monitoring sites in order to keep a close watch on the conditions within the Basin, as discussed under the "Enhanced Monitoring Well Network" heading above.

Groundwater Modeling

During FY 2009 the previous Groundwater Model of the Basin was updated and a separate Groundwater Model was developed to determine protective water levels within the Basin. The modeling work was performed by HydroMetrics LLC. This Model development work was described in the 2009 Annual Report.

Updating and Evaluating the Accuracy of the Groundwater Model

Evaluating the accuracy of the Groundwater Model was performed in 2015 and is reported on in the 2015 Annual Report. That evaluation concluded that the model is a reasonable representation of the Seaside Basin groundwater flow system, and that it should be used for estimating the operational safe yield of the basin and subareas, and for simulating the effects of possible management measures. Therefore, updating of the model was not necessary in 2016.

Modeling of the Laguna Seca Subarea

As reported in the 2015 Annual Report, in response to questions and concerns raised about the steady decline in water levels in the Laguna Seca Subarea (LSSA) in 2014 the Watermaster Board performed modeling of the LSSA relating to the natural safe yield and operating yield of the LSSA. Although there appeared to be no indication of any immediate substantial adverse physical impact to the Basin or the LSSA, the initial results of the modeling work indicated the natural safe yield and operating yield of the LSSA may be significantly less than that set forth in the Decision. A copy of the draft Technical Memorandum describing the modeling work and initial results was contained in Attachment 11 of the 2014 Annual Report. Because of the significance of these initial results, in December 2014 the Watermaster had a technical peer review of the modeling work performed in order to ensure that the modeling and final results were as accurate as possible. The Peer Review Technical Memorandum is contained in Attachment 11 of the 2015 Annual Report. The peer review concluded that the Groundwater Model is satisfactory for estimating the operational safe yield of the basin and its subareas, and for simulating the effects of groundwater management measures that might be considered in the future.

As a result of the peer review and recommendations from its Technical Advisory Committee, the Watermaster Board made several determinations which are discussed in the 2015 Annual Report. One of those was that it would be desirable to more accurately determine the location of the southeastern boundary of the Seaside Groundwater Basin. In mid-2015 the Watermaster authorized having HydroMetrics use the Groundwater Model to try to establish the location of the flow divide between the LSSA and the El Toro Subarea. This is discussed in the section below.

Estimation of Flow Divide Locations Near the Easterly Adjudication Boundary of the Laguna Seca Subarea

Subsequent to receiving a presentation on the Laguna Seca modeling Peer Review, the Watermaster Board concluded it would be beneficial to perform modeling in order to determine the locations of the hydrogeologic flow divides between the Laguna Seca Subarea (LSSA) and the areas to the east of the Adjudication Decision boundary of the Seaside Basin. This work was started in 2015 and finished in 2016.

The principle conclusions from that work were:

- Under anticipated future pumping conditions, groundwater elevations in the LSSA will continue to decline. The eastern portion of the LSSA will suffer the greatest and most persistent declines. Pumping groundwater elevations are predicted to fall below the top of the well screens prior to 2041 in 3 of the wells in this part of the LSSA.
- The locations of the groundwater flow divides will remain relatively stable under currently anticipated pumping conditions out to 2041, which is the end of the modeling period.
- Groundwater flow through the eastern portion of the LSSA is both westwards towards the Southern Coastal Subarea and northward into the Northern Inland Subarea. The Laguna Seca Anticline is a structural feature that causes groundwater flow to split into these directions.
- Under a hypothetical scenario, if pumping within the LSSA were to be discontinued the groundwater flow divide located in the eastern portion of the LSSA would migrate westward. This movement would be caused by relative increases in groundwater elevations in the LSSA due to this reduction in pumping, compared to east of the LSSA where pumping was assumed not to be reduced. Under this hypothetical scenario the groundwater flow direction in the easterly portion of the LSSA would shift towards the northeast and east by 2041 of the scenario, resulting in groundwater flowing out of the LSSA and into the Corral de Tierra subbasin.
- In all of the modeled scenarios, groundwater in the Santa Margarita Aquifer in the most northeastern portion of the LSSA flows north and northeast out of the LSSA and into the Northern Inland Subarea and Corral de Tierra subbasin. This northeastern portion of the LSSA is more heavily influenced by pumping outside of the LSSA than by pumping within the subarea, and this part of the LSSA is hydrogeologically connected to the Corral de Tierra subbasin, as well as the Northern Inland Subarea.
- Cal Am's Toro-1 and Toro-2 production wells draw water directly from the LSSA in the Paso Robles Aquifer, and thus have a direct influence on groundwater levels within the LSSA. The impact of these two wells was not compared to the cumulative impact of the other production wells located further east. Those more easterly wells indirectly affect the LSSA by withdrawing groundwater which would otherwise flow into, and thus recharge, the LSSA. This results in lowering groundwater levels in the LSSA.
- The <u>net</u> flow of groundwater across the eastern LSSA boundary for the <u>aggregation</u> of the Paso Robles and Santa Margarita aquifers is <u>currently</u> from the Corral de Tierra subbasin into the LSSA. However, the model predicts that under anticipated pumping conditions there will be a net flow of groundwater <u>out of</u> the LSSA into the Corral de Tierra subbasin by around 2030. Under a hypothetical scenario, if pumping within the LSSA were to be discontinued flow would begin to go out of the LSSA and into the Corral de Tierra subbasin much earlier (by around 2012).
- The groundwater model results are based upon an incomplete understanding of the hydrogeologic conditions in the Corral de Tierra subbasin, and it would be beneficial to improve the geologic and hydrogeologic understanding of this area. A typical hydrogeological study to improve hydrogeologic understanding would involve first examining existing well data and studies, followed by, if necessary, field work to drill

new wells and determine aquifer properties to provide data where hydrogeological data does not exist.

A copy of the Technical Memorandum describing this work is contained in Attachment 12.

Coordination of Watermaster's Seaside Groundwater Model with Salinas River Basin Model

As reported in the 2015 Annual Report, in May 2015 the Monterey County Resource Management Agency convened a Technical Advisory Committee (TAC) to develop a new Salinas River Basin model, and asked the Watermaster to join their TAC for this work. The County asked for information regarding the Watermaster's model of the Seaside Basin to ensure that the Salinas River Basin model coordinates properly with the Watermaster's model, and the Watermaster provided its model to the County.

In late 2015 because of problems encountered with its original consultant on this work (Brown and Caldwell) the County switched to having the work performed by the United States Geological Survey (USGS), representatives of which had already been participating in the TAC meetings and were intimately familiar with issues involving the Salinas River Basin. This change in consultants resulted in some delay in the work, but work resumed in early 2016, and during 2016 there were several meetings of the County's TAC.

At the time of preparation of this 2016 Annual Report the status of the new Salinas River Basin model, termed the Salinas Valley Integrated Hydraulic Model (SVIHM), was as follows:

- Model construction was ongoing throughout most of the year and continued into late 2016.
- Calibration was performed in October and November.
- Model analysis and integration of the reservoir operations module was expected to occur in December.
- Agricultural stakeholder meetings were held and more meetings are planned to get additional input and data.
- The County will be running the Watermaster's model for the Seaside Basin portion of the SVIHM model area. The Seaside Basin will not be included in the SVIHM. Rather, the SVIHM will use the Watermaster model's findings to interface with the new SVIHM, so it will not be necessary to "remodel" the adjudicated Seaside Basin area that that has already been modeled by the Watermaster. The objective is to have the SVIHM and the Watermaster's model match as closely as possible along the boundary between the two models.
- There will be ongoing meetings of the TAC to discuss progress on the development of the model.

Sustainable Groundwater Management Act

As reported in the 2015 Annual Report the Watermaster Board determined that the Watermaster should monitor the development of the Salinas Valley Groundwater Basin

Sustainability Agency and the State Department of Water Resources' (DWR) development of regulations pertaining to requesting boundary revisions, with the intent to collaborate with these entities as appropriate.

At the State Level

In late 2016 DWR released the final 2016 modifications to California's groundwater basin boundaries. Of the 54 requests for changes to basin boundaries, DWR approved 39, denied 12, and three were deemed incomplete. Most of the modifications were made to basins in the Central Valley and included refinements reflecting waterways, county lines and geologic information. The boundary modification request submitted by the Monterey Peninsula Water Management District (MPWMD) to remove some areas near Monterey from the Salinas Valley Groundwater Basin, and to recognize the boundaries of the Adjudicated Seaside Basin, was approved. These modifications are reflected in the basin boundary map that is now posted on the DWR website.

DWR will include the new basin boundaries in its interim update of Bulletin 118, which is due out by January 1, 2017. Another basin boundary modification request period may be held in 2018 based on demand from local agencies and/or GSAs. Other important upcoming dates on the SGMA timeline include:

- December 31, 2016 –DWR will post a report on Water Available for Replenishment on its website.
- January 1, 2017 – DWR will post Best Management Practices on its website.
- June 30, 2017 – Date by which local agencies in high- and medium-priority basins must form Groundwater Sustainability Agencies (GSAs) that cover the entire basin in order to avoid potential intervention by the State Water Resources Control Board.

At the Monterey County level:

Meetings of Monterey County's Collaborative Work Group (CWG) and Stakeholders Groups began in March of 2016. Several Stakeholder Group meetings were held in 2016, and in 2016 the CWG met on a generally semi-monthly basis. Watermaster staff attended the May 19, 2016 meeting of the CWG to become familiar with the makeup of the group and the types of issues the group was discussing. Most of the group's focus at that point in time was on building consensus on how to form a GSA, how its governing body should be made up, voting issues, and other very preliminary and general topics. Although more meetings of the CWG have been held since then, it does not appear that the group will start getting into issues of direct interest or concern to the Watermaster for some months to come. Watermaster staff continues monitoring the progress of the group and provides regular ongoing updates to the Watermaster TAC and Board. At an appropriate point in time Watermaster staff will resume attending the CWG meetings to provide input on issues of concern to the Watermaster.

It appears that by the June 2017 DWR deadline for the establishment of GSAs, Monterey County is hopeful of establishing one or more GSAs for the portions of the Salinas Valley Groundwater Basin that do not lie within the Adjudicated Seaside Basin. However, on September 15, 2016 Marina Coast Water District (MCWD) filed a Notification with DWR that it wished to serve as the GSA for the portion of the Salinas

Valley Groundwater Basin that lies within their service area, and which does not lie within the Adjudicated Seaside Basin. If by December 28, 2016 no other entity applies to be the GSA for that same portion of the Salinas Valley Basin, DWR will approve MCWD's Notification and MCWD will become the exclusive GSA for that portion of the basin. As of the date of preparation of this 2016 Annual Report Monterey County had not indicated whether it, too, would file a notification to become the GSA for these same areas, in which case DWR would apparently work with those two entities to make a determination as to which entity should be the GSA.

K. Conclusions and Recommendations

The Seaside Basin Watermaster Board has worked diligently to meet all of the Court's established deadline dates. All of the Phase 1 Scope of Work activities, which are described in the "Implementation Plan for the Seaside Basin Monitoring and Management Program" dated March 7, 2007, have been completed. At the Watermaster Board meeting held on October 5, 2016 the Board adopted the FY 2017 budgets contained in Attachment 6, which support carrying out all elements of the "Seaside Groundwater Basin Management and Monitoring Program Anticipated 2017 Work Plan." That Work Plan describes the M&MP activities that will be conducted during Fiscal Year 2017. A copy of this Work Plan is contained in Attachment 9.

As described in Section J above, information from the Enhanced Monitoring Well Network is being utilized to detect any seawater intrusion. The response actions described in the Watermaster's Seawater Intrusion Response Plan, which was contained in the 2009 Annual Report, will be implemented if seawater intrusion is detected within the Basin.

In March of 2017 the Watermaster anticipates holding another status conference with the Court to provide an update on certain of the Watermaster's activities.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

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

MEETING DATE:	November 16, 2016
AGENDA ITEM:	6
AGENDA TITLE:	Set Next Meeting Date
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:
There is no TAC meeting business that needs to be conducted in December, so there will be no need for a December TAC meeting.

I recommend that the next TAC meeting be held on Wednesday January 11, 2017.

ATTACHMENTS:	None
RECOMMENDED ACTION:	Approve skipping having a TAC meeting in December and holding the next TAC meeting on January 11, 2017

SEASIDE BASIN WATER MASTER TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	November 16, 2016
AGENDA ITEM:	7
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 2016.

There are a few things to note in this update:

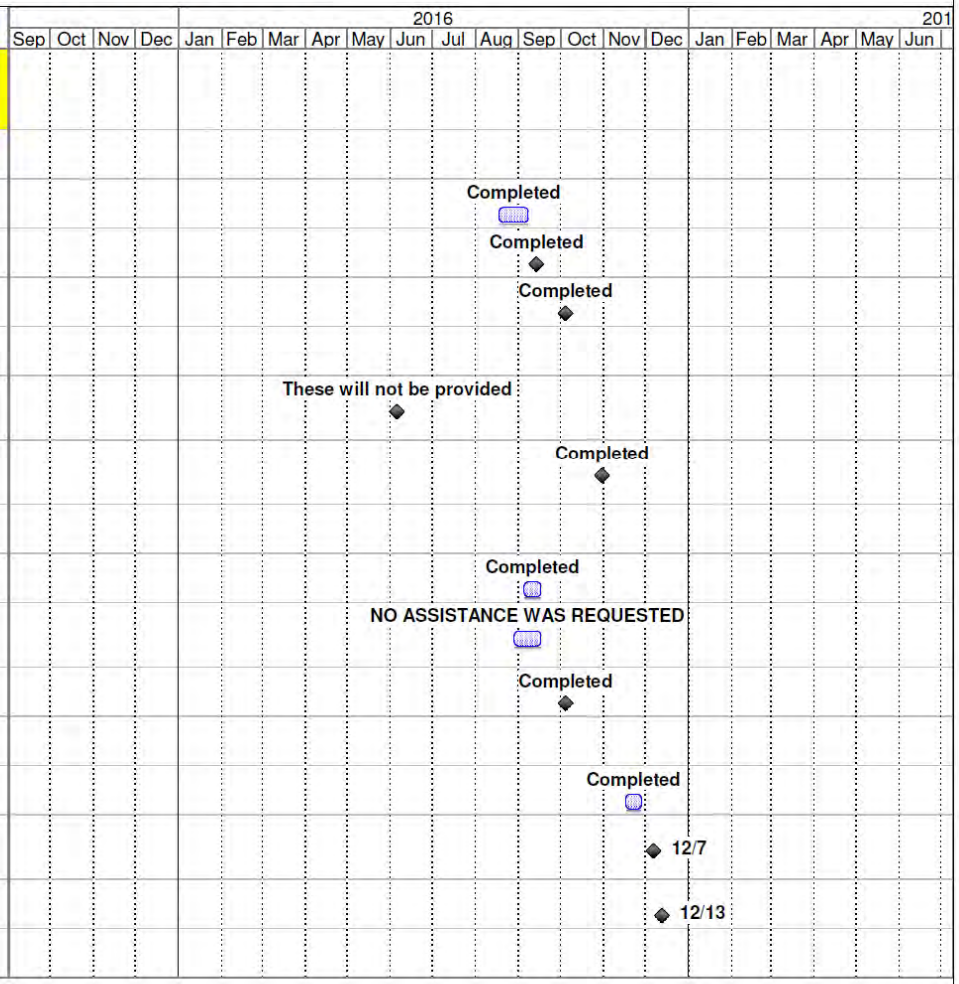
1. There will be no December 2016 TAC meeting as there will be no TAC business that needs to be conducted at that time. The next TAC meeting will be the 2nd Wednesday in January, January 11, 2017.
2. The Board will meet on its normal meeting date of December 7 (1st Wednesday in December) to approve a number of things including the Annual Report and the Initial Consultant Contracts for 2017.

Also attached is the proposed Work Schedule for FY 2017.

ATTACHMENTS:	1. Schedule of Work Activities for FY 2016 2. Schedule of Work Activities for FY 2017
RECOMMENDED ACTION:	Provide Input to Technical Program Manager Regarding Any Corrections or Additions to the Schedule

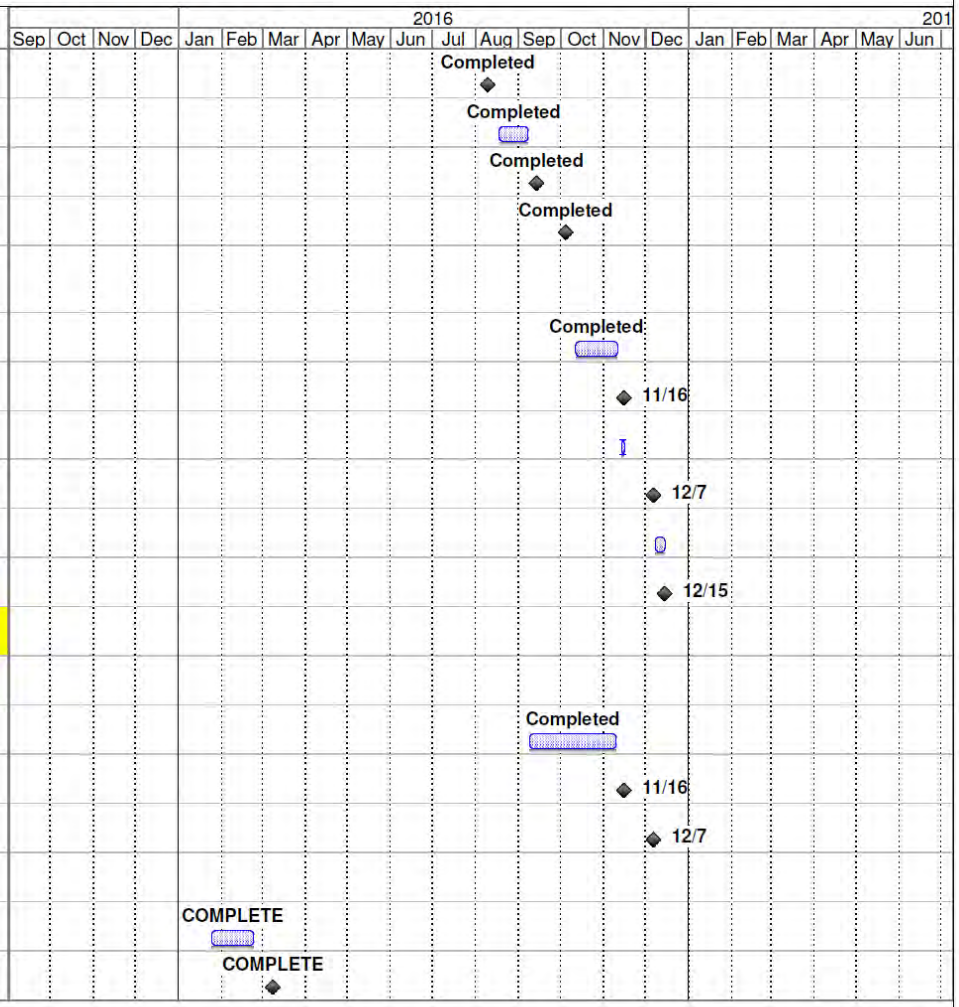
Seaside Basin Watermaster
Monitoring and Management Program
2016 Work Schedule

ID	Task Name
1	***CRITICAL PROJECT MILESTONES ASSOCIATED WITH TAC, BOARD, AND/OR CONSULTANT WORK***
2	**2016 Administration, Operations and Replenishment Budgets**
3	Prepare M&MP Draft Budgets (Same as Task 19)
4	TAC Approves M&MP Budgets (Same as Task 20)
5	Board Approves M&MP Budgets (Same as Task 21)
6	**Watermaster Prepares Quarterly Water Production, Water Level, and Water Quality Reports**
7	Watermaster Prepares Combined Quarterly Water Production, Water Level, and Water Quality Reports for 1st & 2nd Quarters (Same as Task 41)
8	Watermaster Prepares Annual Water Production, Water Level, and Water Quality Report for 2016 (Same as Task 42)
9	**Replenishment Assessment Unit Costs for Water Year 2017**
10	B&F Committee Develops Replenishment Assessment Unit Cost for 2017 Water Year
11	If Requested, TAC Provides Assistance to B&F Committee in Development of 2017 Water Year Replenishment Assessment Unit Cost
12	Board Adopts and Declares 2017 Water Year Replenishment Assessment Unit Cost
13	**Replenishment Assessments for Water Year 2016**
14	Watermaster Prepares Replenishment Assessments for Water Year 2016
15	Watermaster Board Approves Replenishment Assessments for Water Year 2016 (At December Meeting)
16	Watermaster Levies Replenishment Assessment for 2016
17	**Monitoring & Management Program (M&MP) Budgets for 2017 and 2018**



Seaside Basin Watermaster
Monitoring and Management Program
2016 Work Schedule

ID	Task Name
18	Preliminary Discussion of Potential Scope of Work for 2017 M&MP
19	Prepare Draft 2017 M&MP Work Plan and 2017 and 2018 O&M and Capital Budgets
20	TAC approves Draft 2017 M&MP Work Plan and 2017 and 2018 O&M and Capital Budgets
21	Board approves 2017 M&MP O&M and Capital Budgets
22	**2015 Annual Report (Note: Schedule Reflects Court Approval of Later Submittal Date for Annual Report)**
23	Prepare Preliminary Draft 2016 Annual Report
24	TAC Provides Input on Preliminary Draft 2016 Annual Report
25	Prepare Draft 2016 Annual Report (Incorporating TAC Input)
26	Board Provides Input on Draft 2016 Annual Report (At December Board Meeting)
27	Prepare Final 2016 Annual Report (Incorporating Board Input)
28	Watermaster Submits Final 2016 Annual Report to Judge
29	***MANAGEMENT***
30	**M.1 PROGRAM ADMINISTRATION**
31	Prepare Initial Consultant Contracts for 2017
32	TAC Approval of Initial Consultant Contracts for 2017
33	Board Approval of Initial Consultant Contracts for 2017
34	**M.1.g – Sustainable Groundwater Management Act Reporting Requirements**
35	HydroMetrics Prepares Draft Groundwater Storage Analysis
36	TAC Reviews HydroMetrics Draft Storage Analysis



Seaside Basin Watermaster
Monitoring and Management Program
2016 Work Schedule

ID	Task Name	2016																201					
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
37	HydroMetrics Revises Draft Storage Analysis if Necessary						COMPLETE																
38	Submit SGMA Documentation to DWR						COMPLETE																
39	***IMPLEMENTATION***																						
40	**I.2.a DATABASE MANAGEMENT**																						
41	**I.2.a.1 Conduct Ongoing Data Entry/Database Maintenance**																						
42	**I.2.b DATA COLLECTION PROGRAM**																						
43	**I.2.b.2 Collect Monthly Water Levels (MPWMD)**																						
44	**I.2.b.3 Collect Quarterly Water Quality Samples (MPWMD)**																						
45	**I.2.b.6 Reports (from MPWMD)**																						
46	Watermaster Prepares Combined Quarterly Water Production, Water Level, and Water Quality Reports for 1st & 2nd Quarters									Completed													
47	Watermaster Prepares Annual Water Production, Water Level, and Water Quality Report for 2016														Completed								
48	Watermaster Prepares Report Regarding Long-Term Trends in Water Levels in Monitoring Wells							This report was not needed and will not be prepared															
49	**I.3.a ENHANCED SEASIDE BASIN GROUNDWATER MODEL**																						
50	TAC Assists Board in Developing Work Plan to Address LSSA Modeling Results					COMPLETE																	
51	Develop and Schedule Additional Tasks as Directed by Board					IF REQUESTED BY THE BOARD																	
52	**I.3.c Refine and/or Update the BMAP**	NO WORK SCHEDULED UNTIL TAC DIRECTION PROVIDED TO RESUME DISCUSSION																					
53	**I.4.c Annual Seawater Intrusion Analysis Report (SIAR)**																						
54	HydroMetrics Provides Draft SIAR to Watermaster														Completed								
55	TAC Approves Annual Seawater Intrusion Analysis Report (SIAR)																11/16						

Seaside Basin Watermaster
Monitoring and Management Program
2016 Work Schedule

ID	Task Name	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
						2016												201					
56	Board Approves Annual Seawater Intrusion Analysis Report (SIAR)																◆ 12/7						
57	**I.4.d Complete Preparation of Seawater Intrusion Response Plan (SIRP)**					**WORK COMPLETED - NO FURTHER WORK PLANNED IN 2016**																	
58	**I.4.e Refine and/or Update the SIRP**						**ONLY IF FOUND TO BE NECESSARY**																

Seaside Basin Watermaster
Monitoring and Management Program
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9	**Replenishment Assessment Unit Costs for Water Year 2018**
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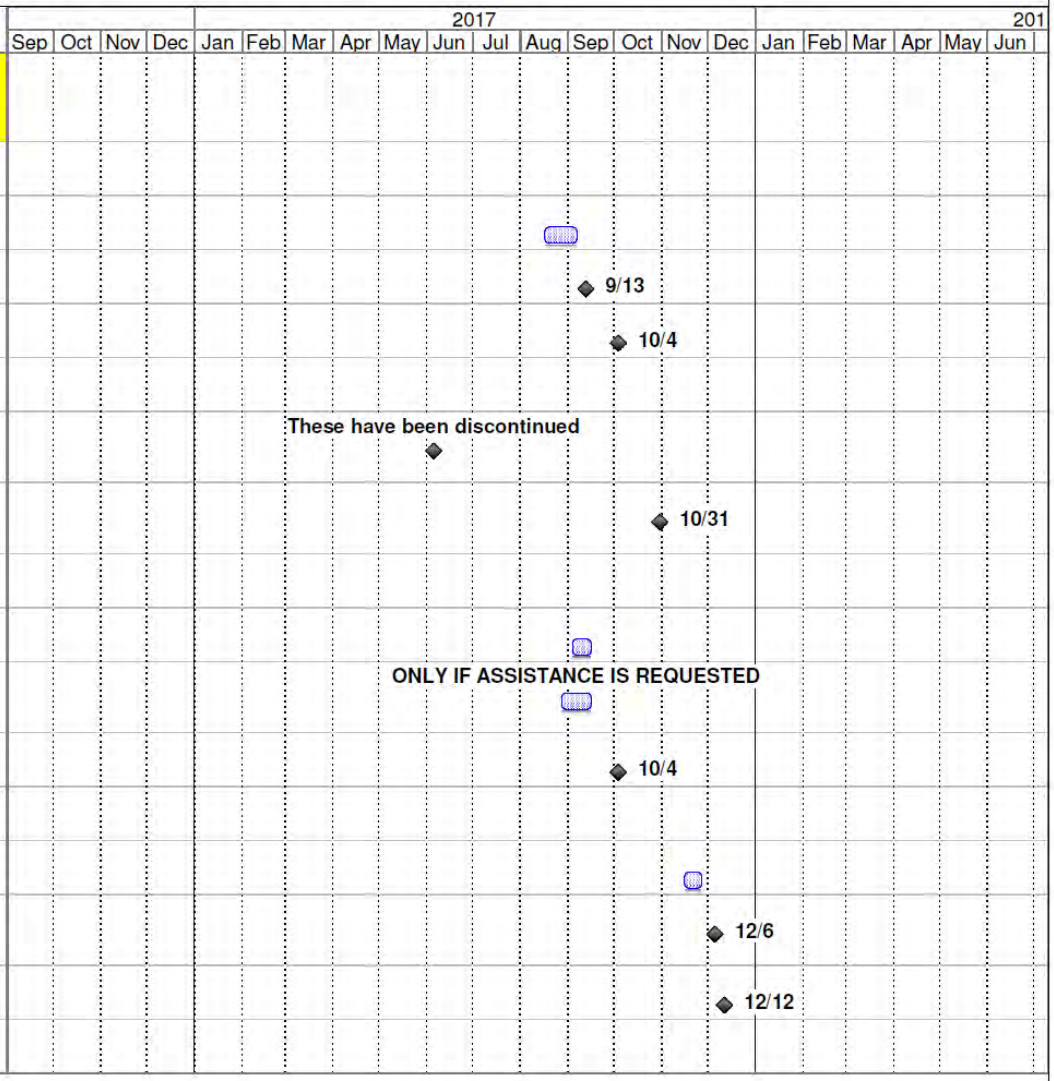

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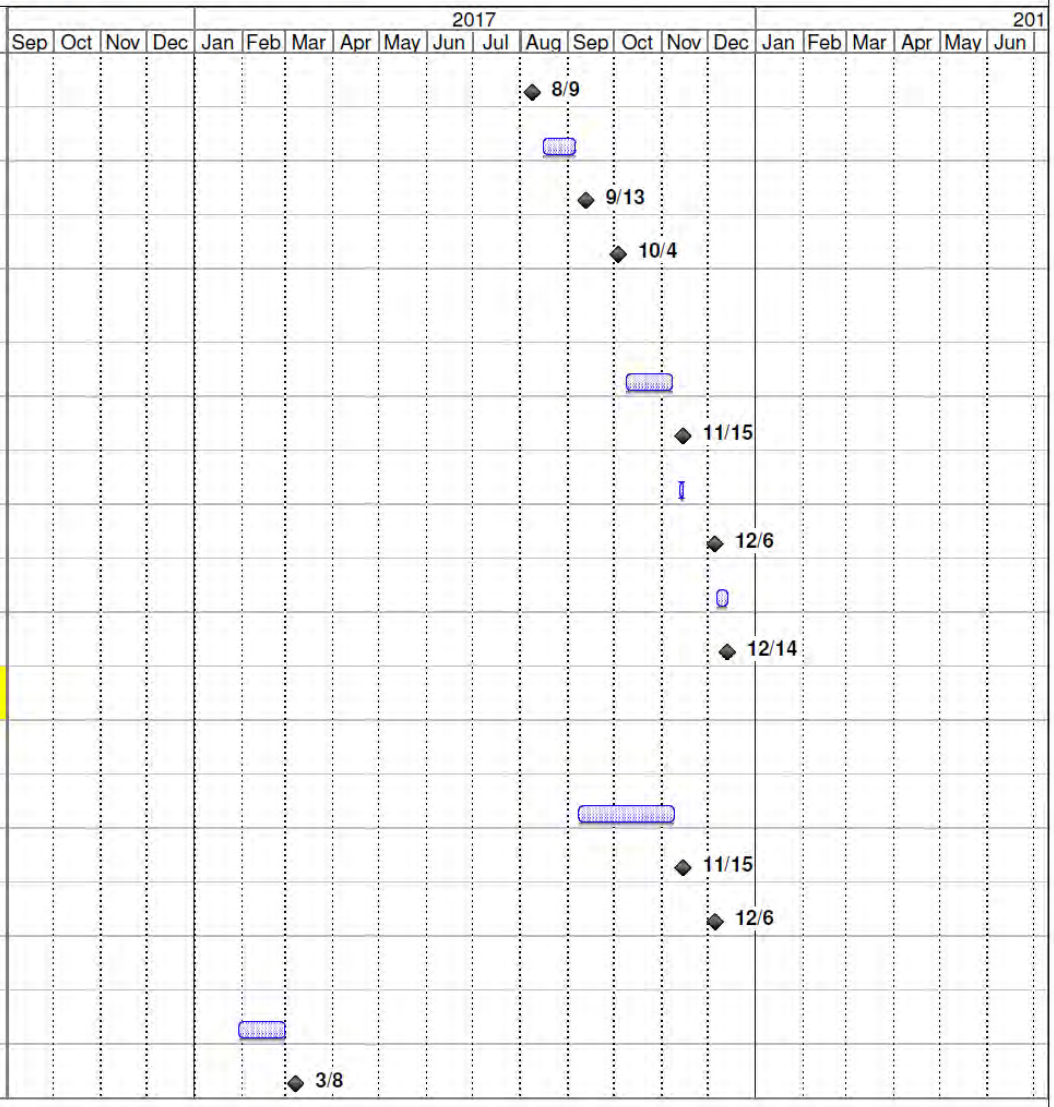

Seaside Basin Watermaster
Monitoring and Management Program
2017 Work Schedule

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38	Submit SGMA Documentation to DWR								3/31														
39	***IMPLEMENTATION***																						
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49	Develop and Schedule Additional Tasks as Directed by Board										IF REQUESTED BY THE BOARD												
50	**I.3.c Refine and/or Update the BMAP**																						
51	**I.4.c Annual Seawater Intrusion Analysis Report (SIAR)**																						
52	HydroMetrics Provides Draft SIAR to Watermaster															11/8							
53	TAC Approves Annual Seawater Intrusion Analysis Report (SIAR)															11/15							
54	Board Approves Annual Seawater Intrusion Analysis Report (SIAR)																12/6						
55	**I.4.d Complete Preparation of Seawater Intrusion Response Plan (SIRP)**																						

NO WORK SCHEDULED UNTIL TAC DIRECTION PROVIDED TO RESUME DISCUSSION

WORK COMPLETED - NO FURTHER WORK PLANNED IN 2017

Seaside Basin Watermaster
Monitoring and Management Program
2017 Work Schedule

ID	Task Name					2017												201					
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
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SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

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

MEETING DATE:	November 16, 2016
AGENDA ITEM:	8
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