

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

DATE: Wednesday, August 14, 2019

MEETING TIME: 1:30 p.m.

**Monterey One Water Offices
5 Harris Court, Building D (Ryan Ranch)
Monterey, CA 93940**

If you wish to participate in the meeting from a remote location, please call in on the Watermaster Conference Line by dialing (515) 604-9094. Use the Meeting ID 355890617. Please note that if no telephone attendees have joined the meeting by 10 minutes after its start, the conference call will be ended.

OFFICERS

Chairperson: Nina Miller, California American Water Company

Vice-Chairperson: Jon Lear, MPWMD

MEMBERS

**California American Water Company
Monterey**

City of Del Rey Oaks

City of

City of Sand City

City of Seaside

Coastal Subarea Landowners

**Laguna Seca Property Owners
Agency**

Monterey County Water Resources

Monterey Peninsula Water Management District

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| <p>The next regular meeting will be held on Wednesday September 11, 2019 at 1:30 p.m. at the M1W Board Room.</p> | |

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

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|---|--|
| MEETING DATE: | August 14, 2019 |
| AGENDA ITEM: | 2.A |
| AGENDA TITLE: | Approve Minutes from the July 10, 2019 Meeting |
| PREPARED BY: | Robert Jaques, Technical Program Manager |
| SUMMARY: | |
| <p>Draft Minutes from this meeting was emailed to all TAC members. Any changes requested by TAC members have been included in the attached version.</p> | |
| ATTACHMENTS: | Minutes from this meeting |
| RECOMMENDED ACTION: | Approve the minutes |

D-R-A-F-T
MINUTES

**Seaside Groundwater Basin Watermaster
Technical Advisory Committee Meeting
July 10, 2019**

Attendees: TAC Members

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

Watermaster

Technical Program Manager - Robert Jaques

Consultants

None

Others

Bob Holden – M1W
Patrick Breen - MCWD

The meeting was convened at 1:35 p.m. after a quorum was established.

1. Public Comments

There were no public comments.

2. Administrative Matters:

A. Approve Minutes from the June 12, 2019 Meeting

On a motion by Mr. Lear, seconded by Mr. Riedl, the minutes were unanimously approved as presented.

B. Reminder About Use of the Teleconference Line for Participation in TAC Meetings

Ms. Miller urged TAC members to attend in person whenever possible. Mr. Gomez noted that his client, the City of Sand City, has asked him to minimize costs wherever possible, and this has contributed in part to his attending some meetings by telephone.

C. MPWMD Activities Update

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

Mr. Lear elaborated on the issue of the hours spent on the CASGEM and Q1/Q2 data reporting. The new CASGEM reporting procedure has required more time than initially expected.

Following some discussion, a motion was made by Ms. Voss, seconded by Mr. Gomez, to discontinue Q1/Q2 and Q3/Q4 data preparation and posting. The motion passed unanimously.

Mr. Lear recommended discontinuing preparation of MPWMD'S water quality/water level annual report, and instead have that data included as an appendix to the Seawater Intrusion Analysis Report. Mr. Lear went on to say that he was still assessing the workload increase due to the Pure Water Monterey project. He would like to cut back on some of the reporting that is covered in MPWMD's Request for Service for these activities, and instead have the consultant (Montgomery and Associates) do the reporting in their documents.

Mr. Jaques suggested that this topic be further discussed under agenda item number five pertaining to the Work Plan for the 2020 Monitoring and Management Program.

3. Continued Discussion of Report on Geochemical Modeling for the Pure Water Monterey Project AWT Water

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

Mr. Holden reported that the Pure Water Monterey AWT plant has been designed to produce water having an alkalinity of between 40 and 80 mg/L, and a pH of between 7.5 and 8.5. He said that M1W is in the process of getting a new water sample for testing that will have an alkalinity of 40 mg/L. He wondered if action on this agenda item could be delayed until the results from testing using the new water sample have been completed. Mr. Jaques said he did not see any problem with postponing action per Mr. Holden's request.

Mr. Lear, however, expressed concern about getting the testing work completed before injection will actually begin. Mr. Holden estimated that injection could begin toward the end of September or in October of this year. Mr. Lear estimated it would take 4 to 6 weeks to get the new testing completed once the sample has been collected.

There was discussion that if testing with the new sample having an alkalinity of 40 mg/L is done, and the same results occur as in the previous testing, then Recommendation No.1 from the Pueblo Water Resources report could be revised to cite this lower alkalinity as being acceptable and this lower alkalinity level could be included in the Storage and Recovery Agreement without posing any operational issues of concern. However, if retesting does not show this, and some adverse impact from geochemical reaction using the lower alkalinity water were detected, then it would be appropriate to impose the higher alkalinity of 50 mg/L contained in Recommendation No.1.

Mr. Jaques commented that if testing with the lower alkalinity water shows no adverse geochemical effects, there would be no need to get further TAC input before going to the Board with a proposed addendum to the Storage and Recovery Agreement.

Following further discussion, the TAC took action on the recommendations at the bottom of page 8 of the agenda packet as follows:

Recommendation 1: There was consensus to accept the Revised Technical Memorandum as satisfactorily fulfilling MPWMD's obligation to perform geochemical modeling of the Pure Water Monterey AWT water, with the caveat that retesting with 40 mg/L alkalinity water is done and the results do not indicate any adverse impact. The data from the retesting would be provided to the TAC for information.

Recommendation 2: The TAC concurred with the Revised Technical Memorandum's recommendation to defer geochemical modeling work on the desalination plant water at this time.

Recommendation 3: The TAC could not reach unanimous agreement on this recommendation to amend the Pure Water Monterey Storage and Recovery Agreement, so a motion was made by Ms. Voss to include the recommendation to issue an amendment to the Pure Water Monterey Storage and Recovery Agreement to include the first recommendation in the Revised Technical Memorandum from Pueblo Water Resources. The motion was seconded by Mr. Costa. Five of the TAC members voted in favor of the motion, so the motion passed. Mr. Lear voted against the motion, commenting that he felt it was not necessary to include the Pueblo Water Resources recommendation as an amendment to the Storage and Recovery Agreement because the design parameters for the plant had been approved by the Division of Drinking Water.

4. Proposed MPWMD Pure Water Monterey Well Ordinance

Mr. Lear asked if any TAC members had questions with regard to the Ordinance. Ms. Voss asked Mr. Lear to provide her a copy of Agreement A- 06181 which is cited in Finding No. 8 in the Ordinance on page 33 of today's meeting agenda packet.

Mr. Lear said that a second reading of the Ordinance will be held by the MPWMD Board of Directors in the near future.

There was no further discussion of this item.

5. Initial Discussion Regarding Scope of Work for Monitoring and Management Program (M&MP) for FY 2020

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

Revisions were suggested to delete task I.2.b.6 of the 2020 Monitoring and Management Program in its entirety, and to add to task I.2.a.1 the following language "No reporting of water level or water quality data is required but MPWMD will promptly notify the Watermaster of any missing data or data collection irregularities that were encountered during the quarterly reporting period."

It was also suggested that the following language be stricken from task I.2.a.1 "Another consultant will periodically post database information to the Watermaster's website, so it will be accessible to the public and other interested parties."

With regard to the additional work proposed under task I.3.a.3 Mr. Lear commented that if water were to be injected closer to the coast in order to achieve protective water levels, and if this resulted in additional water being lost to the ocean, then MPWMD would lose some revenue that it would otherwise receive because it would have less water to recover and sell.

Mr. Riedl reported that Todd Groundwater had performed a study to evaluate coastal versus inland injection and found no difference in terms of raising groundwater levels between those two injection

locations. Mr. Jaques said he was not aware of that report and would appreciate getting a copy of it. Mr. Riedl said he would forward a copy to Mr. Jaques.

Discussion then turned to the recommendations contained in the recently updated Basin Management Action Plan, as outlined on pages 42 and 43 of today's meeting agenda packet.

With regard to the five subparts of Recommendation 1 (Encourage Implementation of Selected Management Actions), the TAC felt that all five of these were good actions to take, but that at this time only subparts 3 (Water Conservation), 4 (Coordination with the Salinas Valley Basin GSAs) and 5 (Enhanced Stormwater Recharge within the City of Seaside) could actually be pursued.

With regard to subpart 1 (Install New Southern Coastal Subarea Wells) Mr. Lear commented that this would be a Cal Am undertaking, but noted that the Monterey Peninsula Water Supply Project would enable pumping reductions which might be preferable to installing new Southern Coastal Subarea wells. He suggested that once the Monterey Peninsula Water Supply Project is in full operation, its effect on groundwater levels be assessed to determine whether or not installing new Southern Coastal Subarea wells would be desirable.

With regard to subpart 2 (Recycled Water for Laguna Seca Golf Courses) it was noted that the Regional Urban Water Augmentation Project did not include recycled water for the Laguna Seca golf courses. Mr. Costa reported there was no excess recycled water from the Pasadera recycling plant because it was all being used on the Pasadera golf course. He went on to say that some years ago there was a small recycling plant used for irrigation of portions of the Laguna Seca golf course, but that it had been taken out of service and all of the wastewater was now being recycled at the Pasadera recycling plant.

With regard to subpart 5, Mr. Riedl said he was in favor of that and wondered if the benefit of enhanced stormwater recharge within the city of Seaside could somehow be quantified. Mr. Jaques said he would ask Ms. King of Montgomery & Associates about that.

With regard to Recommendation 2 pertaining to groundwater modeling, the TAC deferred to the Board's earlier determination to defer any action on this pending completion of the GSP for the Salinas Valley Groundwater Basin.

With regard to Recommendation 3 to continue ongoing groundwater monitoring, the TAC concluded that this is already being done.

With regard to Recommendation 4 pertaining to development of a long-term financing plan for replenishment water, the TAC felt that this would be appropriate to do, when and if a source of replenishment water has been identified.

6. Schedule

Mr. Jaques briefly reported on this item and there was no other discussion.

7. Other Business

No other business was discussed.

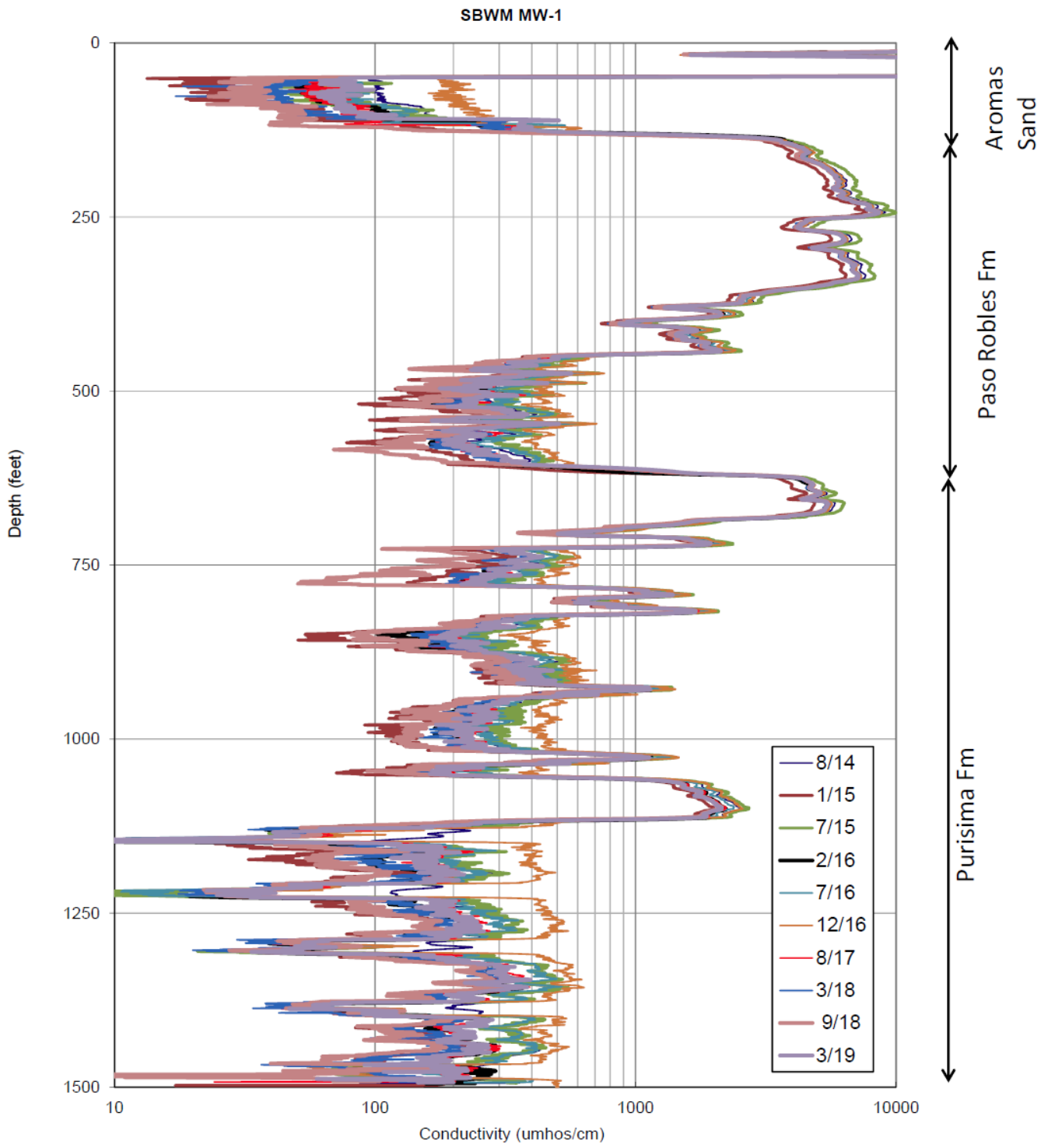
The next regular meeting will be held on Wednesday August 14, 2019 at 1:30 p.m. at the M1W Board Room.

The meeting adjourned at 3:12 p.m.

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

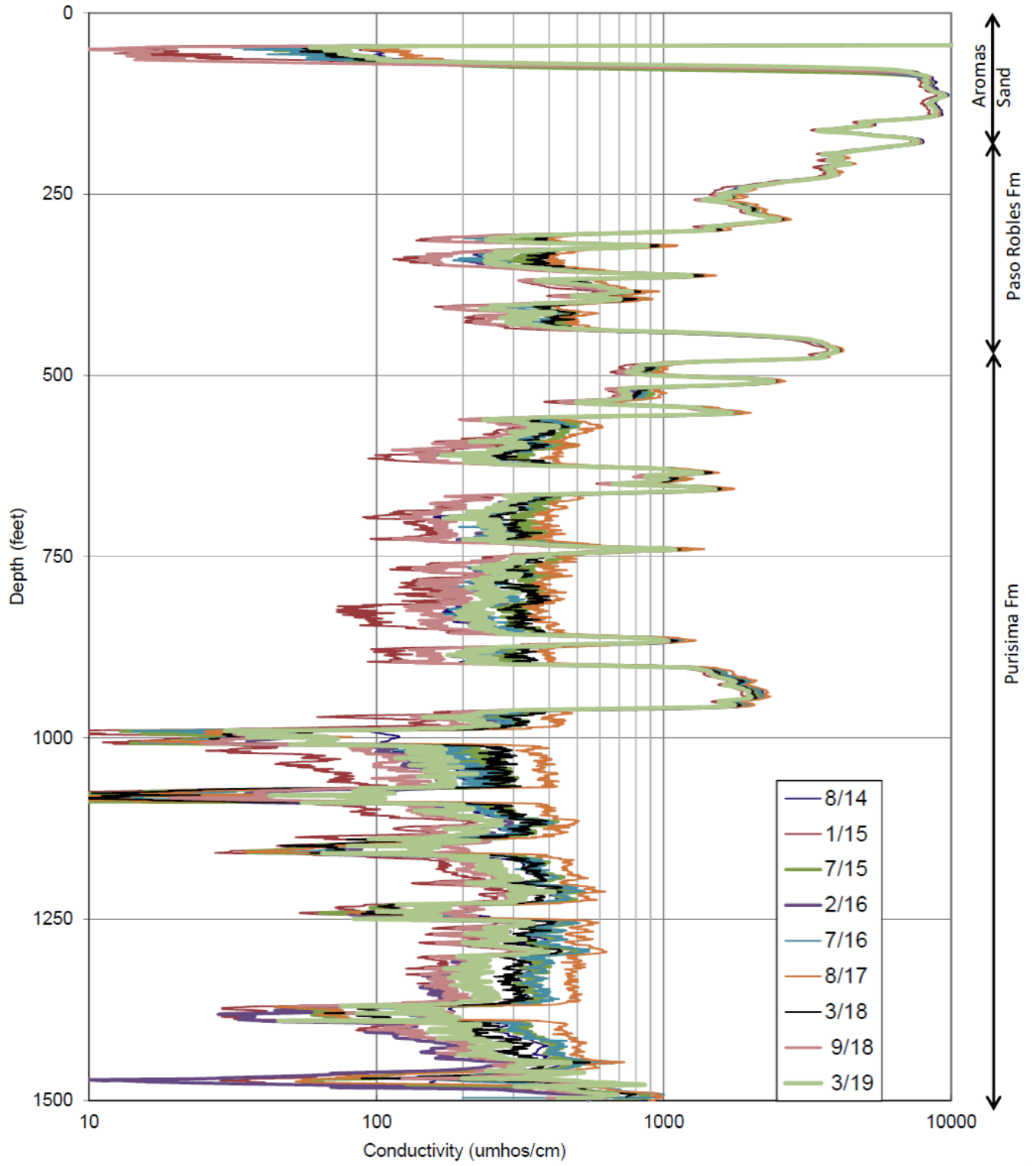
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|----------------------------|---|
| MEETING DATE: | August 14, 2019 |
| AGENDA ITEM: | 2.B |
| AGENDA TITLE: | March 2019 Sentinel Well Induction Logging |
| PREPARED BY: | Robert Jaques, Technical Program Manager |
| SUMMARY: | <p>Martin Feeney completed the induction well logging in March 2019 and provided these data plots. He interprets them as not showing any indications of seawater intrusion.</p> |
| ATTACHMENTS: | Induction Logging Data Plots |
| RECOMMENDED ACTION: | None required – information only |

SENTINEL WELLS CONDUCTIVITY



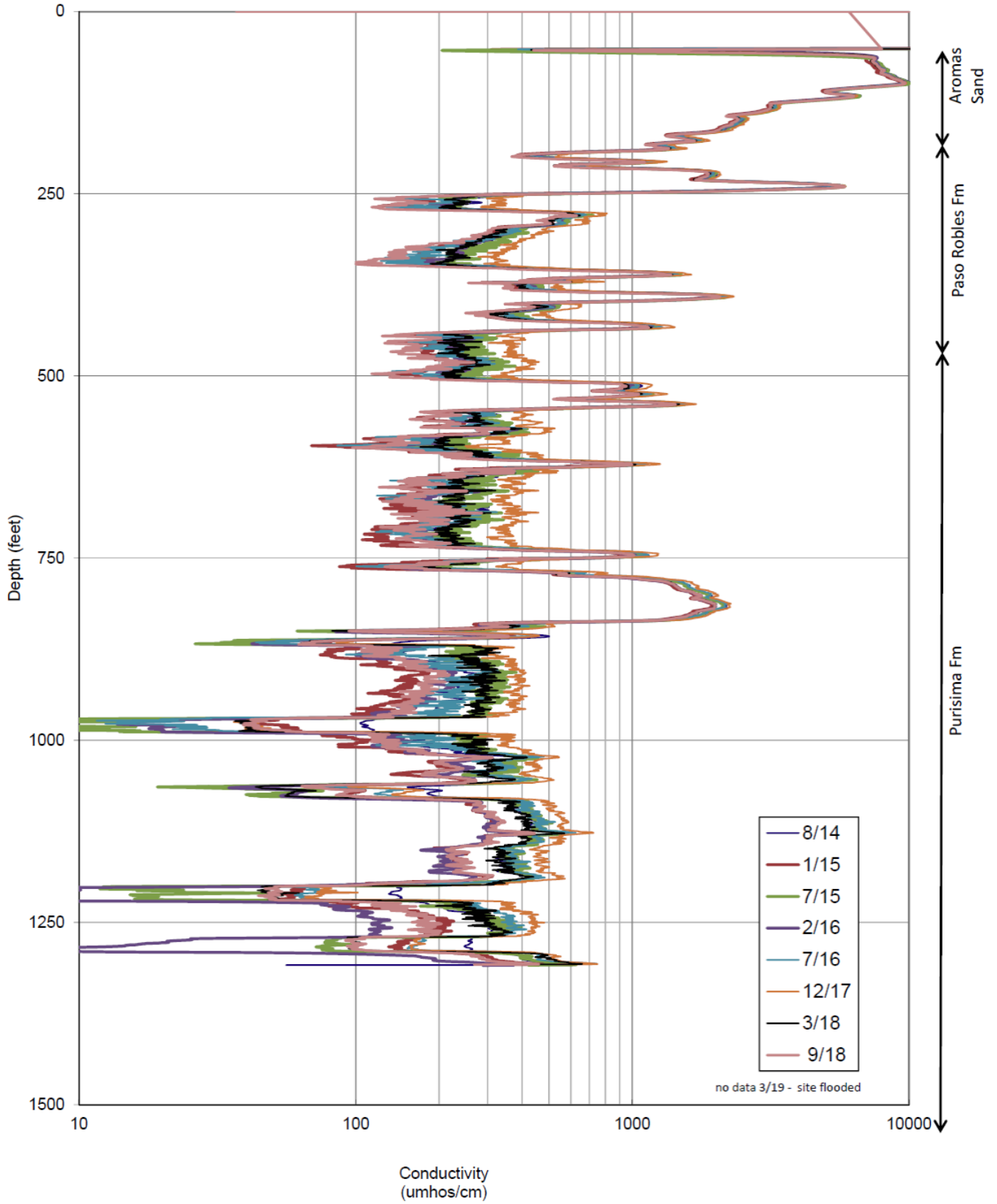
SENTINEL WELLS CONDUCTIVITY

SBWM MW-2

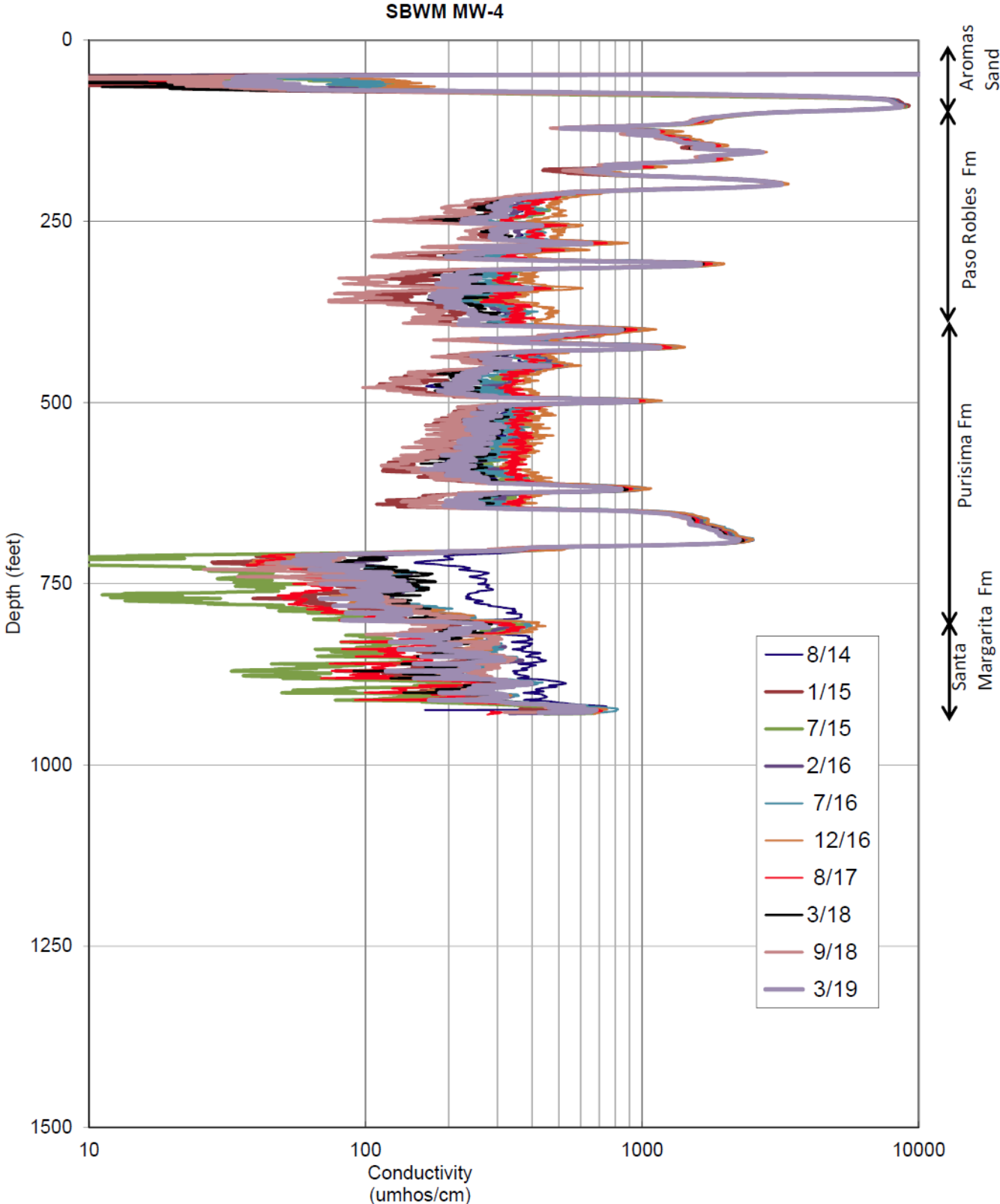


SENTINEL WELLS CONDUCTIVITY

SBWM MW-3



SENTINEL WELLS CONDUCTIVITY



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

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|---|--|
| MEETING DATE: | August 14, 2019 |
| AGENDA ITEM: | 3 |
| AGENDA TITLE: | Update on Geochemical Modeling for the Pure Water Monterey Project AWT Water |
| PREPARED BY: | Robert Jaques, Technical Program Manager |
| SUMMARY: | |
| <p>At the July 10 TAC meeting the geochemical modeling work for the Pure Water Monterey AWT Water was discussed. Mr. Holden reported that M1W was going to retest the water using a new sample that would have a lower alkalinity. On July 25, 2019 he provided me this updating information on the retesting work:</p> <p><i>M1W collected the water July 17th and sent it to Trussell Technologies. Trussell buffered the water and sent it to Mc Campbell on July 18th and Mc Campbell received the water on July 19th. Mc Campbell conducted water and soil testing this week. They are intending to conduct the leaching testing next week with the results sometime after that. The new water sample had a pH of 7.49 and an alkalinity of 39 mg/L.</i></p> <p>Consequently, assuming the new testing finds that the AWT water is ok for aquifer injection, it should be possible for the Pueblo Water Resources recommendation regarding pH and alkalinity to be revised to read pH from 7.5 to 8.5 and Alkalinity of at least 40 mg/L, which are the design parameters for the AWT plant.</p> | |
| ATTACHMENTS: | None |
| RECOMMENDED ACTION: | None required – information only |

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

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|----------------------|--|
| MEETING DATE: | August 14, 2019 |
| AGENDA ITEM: | 4 |
| AGENDA TITLE: | Approve the Monitoring and Management Program (M&MP) for FY 2020 |
| PREPARED BY: | Robert Jaques, Technical Program Manager |

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

SUMMARY:

A Preliminary version of the FY 2020 Work Plan was reviewed and discussed with the TAC at its July 10, 2019 meeting. The attached Final Draft version reflects input from the TAC and from the consultants and contractors who will be performing certain portions of that work. Updates from the July 12 Preliminary version include:

1.I have removed the language and cost in Task I.3.a.3 to perform modeling work pertaining to injection of water to raise groundwater levels. I did this after reviewing the Todd Groundwater Tech Memo that Mr. Riedl sent me after the July 12th meeting, and discussing this with Phyllis Stannin of Todd Groundwater and Derrick Williams of Montgomery & Associates. In his email to me, Mr. Williams provided the following information:

The Watermaster did not ask Montgomery & Associates to do simulations of the 3,500 AFY or 5,750 AFY PWM projects, however Monterey One Water did pay for us to do the simulations as part of their CEQA work. Importantly, the simulations were designed to increase Cal-Am's water portfolio. These simulations are not designed to avoid seawater intrusion. The coastal injection option was not run because it did not focus on the primary objective of increasing water supply.

The purpose of the injection is important because it is tied to how much pumping occurs in the basin. If Cal-Am buys water from MIW expecting that it will extract all of that water in the near future, then no matter how much water you inject it will not raise water levels: all of the water will be removed by the additional Cal-Am pumping. If Cal-Am does not increase its pumping, then injection both inland and at the coast will help raise water levels.

If we are going to pay for water for the sole purpose of raising water levels, then it might be useful to run some simulations that identify the best approach. But if Cal Am is expecting to extract all the water they pay for, then there is no benefit to running the simulations.

2.Jon Lear provided updated language and costs for the work MPWMD performs, and this is reflected in the various Tasks under which they perform work. In particular Task I.2.b.6 has been deleted in its entirety and the language of Tasks I.2.a.1 and I.4.c have been revised to reflect the work being transferred to those Tasks as a result of deleting Task I.2.b.6.

3.The language in Task I.3.e was revised based on the assumption that the re-testing of PWM AWT water at a lower alkalinity will show that the water is acceptable and will not cause any adverse geochemical impacts. If that proves not to be the case, the language will need to be revised further.

I did not include any of the Recommendations from the recently updated Basin Management Action Plan (BMAP), because at its July 12 meeting the TAC felt that only three of those recommendations

AGENDA ITEM:

5 (Continued)

**SEASIDE BASIN WATER MASTER
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(water conservation, coordination with the Salinas Valley Basin GSA, and Seaside storm water recharge) were feasible for pursuit at this time. None of these have any out-of-pocket cost or work consequence to the Watermaster, so they are not included in the M&MP.

At today's meeting the TAC can bring up any other revisions they would like to make to finalize preparation of the Draft M&MP for 2020 that will go to the Board for approval in October,

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| ATTACHMENTS: | Proposed Draft FY 2020 Monitoring and Management Program |
| RECOMMENDED ACTION: | Provide Input to Technical Program Manager Regarding Any Corrections or Additions to the Proposed Draft FY 2020 M&MP |

Seaside Groundwater Basin 2020 Monitoring and Management Program

The tasks outlined below are those that are anticipated to be performed during 2020. Some Tasks listed below are specific to 202019, while other Tasks are recurring such as data collection, database entry, and Program Administration Tasks.

Within the context of this document the term “Consultant” refers either to a firm providing professional engineering or other types of technical services, or to the Monterey Peninsula Water Management District (MPWMD). The term “Contractor” refers to a firm providing construction or field services such as well drilling, induction logging, or meter calibration.

M.1 Program Administration

M. 1. a
Project Budget and
Controls
(\$0)

Consultants will provide monthly or bimonthly invoices to the Watermaster for work performed under their contracts with the Watermaster. Consultants will perform maintenance of their internal budgets and schedules, and management of their subconsultants. The Watermaster will perform management of its Consultants.

M. 1. b
Assist with Board and TAC
Agendas
(\$0)

Watermaster staff will prepare Board and TAC meeting agenda materials. No assistance from Consultants is expected to be necessary to accomplish this Task.

**M. 1. c., M. 1. d, & M.1.e
Preparation for and
Attendance at Meetings,
and Peer Review of
Documents and Reports
(\$15,000)**

The Consultants' work will require internal meetings and possibly meetings with outside governmental agencies and the public. For meetings with outside agencies, other Consultants, or any other parties which are necessary for the conduct of the work of their contracts, the Consultants will set up the meetings and prepare agendas and meeting minutes to facilitate the meetings. These may include planning and review meetings with Watermaster staff. The costs for these meetings will be included in their contracts, under the specific Tasks and/or subtasks to which the meetings relate. The only meeting costs that will be incurred under Tasks M.1.c and M.1.d will be:

- Those associated with attendance at TAC meetings (either in person or by teleconference connection), including providing periodic progress reports to the Watermaster for inclusion in the agenda packets for the TAC meetings, when requested by the Watermaster to do so. These progress reports will typically include project progress that has been made, problem identification and resolution, and planned upcoming work.
- From time-to-time when Watermaster staff asks Consultants to make special presentations to the Watermaster Board and/or the TAC, and which are not included in the Consultant's contracts for other tasks.

Appropriate Consultant representatives will attend TAC meetings when requested to do so by Watermaster Staff (either in person or by teleconference connection), but will not be asked to prepare agendas or meeting minutes. As necessary, Consultants may provide oral updates to their progress reports (prepared under Task M.1.d) at the TAC meetings.

When requested by the Watermaster staff, Consultants may be asked to assist the TAC and the Watermaster staff with peer reviews of documents and reports prepared by various other Watermaster Consultants and/or entities.

**M. 1. f
QA/QC
(\$0)**

A Consultant (MPWMD) will provide general QA/QC support over the Seaside Basin Monitoring and Management Program. These costs are included in the other tasks.

**M.1.g
Prepare Documents for
SGMA Reporting
(\$2,000)**

Section 10720.8 of the Sustainable Groundwater Management Act (SGMA) requires adjudicated basins to submit annual reports. Most of the documentation that needs to be reported is already generated by the Watermaster in conjunction with preparing its own Annual Reports. However, some information such as changes in basin storage is not currently generated and will require consultant assistance to do so. This task will be used to obtain this consultant assistance, as needed.

I. 2 Comprehensive Basin Production, Water Level and Water Quality Monitoring Program

I. 2. a. Database Management

I. 2. a. 1 Conduct Ongoing Data Entry and Database Maintenance/ Enhancement (\$14,604)

The database will be maintained by a Consultant (MPWMD) performing this work for the Watermaster. MPWMD will enter new data into the consolidated database, including water production volumes, water quality and water level data, and such other data as may be appropriate. Other than an annual reporting of data to another Watermaster Consultant at the end of the Water Year, as mentioned below, no reporting of water level or water quality data during the Water Year is required. However, MPWMD will promptly notify the Watermaster of any missing data or data collection irregularities that were encountered during the quarterly reporting period.

At the end of the Water Year MPWMD will prepare an annual water production, water level, and water quality tabulation in Access format and will provide the tabulation to another Watermaster Consultant who will use that data in the preparation of the SIAR under Task No. I.4.c of the Monitoring and Management Program.

No enhancements to the database are anticipated during 2020.

I. 2. a. 2 Verify Accuracy of Production Well Meters (\$0)

To ensure that water production data is accurate, the well meters of the major producers were verified for accuracy during 2009 and again during 2015. No additional work of this type is anticipated during 2020.

I. 2. b. Data Collection Program

I. 2. b. 1 Site Representation and Selection (\$0)

The monitoring well network review that was started in 2008 has been completed, and sites have been identified where future monitoring well(s) could be installed, if it is deemed necessary to do so in order to fill in data gaps. No further work of this type is anticipated in 2020.

I. 2 b. 2 Collect Monthly Manual Water Levels (\$3,726)

Each of the monitoring wells will be visited on a regular basis. Water levels will be determined by either taking manual water levels using an electric sounder, or by dataloggers. The wells where the use of dataloggers is feasible or appropriate have been equipped with dataloggers. All of the other wells will be manually measured.

This Task includes the purchase of one datalogger and parts for the datalogger to keep in inventory as a spare if needed.

**I. 2. b. 3
Collect Water Quality
Samples.
(\$23,550)**

Water quality data will be collected quarterly from certain of the monitoring wells, but will no longer be collected from the four coastal Sentinel Wells. Discontinuing water quality sampling in those wells is the result of the finding made in 2018 that the water quality samples being extracted from those wells are not representative of the aquifer. Those wells were designed for the purpose of electric induction logging, and will therefore continue to be induction logged twice a year in WY 2020.

In 2012 water quality analyses were expanded to include barium and iodide ions, to determine the potential benefit of performing these additional analyses. These two parameters have been useful in analyzing seawater intrusion potential in other vulnerable coastal groundwater basins, and are briefly mentioned in the Watermaster's annual Seawater Intrusion Analysis Reports. These parameters were added to the annual water quality sampling list for the four 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). Barium and iodide analyses will continue being performed on the 3 most coastal MPWMD monitoring wells in 2020, but will no longer be performed on the Watermaster's coastal Sentinel Wells as discussed above.

Water quality data may come from water quality samples that are taken from these wells and submitted to a State Certified analytic laboratory for general mineral and physical suite of analyses, or the data may come from induction logging of these wells and/or other data gathering techniques. The Consultant or Contractor selected to perform this work will make this judgment based on consideration of costs and other factors.

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, or if a sampling pump needs to be installed on a Sentinel Well, an allowance to purchase a replacement sampling pump has been included in this Task.

Improvements to the QA/QC program for the water quality sampling work were adopted in mid-2017 and will be included in this work in 2020.

**I. 2. b. 4
Update Program Schedule
and Standard Operating
Procedures.
(\$0)**

All recommendations from prior reviews of the data collection program have been implemented. No additional work of this type is anticipated in 2020.

**I. 2. b. 5
Monitor Well
Construction
(\$0)**

An additional monitoring well was installed in 2009. No further work of this type is anticipated in 2020.

**I. 2. b. 6
Reports
(\$2,086)**

This task was essentially eliminated starting in 2020 by having the data collected by MPWMD under task I.2.b.1, and reported in the SIAR under task I.4.c. The only work remaining under this task is for MPWMD to prepare and provide the data appendix to the Consultant that prepares the SIAR.

**I.2.b.7
CASGEM Data Submittal
(\$8,940)**

On the Watermaster's behalf MPWMD 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. 3 Basin Management

**I. 3. a.
Enhanced Seaside Basin
Groundwater Model
(Costs listed in subtasks below)**

The Watermaster and its consultants use a Groundwater Model for basin management purposes.

**I.3.a.1
Update the Existing Model
(\$0)**

The Model, described in the report titled "Groundwater Flow and Transport Model" dated October 1, 2007, was updated in 2009 in order to develop protective water levels, and to evaluate replenishment scenarios and develop answers to Basin management questions. The Model was again updated in 2014.

In 2018 the Model was recalibrated and updated. No further work of this type is anticipated in 2020.

**I. 3. a. 2
Develop Protective Water
Levels
(\$0)**

A series of cross-sectional models was created in 2009 in order to develop protective water levels for selected production wells, as well as for the Basin as a whole. This work is discussed in Hydrometrics' "Seaside Groundwater Basin Protective Water Elevations Technical Memorandum." In 2013 further work was started to refine these protective water levels, but it was found that the previously developed protective water levels were reasonable. Protective water levels will be updated, if appropriate, as part of the work of Task I. 3.c.

**I. 3. a. 3
Evaluate Replenishment
Scenarios and Develop
Answers to Basin
Management Questions
(\$20,000)**

In 2009 the updated Model was used to evaluate different scenarios to determine such things as the most effective methods of using supplemental water sources to replenish the Basin and/or to assess the impacts of pumping redistribution. This work is described in HydroMetrics’ “Seaside Groundwater Basin Groundwater Model Report.” In 2010, and again in 2013, HydroMetrics used the updated Model to develop answers to some questions associated with Basin management.

Modeling performed in 2014, 2015, and 2016 led to the conclusion that groundwater levels in parts of the Laguna Seca Subarea will continue to fall even if all pumping within that subarea is discontinued, because of the influence of pumping from areas near to, but outside of, the Basin boundary. Additional modeling work may be performed in 2020 to further examine this situation. This Task provides a \$20,000 allowance to perform modeling or other work to develop answers to basin management questions, if so directed by the Watermaster Board.

**I. 3. b.
Complete Preparation of Basin
Management Action Plan
(\$0)**

The Watermaster’s Consultant completed preparation of the Basin Management Action Plan (BMAP) in February 2009. The BMAP serves as the Watermaster’s long-term seawater intrusion prevention plan. The Sections that are included in the BMAP are:

Executive Summary

Section 1 – Background and Purpose

Section 2 – State of the Seaside Groundwater Basin

Section 3 – Supplemental Water Supplies

Section 4 –Groundwater Management Actions

Section 5 – Recommended Management Strategies

Section 6 – References

**I. 3. c.
Refine and/or Update the
Basin Management Action
Plan
(\$0)**

During 2018-2019 the BMAP was updated based on new data and knowledge that has been gained since it was prepared in 2009.

No further work of this type is anticipated in 2020. However, after the Groundwater Sustainability Plan (GSP) for the adjacent Monterey Subbasin of the Salinas Valley Groundwater Basin is completed, it may be appropriate to further update the BMAP to reflect the impacts of implementing that GSP. That GSP is scheduled to be completed by early 2022.

I. 3. d.
Evaluate Coastal Wells for
Cross-Aquifer Contamination
Potential
(\$0)

If seawater intrusion were to reach any of the coastal wells in any aquifer, and if a well was constructed without proper seals to prevent cross-aquifer communication, or if deterioration of the well had compromised these seals, it would be possible for the intrusion to flow from one aquifer to another. An evaluation of this was completed in 2012 and is described in MPWMD's Memorandum titled "Summary of Seaside Groundwater Basin Cross-Aquifer Contamination Wells Investigation Process and Conclusions" dated August 8, 2012. This Memorandum did not recommend performing any further work on this matter at this time, other than to incorporate into the Watermaster's Database data from wells that were newly identified by the work performed in 2012. That data has now been incorporated into the Database, and no further work by the Watermaster on this matter is anticipated. In late 2017 a request was made to MPWMD to destroy one of its no-longer-used monitoring wells that is perforated in multiple aquifers (Well PCA-East Multiple). MPWMD performed this work in 2018.

No further work of this type is anticipated in 2020.

**I. 3. e.
Seaside Basin Geochemical
Model
(\$10,000)**

When new sources of water are introduced into an aquifer, with each source having its own unique water quality, there can be chemical reactions that may have the potential to release minerals which have previously been attached to soil particles, such as arsenic or mercury, into solution and thus into the water itself. This has been experienced in some other locations where changes occurred in the quality of the water being injected into an aquifer. MPWMD's consultants have been using geochemical modeling to predict the effects of injecting Carmel River water into the Seaside Groundwater Basin under the ASR program.

In order to predict whether there will be groundwater quality changes that will result from the introduction of desalinated water and additional ASR water (under the Monterey Peninsula Water Supply Project) and advance-treated water (under the Pure Water Monterey Project) geochemical evaluations, and potentially modeling, will be performed in the areas of the Basin where injection of these new water sources will occur.

In 2019 a geochemical evaluation of introducing advance-treated water from the Pure Water Monterey Project was performed. That evaluation concluded that there would be no adverse geochemical impacts as a result of introducing that water into the Basin. A similar evaluation of the impact of introducing ASR water also concluded that there would be no adverse geochemical impacts. An evaluation of introducing desalinated water will be performed if the Monterey Peninsula Water Supply Project's desalination plant proceeds into the construction phase.

If any of the geochemical evaluations indicate the potential for problems to occur, then Montgomery and Associates may use the Watermaster's updated groundwater model, and information about injection locations and quantities, injection scheduling, etc. provided by MPWMD for each of these projects, to develop model scenarios to see if the problem(s) can be averted by changing delivery schedules and delivery quantities. This Task includes an allowance of \$10,000 to have Montgomery and Associates perform such modeling, if necessary.

If the modeling predicts that there may be adverse impacts from introducing these new sources of water, measures to mitigate those impacts will be developed under a separate task that will be created for that purpose when and if necessary.

***I. 4 Seawater Intrusion Response Plan (formerly referred to as the
Seawater Intrusion Contingency Plan)***

**I. 4. a.
Oversight of Seawater
Intrusion Detection and
Tracking
(\$0)**

Consultants will provide general oversight over the Seawater Intrusion detection program under the other Tasks in this Work Plan.

**I. 4. b.
Focused Hydrogeologic
Evaluation
(\$0)**

MPWMD attempted to compile historical and current water quality data in the coastal area to provide more in-depth evaluation of conditions in the shallow Dune Sand/Aromas Sand aquifer in the vicinity of the Sand City Public Works well, where unique water quality conditions and variability have recently been observed as discussed at TAC meetings. However, it was found that no historical water quality data from Cal Am's now-abandoned wells existed, and consequently it was not possible to answer the question of why water quality in the Sand City Public Works well differs from water quality in other wells in the Basin. The Sand City desalination plant could be affecting water quality in this area, but without the prior water quality data from now-abandoned wells, this could not be determined. The results of this work were summarized in 2013 in a brief Technical Memorandum prepared by MPWMD with conclusions and recommendations, and no further work on this matter is planned.

**I. 4. c.
Annual Report- Seawater
Intrusion Analysis
(\$25,322)**

At the end of each water year, a Consultant will reanalyze all water quality data. [Water level and water quality data will be provided to the Consultant in MS Access format. The Consultant will put this data into a report format and will include it as an attachment to the Seawater Intrusion Analysis Report.](#) Semi-annual chloride concentration maps will be produced for each aquifer in the basin. Time series graphs, trilinear graphs, and stiff diagram comparisons will be updated with new data. The annual EM logs will be analyzed to identify changes in seawater wedge locations. All analyses will be incorporated into an annual report that follows the format of the initial, historical data report. Potential seawater intrusion will be highlighted in the report, and if necessary, recommendations will be included. The annual report will be submitted for review by the TAC and the Board. Modifications to the report will be incorporated based on input from these bodies, as well as Watermaster staff.

**I. 4. d
Complete Preparation of
Seawater Intrusion Response
Plan
(\$0)**

The Watermaster's Consultant (HydroMetrics) completed preparation of the long-term Seawater Intrusion Response Plans (SIRP) in February 2009. The Sections that are included in the SIRP are:
Section 1 – Background and Purpose
Section 2 – Consistency with Other Documents
Section 3 – Seawater Intrusion Indicators and Triggers
Section 4 – Seawater Intrusion Contingency Actions
Section 5 - References
No further work on the SIRP is anticipated in 2020.

**I. 4. e.
Refine and/or Update the
Seawater Intrusion Response
Plan
(\$0)**

At the beginning of 2009 it was thought that it might be beneficial or necessary to perform work to refine the SIRP and/or to update it based on new data or knowledge that was gained subsequent to the preparation of the SIRP. However, this did not prove to be necessary, and no further work of this type is anticipated in 2020.

**I. 4. f.
If Seawater Intrusion is
Determined to be Occurring,
Implement Contingency
Response Plan
(\$0)**

The SIRP will be implemented if seawater intrusion, as defined in the Plan, is determined by the Watermaster to be occurring.

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

| | |
|---|---|
| MEETING DATE: | August 14, 2019 |
| AGENDA ITEM: | 5 |
| AGENDA TITLE: | Schedule |
| PREPARED BY: | Robert Jaques, Technical Program Manager |
| SUMMARY: | |
| <p>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 are performing certain portions of the work.</p> <p>Attached is the proposed Work Schedule for FY 2019. It reflects discontinuing the posting of Q1/Q2 water quality and water level data on the Watermaster's website, as discussed in Agenda Item No. 2.C.</p> | |
| ATTACHMENTS: | Schedule of Work Activities for FY 2019 |
| RECOMMENDED ACTION: | Provide Input to Technical Program Manager Regarding Any Corrections or Additions to the Schedule |

Seaside Basin Watermaster 2019 Monitoring and Management Program Work Schedule

| ID | Task Name | Dec '18 | Jan '19 | Feb '19 | Mar '19 | Apr '19 | May '19 | Jun '19 | Jul '19 | Aug '19 | Sep '19 | Oct '19 | Nov '19 | Dec '19 |
|----|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | Replenishment Assessment Unit Costs for Water Year 2020 | | | | | | | | | | | | | |
| 2 | B&F Committee Develops Replenishment Assessment Unit Cost for 2020 Water Year | | | | | | | | | | | | | |
| 3 | If Requested, TAC Provides Assistance to B&F Committee in Development of 2020 Water Year Replenishment Assessment Unit Cost | | | | | | | | | | | | | |
| 4 | Board Adopts and Declares 2020 Water Year Replenishment Assessment Unit Cost | | | | | | | | | | | | | |
| 5 | Replenishment Assessments for Water Year 2019 | | | | | | | | | | | | | |
| 6 | Watermaster Prepares Replenishment Assessments for Water Year 2019 | | | | | | | | | | | | | |
| 7 | Watermaster Board Approves Replenishment Assessments for Water Year 2019 (At December Meeting) | | | | | | | | | | | | | |
| 8 | Watermaster Levies Replenishment Assessment for 2019 | | | | | | | | | | | | | |
| 9 | Monitoring & Management Program (M&MP) Budgets for 2020 and 2021 | | | | | | | | | | | | | |
| 10 | Preliminary Discussion of Potential Scope of Work for 2020 M&MP | | | | | | | | | | | | | |
| 11 | Prepare Draft 2020 M&MP Work Plan | | | | | | | | | | | | | |
| 12 | TAC Approves Draft 2020 M&MP Work Plan | | | | | | | | | | | | | |
| 13 | Prepare 2020 and 2021 O&M and Capital Budgets | | | | | | | | | | | | | |
| 14 | TAC approves Draft 2020 and 2021 O&M and Capital Budgets | | | | | | | | | | | | | |
| 15 | Board approves 2020 M&MP Work Plan, O&M, and Capital Budgets | | | | | | | | | | | | | |
| 16 | 2019 Annual Report | | | | | | | | | | | | | |
| 17 | Prepare Preliminary Draft 2019 Annual Report | | | | | | | | | | | | | |
| 18 | TAC Provides Input on Preliminary Draft 2019 Annual Report | | | | | | | | | | | | | |
| 19 | Prepare Draft 2019 Annual Report (Incorporating TAC Input) | | | | | | | | | | | | | |
| 20 | Board Provides Input on Draft 2019 Annual Report (At December Board Meeting) | | | | | | | | | | | | | |
| 21 | Prepare Final 2019 Annual Report (Incorporating Board Input) | | | | | | | | | | | | | |
| 22 | Watermaster Submits Final 2019 Annual Report to Judge | | | | | | | | | | | | | |
| 23 | MANAGEMENT | | | | | | | | | | | | | |
| 24 | M.1 PROGRAM ADMINISTRATION | | | | | | | | | | | | | |

Seaside Basin Watermaster 2019 Monitoring and Management Program Work Schedule

| ID | Task Name | Dec '18 | Jan '19 | Feb '19 | Mar '19 | Apr '19 | May '19 | Jun '19 | Jul '19 | Aug '19 | Sep '19 | Oct '19 | Nov '19 | Dec '19 |
|----|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 25 | Prepare Initial Consultant Contracts for 2020 | | | | | | | | | | | | | |
| 26 | TAC Approval of Initial Consultant Contracts for 2020 | | | | | | | | | | | | | |
| 27 | Board Approval of Initial Consultant Contracts for 2020 | | | | | | | | | | | | | |
| 28 | M.1.g – Sustainable Groundwater Management Act Reporting Requirements | | | | | | | | | | | | | |
| 29 | Montgomery & Associates Prepares Draft Groundwater Storage Analysis | | | | | | | | | | | | | |
| 30 | Submit SGMA Documentation to DWR | | | | | | | | | | | | | |
| 31 | IMPLEMENTATION | | | | | | | | | | | | | |
| 32 | I.2.a DATABASE MANAGEMENT | | | | | | | | | | | | | |
| 33 | I.2.a.1 Conduct Ongoing Data Entry/Database Maintenance | | | | | | | | | | | | | |
| 34 | I.2.b DATA COLLECTION PROGRAM | | | | | | | | | | | | | |
| 35 | I.2.b.2 Collect Monthly Water Levels (MPWMD) | | | | | | | | | | | | | |
| 36 | I.2.b.3 Collect Quarterly Water Quality Samples (MPWMD) | | | | | | | | | | | | | |
| 37 | I.2.b.6 Reports (from MPWMD) | | | | | | | | | | | | | |
| 38 | MPWMD provides tabularized data summaries of the WQ/WL data for Q1 and Q2 for posting to Watermaster's website | | | | | | | | | | | | | |
| 39 | MPWMD provides tabularized data summaries of the WQ/WL data for Q3 and Q4 for posting to Watermaster's website | | | | | | | | | | | | | |
| 40 | MPWMD provides annual water quality and water level data to Montgomery & Associates for inclusion in the 2019 SIAR | | | | | | | | | | | | | |
| 41 | I.3.a ENHANCED SEASIDE BASIN GROUNDWATER MODEL | | | | | | | | | | | | | |
| 42 | Pueblo Water Resources performs geochemical modeling on AWT water from the PWM Project & Submits Tech Memo on this work | | | | | | | | | | | | | |
| 43 | TAC receives initial report from Pueblo Water Resources containing the findings of the geochemical modeling of the AWT water | | | | | | | | | | | | | |
| 44 | TAC receives revised report from Pueblo Water Resources containing the findings of the geochemical modeling of the AWT water | | | | | | | | | | | | | |
| 45 | Pueblo Water Resources performs geochemical modeling on desalinated water from the MPWSP | | | | | | | | | | | | | |

Seaside Basin Watermaster 2019 Monitoring and Management Program Work Schedule

| ID | Task Name | Dec '18 | | Jan '19 | | Feb '19 | | Mar '19 | | Apr '19 | | May '19 | | Jun '19 | | Jul '19 | | Aug '19 | | Sep '19 | | Oct '19 | | Nov '19 | | Dec '19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----|--|--|----|---------|----|---------|---|---------|----|---------|---|---------|----|---------|----|---------|----|---------|----|---------|----|---------|----|---------|---|---------|----|----|---|----|----|----|---|----|----|----|---|---|----|----|----|---|----|----|----|---|---|----|----|----|---|----|----|----|---|----|----|----|---|---|----|
| | | 25 | 29 | 16 | 23 | 30 | 6 | 13 | 20 | 27 | 3 | 10 | 17 | 24 | 31 | 7 | 14 | 21 | 28 | 5 | 12 | 19 | 26 | 2 | 9 | 16 | 23 | 30 | 7 | 14 | 21 | 28 | 4 | 11 | 18 | 25 | 1 | 8 | 15 | 22 | 29 | 5 | 12 | 19 | 26 | 2 | 9 | 16 | 23 | 30 | 6 | 13 | 20 | 27 | 3 | 10 | 17 | 24 | 1 | 8 | 15 |
| 46 | TAC receives report from Pueblo Water Resources containing the findings of the geochemical modeling of the MPWSP desalinated water | NOT CURRENTLY SCHEDULED - AWAITING START OF CONSTRUCTION OF DESALINATION PLANT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 47 | Board receives report from Pueblo Water Resources containing the findings of the geochemical modeling of the PWM AWT water | ◆ 8/7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 48 | Board receives report from Pueblo Water Resources containing the findings of the geochemical modeling of the MPWSP desalinated water | NOT CURRENTLY SCHEDULED - AWAITING START OF CONSTRUCTION OF DESALINATION PLANT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 49 | I.3.c Refine and/or Update the BMAP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | TAC Receives Presentation on Preliminary Draft Updated BMAP | Completed ◆ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 51 | TAC receives Gus Yale's Memo on the Updated BMAP | Completed ◆ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 52 | Montgomery & Associates makes revisions to the Updated BMAP to respond to Gus Yale's Memo & TAC Input | Completed ◆ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 53 | TAC Approves Draft Updated BMAP & Provides Direction to Technical Program Manager Regarding Development of Information on NSY Issues | Completed ◆ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 54 | TAC Discusses NSY and Sustainable Yield Issues | Completed ◆ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 55 | Watermaster Staff Solicits Input on NSY Issues from Standard Producers & Legal Counsel | Completed ◆ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 56 | TAC Receives Report on Outcome of Discussions with Standard Producers and Legal Counsel & Prepares Recommendation to Board on Ramp-Down issues | Completed ◆ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 57 | Board receives presentation on the Draft Updated BMAP from Montgomery & Associates, TAC recommendation regarding ramp-down issues, and Information on NSY and Sustainable Yield Issues | COMPLETED ◆ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 58 | Watermaster Staff and TAC Develop Responses to Questions/Direction from Board on NSY and Sustainable Yield Issues | THIS WORK WAS NOT REQUIRED | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 59 | Board Receives Information in Response to its Questions/Direction on NSY and Sustainable Yield Issues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 60 | I.4.c Annual Seawater Intrusion Analysis Report (SIAR) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 61 | Montgomery & Associates Provides Draft SIAR to Watermaster | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 62 | TAC Approves Annual Seawater Intrusion Analysis Report (SIAR) | ◆ 11/13 ◆ 11/20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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

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|---|--|
| MEETING DATE: | August 14, 2019 |
| AGENDA ITEM: | 6 |
| AGENDA TITLE: | Other Business |
| PREPARED BY: | Robert Jaques, Technical Program Manager |
| SUMMARY: The “Other Business” agenda item is intended to provide an opportunity for TAC members or others present at the meeting to discuss items not on the agenda that may be of interest to the TAC. | |
| ATTACHMENTS: | None |
| RECOMMENDED ACTION: | None required – information only |