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

DATE: Wednesday, July 13, 2022
MEETING TIME: 1:30 p.m.

IN KEEPING WITH GOVERNOR NEWSOM’S EXECUTIVE ORDERS N-29-20 AND N-35-20,
THE TECHNICAL ADVISORY COMMITTEE MEETING WILL BE CONDUCTED BY
TELECONFERENCE AND WILL NOT BE HELD IN THE MONTEREY ONE WATER
OFFICES.

YOU MAY ATTEND AND PARTICIPATE IN THE MEETING AS FOLLOWS:
JOIN FROM A PC, MAC, IPAD, IPHONE OR ANDROID DEVICE (NOTE: ZOOM APP MAY
NEED TO BE DOWNLOADED FOR SAFARI OR OTHER BROWSERS PRIOR TO LINKING)
BY GOING TO THIS WEB ADDRESS:
https://us02web.zoom.us/j/82897400214?pwd=rjmPQSHksGNzB2BvaixdwljX9fj6CT.1

If joining the meeting by phone, dial this number: +1 669 900 9128 US (San Jose)

If you encounter problems joining the meeting using the link above, you may join from your Zoom
screen using the following information:
Meeting ID: 828 9740 0214
Passcode: 989053

OFFICERS
Chairperson: Jon Lear, MPWMD
Vice-Chairperson: Tamara Voss, MCWRA

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

Agenda Item

1. Public Comments
2. Administrative Matters:
   A. Make Findings Required Under AB 361 Regarding Holding Meetings Via
      Teleconference
   B. Approve Minutes from the May 11, 2022 Meeting
   C. Sustainable Groundwater Management Act (SGMA) Update
3. Continued Discussion and Direction About Developing Additional Flow Direction/Flow
   Velocity Modeling Scenarios
4. Initial Discussion Regarding Monitoring and Management Program (M&MP) for FY
   2023
5. Schedule
6. Other Business

The next regular meeting is planned for Wednesday August 10, 2022 at 1:30 p.m.
**SUMMARY:**
As discussed at prior TAC meetings, in order to remain in compliance with AB 361 the TAC needs to adopt certain findings every 30 days in order to keep meeting remotely.

One action required at today’s meeting is to readopt the same findings the TAC adopted at its November 17 meeting, namely that:

1. The Governor’s proclaimed state of emergency is still in effect,
2. The TAC has reconsidered the circumstances of the state of emergency, and
3. The Monterey County Health Officer continues to recommend social distancing measures for meetings of legislative bodies.

I recommend that the TAC again adopt these three findings.

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<th>MEETING DATE:</th>
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<td>AGENDA ITEM:</td>
<td>2.A</td>
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<tr>
<td>AGENDA TITLE:</td>
<td>Make Findings Required Under AB 361 Regarding Holding Meetings Via Teleconference</td>
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<tr>
<td>PREPARED BY:</td>
<td>Robert Jaques, Technical Program Manager</td>
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<tr>
<td>ATTACHMENTS:</td>
<td>None</td>
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<tr>
<td>RECOMMENDED ACTION:</td>
<td>Approve Making the Findings Described Above</td>
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**SEASIDE BASIN WATER MASTER**  
**TECHNICAL ADVISORY COMMITTEE**  

*****AGENDA TRANSMITTAL FORM***

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<tr>
<td>AGENDA ITEM:</td>
<td>2.B</td>
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<tr>
<td>AGENDA TITLE:</td>
<td>Approve Minutes from the May 11, 2022 Meeting</td>
</tr>
<tr>
<td>PREPARED BY:</td>
<td>Robert Jaques, Technical Program Manager</td>
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**SUMMARY:**

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

**ATTACHMENTS:** Minutes from this meeting

**RECOMMENDED ACTION:** Approve the minutes
Attendees: TAC Members
City of Seaside – Nisha Patel
California American Water – Tim O’Halloran
City of Monterey – No Representative
Laguna Seca Property Owners – Wes Leith
MPWMD – No Representative
MCWRA – Tamara Voss
City of Del Rey Oaks – John Gaglioti
City of Sand City – Leon Gomez
Coastal Subarea Landowners – No Representative

Watermaster
Technical Program Manager – Robert Jaques
Administrative Officer Assistant – Michael Paxton

Consultants
Montgomery & Associates – Pascual Benito

Others
MPWMD – Maureen Hamilton

The meeting was convened at 1:34 p.m. with Ms. Voss Chairing the meeting in Mr. Lear’s absence.

1. Public Comments
There were no public comments.

2. Administrative Matters:
   A. Approve Minutes from the April 27, 2022 Meeting
   On a motion by Mr. Gaglioti, seconded by Mr. O’Halloran, the minutes were unanimously approved as presented.

   B. Sustainable Groundwater Management Act (SGMA) Update
   Mr. Jaques presented the agenda packet materials for this item and there was no other discussion.

   C. Make Findings Required Under AB 361 Regarding Holding Meetings Via Teleconference
   Mr. Jaques briefly summarized the agenda packet materials for this item. A motion was made by Mr. O’Halloran, seconded by Mr. Gaglioti, to adopt the findings contained in the agenda packet. The motion passed with Mr. Leith voting no.

3. Results from Martin Feeney’s March 2022 Induction Logging of the Sentinel Wells and Recommendation to Reduce Frequency of Induction Logging
Mr. Jaques summarized the agenda packet materials for this item.

Mr. Gaglioti said he concurred with reducing the induction logging frequency because of its long-term repetitive results.

Mr. Benito said that under more severe hydrologic conditions than those used in the flow direction/flow velocity modeling work, such as more droughts or longer periods of drier weather, seawater intrusion could move in land faster. He referred to Figure 1 on page 20 of the agenda packet showing the first six years of projected seawater intrusion advancement rates during the recent drought.

Ms. Voss reported that in the 1970s Dr. Gary Green reported possible Santa Margarita aquifer outcropping into Monterey Bay. She felt that vertical migration downward from the Paso Robles into the Santa Margarita aquifer was the most likely route for seawater to enter the Santa Margarita aquifer. She agreed with reducing the induction logging frequency to one time per year. She asked what time of year the one event would be scheduled. Mr. Jaques responded that Mr. Feeney had recommended that it be done at the end of the peak irrigation season which means it would be done in the fall of each year. Ms. Voss said she concurred with that recommendation.

Mr. Benito concurred with Ms. Voss’s comments about possible out-cropping of the Santa Margarita aquifer into Monterey Bay, and that the potential for direct seawater intrusion coming into that aquifer might exist.

Mr. O’Halloran said he concurred with reducing the induction logging frequency to one time per year and doing it in the fall.

On a motion by Mr. O’Halloran seconded by Mr. Gaglioti, the recommendation to reduce the induction logging frequency to once per year and to have it done in the fall, passed unanimously.

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

Mr. Gaglioti supported the reduced scope of work as a way to keep this work moving along. Mr. O’Halloran said he concurred.

Ms. Voss said she concurred and that ample discussion on this topic had been held at previous TAC meetings. She felt the spreadsheet approach was a more cost-effective way of getting information.

On a motion by Mr. Gaglioti, seconded by Mr. O’Halloran, the recommendation to approve Montgomery & Associates RFS 2022-4 was unanimously approved.

5. Resumed Discussion of Pros and Cons of Using the Sustainable Yield (SY) Approach in Place of the Natural Safe Yield (NSY) Approach for Basin Management
Mr. Jaques summarized the agenda packet materials for this item.

Mr. Gaglioti said he liked the Sustainable Yield approach, because it has all the protocols to better manage the basin. He felt it would give an “earlier warning” of potential basin management problems, but that it was too early to perform a Sustainable Yield analysis because the GSPs for the adjacent subbasins are not that well developed. He supported the recommendation to not undertake a Sustainable Yield analysis at this time.
Ms. Voss said she agreed that the Sustainable Yield analysis would provide more useful basin management information than the Natural Safe Yield analysis, but that it was very costly and should be deferred until the GSPs for the adjacent subbasins are further developed.

Mr. Leith said he concurred with deferring undertaking a Sustainable Yield analysis.

Mr. Benito said the original HydroMetrics proposal to perform a Sustainable Yield analysis included some task work that has now already been done under the recent modeling work, so that would somewhat reduce the scope.

A motion was made by Mr. Gaglioti, seconded by Ms. Voss, to hold off performing a Sustainable Yield analysis, but to revisit this decision on an annual basis. The motion carried unanimously.

6. Schedule
Mr. Jaques noted that the only change in the schedule in this update was the timing of some of the tasks. No new tasks were added. There was no other discussion.

7. Other Business
There was no other business.

The meeting adjourned at 2:14 PM.
**SEASIDE BASIN WATER MASTER**
**TECHNICAL ADVISORY COMMITTEE**

* * * AGENDA TRANSMITTAL FORM * * *

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<tr>
<td>AGENDA TITLE:</td>
<td>Sustainable Groundwater Management Act (SGMA) Update</td>
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<td>PREPARED BY:</td>
<td>Robert Jaques, Technical Program Manager</td>
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**At the State level:**
Since my last update I received the following notification from the State that impacts the Watermaster, with a few of the statements highlighted in yellow that pertain to the Seaside Basin:

*The California Department of Water Resources (DWR) would like to notify you that airborne electromagnetic (AEM) geophysical surveys have been scheduled for the Monterey Bay Area. The surveys will begin in November and will cover the following groundwater basins: Seaside, Monterey, 180/400 (partially surveyed Summer 2021), Eastside (partially surveyed Summer 2021), Langley, Pajaro, Santa Cruz Mid-County, Santa Margarita, San Benito, and Llagas (partial).*

This survey is a part of DWR’s Statewide AEM Survey Project to collect AEM data throughout the state’s high- and medium-priority groundwater basins, where data collection is feasible, and in a limited number of low- or very low-priority groundwater basins that are adjacent to a survey area. The surveys are being conducted to improve the understanding of groundwater resources and to support the local and state goal of improved groundwater management. The surveys are funded through voter-approved Proposition 68 and there is no additional cost to GSAs.

In preparation for the survey, DWR would like to invite you to a meeting to provide an overview of the project and to request that GSAs share (1) maps showing the GSA’s areas of interest (areas where the GSA would like AEM data collected) and (2) existing lithology and geophysical logs (described in the Existing Data Fact Sheet). More information on these requests will be provided during the meeting.

I plan to attend the DWR meeting once it is scheduled.

**At the Monterey County level:**
Attached are summaries of meetings held in June 2022.

<table>
<thead>
<tr>
<th>ATTACHMENTS:</th>
<th>Meeting Summaries</th>
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<td>RECOMMENDED ACTION:</td>
<td>None required – information only</td>
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SUMMARY OF
PURE WATER MONTEREY, AND
SALINAS VALLEY AND
MARINA COAST WATER DISTRICT GROUNDWATER SUSTAINABILITY
AGENCY ZOOM MEETINGS
IN JUNE 2022

Note: This is a synopsis of information from these meetings that may be of interest to the Seaside Basin Watermaster

SVBGSA 180/400-Foot Aquifer GSP Implementation Committee Meeting June 2, 2022:
Topics discussed at this meeting included:
• The new SVBGSA committee structure was described.
  o Some objections were made to the changes in membership on various committees and numerous questions similar to those raised at an earlier Advisory Committee meeting where the same topic was discussed were made.
  o One question that was raised was how will disputes between subbasins be resolved? Staff responded that the issues would come to the Advisory Committee for discussion and recommendations and then go to the Board for decision and direction.
  o This committee will meet every other month.
• The $7.6 million Implementation Grant that was received is now being used to fund feasibility studies of the projects and management actions listed in the GSP.
• Changes to the 180/400 foot GSP were discussed.
  o With regard to Water Budgets in Chapter 6, the amount of sea water intrusion was increased from 2,900 AFY to 12,600 AFY.
  o The projected sustainable yield (after sustainability has been reached) and overdraft figures were revised to the following:

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<thead>
<tr>
<th>Year</th>
<th>2030</th>
<th>2070</th>
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<tr>
<td>Sustainable Yield (AFY)</td>
<td>111,200</td>
<td>116,900</td>
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<tr>
<td>Over Draft (AFY)</td>
<td>13,400</td>
<td>13,400</td>
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• There was a brief discussion of progress on the Deep Aquifer Study. The Phase 1 preliminary investigation will be completed this summer. Phase 2 will consist of field studies including geophysics, aquifer testing, and groundwater quality samples. Phase 3 will determine what comes constitutes the deep aquifer and how to manage it including water budgets. There was much discussion on this topic.
• There was a brief update on progress in starting to implement the CSI P projects that are in the GSP.
• A Department of Conservation $10 million grant for land-owner guided land acquisition to help acquire land to be used to recharge rainfall (stormwater runoff) into the groundwater basin has been received. The grant was made to a coalition of groups which includes the SVBGSA. The work of the grant needs to be completed within a three-year period.

PWM Water Quality and Operations Committee Meeting June 22, 2022:
Discussion at this meeting included:
• Phase 3 and Deep Injection Well No. 3 is being closed out now. Both of the new deep injection wells are in operation.
• Two construction packages for the Pure Water Monterey Expansion Project are now “shovel ready”.
• The Amended Water Purchase Agreement has now been signed by all parties and is awaiting PUC approval.
• All water quality requirements in the first quarter of 2022 for the Pure Water Monterey Project were met and no exceedances were reported.
• There have been several monthly water quality constituent exceedances at some of the monitoring wells, but none that exceeded the annual average maximum contaminant level limits.
• An update was provided on the ASR-1 well problem:
  o Mr. Stoldt of MPWMD reported that:
    ▪ There is a dispute resulting from the Division of Drinking Water’s prohibition to Cal Am for use of well ASR-1 as a production well. The disputes pertain to requirements under the Water Purchase Agreement and the Watermaster’s Storage and Recovery Agreement. Meet and confer discussions are continuing in hopes of resolving the disputes, with the next meeting scheduled for August 2.
    ▪ ASR-1 was taken off-line by MPWMD for the extrinsic tracer test.
    ▪ In August 2021 MPWMD told Cal Am they wanted to take ASR-1 off-line for extraction purposes.
    ▪ Physical solutions are being explored including connecting Cal Am’s Paralta well to Cal Am’s Monterey Main system, using ASR wells 3 and/or 4 for more production, using new Deep Injection Wells that are further away for injection, and others.
• With regard to the ASR-1 well problem, I asked two questions and got these responses:
  o A letter dated September 14, 2021 from the Division of Drinking Water (DDW) to Cal Am included the following statements:
    “The intrinsic tracer study confirmed that the estimated underground retention time to the ASR wells 01 and 02 was insufficient and would not meet the minimum underground retention time that is required, and “the recycled water that reached ASR well 1 during the 2020 extraction period potentially did not meet the 12-log virus reduction requirement.”
    I commented that I did not recall these exceedances being discussed at any of the Water Quality and Operations Committee meetings and asked for feedback from Monterey One Water (M1W) on this. Dave Lindow and Tamsen McNarie (both with M1W) reported that after receiving DDW’s letter M1W sent a response clarifying what they felt was a misunderstanding. They commented further that no notices of violation had been issued to them. They will provide me a copy of their response letter to help better understand the situation with regard to that letter.
  o I asked if the inability of Cal Am to use ASR-1 as a production well would hamper their ability to meet customer demands in the near future. Mr. Cook of Cal Am responded that Cal Am is currently reviewing its ability to meet its near future demands without ASR-1. He noted that reduced Pure Water Monterey injection would probably allow ASR-1 to be redesignated by DDW as a production well. They are looking at other physical solutions and he is hopeful of being able to meet demands during the current water year with ASR-1 still out of service as a production well. However, starting with the next water year Cal Am will need more production capacity to meet their water demands because next water year under the CDO they will have less availability of water from the Carmel River Basin.
• The next meeting of the Committee will be on September 28, 2022.
**SEASIDE BASIN WATER MASTER**  
**TECHNICAL ADVISORY COMMITTEE**

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<td>AGENDA ITEM:</td>
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<tr>
<td>AGENDA TITLE:</td>
<td>Continued Discussion and Direction About Developing Additional Flow Direction/Flow Velocity Modeling Scenarios</td>
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<tr>
<td>PREPARED BY:</td>
<td>Robert Jaques, Technical Program Manager</td>
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**SUMMARY:**
At the TAC’s March 9, 2022 meeting when the Montgomery & Associates presentation on the Flow Direction/Flow Velocity Modeling work was made, there was discussion about potentially modeling additional scenarios to determine what the impacts would be of using different assumptions. An excerpt from the minutes of that meeting describing that discussion is attached.

Specifically, the assumptions that were discussed included:
- Whether using a repeat of historical hydrology might underestimate the effects of climate change, and that in future years there might be less than the historical pattern of rainfall. This could result in:
  - Less water available for ASR injection into the Basin.
  - An increase in water demands for irrigation within the service areas of Cal Am and other urban water suppliers.
  - A reduction in the amount of Pure Water Monterey (PWM) Project water that could be supplied to the Basin due to the PWM Project having to provide more water to the Castroville Seawater Intrusion Project because of increased irrigation demands there.
- The impacts of using recycled water on the Seaside golf courses.
- The timing of the start of Cal Am’s overpumping payback of 700 AFY for 25 or more years.

There was consensus to resume this discussion after the replenishment modeling work had been completed. The initial replenishment water modeling work has now been completed, and the additional replenishment water analyses are expected to be completed in early August. Pascual Benito will give us an oral progress report on that work at today’s meeting.

Resuming this discussion is on today’s agenda, so if the TAC feels that additional Flow Direction/Flow Velocity Modeling work should be done, that work can be included in the proposed FY 2023 Monitoring and Management Program and its Budget.

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<th>ATTACHMENTS:</th>
<th>Excerpt from Minutes of the March 9, 2022 TAC meeting</th>
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<tr>
<td>RECOMMENDED ACTION:</td>
<td>Provide direction on whether or not to recommend to the Board to perform additional flow direction/flow velocity modeling scenarios</td>
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3. Presentation and Discussion of Flow Velocity Modeling

Mr. Jaques introduced this item and Mr. Benito provided a PowerPoint presentation on the modeling work. Copies of his presentation slides are attached.

Mr. Gaglioti asked about what level of confidence there was in the findings of the modeling. Mr. Benito responded that the modeling is based on repeating historical hydrology patterns. Mr. Gaglioti said he felt future years are likely to be drier than the historical patterns.

Mr. Lear commented that in Santa Cruz County the Mid-Coast Basin is modeling more conservative (drier) hydrology projections.

Mr. Benito said other climatic conditions and hydrology projections could be considered. He reported that depressed water levels inland has the greatest impact on the advance of sea water intrusion. He went on to say that the use of recycled water on the Seaside golf courses will have a significant beneficial impact, as will the Cal Am payback program.

Mr. Gaglioti observed that ASR has a strong impact, and if ASR is less than is being projected it would have a harmful impact. Also, he asked if Seaside’s use of recycled water at its golf courses to enable it to serve new development projects had been considered. Mr. Benito responded that this has been addressed in the modeling work.

Ms. Voss asked Mr. Benito a question about recharge during wet years. He responded that surface recharge has little impact, mainly in wet years there can be an increase in ASR as a result of increased rainfall in Carmel Valley. This helps raise groundwater levels due to the banking of the ASR-injected water.

Mr. O’Halloran said he views the assumptions used in the modeling work as a best-case scenario, and expressed concern that demand will be higher and Cal Am may not be able to do all of its projected payback, and that the hydrology projections used in the modeling may be overly optimistic.

Mr. Lear commented that looking at other scenarios in the replenishment water modeling work will provide some insight.

Mr. Benito reported that a recent tracer study with the Pure Water Monterey Project found that the initially estimated porosity values needed to be adjusted in order to match the tracer study results. So in the Technical Memorandum includes a range of porosity values (8% to 16%).

He also pointed out that particle tracking is not a substitute for full seawater intrusion modeling. Also, it does not tell us where the seawater-freshwater interface is located now, or where it will be in the future.

The most significant inland flows occur in the lower Paso Robles aquifer.

The hydrologic conditions that are assumed in the modeling have a significant impact on travel times.

There was brief discussion of the potential benefit of evaluating the impacts of adjacent subbasin Groundwater Sustainability Plan projects being implemented.

Mr. Jaques asked Mr. Benito how it might be possible to locate the seawater-freshwater interface in the offshore area. He responded that the Seawater Intrusion Group’s seawater intrusion model and airborne
electromagnetic work may provide helpful information. Mr. Lear commented that in the Mid-County Basin in Santa Cruz County they did repeatable surveys to detect changes in location.

Mr. Gaglioti asked Mr. Jaques the status of the airborne electromagnetic work. Mr. Jaques said he was not aware of the status of Rosemary Knight’s proposed development of further airborne electromagnetic surveys. He noted that DWR is apparently not planning to do airborne electromagnetic surveys in the Seaside basin.

Mr. Gaglioti recommended that in the staff report to the Board on this modeling work that the time-series graphics should be highlighted as being very climate dependent. He felt that people could get a misleading impression by assuming that the climate pattern will repeat itself. He went on to say he would like to see more “dire” (likely) drought conditions evaluated in the flow direction and flow velocity modeling work. He referred to Mr. Benito’s slides number four and five which he felt could give the wrong impression that everything will be fine with Pure Water Monterey Expansion and Cal Am payback taking place.

Mr. O’Halloran said that if the TAC recommends running additional replenishment water scenarios (a topic to be discussed under agenda item 4 during today’s meeting) it would be beneficial to put discussion of the flow direction and flow velocity Technical Memorandum on hold and then determine if it should include modeling of additional scenarios.

Ms. Voss said it was important to highlight which components affect the results of the flow direction and flow velocity analysis the most, e.g. ASR, Pure Water Monterey Expansion, Cal Am repayment, etc. Mr. Lear suggested identifying what percentage of groundwater level rise is attributed to each of those components. Mr. Benito said he could develop graphics and text to explain this.

Mr. Lear recommended tabling further discussion of the flow direction and flow velocity modeling Technical Memorandum for the time being, and there was consensus to support this recommendation.
## Initial Discussion Regarding Monitoring and Management Program (M&MP) for FY 2023

### Summary

The Schedule calls for the TAC to approve the FY 2023 Management and Monitoring Program (M&MP) and Budget at its August 2022 meeting. This will then go on to the Board for approval at its September 7, 2022 meeting.

In order to obtain TAC input and direction regarding these items, I have reviewed the FY 2022 M&MP and have edited it to reflect changes to work items that I anticipate for the FY 2023 M&MP. A copy of this Proposed 2023 M&MP is attached.

Items highlighted in **yellow** are costs or other items for the various tasks that I will evaluate and update as necessary, based on the TAC’s input at today’s meeting and discussions with our consultants.

Other than the obvious need to change the dates in the M&MP from 2022 to 2023 (which I have done), all other proposed changes from the 2022 M&MP are shown in Track-Change format (deletions in **red** strikeout and additions in **blue**) for the TAC to consider in preparing the 2023 M&MP. Most of the proposed revisions are relatively minor, but:

- **Task I.2.b.3** reflects reducing the frequency of induction logging of the Sentinel Wells from twice per year to once per year, as approved by the TAC and the Board earlier this year.
- **Task I.2.b.5** mentions that a replacement for Monitoring Well FO-9 Shallow, which had to be destroyed because of casing leakage, may be installed in 2022 or may not be installed until 2023. A Watermaster cost-share for this work was included in the 2022 M&MP Capital Budget, and will be included in the 2023 M&MP Capital Budget in case the work is not performed until 2023.
- **Task I.3.a.3** is again proposed with a budget of $60,000 in order to provide funds for modeling or other work, such as additional Flow Direction/Flow Velocity analyses or work to assess other Basin management issues, if so directed by the Board. In 2022 such additional work essentially exhausted the amount budgeted for this Task, as well as the M&MP Contingency line-item amount.
If there are other revisions the TAC would like to make to prepare the M&MP for 2023, they can be brought up at today’s meeting. The final M&MP for 2023, which will reflect any revisions or additions/deletions that come up at today’s meeting and input from our consultants, will be on the TAC’s August 10, 2022 Agenda for approval.

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<th>ATTACHMENTS:</th>
<th>Draft FY 2023 Seaside Groundwater Basin M&amp;MP</th>
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<tr>
<td>RECOMMENDED ACTION:</td>
<td>Provide Input to Technical Program Manager Regarding Any Corrections or Additions to the Draft FY 2023 M&amp;MP</td>
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**DRAFT**

**Seaside Groundwater Basin**  
**2023 Monitoring and Management Program**

The tasks outlined below are those that are anticipated to be performed during 2023. Some Tasks listed below are specific to 2023, 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

<table>
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<th>Task</th>
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| 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  
($27,560) | 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, M.1.d, and M.1.e will be:  
- Those associated with attendance at TAC meetings (either in person or by teleconference/videoconference 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 (either in person or by teleconference/videoconference connection) when requested to do so by Watermaster Staff, 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
(S0)

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
($2,464,980)

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

<table>
<thead>
<tr>
<th>I. 2. a. 1</th>
<th>Conduct Ongoing Data Entry and Database Maintenance/Enhancement</th>
<th>($23,176)</th>
</tr>
</thead>
</table>

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 in Task I.4.c 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.

Under this Task, when requested MPWMD will also respond to requests from consultants and others for data from the database.

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 2023.

A separate consultant will maintain the Watermaster’s website.

<table>
<thead>
<tr>
<th>I. 2. a. 2</th>
<th>Verify Accuracy of Production Well Meters</th>
<th>($)0</th>
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</thead>
</table>

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 2023.

#### I. 2. b. Data Collection Program

<table>
<thead>
<tr>
<th>I. 2. b. 1</th>
<th>Site Representation and Selection</th>
<th>($)0</th>
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</table>

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 2023.
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.
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 have historically been well therefore continue to be induction logged twice a year in WY 2022. Because many years of logging data have shown essentially no change in aquifer water quality, beginning in WY2023 the frequency of induction logging of the Sentinel Wells will be reduced to once per year.

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 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 2023.

As discussed in the 2013 Annual Report, the Watermaster reduced the frequency of water quality sampling at monitoring well SBWM-5 (the Camp Huffman well) to once every 3 years beginning in WY 2014. This was based on the January 2010 well construction report in which the well installation hydrogeologic consultant (Martin Feeney) recommended doing initial sampling annually for several years, then reducing the frequency of sampling once it was felt that the water chemistry had been established. Mr. Feeney suggested going to once every five years after initial water quality had been established. Starting with WY 2014 the Watermaster elected to go to once every three years as a more conservative approach. The results from water quality sampling that has performed to date on these wells shows there has been little change in water quality at these wells. Therefore, the sampling frequency has been reduced to once every five years beginning in 2022.

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 fails or is found to be no longer adequate due to declining groundwater levels, an allowance of $900 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 2023.

| I. 2. b. 4 Update Program Schedule and Standard Operating Procedures. (S0) | All recommendations from prior reviews of the data collection program have been implemented. No additional work of this type is anticipated in 2023. |
| I. 2. b. 5 Monitor Well Construction (S0) | A well to replace Monitoring Well FO-9 Shallow, which in 2021 was found to have a leaking casing, is expected to be installed in either 2022 or 2023. The costs for this work were included in the 2022 M&MP Capital Budget. If this replacement well is not installed in 2022, the costs will be included in the 2023 M&MP Capital Budget. No costs for this work are included in the 2023 Operations Budget. |
| I. 2. b. 6 Reports ($3,136) | This task was essentially eliminated starting in 2020 by having the data collected by MPWMD under tasks I.2.b.1, I.2.b.2, and I.2.b.3 reported in the SIAR under Task I.4.c. The work remaining under this task is for MPWMD to prepare and provide the data appendix to the Consultant that prepares the SIAR. No formalized reporting on a quarterly basis is required. However, MPWMD will promptly notify the Watermaster and the Consultant that prepares the SIAR of any missing data or data collection irregularities in the water quality and water level data collected under Tasks I.2.b.2 and I.2.b.3. |
| I.2.b.7 CASGEM Data Submittal ($4,704) | 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**

<table>
<thead>
<tr>
<th>I.3.a.1</th>
<th>Update the Existing Model ($0)</th>
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<tbody>
<tr>
<td></td>
<td>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 2023.</td>
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<tr>
<td>I. 3. a. 2</td>
<td>Develop Protective Water Levels ($0)</td>
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<td>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.</td>
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</table>
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, 2013, and
again in 2013–2022, HydroMetrics used the updated Model was used to
develop answers to some questions associated with Basin management.

Modeling performed to date indicates that the solution to the problem of
water levels in the Seaside Basin being below Protective Water Levels will
be to inject replenishment water.

Within the next few years there may be the ability of either of two projects
to provide additional water for Basin replenishment. One of these is the
Monterey Peninsula Water Supply Project’s (MPWSP) desalination plant.
The other is the Pure Water Monterey (PWM) Expansion Project. Growth
is built into each of these projects’ plant capacity, and the full capacity of
these plants will likely not all be needed for some years into the future.
During the time period that these projects would have excess capacity, they
could potentially provide water for Basin replenishment.

Montgomery & Associates agrees that injection is the quickest way to
bring groundwater levels up in the Seaside Basin. The original 3,500 AFY
PWM Project is already in operation, and construction of either the
MPWSP desalination plant or the PWM Expansion Project is expected to
begin within the next few years. Modeling to determine the additional
amount of replenishment water needed to achieve protective groundwater
level elevations throughout the Basin, after either or both of those projects
are constructed, would be was performed in 2022 to aid the Watermaster in
pursuing approaches to obtain that additional water for Basin
replenishment.

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 or other work may be performed in 2023
to update the previous work.

Based on input from Montgomery & Associates it is expected to cost about
$10,000 to update the earlier replenishment water modeling that was
performed in 2013. Hence, This Task includes a $460,000 allowance to perform
this further modeling or analyses pertaining to Basin management
issues— if so directed by the Watermaster Board.
Modeling performed in 2014, 2015, and 2016 led to the conclusion that groundwater levels in parts of the Laguna Seca Subbasin will continue to fall, even if all pumping within that subbasin 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 2023 after the Groundwater Sustainability Plan for the Monterey Subbasin (being jointly prepared by the Salinas Valley Basin and the Marina Coast Water District Groundwater Sustainability Agencies) 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.

<table>
<thead>
<tr>
<th>I. 3. b. Complete Preparation of Basin Management Action Plan ($0)</th>
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<tr>
<td>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</td>
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<th>I. 3. c. Refine and/or Update the Basin Management Action Plan ($0)</th>
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<td>In 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 2023. However, although no funds are budgeted for this Task in 2023, at some point after the Groundwater Sustainability Plan (GSP) for the adjacent Monterey Subbasin of the Salinas Valley Groundwater Basin is completed in early 2022, at some point it may be appropriate to further update the BMAP to reflect the impacts of implementing that GSP.</td>
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<tr>
<th>I. 3. d. Evaluate Coastal Wells for Cross-Aquifer Contamination Potential ($0)</th>
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<tr>
<td>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 led to casing leakage, 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, other than to incorporate into the Watermaster’s Database data from wells that were...</td>
</tr>
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</table>
newly identified by the work performed in 2012. That data has now been incorporated into the Database. In 2021 the Watermaster TAC examined the feasibility of performing conductivity profiling of certain of the near-coastal wells that were evaluated in the 2012 Memorandum, as a method of determining if any of those wells was allowing downward migration of intruded water from the shallow dunes aquifer to enter the Paso Robles aquifer. However, it was concluded that conditions in those wells would make it infeasible to perform such work.

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 2023.

### L.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 Cannel 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 the geochemical evaluation of injecting desalinated water indicates 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 (formally referred to as the Seawater Intrusion Contingency Plan)

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Details</th>
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<tbody>
<tr>
<td><strong>I. 4. a.</strong> Oversight of Seawater Intrusion Detection and Tracking ($0)</td>
<td>Consultants will provide general oversight over the Seawater Intrusion detection program under the other Tasks in this Work Plan.</td>
</tr>
<tr>
<td><strong>I. 4. c.</strong> Annual Report- Seawater Intrusion Analysis ($26,29027,176)</td>
<td>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. If possible, 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 induction 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.</td>
</tr>
<tr>
<td><strong>I. 4. e.</strong> Refine and/or Update the Seawater Intrusion Response Plan ($0)</td>
<td>At the beginning of 2009, and again in 2021, 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 2023.</td>
</tr>
<tr>
<td><strong>I. 4. f.</strong> If Seawater Intrusion is Determined to be Occurring, Implement Contingency Response Plan ($0)</td>
<td>The SIRP will be implemented if seawater intrusion, as defined in the Plan, is determined by the Watermaster to be occurring.</td>
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</table>
**SEASIDE BASIN WATER MASTER**  
**TECHNICAL ADVISORY COMMITTEE**

* * * AGENDA TRANSMITTAL FORM * * *

<table>
<thead>
<tr>
<th>MEETING DATE:</th>
<th>July 13, 2022</th>
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</thead>
<tbody>
<tr>
<td>AGENDA ITEM:</td>
<td>5</td>
</tr>
<tr>
<td>AGENDA TITLE:</td>
<td>Schedule</td>
</tr>
<tr>
<td>PREPARED BY:</td>
<td>Robert Jaques, Technical Program Manager</td>
</tr>
</tbody>
</table>

**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 are performing certain portions of the work. Attached is the updated schedule for 2022 activities.

Some items of note include:
- Montgomery & Associates presentation to the TAC on the Additional Replenishment Water Scenario Analysis is scheduled for the TAC’s August 10th meeting, based on Pascual Benito completing the work on that schedule.
- Montgomery & Associates presentation of the Final Replenishment Water Modeling Report (including the additional analysis) is scheduled for the Board’s September 7th meeting, again based on Pascual Benito completing the work on that schedule.
- If the TAC (at today’s meeting) recommends performing additional Flow Direction/Flow Velocity modeling work, a cost estimate for that work will be requested from Montgomery & Associates so it can be included in the FY 2023 M&MP Budget (there is no funding remaining in the FY 2022 M&MP Budget to pay for this work). The Scope and Cost Proposal itself would be scheduled for approval by the TAC at its November 16, 2022 meeting, with Board approval at its December 7, 2022 meeting.

I do not anticipate any business for the TAC to conduct in September or October. Therefore it is likely that there will not be a need for TAC meetings in either of those months, and that the next TAC meeting would be on the 3rd, not the 2nd, Wednesday of November – November 16, 2022.

Confirming or updated emails regarding TAC meetings will be sent out prior to the normal meeting dates in September and October.

**ATTACHMENTS:**  
Schedule of Work Activities for FY 2022

**RECOMMENDED ACTION:**  
Provide Input to Technical Program Manager Regarding Any Corrections or Additions to the Schedules
<table>
<thead>
<tr>
<th>MEETING DATE:</th>
<th>July 13, 2022</th>
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<tbody>
<tr>
<td>AGENDA ITEM:</td>
<td>6</td>
</tr>
<tr>
<td>AGENDA TITLE:</td>
<td>Other Business</td>
</tr>
<tr>
<td>PREPARED BY:</td>
<td>Robert Jaques, Technical Program Manager</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>ATTACHMENTS:</th>
<th>None</th>
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<tbody>
<tr>
<td>RECOMMENDED ACTION:</td>
<td>None required – information only</td>
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