MEETING NOTICE AND AGENDA

TECHNICAL ADVISORY COMMITTEE OF THE SEASIDE BASIN WATER MASTER

DATE: Tuesday July 9, 2024

MEETING TIME: 1:30 p.m.

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/81816102252?pwd=pIJl5k8tcXbJMEMdNBlnJD4yRtqH57.1

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: 818 1610 2252
Passcode: 260211
TAC Member Teleconferencing Information is on the Next Page

OFFICERS
Chairperson: Jon Lear, MPWMD
Vice-Chairperson: Kim Shirley, City of Del Rey Oaks
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

The next regular meeting is tentatively planned for Wednesday August 14, 2024 at 1:30 p.m.

TAC MEMBER TELECONFERENCING INFORMATION

NAME	ENTITY	LOCATION
Amy Woodrow	Monterey County Water Resources Agency	5 Carriage Way, Durham, NH.
Kim Shirley	City of Del Rey Oaks	4 Baxter Place, Del Rey Oaks, CA
Nisha Patel	City of Seaside	Engineering Trailer, 440 Harcourt Avenue Seaside, CA
David Pezzini	California American Water	511 Forest Lodge Rd. Suite 100 Pacific Grove, CA
Cody Hennings	City of Monterey	City of Monterey Administrative Service Center, Orca Room, 735 Pacific Street, Monterey, CA
Jon Lear	Monterey Peninsula Water Management District	5 Harris Court, Bldg. G, Monterey, CA
Leon Gomez	City of Sand City	City Hall in Sand City, 1 Pendergrass Way, Sand City, CA 93955
Paul Bruno	Coastal Subarea Landowners	192 Healy Ave, Marina, CA

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	July 9, 2024
AGENDA ITEM:	2.A
AGENDA TITLE:	Welcome New TAC Member Representing California American Water Company
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

David Pezzini will be replacing Tim O'Halloran as California American Water Company's representative on the TAC starting with today's meeting.

A copy of his resume is attached. It demonstrates that he has considerable experience in the types of issues with which the Watermaster TAC deals.

ATTACHMENTS:	Resume of David Pezzini
RECOMMENDED ACTION:	None required – information only

David Pezzini, PE

Education

California Polytechnic State University, San Luis Obispo
Master of Science in **Water Engineering**, *Graduated June 2013*
Major GPA: 3.71

California Polytechnic State University, San Luis Obispo
Master of **Business Administration**, *Graduated June 213*
Major GPA: 3.35 APWA - Herbert E. Gerfen Scholarship Recipient

California Polytechnic State University, San Luis Obispo
Bachelor of Science in **Civil Engineering**, *Graduated June 2011*
Major GPA: **3.20** Two **Dean's List** Awards

Work Experience

California American Water, Pacific Grove, CA *1/2021 - Present*
Engineering Project Manager
- Project Management, Schedule Preparation, and Budget Review
- Providing Water and Wastewater Planning and Design Services.
- New Pipeline Construction, Rehabilitation, and Replacement
- Supply and Demand Analysis
- Monterey Peninsula Water Supply Project Conveyance System Project Manager

Harris & Associates, Salinas, CA *3/2019 - 1/2021*
Senior Project Manager
- Providing Water, Sewer, and Recycled Water Infrastructure Planning and Design Services.
- Provided Engineering Services During Construction and Submittal Review
- Cost Estimating
- Plan and Specification Preparation
- Project Management, Schedule Preparation, and Budget Review

West Yost Associates, Davis, CA *7/2013 - 3/2019*
Associate Engineer II
- Providing Water, Sewer, and Recycled Water Infrastructure Planning and Design Services.
- New Pipeline Construction, Rehabilitation, and Replacement
- Provided Engineering Services During Construction and Submittal Review
- Site Civil Layout Including Grading Design of Tank and Pump Station Sites
- Plan and Specification Preparation
- Project Management, Schedule Preparation, and Budget Review

Professional Registrations and Affiliations

Professional Civil Engineer - California C86393
American Public Works Association - Monterey Bay Chapter Director (President)

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	July 9, 2024
AGENDA ITEM:	2.B
AGENDA TITLE:	Approve Minutes from the June 12, 2024 Meeting
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

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

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

D-R-A-F-T
MINUTES

Seaside Groundwater Basin Watermaster
Technical Advisory Committee Meeting
June 12, 2024

Attendees: TAC Members

City of Seaside – No Representative
California American Water – Tim O'Halloran
City of Monterey – No Representative
Laguna Seca Property Owners – No Representative
MPWMD – Jon Lear and Maureen Hamilton
MCWRA – Amy Woodrow
City of Del Rey Oaks – Kim Shirley
City of Sand City –Leon Gomez
Coastal Subarea Landowners – Paul Bruno

Watermaster
Technical Program Manager-Bob Jaques

Consultants
Montgomery & Associates – Georgina King
Geophysical Imaging Partners – Max Halkjaer and Ahmad-Ali Behroozmand

Others
MCWD – Patrick Breen

The meeting was convened at 1:31 p.m. by Mr. Lear. He had to depart after Agenda item 2.B was discussed, and thereafter the newly elected Vice Chair, Kim Shirley, conducted the meeting.

1. Public Comments
There were no public comments.

2. Administrative Matters:

A. Welcome New TAC Member Representing the Monterey County Water Resources Agency
Mr. Jaques introduced Amy Woodrow to the TAC and she said she was glad to be joining as the MCWRA representative. There was no other discussion.

B. Elect New Vice-Chairperson
Mr. Lear asked if anyone would like to volunteer to become the Vice Chair. Ms. Shirley said she would be willing to fill that role. There we no other volunteers. Mr. Bruno nominated Ms. Shirley to be the Vice Chair and the nomination was seconded by Ms. Shirley. On a role call vote Ms. Shirley was unanimously elected to the Vice Chair position.

C. Approve Minutes from the March 13, 2024 Meeting

On a motion by Mr. Bruno, seconded by Ms. Shirley, the minutes were unanimously approved as presented, with Mr. Bruno and Ms. Woodrow abstaining as they had not attended the March 13th meeting.

D. Sustainable Groundwater Management Act (SGMA) Update

Mr. Jaques introduced this item. There was no other discussion.

3. Informational Presentation on Stationary Transient Magnetic (sTEM) Imaging

Mr. Jaques introduced this item. Mr. Behroozmand, assisted by Mr. Halkjaer, both from Geophysical Imaging Partners, provided an informational PowerPoint presentation describing land-based electromagnetic (EM) imaging. Copies of his PowerPoint slides are attached.

Mr. Behroozmand reported that he had led the DWR AEM survey of the Salinas Valley Groundwater Basin, conducted a few years ago, and was thus familiar with the EM work that had been done in the vicinity of the Seaside Basin. He reported that the DWR AEM work was constrained by flight safety issues, so no transects perpendicular to the coastline were performed in the vicinity of Monitoring Well SBWM-4. He said that between 10 and 20 measurements per day can typically be taken, depending on field conditions and the distance between measurement sites. He also reported that the results from sTEM surveys compare closely to AEM results.

In response to a question Mr. Behroozmand said that if the saline layer overlying the subsurface zone of interest is more than 15 to 20 meters thick, it cannot be penetrated by the EM signal. [Editorial note: Thus, doing EM offshore in the ocean is not feasible except in very shallow depths.]

4. Continued Discussion of Follow-up Actions Regarding Induction Logging Findings on Sentinel Well No. 4

Mr. Jaques introduced and summarized this item.

Ms. King said she felt the sTEM work is very useful and that it would be worthwhile to do it. She questioned whether it would be necessary to get Coastal Commission permission to perform the proposed work in the vicinity of Monitoring Well SBWM-4. Mr. Jaques commented that it would probably not be necessary to get Coastal Commission permission, since no construction or invasive work would be involved, but that permission would be needed from State Parks which is the entity with jurisdiction over that property. Mr. Jaques also felt it probably would not be difficult to get permission to do this type of work on the SNG well property.

Mr. Bruno said he supported getting the sTEM data which would be helpful in determining the location of the seawater intrusion front. [Editorial note: At this point in the meeting Mr. Bruno needed to depart to participate in another activity.]

With regard to updating the Seawater Intrusion Response Plan, Ms. King suggested seeing how and if it would be possible to incorporate the geophysical technology and data into the criteria that would trigger implementation of the Plan.

Following this discussion there was consensus from the TAC to go ahead with all of the recommendations made by the Technical Program Manager as contained on pages 18-19 of the agenda packet.

5. Schedule

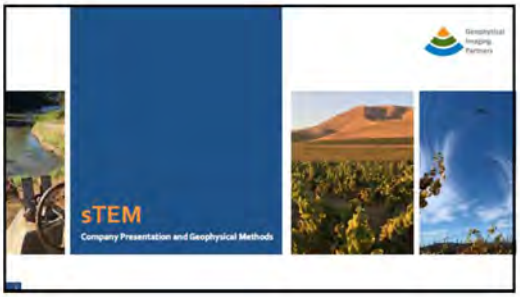
Mr. Jaques asked TAC members to put on their calendars that the next meeting will be on Tuesday, July 9 at 1:30 PM via Zoom. The regular meeting date had to be rescheduled to avoid a conflict with the

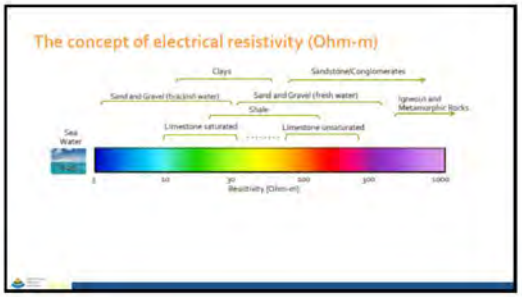
Watermaster Board meeting that had been rescheduled to July 10th, the normal TAC meeting date for that month.

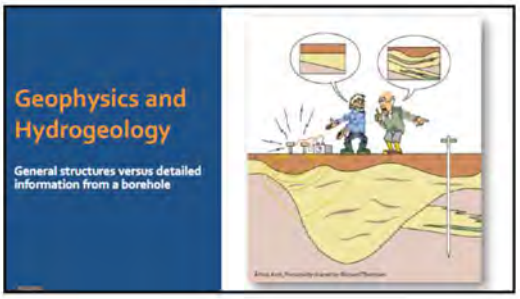
6. Other Business

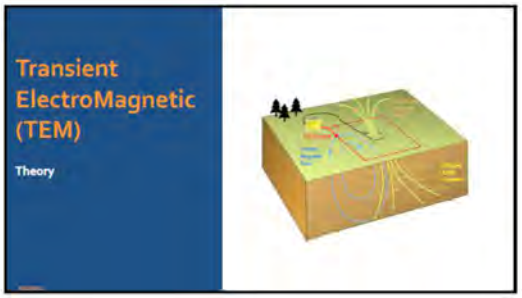
There was no other business.

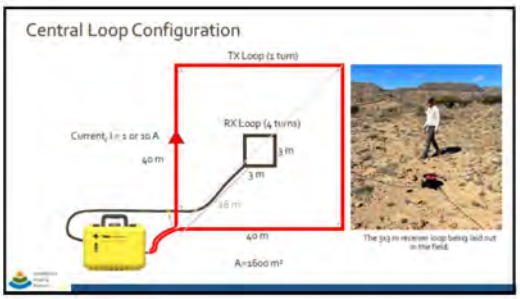
The meeting adjourned at 2:35 p.m.

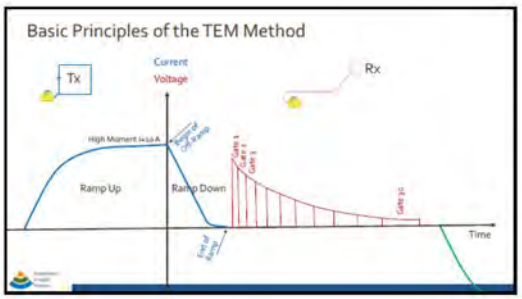

sTEM
Company Presentation and Geophysical Methods

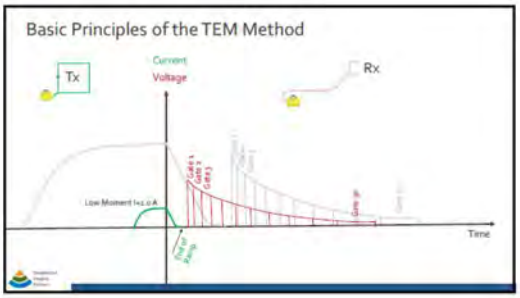

The concept of electrical resistivity (Ohm-m)
Clays
Sandstone/Conglomerates
Sand and Gravel (fresh water)
Igneous and Metamorphic Rocks
Shale
Limestone saturated
Limestone unsaturated
Sea Water
Resistivity (Ohm-m)

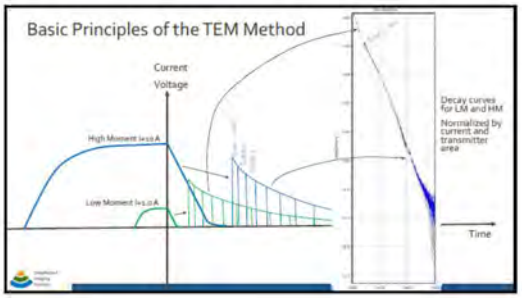

Geophysics and Hydrogeology
General structures versus detailed information from a borehole

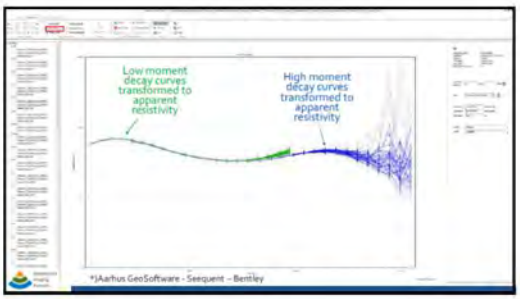

Transient ElectroMagnetic (TEM)
Theory

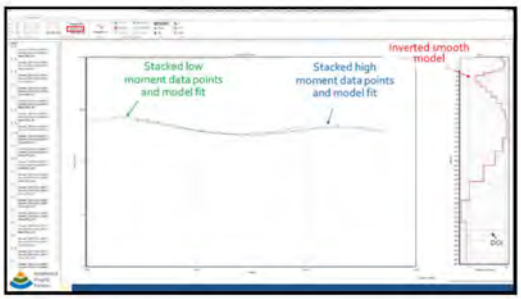

Central Loop Configuration
TX Loop (1 turn)
RX Loop (4 turns)
Current, I = 1 or 10 A
40 m
3 m
3 m
40 m
A=1600 m²

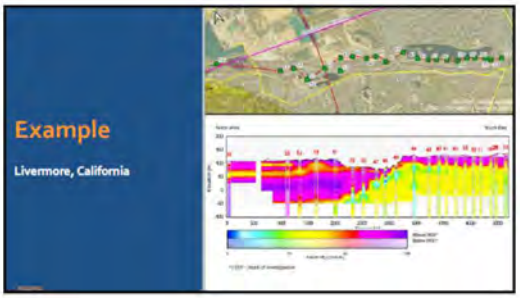

Basic Principles of the TEM Method
Tx
Current
Voltage
Rx
Ramp Up
Ramp Down
Time

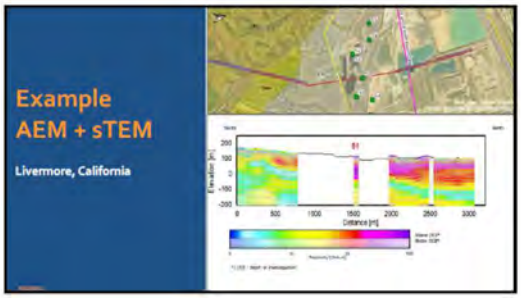

Basic Principles of the TEM Method
Tx
Current
Voltage
Rx
Time


Basic Principles of the TEM Method
Current
Voltage
Decay curves for LM and HM
Normalized by current and transmitter area
Time

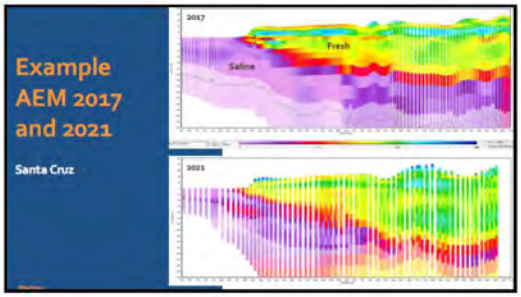

Low moment decay curves transformed to apparent resistivity
High moment decay curves transformed to apparent resistivity
*)Aarhus GeoSoftware - Seequent – Bentley


Stacked low moment data points and model fit
Stacked high moment data points and model fit
Inverted smooth model


Example
Livermore, California


Example
AEM + sTEM
Livermore, California


Example
AEM 2017
and 2021
Santa Cruz


Example
AEM 2017
and 2021
Santa Cruz
2017
Fresh
Saline
2021

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

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

MEETING DATE:	July 9, 2024
AGENDA ITEM:	2.C
AGENDA TITLE:	Sustainable Groundwater Management Act (SGMA) Update
PREPARED BY:	Robert Jaques, Technical Program Manager

At the State level:
Since the last TAC meeting I have not received anything from the State that impacts the Watermaster.

At the Monterey County level:
Attached are summaries of meetings held in June 2024.

ATTACHMENTS:	Meeting Summaries
RECOMMENDED ACTION:	None required – information only

SUMMARY OF PURE WATER MONTEREY, AND SALINAS VALLEY AND MARINA COAST WATER DISTRICT GROUNDWATER SUSTAINABILITY AGENCY ZOOM MEETINGS IN JUNE 2024

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

Groundwater Technical Advisory Committee Meeting, June 12, 2024:

Since this meeting conflicted with the Watermaster TAC meeting on this same date and time, I was not able to attend it. Nancy Dayton, who is assisting Laura Paxton in the Administrative Officer duties, sat in on the meeting via Zoom. Her notes from the meeting provided this information:

- Victoria Hermosilla of M&A presented geophysical data for the Eastside, Langley, and Monterey subbasins and the Corral de Tierra area.
    - Data from well completion reports and AEM were considered separately and together.
    - In the Eastside Subbasin bedrock contact has been noted. The bedrock is much shallower than previously understood, so there is less aquifer space available.
    - In the Langley Subbasin, there was less AEM data available, but more well completion data is available. "Rock" is present close to the Gabilan Range. The bedrock is comprised of Monterey Shale and Crystalline Rock. Less aquifer space is available.
    - In the Monterey Subbasin, Santa Margarita Sandstone, Monterey Shale, and Quartz Monzonite are present. Crystalline rocks are uplifted due to faulting. In some spots, the bedrock is at surface level.
    - This study indicates a significant change from current understanding. These findings impact the ASR study because modeling in that study will need to be adjusted to reflect this new information.
- Lisa Porta of M&A presented the ASR Feasibility Study.
    - Ms. Porta was very careful to state the information was preliminary.
    - The study will be on-going and concepts will be presented at a meeting on July 10.
        - One alternative: 16 ASR Wells: 8 at the 180 and 8 at the 400. Both would inject and extract.
        - Injecting into both aquifers would not offset SWI by 2070.
        - Seasonal releases would use more pumping than injection but would not leave enough supply for CSIP.
        - Another alternative would use bypass flows—more injection than pumping. Apparently there would not be unmet demand in that scenario.
    - There is simply a lack of available water to stop SWI; however, focusing only on the 400 ft aquifer would provide marginal results by 2070.

SVBGSA Advisory Committee Meeting, June 20, 2024:

Items of interest to the Watermaster included:

- An informative PowerPoint presentation by a representative from the Alameda County Water District describing how they manage seawater intrusion in their groundwater basin located in the southern San Francisco Bay area.
    - They use a portfolio of programs and management actions that include groundwater replenishment/recharge using abandoned quarries as surface recharge basins fed by water from Alameda Creek
    - Their deeper aquifers became seawater intruded through abandoned wells and downward percolation of intruded water from overlying shallower aquifers
    - They have a Replenishment Assessment Act (1961) with a fee to well owners on a dollars per acre-feet of water produced. They use this as a funding source for the seawater intrusion mitigation program.
    - They have about 100 monitoring wells.
    - They have an Aquifer Reclamation Program that pumps intruded water back to the San Francisco Bay so freshwater can replace it. The purpose of this program is to keep groundwater levels above sea level (protective groundwater elevations).
    - It took about 10 years to raise groundwater levels about 30 feet to start getting them above sea level.
    - They have a desalination plant that takes intruded water which is actually just brackish about (2,000 ppm chloride) and uses the desalinated water as a potable water source. The brine from that desalination plant goes to San Francisco Bay.

- Other topics discussed at this meeting pertained to groundwater dependent ecosystems and the workgroups that are part of the Advisory Committee.

Monterey Subbasin GSP Implementation Committee Meeting, June 26, 2024:

Items of interest to the Watermaster included:

- Victoria Hermosilla of Montgomery & Associates, who is heading up the development and updating of the Monterey Subbasin Hydrogeologic Conceptual Model (HCM) made a very comprehensive and informative presentation on the preliminary findings of this model:
    - A significant amount of both water and geologic data has been incorporated into the model. These include well completion reports, published hydrogeologic reports, Salinas Valley Integrated Hydrogeologic Model (USGS) model layers, AEM survey data, seismic data, and data from field observations.
    - Coordination has occurred with various agencies to obtain this information, including the Seaside Basin Watermaster.
    - A better understanding of the hydrogeology of the Monterey subbasin has found that:
        - Geologic barriers reduce the flow of groundwater flow from the Corral de Tierra subarea into the Laguna Seca and Northern Inland Subareas of the Seaside Basin
        - Structural deformations altered how the formations showed up in AEM data
        - The eastern portion of the Laguna Seca Subarea and the Corral de Tierra Subarea are within the same bedrock bowl
        - The SVBGSA/MCWDGSA plan to collect more water level and aquifer test data, and may suggest monitoring this area together with the Watermaster
        - There are two separate geologic bowls within the Corral de Tierra subarea: the bowl in the southern portion of the subarea is interconnected with the Laguna Seca subarea, and the bowl in the northern portion of the subarea is connected with the 180/400 foot aquifer subbasin

    - Next steps in refining the Monterey Subbasin Hydrogeologic Conceptual Model will be to incorporate the updated layering and recalibration from the Seawater Intrusion Model, and continued inter-agency collaboration
- There was also discussion of the projects and management actions in the Monterey Subbasin Groundwater Sustainability Plan for the Corral de Tierra Subarea and updating the sustainability strategy and timeline based on priorities to be recommended by the Implementation Committee and ultimately to be approved by the Boards of Directors of the GSAs

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	July 9, 2024
AGENDA ITEM:	3
AGENDA TITLE:	Discuss Revised Proposal from Geophysical Imaging Partners to Perform sTEM Survey Near Sentinel Well No. 4
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

At the June 12 TAC meeting a draft proposal from Geophysical Imaging Partners to Perform sTEM Survey Near Sentinel Well No. 4 was provided for initial review and feedback. The TAC was supportive of discussing their proposal further at today's meeting. After the June 12th meeting I discussed the draft proposal with Ahmad-Ali Behroozmand (of Geophysical Imaging Partners) and Georgina King (of Montgomery & Associates). Ms. King had some questions and suggestions for revising the proposal, and Mr. Behroozmand agreed get back to me with a revised proposal addressing Ms. King's issues.

Attached is the revised proposal. I believe the proposal is reasonable, and I request that the TAC include this work in the 2025 Monitoring and Management Plan (M&MP). If it is included in the M&MP a contract with Geophysical Imaging Partners based on this proposal will be prepared and brought back to the TAC for its approval later this year, so the work can be performed in 2025, subject to Board approval to do so. I will propose that instead of the contract format contained in Appendix 3 of the Proposal that the Watermaster's standard Professional Services Agreement format be used. I have already shared that with Mr. Behroozmand and he is reviewing it for acceptability.

Before preparing such a contract I would need to communicate with State Parks and Recreation to obtain their permission for the work to be done on the Fort Ord Dunes State Park where Sentinel Well No. 4 is located. I would also need to get permission from Mr. Ghandour for the work to be done on the Security National Guarantee property where the SNG and PCA-West wells are located.

The TAC is invited to ask questions and provide suggested further revisions, if any, to the proposal at today's meeting.

ATTACHMENTS:	Revised Proposal from Geophysical Imaging Partners
RECOMMENDED ACTION:	Approve having this work included in the 2025 M&MP

PROPOSAL: sTEM GEOPHYSICAL SURVEY TO MAP SALTWATER INTRUSION

June 2024

Seaside Basin Watermaster
83 Via Encanto
Monterey, CA 93940

GEOPHYSICAL
IMAGING
PARTNERS

Opportunity #	Q24017
Project name	sTEM geophysical survey to map potential saltwater intrusion near a sentinel monitoring well
Date	25 June 2024
Client	Seaside Basin Watermaster 83 Via Encanto Monterey, CA 93940
Prepared by	Ahmad-Ali Behroozmand, Max Halkjaer, Jesse Crews
Project description	TEM geophysical survey to investigate near potential saltwater intrusion near a sentinel monitoring well.
Cover photo	The sTEM system in operation during a recent groundwater mapping survey in Livermore, California.

Geophysical Imaging Partners Inc.
Pleasant Hill, California
Email: ahmad@geophysicalimaging.com, max@geophysicalimaging.com
Phone: +1 415-430-7173

Dear Mr. Robert S. Jaques,

Following recent meetings held between Seaside Basin Watermaster (the Client), and Geophysical Imaging Partners (GIP) and Haley & Aldrich (H&A), this proposal is prepared for the Client in response to a request for a pilot geophysical survey near a sentinel well in Seaside, California. Recent data from the sentinel well suggests increasing salinity, however the extent of potential seawater intrusion in the monitored aquifer(s) around this well is currently unknown. The purpose of the geophysical surveys is to confirm the applicability of time-domain electromagnetic (TEM) imaging as a tool to investigate the presence and map the extent of seawater intrusion in the vicinity of the affected sentinel well.

Taking the scope of work and the expected geological settings into consideration, we propose a one-day preliminary geophysical survey the area near the well using the stationary time-domain electromagnetic (sTEM) method, sTEM (see Figure 1).

This pilot survey will be conducted using a sTEM system from TEMCompany, which provides point measurements down to maximum depths of 200-300 meters.

Figure 1 The sTEM system, STEM, in operation during a recent project in Livermore, California.

This pilot geophysical survey will provide an electrical resistivity model of the subsurface at each measuring point, which can then be transformed and interpreted to estimate lithology and relative pore fluid salinity. The primary objective of this initial pilot is to determine if the resulting geophysical profiles and interpretations provide meaningful insight to the Client toward understanding seawater intrusion in the study area, and warrant additional geophysical investigations.

It is not feasible to collect useful TEM data in the vicinity of powerlines and other installations due to interference from these sources. As a general rule, we will need to maintain a distance from powerlines that is similar to the depth of investigation.

Proposed sTEM sounding locations are shown in Figure 2. The number of proposed locations is higher than averaged daily coverage. We understand that vegetation can be dense in the study area, and actual survey locations may be adjusted based on local obstructions and/or access issues. Overall, we will make efforts to conduct measurements at as many locations as possible during one survey day and wherever possible near the well within the pilot study timeframe.

Our team has worked on geophysical saltwater intrusion projects in northern Monterey Bay, both by applying ground-based TEM like the proposed sTEM system and by flying offshore airborne EM (AEM) survey in 2017, as

well as the statewide AEM survey on behalf of DWR until late 2022. Furthermore, the team has recently worked on the deep aquifer study in Salinas Valley using AEM.

Existing geophysical data near the survey area will be revisited to optimize field setup and help with the interpretation of the sTEM results. Existing data include:

- ERT vertical section performed along the beach by Stanford University (2015)
- Airborne Electromagnetic (AEM) SkyTEM 2017 performed by Stanford University
- AEM SkyTEM 2019 performed by Stanford University
- AEM SkyTEM 2022 performed by DWR

A preliminary hydrogeologic interpretation of the pilot study results will be included in our final report, correlating our measured electrical resistivity profiles to known stratigraphy in the study area. We ask that the Client provide well logs, along with monitoring data and all other existing information about the affected sentinel well (and any other pertinent wells within or directly adjacent to the pilot study area). These data, along with publicly available data from the previous geophysical surveys noted above, will be used to generate a preliminary interpretation of lithology, including depth intervals corresponding to key regional aquifers. If data are able to substantiate an estimation of relative areas of higher vs lower pore fluid resistivity (correlating with salinity) within these key aquifers, a preliminary interpretation of seawater intrusion indications will also be included.

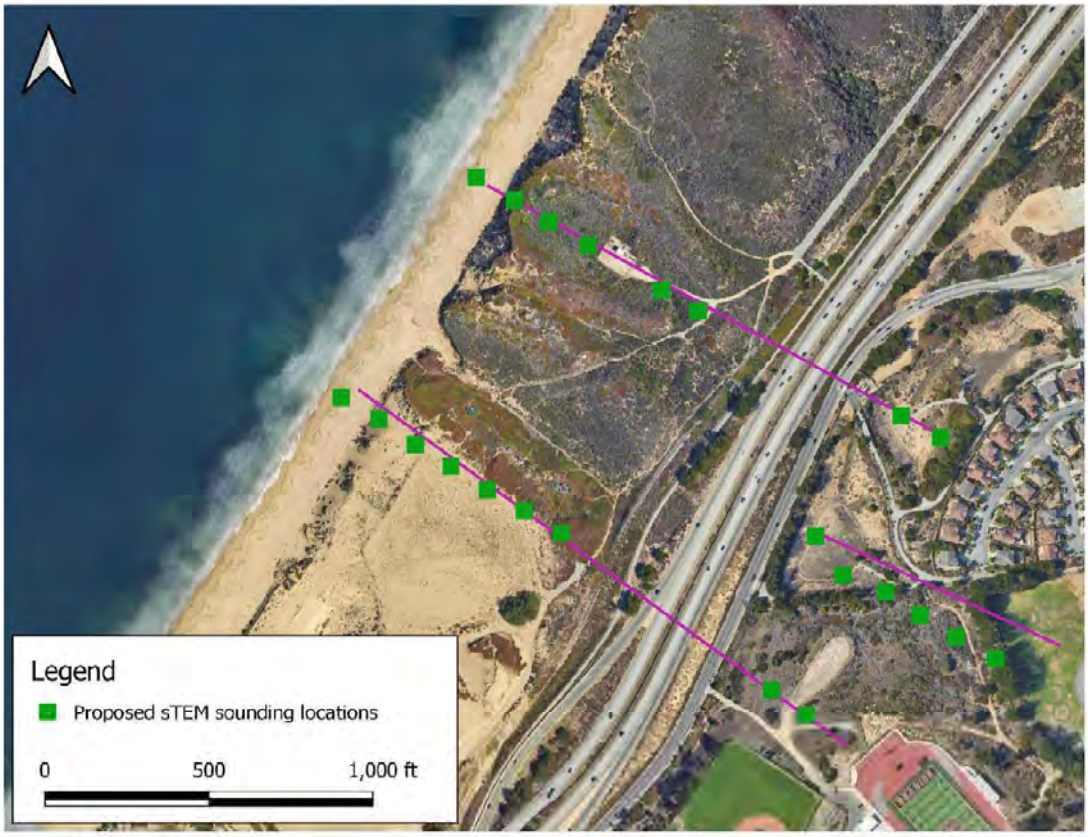


Figure 2 Proposed sTEM sounding locations.

The Stationary Time-Domain Electromagnetics (sTEM)

The sTEM is a hand carried system that involves laying out a 40 x 40 m (130x130 ft) square-shaped transmitter loop, along with a receiver placed at the center of the transmitter loop for each measurement (see Figure 3). These measurements are referred to as 'soundings' and provide subsurface information beneath the transmitter loop to depths of approximately 200-300 meters. The depth of investigation depends on the geological conditions, the water quality (salinity) and signal-to-noise ratio. In the presence of seawater in the formation, the resistivity will be in the range of 1 ohm-m. The electrically conductive saltwater will prevent the EM signal from penetrating a thick conductive layer (e.g., 100+ft) of seawater.

Depending on the distance between the soundings and the terrain, about 10-20 soundings can be conducted in a day. The instrument is lightweight and can also be hand carried in the field by a crew of two people, as illustrated in Figure 4. By hand carrying the instrument and placing only thin cables on the ground for a short period (up to 20 minutes), no damage to the environment is expected.

Figure 3 Configuration of the sTEM system.

sTEM data processing steps

The collected STEM data undergo the following processing steps:

1. Manually inspect each dataset for both low-moment (LM) and high-moment (HM) sounding curves.
2. Remove noisy data. The noise can be due to overhead powerlines, buried power cables, metal fences, and other man-made sources.
3. Assign a standard uniform 3% noise to all data.
4. Assign transmitter loop center coordinates (acquired in the field) and Digital Elevation Model (DEM) elevation to the sounding positions.

Figure 4 A sTEM system, STEM, being carried with a two-person team during a recent well siting project in Livermore, California.

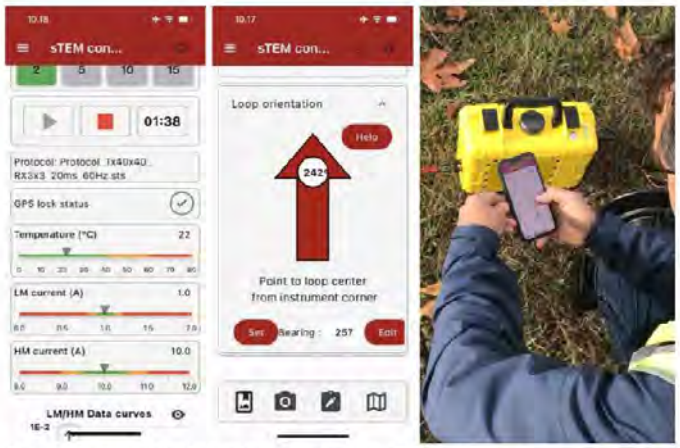


Figure 5 The user interface when operating the sTEM instrument.

sTEM data inversion steps

The processed STEM data will then be used in the following inversion scheme:

1. Define vertical constraints on the resistivities as well as the number of model layers and layer thicknesses.
2. Invert the processed data for smooth (multi-layer) resistivity models.
3. Present the results as line models. If the results are not satisfactory (e.g., due to high data residual), the inversion setup is revisited, and the data are re-inverted.
4. Calculate the data residual (data fit), which represents the difference between the observed data and the mapping of the estimated model to the data space.
5. Calculate the depth of investigation (DOI), based on a sensitivity analysis of the model.

sTEM Results

The processing and inversion of the STEM data will be performed using the software packages Aarhus SPIA (https://www.aarhusgeosoftware.dk/aarhus-spia-tem) and Aarhus Workbench (https://www.aarhusgeosoftware.dk/aarhus-workbench). The SPIA and Workbench are well-documented and technically sound software packages used for processing and inversion of ground-based and airborne electromagnetic and geoelectrical data. We utilized an application that is specifically designed for the processing and inversion of STEM data.

As described in the previous sections, the measured data are modeled to represent electrical resistivities at various depths, which can then be interpreted as lithology to get an understanding of the site geology. The inversion of STEM data results in one-dimensional (1D) resistivity models at each sounding location.

The STEM results will be presented as vertical resistivity sections, mean resistivity plan-view maps, and resistivity model reports.

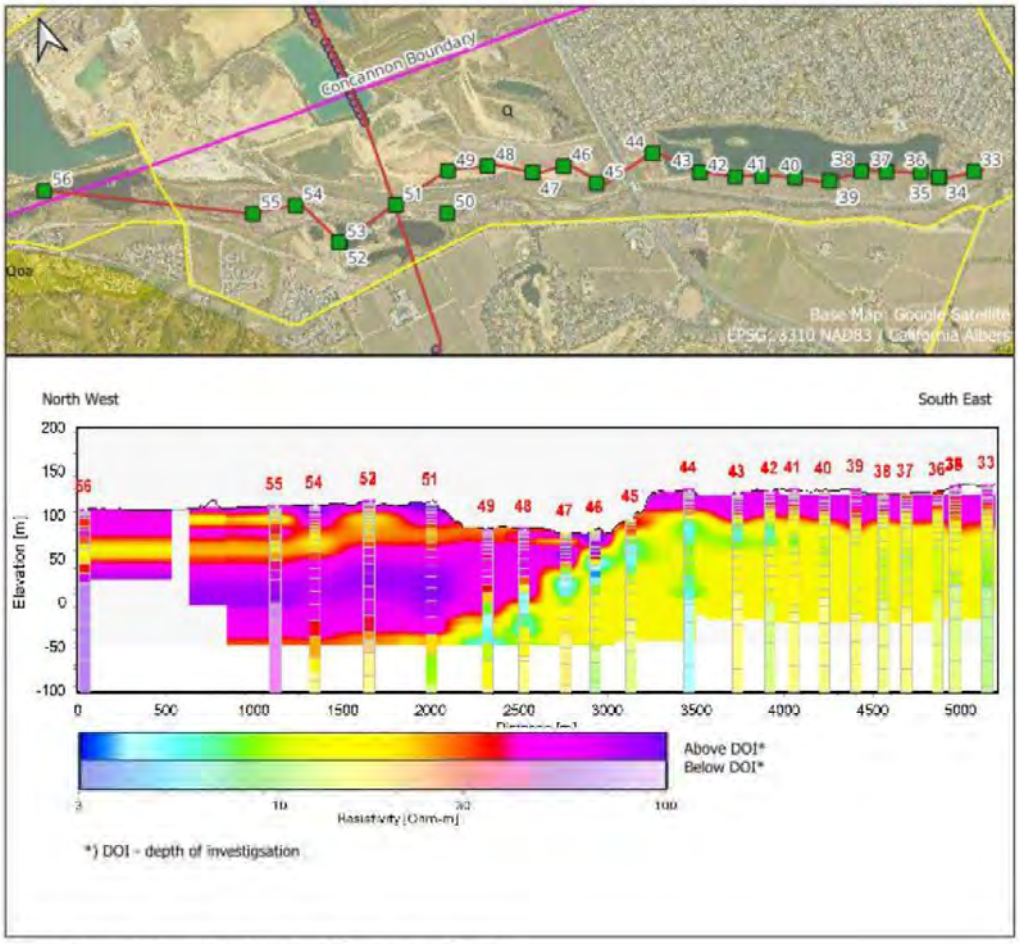


Figure 6 Example showing the sTEM models as a vertical section.

Data Deliverables

The following files will be provided as project deliverables.

1. Raw data, including files extracted from the instruments and supporting configuration files.
2. A GERDA Firebird database containing the acquired data, processed data, and the inverted model results.
3. ArcGIS layers, which include:
    a. Layout: ArcGIS shape files ("*.shp") containing general information about the surveyed area (AOI, well locations etc.) and location of the collected data.
    b. Georeferenced TIFF files for mean resistivity slices
    c. Model Sections: ArcGIS shape files ("*.shp") providing location information for the vertical sections presented in this report.

4. Google Earth KMZ files.
5. The project report, delivered as a PDF file.

The project report contains basic interpretations of the data based on our general understanding of the geological and hydrogeological settings in the study area, with specific correlations to data provided by the Client on the affected sentinel well and any other pertinent wells within the pilot study area. We will participate in one or two meetings to discuss the interpretations further.

Time schedule

We are prepared to discuss the project timeline and schedule the fieldwork according to the needs. Initial inversion results will be shared within two-three weeks after demobilization. A virtual meeting will be held with the Client to present the results. The final project deliverables will be provided within 4-8 weeks after demobilization. Please do not hesitate to reach out if you would like to discuss the project plan further.

Team

Ahmad-Ali Behroozmand, Max Halkjaer and Jesse Crews will be in charge of the field operations and managing data processing, inversion, and reporting of results. The team members bring years of experience in TEM investigations covering any aspect from the theoretical geophysical background, hardware and software utilized for data processing and inversion, and interpretation of the results. You can find their resumes in Appendix 2.

Budget

The table below provides cost estimates for the project, which will be invoiced as a lump sum. The cost estimates are provided according to the above-mentioned plan. Should the proposed plan require adjustments, we are happy to discuss it with the Client and modify the budget accordingly.

Tasks	Price (USD)
Mob/demob[1]	1,500
1 day of STEM survey ($9,000/day)[2]	9,000
Integration with AEM results and report[3]	5,000
Total (USD)	**15,500**

[1]*Includes instrument preparation, hotels, car rental, gasoline for the car, insurance, time while traveling, software license (SPIA, Workbench), and per diem.*

[2]*Includes fieldwork, data processing and inversion.*

[3]*Includes presentation of the results to the Client, preparing standard data report and other project deliverables.*

Contractual Conditions

Attached are standard Terms and Conditions

Agreement and Authority to Proceed

On behalf of

Seaside Basin Watermaster
83 Via Encanto
Monterey, CA 93940

We hereby acknowledge receipt of Geophysical Imaging Partners ApS's proposal dated June 1, 2024, and confirm our acceptance and agreement, including responsibility for payment of invoices raised in connection with this project.

Seaside Basin Watermaster:

Signature	Date
Name (please print)	Title
Robert S. Jaques, PE	Technical Program Manager

Please sign and return to your Geophysical Imaging Partners contact: Max Halkjaer, max@geophysicalimaging.com

Yours sincerely,

Ahmad-Ali Behroozmand
Senior Geophysics, PhD, PGp

ahmad@geophysicalimaging.com

Max Halkjaer
Senior Geophysicist/Hydrogeologist

max@geophysicalimaging.com

Appendix 1 – TEM Theory

For decades electromagnetic (EM) methods have been used worldwide for cost effective mapping of the subsurface materials for different applications. More recently, the accuracy of the instruments and their ability to obtain information about aquifers and hydrogeological properties has improved significantly. As a result, the TEM method is now one of the most efficient geophysical technologies for groundwater investigations.

Principles of TEM

The physical principle of the TEM is based on the electromagnetic induction phenomenon. The ground is first energized by a primary magnetic field generated by a direct current injected in a transmitter (Tx) loop. When the current stabilizes, the transmitter is turned off abruptly. During this rapid decay of the current an electromotive force results in short-duration eddy currents whose strength is largest in conductive parts of the ground. The EM induction phenomenon generates what is called the secondary magnetic field, which is measured just after the end of the turn-off using an induction receiver coil located in the center of the Tx loop (central loop configuration like STEM) or outside the Tx loop (off-set configuration like tTEM). The actual measurement is the time derivative of the magnetic flux passing through the receiver coil (dB/dt).

Just after the current in the Tx loop is turned off, the eddy currents in the ground will be close to the surface, and the measured signal primarily reflects the resistivity of the top layers. At later times the current will run deeper in the ground, and the measured signal contains information about the resistivity of the deeper layers. This is why the method is referred to as time-domain EM or TEM. Measuring the dB/dt in the receiver coil (also called a "sounding") will therefore provide information about the resistivity as a function of depth.

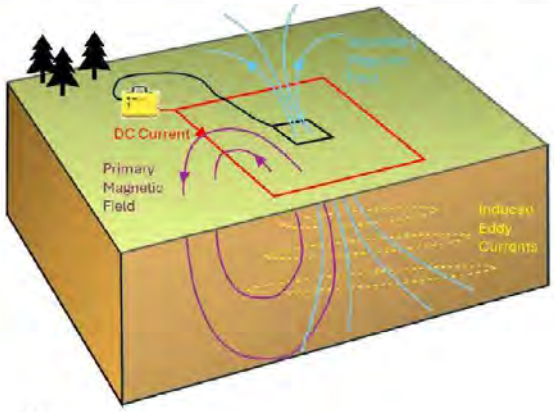


Figure 7 Basic principles of a TEM measurement.

The transmitter magnetic moment (Tx loop area x current x number of wire turns) and the signal-to-noise ratio (SNR) determine the depth of investigation (DOI). A stronger magnetic moment enables deeper penetration of the magnetic fields and thus greater DOI. The SNR depends on the ground electrical resistivity and ambient noise. The higher the SNR, the greater the DOI.

More information about the principles of the TEM method can be found in Ward and Hohmann (1988).

Noise in TEM data

TEM data are comprised of different type of noise components. Noise can cause bias signals and affect the depth of investigation and if not properly identified and removed, can result in incorrect geological and hydrological interpretations. The different sources of noise include: (1) Galvanic coupling caused by the electromagnetic signal induced in a metal object, such as a metal pipe, metal fence or the loop, following the ground-wire through the power-masts to the ground, (2) Capacitive coupling caused by the induced EM signal in an insulated installation such as a power cable, (3) Coherent noise from electrical powerlines, (4) Atmospheric noise, and (5) Instrument internal noise.

References

Ward SH, Hohmann GW (1988) Electromagnetic theory for geophysical applications. In: Nabighian MN (ed) Electromagnetic methods in applied geophysics, vol 1. SEG, Tulsa, pp 131–311.

Appendix 2 – Resumes

MAX HALKJAER

Mr. Halkjaer is a highly experienced geophysicist with multiple AEM, tTEM, FloaTEM, and other geophysical assignments successfully completed within California as well as globally. He holds a Master's degree in geology and geophysics from the University of Aarhus and has 28 years of experience in groundwater management, particularly with the application of geophysical methods.

Since 2016 he has served as a principal Hydro-geophysicist, focusing on projects in California.

In California, he has been the project director and principal geophysicist on the DWR state-wide Airborne Electromagnetic (AEM) survey project. Mr. Halkjaer also acted as the project manager on two of the three pilot projects under the Stanford Groundwater Architecture Project (GAP). The scope of these projects was to test the use of AEM and integrate the data with borehole information to create more solid Hydrogeologic Conceptual Models (HCM).

As a researcher at Aarhus University, he developed time domain electromagnetic (TEM) instrumentation and software for processing and inversion of TEM data. In 2004, he co-founded SkyTEM Surveys ApS and served as the managing director of the company until 2012. He has been responsible for a number of large AEM and ground-based projects with a focus on groundwater mapping across the world, including Australia, SE-Asia, Europe, and North America.

Mr. Halkjaer has extensive experience working with a variety of geophysical methods for groundwater investigations, geotechnical applications, environmental studies, and mineral exploration.

CERTIFICATES

First Aid, CPR, and AED Training certificate. Defensive Driving certificate. Firefighting certificate. Preventing Sexual Harassment and Discrimination. Maintain a drug-free work site.

PUBLICATIONS AND PRESENTATIONS

Mr. Halkjaer has co-authored numerous publications, and he has given numerous presentations at conferences.

SELECTED PROJECTS

California Statewide Airborne Electromagnetic (AEM) Surveys (2021-2022)
Client: CA Department of Water Resources
AEM surveys to map groundwater aquifers in all SGMA medium- and high-priority basins.
Role: Project Director and Principal Geophysicist | Technical expert and advisor | Data Quality Assurance - Quality Control

SPECIAL COMPETENCIES

- Hydro-geophysics
- Geophysics for geotechnic
- Geophysical methods: electromagnetic (EM), magnetics, gamma ray spectrometer (GRS)
- Innovation

PROJECT ASSIGNMENTS

- Project Director
- Principal geophysicist
- Member of technical advisory committees

TOTAL YEARS OF EXPERIENCE

28

EDUCATION

M.Sc/1995/Geology and Geophysics
University of Aarhus, Aarhus, Denmark

GAP: Airborne Electromagnetic Project pilot studies in California, Indian Wells Valley and Paso Robles, Stanford University (2017-2020)
Client: Stanford University, DWR, Indian Wells Valley Water District, San Luis Obispo County, the Danish EPA.
Digitization of well information. AEM geophysical survey for groundwater basin characterizations. Integrated interpretation.
Role: Project manager| AEM planning

Petaluma and Sonoma valleys groundwater investigations, Santa Rosa, CA (2021-2022)
Client: Sonoma County Water Agency
gTEM and ERT geophysical investigations for further characterization of the basin for refining the basin hydrogeologic conceptual model.
Role: Principal Geophysicist

Salinas Valley Deep Aquifer Study using AEM, Monterey, CA (2022-2023)
Client: Salinas Valley Basin Groundwater Sustainability Agency
AEM geophysical surveys in the Salinas Valley, CA, to investigate the deep aquifers in the region.
Role: Survey design and interpretation.

Geophysical investigations for siting production wells, Brenda, Arizona (2023)
Client: Private
Groundbased TEM geophysical survey for improved understanding of the groundwater basin to find optimal drilling locations.
Role: Project planning | data acquisition, analysis and interpretation

MAR site investigations along Cosumnes River, Sacramento, CA (2020-2022)
Client: Sacramento Area Flood Control Agency
tTEM and ERT geophysical investigation to map paleochannels and assess potential MAR sites.
Role: Principal Geophysicist and interpretation

Kern Fan Shallow Hydrogeological assessment, Bakersfield, CA (2021)
Client: Rosedale-Rio Bravo Water Storage District
tTEM geophysical investigation to assess potential MAR sites.
Role: Project manager | data acquisition, analysis and interpretation

Surface water Groundwater study, Silkeborg, Denmark (2021)
Client: The Danish EPA and Silkeborg Waterworks
FloaTEM geophysical investigation on lakes and rivers to map variations in the hydraulic connectivity as input to a numerical groundwater model.
Role: Project manager | Skipper, data acquisition, analysis, and interpretation

Yolo bypass shallow hydrogeological assessment, Yolo County, CA (2020-2021)
Client: CA Department of Water Resources
tTEM geophysical investigations to characterize the shallow subsurface on both sides of a levee structure.
Role: Project Manager, Project planning | data acquisition, analysis and interpretation.

Salton Sea Hydrogeological investigations, Salton Sea, CA – Two projects (2020-2021)
Clients: Department of Water Resources and Imperial Irrigation District
gTEM and tTEM geophysical surveys to investigate the geology and hydrology of three areas around the Salton Sea in California.
Role: Project planning |analysis and interpretation

MAR basin investigations, Orange County, CA (2020-2021)
Client: Orange County Water District
GCM geophysical surveys at existing infiltration basins to improve understanding of the shallow subsurface hydrogeology.
Role: Principal Geophysicist and interpretation

HCM development with support from AEM in Santa Ynez, Santa Barbara County, CA (2020-2021)
Client: Santa Barbara County, GSI, SYRWCD
AEM surveying and interpretation.
Role: Principal Geophysicist, Hydrogeological interpretations

AEM survey along the Pismo Beach to assess saltwater intrusion, Santa Maria County, CA (2020)
Client: WSI, City of Prismo Beach
AEM surveying and interpretation.
Role: Principal Geophysicist, Hydrogeological interpretations

AHMAD ALI BEHROOZMAND, PHD, PGP

Dr. Behroozmand is a Professional Geophysicist (#1106) in the State of California, holds a PhD degree in Geophysics and specializes in the field of Hydro-geophysics. Ahmad has more than 15 years of professional experience in the development and application of airborne, ground-based and logging geophysical methods for subsurface characterization. He has been involved in numerous groundwater-related projects worldwide and in California in compliance with the SGMA program, including the DWR State-wide Airborne Electromagnetics (AEM) Survey Project and the Stanford Groundwater Architecture Project (GAP).

Ahmad has a strong background in project management, as well as in the acquisition, processing and inversion, and interpretation of geophysical data.

As a research scientist at Stanford University and Aarhus University, Dr. Behroozmand conducted fundamental research in hydro-geophysics within the framework of different research projects. The results of his research have been published as peer-reviewed scientific journal articles and presented at numerous conferences. He has taught university courses at graduate and undergraduate levels, advised students and served as a scientific journal editor and reviewer.

Ahmad's work in California has focused on different applications, including large-scale groundwater basin characterizations, local-scale subsurface characterization, assessment of managed aquifer recharge sites, and levee projects, among others.

With a strong belief in teamworking, Dr. Behroozmand has, during his career, developed collaborations with governmental agencies, water stakeholders, and other private sectors to identify and develop solutions for improved groundwater management.

SPECIAL COMPETENCIES

- Hydro-geophysics
- Geophysical methods: airborne, ground-based, waterborne, logging
- Acquisition, Processing & inversion, and Interpretation of geophysical data
- GIS

PROJECT ASSIGNMENTS

- Project Manager
- Senior Geophysicist
- Project Planning
- Data Collection
- Data Interpretation and reporting

TOTAL YEARS OF EXPERIENCE

15

EDUCATION

PhD, Geophysics

PUBLICATIONS

22 Peer-Reviewed Journal Articles | 40+ Peer-Reviewed Conference Presentations | 1,072 ISI Citations | H-index: 12 | Google Scholar

SELECTED PROJECTS

California Statewide Airborne Electromagnetic (AEM) Surveys (2021-2022)
Client: CA Department of Water Resources
AEM surveys to map groundwater aquifers in all SGMA medium- and high-priority basins.

Role: Key project member | AEM data acquisition coordinator | Data acquisition, analysis and interpretation | Project planning

Petaluma and Sonoma valleys groundwater investigations, Santa Rosa, CA (2021-2022)
Client: Sonoma County Water Agency
gTEM and ERT geophysical investigations for further characterization of the basin for refining the basin hydrogeologic conceptual model.
Role: Project planning | data acquisition, analysis and interpretation

Salinas Valley Deep Aquifer Study using AEM, Monterey, CA (2022-2023)
Client: Salinas Valley Basin Groundwater Sustainability Agency
AEM geophysical surveys in the Salinas Valley, CA, to investigate the deep aquifers in the region.
Role: Data acquisition, analysis and interpretation.

Geophysical investigations for siting production wells, Brenda, Arizona (2023)
Client: Private
gTEM geophysical surveys for improved understanding of the groundwater basin to find optimal drilling locations.
Role: Project planning | data acquisition, analysis and interpretation

MAR site investigations along Cosumnes River, Sacramento, CA (2020-2022)
Client: Sacramento Area Flood Control Agency
tTEM and ERT geophysical investigation to map paleochannels and assess potential MAR sites.
Role: Project planning | data acquisition, analysis and interpretation

MAR site investigations in Kings County, CA – Two projects (2021-2022)
Client: Kings County Water District
tTEM geophysical investigation to investigate multiple potential MAR sites within the Kings County of California.
Role: Project manager | data acquisition, analysis, and interpretation

Kern Fan Shallow Hydrogeological assessment, Bakersfield, CA (2021)
Client: Rosedale-Rio Bravo Water Storage District
tTEM geophysical investigation to assess potential MAR sites.
Role: Project planning | data acquisition, analysis and interpretation

MAR site investigations in Santa Clarita, CA (2021)
Client: Santa Clarita Valley Water Agency
tTEM geophysical investigation to investigate recharge potential at a study site.
Role: Project manager | data acquisition, analysis, and interpretation

Yolo bypass shallow hydrogeological assessment, Yolo County, CA (2020-2021)
Client: CA Department of Water Resources
tTEM geophysical investigations to characterize the shallow subsurface on both sides of a levee structure.
Role: Project planning | data acquisition, analysis and interpretation.

Salton Sea Hydrogeological investigations, Salton Sea, CA – Two projects (2020-2021)
Clients: Department of Water Resources and Imperial Irrigation District
gTEM and tTEM geophysical surveys to investigate the geology and hydrology of three areas around the Salton Sea in California.
Role: Project planning | data acquisition, analysis and interpretation

MAR basin investigations, Orange County, CA (2020-2021)
Client: Orange County Water District
GCM geophysical surveys at existing infiltration basins to improve understanding of the shallow subsurface hydrogeology.
Role: Project planning | data acquisition

GAP: Airborne Electromagnetic Project Implementation, Indian Wells Valley, Stanford University (2015-2017)
Client: Indian Wells Valley Water District
Pilot testing of gTEM and NMR geophysical methods. AEM geophysical survey for groundwater basin characterizations.
Role: Project planning | acquisition, analysis and interpretation of NMR, TEM and AEM data.

Appendix 3 – Terms and Conditions

This contract (hereinafter referred to as "Agreement") is made and in effect as of the 1st day of June, 2024 by and between:

Geophysical Imaging Partners, Inc.
(hereinafter referred to as "Service Provider"),

and
Seaside Basin Watermaster
(hereinafter referred to as "Client").

This Agreement governs the terms and conditions by which professional services ("Work") are to be performed for the Client by Geophysical Imaging Partners. The Work is described in the Project Proposal presented above.

I. COMPENSATION. Client agrees to compensation as specified in the Project Proposal for the Work described in the proposal (for all labor hours and materials used in the performance of work, including all authorized change orders). Invoices will be submitted following the completion of the milestones identified in Exhibit A and are due Net 30 days following receipt of acceptable invoice.

II. TERM OF AGREEMENT. This agreement will remain in effect until the bilateral agreement of completion of the project or until terminated in accordance with section IX, Termination.

III. BILLING and PAYMENT. Invoices and invoice questions shall be directed to: max@geophysicalimaging.com. Payments shall be made within 30 days of receipt of a complete and acceptable invoice. Compensation.

IV. CHANGE ORDER. Parties may at any time modify the scope of Work by a written change explaining the changes. Service Provider will notify Client within three (3) business days of receiving the change order of any cost impact. Such change orders shall become effective when signed and dated by both parties.

V. COMPLETION OF WORK. The Client will supply Service Provider, in a timely manner, all materials and information required for Service Provider to complete the Work in accordance with this Agreement. When Client's failure to supply such materials and information leads to a delay in completion of the Work, Service Provider reserves right to reasonably extend previously agreed deadlines for the completion of the Work. Where Client's failure to provide materials and information prevents progress of Work for more than 30 days, Service Provider reserves the right to invoice the Client for any part or parts of the Work already completed.

VI. RELATIONSHIP. The Client and Service Provider are independent parties and nothing in this Agreement shall constitute either party as the employer, employee, partner or joint venture of the other party. Neither the Client nor the Service Provider has any authority to assume or create any obligation or liability, either expressed or implied, on behalf of the other.

VII. RESERVATION OF RIGHTS. All rights to the Work not expressly granted hereunder are reserved to the Service Provider, including by not limited to all rights of ownership to sketches, drafts, or other preliminary materials.

VIII. DISPLAY OF WORK. Client is granted all rights upon payment in full for the completed Work.

IX. TERMINATION. Either party may terminate this Agreement by giving thirty (30) calendar days written notice to the other party of such termination. In the event that the Work is postponed or terminated at the request of the Client, Service Provider shall have the right to invoice the Client for Work completed through the date of the termination notice, while reserving all other rights under this agreement. If additional payment is due, it must be paid within thirty (30) calendar days of the Client's written notification to terminate Work. In the event of termination by the Client, the Client shall also pay any expenses related to the Work incurred by the Service Provider and the Service Provider shall own all rights to the Work.

X. FORCE MAJEURE. Service Provider shall not be held liable for breach of contract where the breach was due to events, such as fire or acts of God, beyond the control of the Service Provider.

XI. SURVIVAL OF CONTRACT. Where one or more terms of the Agreement are void or unenforceable for any reason, all other terms of the Agreement will remain valid and enforceable.

XII. JURISDICTION. This Agreement shall be governed by the laws of the Kingdom of Denmark, which shall claim venue and jurisdiction for any legal action arising from the Agreement between Service Provider and Client.

XIII. LIABILITY. Upon Client's acceptance of Work, Service Provider shall not be liable for defects and/or deficiencies in Work performed and accepted under this Agreement.

This Agreement and all documents referenced herein represent the entire Agreement between Service Provider and Client and supersedes all other writings. The parties shall not be bound by, or be liable for any statement, representation, promise, inducement, or understanding not set forth herein.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	July 9, 2024
AGENDA ITEM:	4
AGENDA TITLE:	Update on of Follow-up Actions Regarding Induction Logging Findings on Sentinel Well No. 4
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

At the June 12, 2024 TAC meeting the TAC approved a set of recommendations from the Technical Program Manager regarding follow-up actions to be taken as a result of the findings from induction logging of Sentinel Well No. 4. One of those actions was to expand the annual induction logging to include three additional wells: MSC Deep, PCA-West Deep, and PCA-East Deep.

Mr. Lear has reported that MSC Deep is obstructed with a low flow pump that slipped down the well when the carabineer broke in 2020. MPWMD has been sampling the well by using the purge-3-casing volumes method and a sample pump to keep the water quality record going. As a result, MPWMD can still get water levels and water quality from MSC Deep, but it is not able to be induction logged. They attempted to fish the low flow pump out of the well, but were unsuccessful. If this well is to be induction logged, they would need to video the well and get a driller to get the lost pump out of it.

From the information Mr. Lear has provided, trying to make MSC Deep capable of being induction logged will be a complex undertaking with no certainty that the work would be successful. I did not feel that the value of the data that would be obtained from induction logging this well would justify the cost associated with doing that work. Consequently I have asked Mr. Lear to simply continue using the well for water level and water quality measurements, but not to do any other work on it that would be necessary to enable it to be induction logged.

Ms. King has sent me a draft proposal to update the SIRP. She will be out of the office during today's meeting, so I plan to put the draft proposal on the August TAC meeting agenda for discussion.

All of the other recommendations from the June 12th TAC meeting are being pursued.

ATTACHMENTS:	None
RECOMMENDED ACTION:	None required – information only

SEASIDE BASIN WATER MASTER TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	July 9, 2024
AGENDA ITEM:	5
AGENDA TITLE:	MPWMD Scope of Work 2024-02
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

The Scope of Work for MPWMD for 2024 (SOW 2024-01) needs to be augmented to cover certain work that was not known or anticipated when that SOW was approved. Attached is a second Scope of Work (SOW 2024-02) that will cover the costs to:

1. Attempt to fish the fallen data logger out of Sentinel Well No. 3.
2. Install new datalogger and communication cable in Well PCA-West Shallow.
3. Induction log Wells PCA-West Deep and PCA-East Deep

The costs to be authorized by SOW 2024-02 can be funded from the Contingency Line Item in the approved 2024 Monitoring and Management Program Operations Budget.

ATTACHMENTS:	MPWMD SOW 2024-02
RECOMMENDED ACTION:	Approve MPWMD SOW 2024-02

SEASIDE BASIN WATERMASTER
SCOPE OF WORK

Note: The work described in this Scope of Work (SOW) will be performed in accordance with the terms and conditions set forth in the Master Services Agreement for Groundwater Monitoring and Database Services (Agreement) executed between the Monterey Peninsula Water Management District (DISTRICT) and the Seaside Groundwater Basin Watermaster (WATERMASTER), dated 2/14/22.

DATE: 8/1/2024

SOW NO. 2024-02
(To be filled in by WATERMASTER)

TO: Robert Jaques
WATERMASTER

FROM: Jonathan Lear
DISTRICT

Services Needed and Purpose:

1. Attempt to fish data logger out of Sentinel Well No. 3.
2. Install new datalogger and communication cable in Well PCA-West Shallow.
3. Induction log Wells PCA-West Deep and PCA-East Deep.

A description of these services and a breakdown of the costs to perform them is contained in the table in Attachment 1.

Schedule:

The work of this SOW No. 2024-02 shall be completed in accordance with the column titled "Schedule" in the table in Attachment 1.

Method of Compensation:

Time and Material Payment Method (As defined in Section 6 of the Master Agreement).

Total Price Authorized by this SOW:

$ 7,554.00 (See Attachment 1 for a Breakdown of this Total Price. Cost is authorized only when evidenced by signature below.)

Total Price may not be exceeded without prior written authorization by WATERMASTER in accordance with Section 6 of the Agreement (Payment of Services).

Requested by: _____ Date: _____
WATERMASTER

Agreed to by: _____ Date: _____
DISTRICT

ATTACHMENT 1

Detailed Scope of Work for SOW No. 2024-02

Background:

This SOW No. 2024-02 authorizes DISTRICT to perform the following work:

1. **Attempt to fish data logger out of Sentinel Well No. 3**
   The datalogger and its support cable have fallen toward the bottom of Sentinel Well No. 3. The fallen materials interfere with induction logging of this well. MPWMD will use a tool to attempt to fish out and remove these items from this well.

2. **Install new datalogger and communication cable in Well PCA-West Shallow**
   In this well the low flow sampling pump is stuck on the old dead data logger, but the pump still works for collecting water quality samples. Pulling a data logger up and down every quarter to download them is risky. Therefore, a new (replacement) datalogger with a communication cable needs to be installed.

3. **Induction log Wells PCA-West Deep and PCA-East Deep**
   Induction logging of Sentinel Wells Nos. 1 through 4 is covered under SOW 2024-01. To augment the induction logging data that is acquired annually from those wells, these two additional wells will also be induction logged.

The total estimated costs to perform the work described above, and the hourly rates for the personnel who will be performing the work, are shown in the table below.

COST BREAKDOWN

Task	Description	Time (Hrs)	Rate	Cost	Schedule
1	**Well Fishing at Sentinel Well No. 3**				Jul-24
	Obtain Tools and Attempt to Fish out Data Logger from Sentinel Well No. 3	16	119	$1,904	
	Manage Fishing work	2	237	$474	
2	**Install Data Logger and Communication cable in Well PCA-West Shallow**				Aug-24
	Install new logger with communication cable	6	119	$714	
3	**Induction log Wells PCA-West Deep and PCA-East Deep**				Oct-24
	Have Pacific Surveys LLC induction log these two additional wells when induction logging of Sentinel Wells Nos. 1 through 4 is performed in the fall of 2024	---	Lump Sum	$1,860	
	Labor Total	24	Varies	$4,952	
	Estimated Fleet Support	15	$ 0.67	$10	
	Data Logger and Comm Cable	1	$ 1,500	$1,500	
	Well Fishing Cable	1	$ 1,000	$1,000	
	Administrative Support	1	$ 92	$92	
				$7,554	

Notes: 1. Fleet Support, Data Loggers, and Fishing Tools are estimated costs.
2. Direct costs incurred by District will be passed through to the Watermaster according to the Time and Expense method in the Master Services Agreement.

SEASIDE BASIN WATER MASTER TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	July 9, 2024
AGENDA ITEM:	6
AGENDA TITLE:	Initial Discussion Regarding Monitoring and Management Program (M&MP) for FY 2025
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:

The Schedule calls for the TAC to approve the FY 2025 Management and Monitoring Program (M&MP) and its Budgets at its August 2024 meeting. These will then go on to the Board for approval at a fall 2024 Board meeting.

In order to obtain TAC input and direction regarding these items, I have reviewed the FY 2024 M&MP and have edited it to reflect changes to work items that I anticipate for the FY 2025 M&MP. A copy of this Preliminary Draft 2025 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 2024 to 2025 (which I have done), all other proposed changes from the 2024 M&MP are shown in Track-Change format (Additions in red underline and deletions in ~~blue~~ strikeout) for the TAC to consider in preparing the 2025 M&MP.

Most of the proposed revisions are relatively minor, but:

A new Task I.2.b.8 has been added to perform subsurface electromagnetic imaging in the vicinity of Sentinel Well No. 4 to see if it can help to determine if seawater intrusion is beginning to occur in that part of the Seaside Basin.

Task I.3.a includes the potential updating of the Watermaster's Seaside Basin Ground Water Model in 2025, in order for it to coordinate more closely with the updated model being prepared for the adjacent Monterey Subbasin.

Task I.3.a.3 has been updated to reflect Cal Am's updated schedule for the Monterey Peninsula Water Supply Project's desalination plant.

Task I.4.e includes updating the Seawater Intrusion Response Plan in response to the induction logging results from Sentinel Well No. 4.

SEASIDE BASIN WATER MASTER TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

AGENDA ITEM:	6 (Continued)

If there are other revisions the TAC would like to make to prepare the M&MP for 2025, they can be brought up at today's meeting. The Final Draft M&MP for 2025, which will reflect any revisions or additions/deletions that come up at today's meeting and other input from our consultants, will be on the TAC's August 14, 2024 Agenda for approval.

ATTACHMENTS:	Preliminary Draft FY 2025 Seaside Groundwater Basin M&MP in Track Changes Format
RECOMMENDED ACTION:	Provide Input to Technical Program Manager Regarding Any Corrections or Additions to the Preliminary Draft FY 2025 M&MP

PRELIMINARY DRAFT
Seaside Groundwater Basin
2025 Monitoring and Management Program

The tasks outlined below are those that are anticipated to be performed during 2025. Some Tasks listed below are specific to 2025, 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 ($19,530)	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 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 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 ($0)	A Consultant (MPWMD) will provide general QA/QC support over the Seaside Basin Monitoring and Management Program. These costs are included in the other tasks.
M.1.g Prepare Documents for SGMA Reporting ($~~2,540~~3,124)	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 ($22,700)	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~~ are 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 2025. A separate consultant and/or Watermaster staff itself will maintain the Watermaster's website.
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 2025.
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 2025.

I. 2 b. 2 **Collect Water Levels** **($21,128)**	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.** **($38,446)**	As discussed in the 2018 Annual Report, water quality data will be collected quarterly from certain of the monitoring wells, but is no longer being collected from the four coastal Sentinel Wells. Because many years of data have shown essentially no change in aquifer water quality, beginning in WY2023 the frequency of induction logging of the Sentinel Wells was reduced to once per year. As discussed in the 2012 Annual Report, water quality analyses were expanded to include barium and iodide ions. Since these analyses have created more than 10 years of data, as discussed in the 2022 Annual Report the analyses were no longer being performed starting in WY 2023. They will only be resumed if the other water quality parameters are indicative of seawater intrusion. As discussed in the 2021 Annual Report, the frequency of sampling of SBWM-5 (the Camp Huffman well) has been reduced over the years. It is being sampled once every five years beginning in WY 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. 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 ~~$945~~ $950 to purchase a replacement sampling pump has been included in this Task.
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 2025.
I. 2. b. 5 **Monitor Well Construction** **($0)**	A well to replace Monitoring Well FO-9 Shallow, which in 2021 was found to have a leaking casing, was installed in 2023. No other monitoring wells are expected to be constructed in 2025.

I. 2. b. 6 **Reports** **($3,680)**	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** **($4,200)**	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.2.b.8 **Perform Subsurface Electromagnetic Imaging** **($15,500)**	The 2023 induction logging revealed gradually increasing conductivity in some of the shallower formations near the coastline. In 2025 the potential benefit of performing subsurface electromagnetic imaging in the vicinity of Sentinel Well No. 4 will be evaluated to see if it can help determine if seawater intrusion is beginning to occur in that part of the Seaside Basin.
	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. Work is being performed by the Salinas Valley Basin and Marina Coast Groundwater Sustainability Agencies on the hydrogeologic modeling of the Monterey Subbasin. Significant changes in the understanding of the hydrogeology of that subbasin are being identified, and an updated model of that subbasin is expected to be completed in late 2024. In order for the Watermaster's Model to incorporate that new information and to more closely coordinate with the updated Monterey Subbasin model, it may be desirable to update the Watermaster's Model in 2025. ~~No further work of this type is anticipated in 2025.~~

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' November 2009 report titled *"Seaside Groundwater Basin Modeling and Protective Groundwater Elevations,"* ~~which is the October 21, 2009 posting~~and is posted on the Watermaster's website. As discussed in Attachment 10 of the 2013 Annual Report, further work was started in 2013 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. or I.4.e.
I. 3. a. 3 **Evaluate Replenishment Scenarios and Develop Answers to Basin Management Questions** **($40,000)**	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. Two projects are planned that have the potential to provide additional water for Basin replenishment. The first is the Pure Water Monterey Expansion (PWMX) Project for which construction bids were solicited in 2023 and is projected to become operational in 2025. The PWMX Project will increase the capacity of the existing 3,500 AFY PWM Project by 2,250 AFY. The second is the Monterey Peninsula Water Supply Project's (MPWSP) desalination plant which is still in the design and permitting stage. The proponent of the MPWSP, California American Water, anticipates starting construction of the desalination plant in October 2025 and the plant becoming operational in late 2027 or early 2028. ~~with no currently projected implementation date.~~ 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. Modeling performed in 2022 and 2023 found that between 1,000 and 4,600 AFY of replenishment water will need to be needed, depending on future water demands and rainfall. 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. The Groundwater Sustainability Plan for the Corral de Tierra subarea of the Monterey Subbasin includes projects to help to alleviate this problem, but they ~~are unlikely~~will be insufficient to completely alleviate it. This Task includes a $40,000 allowance to perform further modeling or analyses pertaining to Basin management issues 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)**	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 2025. However, although no funds are budgeted for this Task in 2025, since the Groundwater Sustainability Plan (GSP) for the adjacent Monterey Subbasin of the Salinas Valley Groundwater Basin was completed in early 2022, at some point it may be appropriate to further update the BMAP to reflect the impacts of implementing that GSP.
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 led to casing leakage, it would be possible for the intrusion to flow from one aquifer to another. An evaluation of this was performed in 2012 and is described in Attachment 10 of the 2012 Annual Report. 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. No further work of this type is anticipated in 2025.

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 used 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

I.3.e.
Seaside Basin Geochemical Model
(Continued)

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 and/or California American Water for this project, 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 desalinated 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. c. **Annual Report- Seawater Intrusion Analysis** **($~~28,020~~30,050)**	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 by another Consultant (MPWMD) 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 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.
I. 4. e. **Refine and/or Update the Seawater Intrusion Response Plan** **($0)**	~~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 2025.~~ Due to the observation of increasing conductivity in the 2023 induction logging in some of the shallower formations near the coastline, it was determined that in 2025 it would be appropriate to update the 2009 SIRP. The update would include incorporating data that has been obtained since 2009 and examining technology and techniques that could potentially be used to make the SIRP more practical and useful.
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 SIRP, is determined by the Watermaster to be occurring.

SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	July 9, 2024
AGENDA ITEM:	7
AGENDA TITLE:	Schedule
PREPARED BY:	Robert Jaques, Technical Program Manager

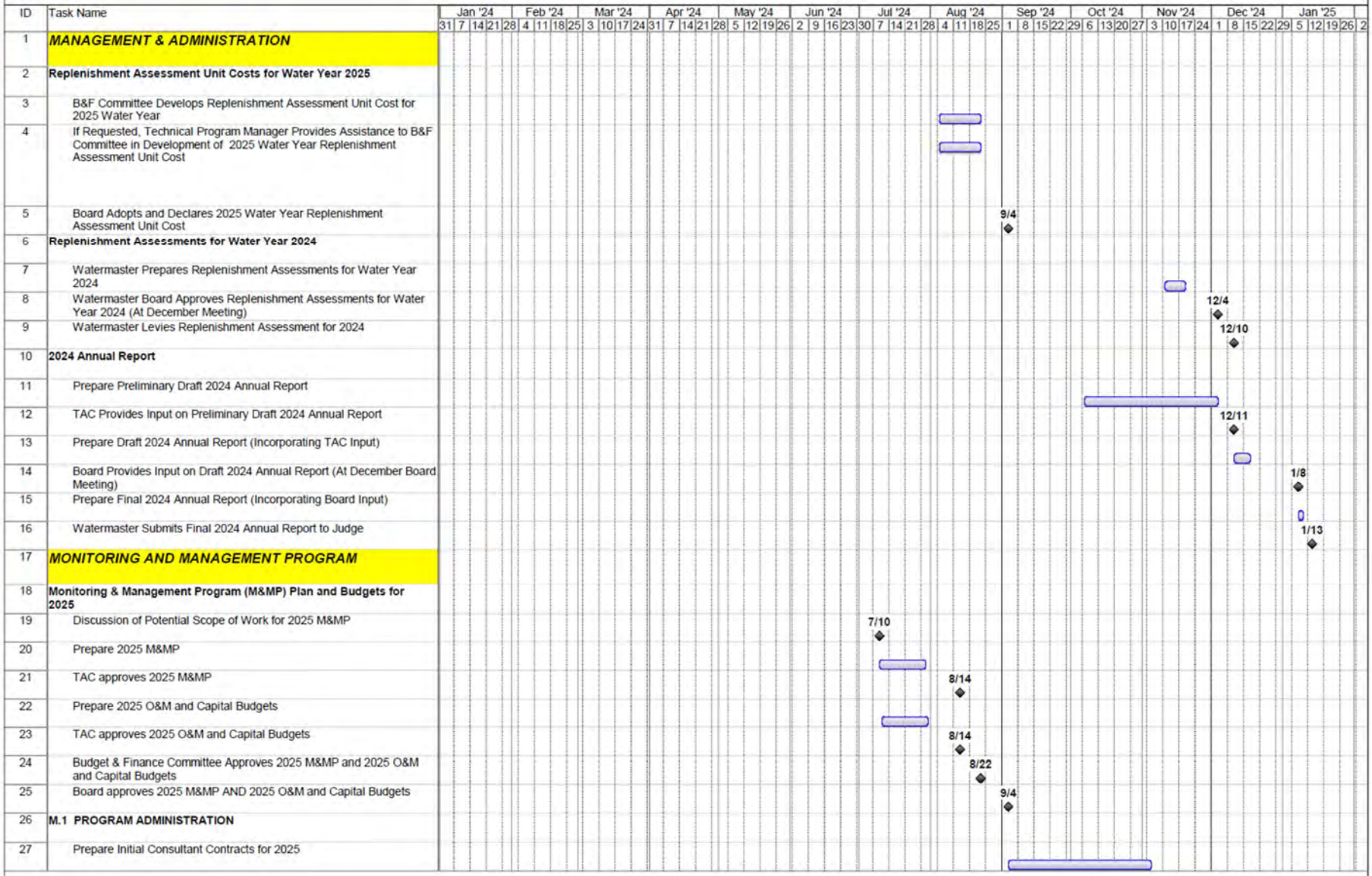
SUMMARY:

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

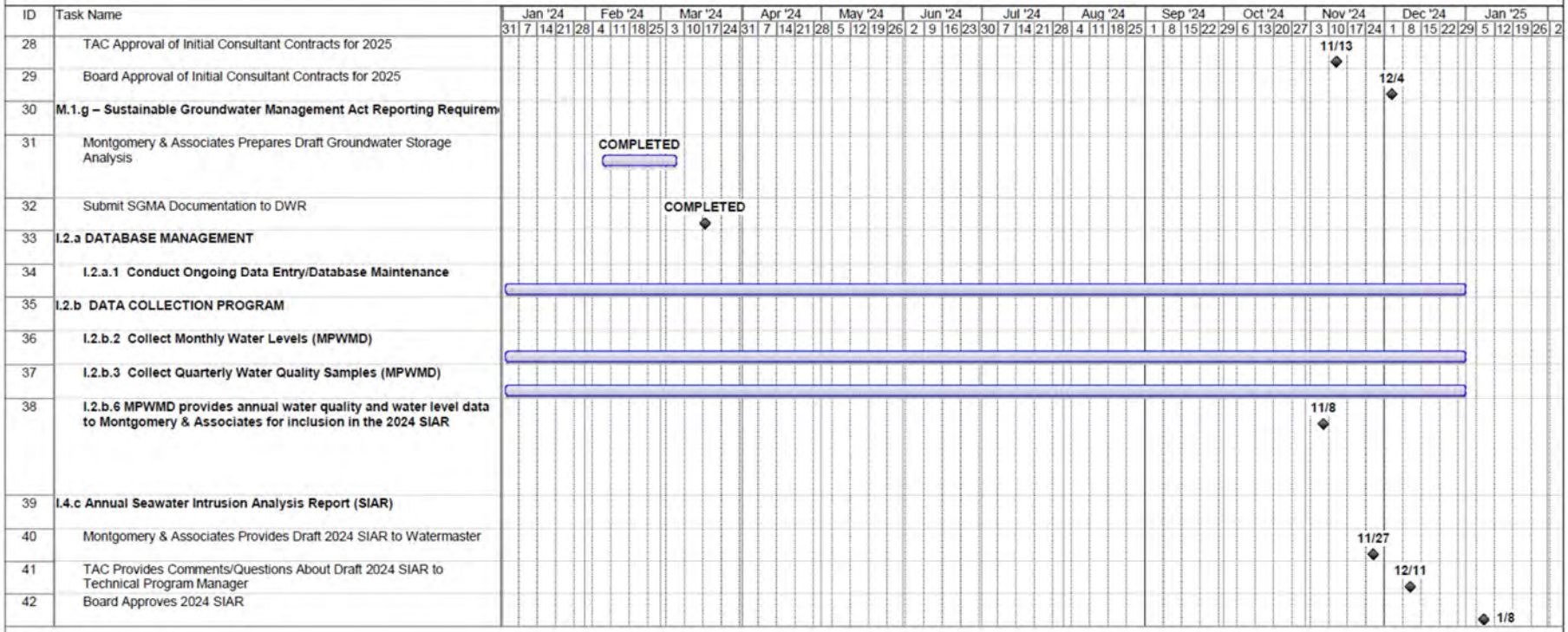
Attached is the updated schedule for 2024 activities.

ATTACHMENTS:	Updated Schedule of Work Activities for FY 2024
RECOMMENDED ACTION:	Provide Input to Technical Program Manager Regarding Any Corrections or Additions to the Schedules

Seaside Basin Watermaster
2024 Monitoring and Management Program
Work Schedule



Seaside Basin Watermaster
2024 Monitoring and Management Program
Work Schedule



SEASIDE BASIN WATER MASTER
TECHNICAL ADVISORY COMMITTEE

** * * AGENDA TRANSMITTAL FORM * * **

MEETING DATE:	July 9, 2024
AGENDA ITEM:	8
AGENDA TITLE:	Other Business
PREPARED BY:	Robert Jaques, Technical Program Manager

SUMMARY:
The "Other Business" agenda item is intended to provide an opportunity for TAC members or others present at the meeting to discuss items not on the agenda that may be of interest to the TAC.

ATTACHMENTS:	None
RECOMMENDED ACTION:	None required – information only