



# NOTICE OF MEETING

## OPERATIONS COMMITTEE/BOARD OF DIRECTORS (OPERATIONS)

(Per paragraph 3 on page 10 under subsection *Committee Meetings* of the Board Handbook: The Board, as a practice, generally does not take final action on items during committee meetings, unless District staff determines the urgency of the item requires immediate action that cannot be delayed until a subsequent regular bi-monthly Board meeting.)

**MEETING DATE:** September 15, 2023

**TIME:** 9:30 a.m.

**LOCATIONS:** This meeting will be held remotely and in-person.

Open Session	Remotely
Marin Water Board Room 220 Nellen Avenue Corte Madera, CA 94925	<b>URL:</b> <a href="https://us06web.zoom.us/j/86822995553">https://us06web.zoom.us/j/86822995553</a>  <b>Webinar ID:</b> 868 2299 5553 <b>Phone Call:</b> 1-669-444-9171

**EMAILED PUBLIC COMMENTS:** Submit your comments in advance of the meeting to [BoardComment@MarinWater.org](mailto:BoardComment@MarinWater.org). All emailed comments received by 7:30 a.m. on the day of the meeting will be provided to the Board of Directors prior to the meeting. Please do not include personal information in your comment that you do not want published on our website such as phone numbers and home addresses.

**PARTICIPATION DURING THE MEETING:**

**In-person Attendee:** Fill out a speaker card prior and place it next to the Board Secretary. List the number of the agenda item(s), for which you would like to provide a comment. Once you’re called, proceed to the lectern to make your comment.

**Remote Attendee:** Click on the “raise hand” button on the bottom of the Zoom screen. If you are joining by phone and would like to comment, press \*9 and staff will call on you by the last four digits of your phone number.

*(Note: The board president may shorten the amount of time for public comment due to large numbers of both in-person and virtual attendees.)*

AGENDA ITEMS	RECOMMENDATIONS
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<b>Call to Order and Roll Call*</b>	
<b>Adoption of Agenda</b>	<i>Approve</i>

**Public Comment - Items Not on the Agenda**

Members of the public may comment on any items not listed on the agenda during this time. Comments will be limited to three (3) minutes per speaker, and time limits may be reduced by the board president to accommodate the number of speakers and ensure that the meeting is conducted in an efficient manner.

**Calendar (9:40 a.m. – Time Approximate)**

1. Minutes of the Operations Committee Meeting/Special Meeting of the Board of Directors (Operations) of August 18, 2023 (Approximate Time 1 Minute)	<i>Approve</i>
2. Quagga and Zebra Mussel Infestation Prevention Grant Award (Approximate Time 5 Minutes)	<i>Review and Refer for Board Approval</i>
3. Update on Professional Services Agreement (MA-6131) with Team Logic IT (Help Desk) (Approximate Time 15 Minutes)	<i>Information</i>
4. Software Maintenance Reinstatement/Renewal with SAP (MA-6242) (Approximate Time 15 Minutes)	<i>Review and Refer for Board Approval</i>
5. Water Supply Roadmap – Update on Petaluma River Desalination and Referral of a Proposal for Additional Research and Analysis (Approximate Time 20 Minutes)	<i>Review and Refer for Board Approval</i>

**Adjournment (10:36 a.m. – Time Approximate)**

**ADA NOTICE AND HEARING IMPAIRED PROVISIONS:**

In accordance with the Americans with Disabilities Act (ADA) and California Law, it is Marin Water’s policy to offer its public programs, services, and meetings in a manner that is readily accessible to everyone, including those with disabilities. If you are an individual with a disability and require a copy of a public hearing notice, an agenda, and/or agenda packet in an appropriate alternative format, or if you require other accommodations, please contact Board Secretary Terrie Gillen at 415.945.1448, at least two days in advance of the meeting. Advance notification will enable Marin Water to make reasonable arrangements to ensure accessibility.

\*MARIN WATER BOARD OF DIRECTORS ORDER OF ROLL CALL: RANJIV KHUSH, MATT SAMSON, JED SMITH, MONTY SCHMITT, AND LARRY RUSSELL

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**FUTURE BOARD AND COMMITTEE MEETINGS AND UPCOMING AGENDA ITEMS:**

<b>Dates</b>	<b>Meetings</b>
Tuesday, September 19, 2023 6:30 p.m.	<ul style="list-style-type: none"> <li>• Board of Directors’ Regular Bi-Monthly Meeting</li> </ul>
Thursday, September 21, 2023 1:30 p.m.	<ul style="list-style-type: none"> <li>• Watershed Committee Meeting/Special Meeting of the Board of Directors</li> </ul>
Thursday, September 28, 2023 9:30 a.m.	<ul style="list-style-type: none"> <li>• Finance &amp; Administration Committee Meeting/Special Meeting of the Board of Directors</li> </ul>

<p><b>Upcoming Key Items for future Operations Committee Meetings</b></p> <ul style="list-style-type: none"> <li>• <u>At October 20, 2023 Operations Committee Meeting</u> <ul style="list-style-type: none"> <li>○ Recycled Water Update</li> </ul> </li> </ul>
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 Board Secretary



**Item Number:** 01  
**Meeting Date:** 09-15-2023  
**Meeting:** Operations  
Committee/Board of Directors  
(Operations)

## Approval Item

### TITLE

Minutes of the Operations Committee Meeting/Special Meeting of the Board of Directors (Operations) of August 18, 2023

### RECOMMENDATION

Approve the minutes

### SUMMARY

The Operations Committee/Board of Directors (Operations) held its regularly scheduled monthly meeting on August 18, 2023. The minutes are attached.

### DISCUSSION

None

### FISCAL IMPACT

None

### ATTACHMENT(S)

1. Minutes of the Operations Committee Meeting/Special Meeting of the Board of Directors (Operations) of August 18, 2023

DEPARTMENT OR DIVISION	DIVISION MANAGER	APPROVED
Communications & Public Affairs Department	 Terrie Gillen Board Secretary	 Ben Horenstein General Manager

**MARIN MUNICIPAL WATER DISTRICT  
OPERATIONS COMMITTEE MEETING /SPECIAL MEETING OF THE  
BOARD OF DIRECTORS (OPERATIONS)**

**MINUTES**

**Friday, August 18, 2023**

**Held Remotely and at In-Person Locations**

**Locations:** Marin Water, Board Room, 220 Nellen Avenue, Corte Madera, CA 94925, Contractors State License Board, First Floor Lobby, 9821 Business Park Drive, Sacramento, CA 95827, and 72-300 Maheawalu Drive, Kailua Kona, HI 96740

**CALL TO ORDER AND ROLL CALL:**

Chair Larry Russell called the meeting to order at 9:30 a.m.

***Directors Present:*** Matt Samson, Monty Schmitt, Jed Smith, and Larry Russell

***Directors Absent:*** Ranjiv Khush

**ADOPT AGENDA:**

On motion made by Director Samson and seconded by Director Schmitt, the board adopted the agenda. The board took the following roll call vote:

Ayes: Directors Samson, Schmitt, Smith, and Russell

Noes: None

Absent: Director Khush

There were no public comments on the adoption of the agenda.

**PUBLIC COMMENT - ITEMS NOT ON THE AGENDA**

There were no public comments.

**CALENDAR ITEMS:**

**Item 1 Minutes of the Operations Committee Meeting/Special Meeting of the Board of Directors (Operations) of July 21, 2023**

On motion made by Director Schmitt and seconded by Director Samson, the board approved the minutes. The board took the following roll call vote:

Ayes: Directors Samson, Smith, Schmitt, and Russell  
Noes: None  
Absent: Director Khush

There were no public comments.

**Item 2 Marin County Grand Jury Report Responses**

Engineering Division Manager Crystal Yezman presented this item to discuss the District’s proposed responses to the Grand Jury Reports on *Dam and Reservoir Safety: Water May Save Us-Water May Drown Us*, and *Build More ADUs – An Rx to Increase Marin’s Housing Supply*.

Discussion ensued.

There were two (2) public comments.

On motion made by Director Smith and seconded by Director Samson, this item was referred to the Board for approval at a future meeting.

**Item 3 Marin-Sonoma Winter Water Intertie Project**

Water Resources Division Manager Paul Sellier introduced Tim Taylor with Carollo Engineers and Xavier Irias with Woodard & Curran. They provided a presentation highlighting the long-term water supply from conveyance to storage, including the proposed agreement for professional services with Carollo for work on the project.

There was discussion throughout the presentation.

There were four (4) public comments.

On motion made by Director Schmitt and seconded by Director Samson, this item was referred to the Board for approval at a future meeting.

**ADJOURNMENT**

There being no further business, the Operations Committee Meeting/Special Meeting of the Board of Directors (Operations) adjourned at 10:48 a.m.

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Board Secretary



**Item Number:** 02  
**Meeting Date:** 09-15-2023  
**Meeting:** Operations  
Committee/Board of Directors  
(Operations)

## Review and Refer for Board Approval

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**TO:** Operations Committee/Board of Directors (Operations)

**FROM:** Paul Sellier, Water Resources

**THROUGH:** Ben Horenstein, General Manager

**DIVISION NAME:** Water Resources

**ITEM:** Quagga and Zebra Mussel Infestation Prevention Grant Award

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### SUMMARY

As part of the District's ongoing efforts to secure grants to support projects that benefit our water supply reservoirs, the District has successfully applied for the Quagga and Zebra Mussel Infestation Prevention Grant from the California Department of Parks and Recreation - Division of Boating and Waterways (DBW). Staff is requesting that the Operations Committee review the grant and refer to a future regularly scheduled Board meeting for consideration of approval of a resolution accepting the grant and delegating the necessary authority to accept and administer the grant.

### DISCUSSION

The District is required by the California Department of Fish and Wildlife (CDFW) to monitor quarterly for invasive Quagga and Zebra mussels as our reservoirs are open to the public for fishing. The District has hired Stillwater Sciences, a local environmental science firm based in Berkeley, to perform this work since 2018. The work entails entering the reservoir by boat to physically inspect the artificial monitoring substrates that are at specific depths in the District reservoirs. The findings are recorded and the documentation is submitted by Stillwater to CDFW for review. To date, no invasive mussels have been found in the District's reservoirs.

The District was also notified that in 2024 CDFW will be requiring monthly reservoir monitoring for invasive mussels, an increase in frequency from quarterly monitoring. The District anticipates continuing to work with Stillwater Sciences to satisfy this heightened requirement and funds from this grant will offset the increased cost of the more frequent monitoring. The District will also be working with Stillwater to create an Invasive Mussel Prevention Plan that will document the best practices needed to protect our reservoirs from infestation.

**FISCAL IMPACT**

The invasive mussel monitoring program currently costs approximately \$32,000 per year and with the increased monitoring frequency costs are anticipated to rise to \$96,000 per year. The District will receive \$86,800 from the DBW grant program to offset the monitoring costs.

**ATTACHMENT(S)**

None





**Item Number:** 03  
**Meeting Date:** 09-15-2023  
**Meeting:** Operations  
Committee/ Board of Directors  
(Operations)

## Informational Item

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**TO:** Operations Committee/Board of Directors (Operations)

**FROM:** Crystal Yezman, Director of Engineering

**THROUGH:** Ben Horenstein, General Manager

**DIVISION NAME:** Engineering

**ITEM:** Update on Professional Services Agreement (MA-6131) with Team Logic IT (Help Desk)

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### SUMMARY

On October 17, 2022, the District executed a professional services agreement (MA-6131) with Team Logic IT to provide Helpdesk support services at a time when staff departures led to a reduction in resource capacity. Contracted IT support services went live on January 3, 2023. In April 2023, the professional services agreement was amended to extend the term to September 30, 2023 with a not to exceed amount of \$60,920.00. Staff will provide an update on the status of the Help Desk support contract, the re-hiring of District staff and next steps for the District in addressing this scope of work.

### DISCUSSION

Helpdesk services managed under contract MA-6131 include assisting users with their Windows desktop workstations, Microsoft Office products, laptops, printers, iPads, new employee enrollments, file permissions, and Citrix remote access. These services are commonly used office systems and have been in use at the District for many years. More specialized helpdesk service tickets are reassigned to District staff for GIS, SAP, Dell VXRail and Exchange Server management, Cyber Security, SDWAN networking, Content Server and CISCO VOIP phones, which are supported by internal and external subject matter experts (SMEs).

The IT Support Panel (ITSP) helpdesk ticketing system installed by Team Logic IT has been very informative in capturing the number of tickets and issues that typically get submitted by staff. Prior to ITSP, the helpdesk relied on emails and phone calls to work and solve a problem, without any centralized tracking system. ITSP also remotely monitors the health of Windows desktops and opens automatic tickets if it senses a problem. Additionally, ITSP can do mass updates and security patches on the District's 200+ desktops within a twenty four hour period.

The IT team has had an opportunity to assess the data on helpdesk ticket submissions, as well as the effectiveness and overall satisfaction with services provided by Team Logic IT. Based on

recent hiring and staffing levels, the IT team believes that there is now enough capacity to resume full responsibility for helpdesk service requests. Remaining vacancies within the IT department will be filled to support upcoming IT Initiatives that will be detailed in the workforce development section of the upcoming IT Strategic Plan.

Staff recommends that the District not renew the professional services agreement after the upcoming contract end date. While the services provided by Team Logic IT were helpful in providing staff augmentation during a period when the IT team was short staffed, the District has been successful in hiring several new IT personnel and continues to develop in-house capacity to effectively manage the required workload. Outsourcing of these service is no longer required.

To support internal service desk operations, the IT team has reviewed several leading solutions for helpdesk ticketing, remote support, endpoint management, patch management, and endpoint backup and has reached a consensus on a best-of-breed solution that is a good fit for the District's IT environment. The goal will be to implement this solution prior to the contract end-date to ensure a seamless transition and to maintain or exceed existing levels of service.

**FISCAL IMPACT**

Initial estimates obtained for the selected Service Desk solution are approximately \$15,000 annually. Funding for this expenditure is available within the Information Technology Department's Operational budget.

**ATTACHMENT(S)**

None




**Item Number:** 04  
**Meeting Date:** 09-15-2023  
**Meeting:** Operations  
Committee/Board of Directors  
(Operations)

## Review and Refer for Board Approval

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**TO:** Operations Committee/Board of Directors (Operations)

**FROM:** Crystal Yezman, Director of Engineering 

**THROUGH:** Ben Horenstein, General Manager 

**DIVISION NAME:** Engineering

**ITEM:** Software Maintenance Reinstatement/Renewal with SAP (MA-6242)

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### SUMMARY

The District's Enterprise Resource Planning (ERP) solution is published by SAP and the current version in production is known as "SAP ERP Central Component" often simply referred to as SAP ECC. SAP ECC supports operations and processes in hiring, payroll and benefits administration, budgeting, rate management, accounting, financial management, infrastructure management, capital projects, maintenance and work orders, customer billing, water conservation, customer service, purchasing, warehouse management, vendor management, and accounts payable. This software maintenance agreement reinstates SAP software maintenance retroactively and continues ongoing software maintenance and licensing for the remainder of the calendar year. This work was previously transferred to a different vendor, but staff has learned that the services being provided are not comparable and a continued license with SAP is necessary to entitle the District to software and security updates released for all licensed SAP ECC modules while the software maintenance contract remains current.

### DISCUSSION

This SAP Support Schedule will continue in effect and will be renewed for the next period at the annual cost provided below. Software maintenance is essential to keeping the District's ERP systems stable and secure.

Staff recommends that the District's Operations Committee review and refer this item to the full board to authorize the General Manager to execute the proposed software maintenance agreement through December 31, 2023 with SAP in the amount of \$149,979.33.

### FISCAL IMPACT

This reinstatement covers all licenses from the original SAP Sales Orders detailed in the attached proposal and will need to be paid in full for the first cycle in two payments:

Support Reinstatement Fee:	\$99,986.20
Maintenance Fee (for remainder of 2023):	\$49,993.11

Funding for this expenditure is available within the Information Technology Department's Operational budget for FY24.

**ATTACHMENT(S)**

- 1) SAP Sales Orders Proposal



SAP Public Services Inc., 1300 Pennsylvania Ave, NW, Suite 600, 20004 Washington

Marin Municipal Water District  
 220 Nellen Avenue  
 94925 CORTE MADERA

## Re-instatement of SAP maintenance

Dear Customer,

we received a letter from you requesting Re-instatement of SAP maintenance.

Your SAP Support Schedule will continue in current effect and will be renewed for the next renewal period. Should you wish to terminate SAP maintenance after the next renewal period, please make a separate written request during that period.

For the licenses from the original Sales Orders stated below, Licensee will pay a one-time Support Reinstatement Fee of **USD \$99,986.20**. For the Support Period from **January 1, 2023, to August 31, 2023**.

Maintenance Base of the Reinstated Software – **USD \$650,532.08**

Annual Maintenance Fee of Reinstated Software – **USD \$149,979.33**

Effective Date of Reinstatement – **September 1, 2023**

Actual Maintenance Fee payment (for current calendar year) – **USD \$49,993.11**

## REINSTATED SOFTWARE

Material Number	Material Description	Quantity	Sales Order
7011384	BA&T SAP BObj BI, Edge ed. d. mgmt. (CS)	1	11252126
7001152	MS SQL Server Enterprise Edition	1	11252126
7011289	SAP Business Analytics Prof User	2	11252126
7016760	SAP Multichannel Foundation f. Utilities	30	11252126
7001036	zBP CE-RQT Catalogue Engine Requisite	1	10157876
7001152	MS SQL Server Enterprise Edition	1	10664338
7001152	MS SQL Server Enterprise Edition	1	11275931
7015792	SAP Adv. Metering Infstr. Water Utilit.	70	11275931
7015763	SAP Bill-To-Cash Mgmt f. Water Utilities	70	11275931
7015760	SAP Meter Admin a. Oper. f. Water Util.	70	11275931
7015775	SAP Sales Mgmt + Cust. Serv. Water Util.	70	11275931
7015789	SAP Water Data Mngmt f. Water Utilities	70	11275931
7002983	SAP ALM/BAPI 4.6c	5	10386361
7017299	SAP Single Sign-On	5	12137291
7001170	Billing (consumption based contracts)	70	10157387
7001172	Invoicing & Contract Accounting	70	10157387
7000127	IS-PS Public Sector	1	10157387
7001152	MS SQL Server Enterprise Edition	1	10157387
7001126	SAP Business Suite Employee	143	10157387
7001125	SAP Business Suite Professional	90	10157387
7001116	SAP KM Training Content	90	10157387
7001132	SAP Payroll Processing	1.000	10157387
7001382	SAP Tutor	90	10157876



7001542	EnterpriseBuyer Desk. Edition Req. Usr	143	10157876
7001541	EnterpriseBuyer Prof. Edition Prof. Usr	90	10157876
7000268	BSI U.S. Payroll Tax Processing	1.000	10157731
7001152	MS SQL Server Enterprise Edition	1	10157731
7001152	MS SQL Server Enterprise Edition	1	10423687
7003274	SAP Interactive Forms by Adobe - Enable	233	10423687
7001152	MS SQL Server Enterprise Edition	1	10702106
7010018	SAP Public Budget Formulation	1	10702106
7018104	MS SQL Server Enterprise Edition	1	12038326
7002389	SAP Business Suite Developer User	14	12038326
7001125	SAP Business Suite Professional	7	12038326
7018104	MS SQL Server Enterprise Edition	1	13259480
7001125	SAP Business Suite Professional	5	13259480
7002009	RWD InfoPak Complete Package	90	10220164
7001985	RWD InfoPaks Option 5	90	10220164



**Item Number:** 05  
**Meeting Date:** 09-15-2023  
**Meeting:** Operations  
Committee/Board of Directors

## Review and Refer for Board Approval

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**TO:** Operations Committee/Board of Directors (Operations)

**FROM:** Paul Sellier, Director of Water Resources

**THROUGH:** Ben Horenstein, General Manager

**DIVISION NAME:** Water Resources

**ITEM:** Water Supply Roadmap – Update on Petaluma River Desalination and Referral of a Proposal for Additional Research and Analysis

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### SUMMARY

On February 28, 2023, the Board selected the Integrated Roadmap for improved water supply resiliency (Roadmap). Since that time, staff has been moving forward with all of the projects identified in the Roadmap. In collaboration with the District, the City of Petaluma’s consultant, Kennedy Jenks, has completed an initial review of groundwater availability for a potential brackish desalination plant as proposed by Jacobs in the Strategic Water Supply Assessment. Staff will provide a presentation on progress to date on the Petaluma River brackish desalination concept.

### DISCUSSION

The District has partnered with the City of Petaluma (City) to develop a better understanding of the potential for the Petaluma River Brackish Desalination project (Project) as described in the Strategic Water Supply Assessment (SWSA) to yield a viable water supply. The City accelerated the work schedule by making budget available, as part of their ongoing water supply resiliency planning effort, to explore groundwater availability and water quality in the basin. The City tasked Kennedy Jenks to review existing data from city owned wells, available data from the United States Geological Survey and more recent information from the Groundwater Sustainability Plan for the Petaluma Valley as well as City owned well pumping data.

The review of existing data supports the conclusion that the groundwater in the area around the City of Petaluma is not saline water with a few exceptions. This places the water into the Groundwater Sustainability Agency purview and from a review of groundwater withdrawals and recharge of the groundwater basin, the basin would not have the capacity to support the level of withdrawals of potable water.

While this is a challenge for the Project there is an opportunity to further investigate the geology nearer San Pablo Bay where it may be possible to locate an ancient (paleo) riverbed channel that could then be used to support a subsurface intake structure for a desalination plant. The paleo channel would likely be more directly hydraulically connected to the bay itself, and therefore much less likely to impact the existing potable groundwater basin. This might provide environmental and potential cost benefits over an open bay intake for desalination. Staff has obtained a proposed scope of work from Kennedy Jenks Consultants for \$124,643 to conduct this research and analysis.

As proposed, the scope of work (attached) includes a desktop analysis to locate a possible paleo channel in an area near where the Petaluma River meets San Pablo Bay. The proposed scope of work includes further exploration of groundwater nearer the bay and will utilize an existing Airborne Electro Magnetic (AEM) survey conducted by the State Department of Water Resources (DWR) of this area. AEM surveys measure the electrical magnetic response (resistivity/conductivity) of different subsurface layers to determine the types and depths of different soil layers. The data collected is used to create continuous images that are interpreted for underground geology. The AEM survey combined with existing lithological data from previously drilled wells or borings in the area may provide an opportunity to interpret the AEM data to help point to a likely location for the paleo channel. Pending the outcome of the desktop analysis, field work to physically locate the paleo channel would take place. Fieldwork would require permits for, and drilling of, three to four test wells to perform capacity testing and determine water quality.

Staff will provide a presentation to review the work to-date on the Project and proposed scope of work to develop the Project as described.

**FISCAL IMPACT**

None

**ATTACHMENT(S)**

1. Proposed scope of work
2. Fee Estimate and Schedule



## Attachment A: Scope of Work for Brackish Water Desalination Feasibility Study

### Phase 1: Desktop Study

The scope of work for Tasks 1.1, 2 and 3 can be initiated upon notice to proceed. A detailed estimated fee is provided in Appendix D.

#### Task 1 – Project Management & QA/QC

##### Task 1.1 - Phase 1 PM Activities

Project management includes project setup, subcontracting, submittal of monthly project status reports, preparation for and leading one (1) Phase 1 kickoff meeting and four (4) project status meetings (calls/webinars), participating in two (2) GSA briefings and internal coordination to keep the project on schedule and within budget. Other project meetings are described in subsequent tasks. Quality assurance/quality control (QA/QC) activities are integrated into KJ's project management system from project inception through final document submission. Each major deliverable will receive a quality control review prior to submission to the client from a senior KJ engineer, and an internal Concept and Criteria Review will be conducted as part of project initiation.

##### *Assumptions*

- Five (5) month project duration
- One (1) Phase 1 kickoff meeting (attended by two (2) KJ staff, (2) Geoscience staff (hybrid - in person and teams))
- Four (4) progress status calls (attended by two (2) KJ staff, (2) Geoscience staff (virtual))
- Two (2) GSA briefings attended by one (1) KJ staff, (2) Geoscience staff (virtual)
- Each meeting is anticipated to have a one (1) hour duration

##### *Deliverables*

- Agenda, meeting materials and minutes in electronic form
- 5 monthly project status reports and invoices

##### Task 1.2 - Phase 2 PM Activities

Project management activities for Phase 2 will be similar in nature to Task 1.1. The project duration and number and type of meetings will be further refined upon completion of Phase 1.

#### Task 2 – Develop Preliminary Project Concept and Cost Update

This task will refine the project concept based on discussion with the District and information from the recent USBR WaterSMART Grant Proposal submitted by the District. A **project summary sheet** will be developed that

includes a project description, overview map of the project location and major facilities and identification of assumptions, benefits, limitations and data gaps.

A **data request** will be generated as part of the initial kickoff meeting, to identify relevant studies, data and other information that can be used to support the analysis. A tracking table will be submitted to the District and maintained by KJ. The District will provide digital files to the project team, as available, within 3 weeks of the data request.

A **preliminary high-level capital cost estimate** will be developed for the project concept, based on siting a regional desalination plant at San Pablo Bay, with subsurface intake. This task will build on unit costs and cost estimates developed for the SWSA, using similar project component as defined in other relevant main water supply alternatives (e.g. \$/MGD of desalination treatment, \$/LF of pipelines, \$/MG of storage etc). It is understood that there is limited unit cost information available from the SWSA. As such, KJ will review the total project costs developed in the SWSA, additional information gathered by the District and develop unit costs that can be applied to this project concept, where applicable. Unit cost assumptions will be further supported based on our team's experience with similar projects. The objective of this preliminary cost estimate is to be able to compare the cost of this new option with the other water supply alternatives. This would allow the District to potentially eliminate, this option early if the project costs and/or unitized cost per AFY are unacceptably high, based on the desktop study, before any further research is done. Soft costs will be estimated based on a percent of facility direct costs, using assumptions similar to the SWSA or as directed by the District. Operations and maintenance costs and life cycle unit costs will not be developed as part of this effort.

#### *Assumptions*

- SWSA Table 11, summarizing the potential yield, costs, and timing for each of the main water supply alternatives will be used as the basis for cost comparison.
- A summary of the metrics for desalination-focused options, provided in the SWSA, 13 Sept 2023, Board Workshop #7 (Slide 22: Desalination Options Yield and Cost Summary) will be applied, as appropriate.
- If possible, the District and/or the SWSA consultant (Jacobs) will provide additional unit cost and/or facility cost data from the SWSA study to support the comparison of project concepts.
- All cost will be at a concept-level with major assumptions listed and a range of accuracy provided reflective of AACE Class V Cost estimate (+50% to 30%)

#### *Deliverables*

- Project Summary Sheet with Map
- Data Request and Tracking Table
- Preliminary High Level Capital Cost Estimate Table

### Task 3 – Desktop Research Using the Existing AEM Survey Data

Under this task, Geoscience and Ramboll will conduct a desktop analysis of the California Statewide Airborne Electromagnetic (AEM) survey that Ramboll conducted for the California Department of Water Resources to identify potential areas for explanatory borehole drilling. KJ will provide coordination and oversight.

#### Task 3.1 - Data Collection and Review

Initial data review suggests that elevated salinity inland from the bay may be from seawater intrusion from past pumping. Under this task, Geoscience will conduct a detailed review of available data for wells (including well construction data, well logs, groundwater levels, and water quality) in and around the study area close to the San Pablo Bay (approximately from one mile inland of Highway 37 to the coast). The high-resolution dataset will provide an initial understanding of a possible coarse layer within or below the bay mud that would act as a conduit from San Pablo Bay to a new wellfield. The dataset will be provided to Ramboll for their further sensitivity analysis using the AEM data.

#### Task 3.2 – Sensitivity Analysis and Uncertainty Analysis Using the Existing AEM Database

The existing AEM data will be analyzed under this task to better identify and quantify the uncertainty surrounding subsurface resistivity targets consistent with the expected paleochannels. The analysis will include:

- A desktop study to evaluate the expected AEM signal produced by a paleochannel in the various subsurface scenarios.
- Investigation and application of alternative inversion options to the data to provide more vertical and lateral freedom in the estimated resistivity value. Additionally, this will include applying a priori constraints to known features or layering in the subsurface.
- 1D uncertainty analysis of the AEM data at a selected set of locations to quantify the degree of uncertainty surrounding the resistivity and thickness of potential targets consistent with what would be expected for paleochannels.
- Interpretation of the AEM and auxiliary data and the likelihood that the AEM data would have detected a paleochannel-like feature.

The detailed scope of work for this task is described in Ramboll's proposal submitted to Geoscience on July 11, 2013 (Appendix B). Ramboll will produce a **Technical Memorandum (TM) - Analysis of AEM Data** presenting the results of the data analysis, preliminary interpretations, and recommendations for future work to improve the identification of potential paleochannels in the area of interest. The memo will contain maps and figures showing the location and types of data analyzed, analysis and interpretation results.

#### Task 3.3 - Evaluation of Exploratory Borehole Locations

Geoscience will review the Ramboll's findings from Task 3.2 to evaluation and recommend locations for exploratory boreholes. Two (2) one-hour meetings are assumed with the District to present the findings and discuss next steps. Assuming a viable paleochannel-like feature is detected, the project team will move forward with Task 4.

**OFF RAMP:** If a viable paleochannel-like feature is not detected or the project concept deemed infeasible, the project team will meet with the District to determine the next steps for additional desktop evaluations or discontinue the effort.

#### *Assumptions*

- Two (1) One (1) hour meetings attended by KJ PM, one (1) KJ team member and two (2) Geoscience team members.
- Geoscience will provide technical QA/QC of their internal work products and deliverables provided by Ramboll.
- KJ will provide review of deliverables ....

#### *Deliverables*

- Agenda, meeting materials and minutes in electronic form.
- Dataset provided by Geoscience to Ramboll for their further sensitivity analysis using the AEM data
- Draft and Final TM - Analysis of AEM Data (Ramboll)
- Exploratory boreholes summary table and map

## Phase 2: Exploratory Drilling

The scope of work for Tasks 1.2, 4, 5 and 6 will only be initiated if a viable paleochannel-like feature is identified in Phase 1. An outline of the anticipated tasks and subtasks is provided herein. The tasks will be revisited prior to NTP for Phase 2, allowing the KJ team time to validate the approach, develop the appropriate scope and provide a fee estimate based on the desktop findings.

### **Task 4 – Preparation of Exploratory Drilling Workplan and Permitting Assistance**

This task includes preparation of a detailed technical work plan for the contractor to follow during exploratory drilling, sampling, and destruction of three exploratory boreholes. The scope and level of effort for permitting support, meetings and site visits will be refined based on Phase 1 outcomes and the number and placement of exploratory borings recommended. The following subtasks are anticipated.

#### **Task 4.1 – Exploratory Drilling Workplan**

#### **Task 4.2 – Permitting Compliance Assistance**

#### **Task 4.3 – Exploratory Drilling Meetings**

### **Task 5 – Exploratory Borehole Drilling and Depth Specific Water Quality Testing**

For the exploratory investigation, Geoscience can subcontract with a drilling contractor with a C-57 license and proven track record of successfully utilizing the preferred drilling method (e.g. sonic or other) to perform the exploratory work. The scope and level of effort for Task 5 will be developed based on Phase 1 outcomes, the

number and placement of exploratory borings recommended, confirmation of the preferred drilling approach (sonic or other) and District contracting preferences and requirements with respect to the drilling contractor. The following subtasks are anticipated.

Task 5.1 – Construction Management

Task 5.2 – Exploratory Borehole Drilling with Onsite Field Supervision

Task 5.3 – Evaluate Geophysical Logs

Task 5.4 – Depth Specific Water Quality Sampling

Task 5.5 – Mechanical Grading Analysis

Task 5.6 – Draft and Final Technical Memorandum

### **Task 6 – Additional Services (Not Scoped)**

Should the additional services be identified as part of Phase 1, or if the exploratory drilling show favorable results, it is anticipated that the District may wish to continue to develop this regional brackish water desalination project.

Additional tasks that could help to further the project include but are not limited to:

- Continued source water quality investigations
- Finish water quality specification development
- Evaluation of brine disposal options, including data gap identification
- Development of Project partnerships
- Conveyance and distribution system assessment
- Isolated aquifer zone testing
- Further development of Project costs

Task 6 additional services may be identified and scoped as part of Phase 2 or after initial results from field investigations are completed

**OFF RAMP:** if an insignificant or non-viable paleochannel is encountered during drilling, the project team will meet with the District to determine the next steps for additional field investigations or discontinue the effort.

Attachment No. 2 – Estimated Fee and Schedule

Estimated Budget for Phase 1

TASK DESCRIPTION	KJ Total Hours	KJ Total Labor	Geoscience <sup>a</sup>	ODCs	Total Labor + Subs + Expenses
<b>Phase 1: Desktop Study</b>					
Task 1 - Project Management and QA/QC (Phase 1)	113	\$30,066	\$5,941	\$300	\$36,308
Task 2 - Develop Preliminary Project Concept and Cost Update	80	\$19,739	\$5,025	\$0	\$24,764
Task 3 - Desktop Research Using the Existing AEM Survey Data	0	\$0	\$63,571	\$0	\$63,571
<b>Subtotal Phase 1</b>	<b>193</b>	<b>\$49,806</b>	<b>\$74,537</b>	<b>\$300</b>	<b>\$124,643</b>
<b>Phase 2: Exploratory Drilling<sup>b</sup></b>					
Task 1 - Project Management and QA/QC (Phase 2)	<i>Scope and Effort to be confirmed after Phase 1</i>				
Task 4 - Preparation of Exploratory Drilling Workplan and Permitting Assistance					
Task 5 - Exploratory Borehole Drilling and Depth Specific Water Quality Testing					
Task 6 – Additional Services (Not Scoped) <sup>c</sup>					
<b>Subtotal Phase 2</b>	<b>TBD</b>	<b>TBD</b>	<b>TBD</b>	<b>TBD</b>	<b>TBD</b>
<b>Total Project</b>	<b>TBD</b>	<b>TBD</b>	<b>TBD</b>	<b>TBD</b>	<b>TBD</b>

- <sup>a</sup> Fee for Geosciences includes services performed by Ramboll (Phase 1) and may include Drilling Contractor (Phase 2).
- <sup>b</sup> Fee for Phase 2 is not provided at this time, as the results from the desktop study will inform the number of wells to be drilled and the level of effort.
- <sup>c</sup> Additional services may be identified and scoped as part of Phase 2 or after initial results from field investigations are completed.

Anticipated Project Schedule

Tasks, Meetings and Key Deliverables	2023						2024						
	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept
<b>Phase 1 - Desktop Study</b>													
Notice to Proceed	+												
<b>Task 1 - Project Management and QA/QC</b>													
Meetings and Progress Calls		Kick-off	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺	☺
Status Reports and Invoices		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Task 2 - Develop Preliminary Project Concept and Cost Update</b>													
Project summary sheet, data request, cost estimate			◆		✓								
<b>Task 3 - Desktop Research Using the Existing AEM Survey Data</b>													
Task 3.1 - Data Collection and Review													
Task 3.2 - Sensitivity Analysis				◆	✓								
Task 3.3 - Evaluation of Exploratory Boreholes				◆	✓								
<b>Task 4 - Preparation of Exploratory Drilling Workplan and Permitting Assistance</b>													
Task 4.1 - Exploratory Drilling Workplan							◆	◆	✓				
Task 4.2 - Permitting Compliance Assistance													
Task 4.3 - Exploratory Drilling Meetings							☺	☺	☺	☺	☺	☺	☺
<b>Task 5 - Exploratory Borehole Drilling and Depth Specific Water Quality Testing</b>													
Task 5.1 - Construction Management													
Task 5.2 - Exploratory Borehole Sonic Drilling													
Task 5.3 - Evaluate Geophysical Logs													
Task 5.4 - Depth Specific Water Quality Sampling													
Task 5.5 - Mechanical Grading Analysis													
Task 5.6 - Draft and Final Technical Memorandum												◆	◆
<b>Task 6 - Future Services (Not Funded)</b>													✓
<i>Initiate Scoping (Simulprobe water quality assessment and other investigations needed)</i>													

<sup>1)</sup> Phase 2 schedule to be refined at/near completion of Phase 1 based on number of wells to be drilled and availability of drilling contractor.

LEGEND			
<b>Meetings</b>		<b>Deliverables</b>	
Progress Status Calls	☺	Interim/Admin Draft	◆
Site Visits	⊕	Draft	☺
GSA Briefing	△	Final	✓