



BOARD MEMORANDUM

DATE: April 9, 2025

TO: Board of Directors

FROM: Najwa Pitois, Ph.D., P.E.
Principal Water Resources Planner *NP*

SUBJECT: Approve and Authorize the General Manager to Enter into a Contract with INTERA to Enhance Modeling of the Local Groundwater System

SUMMARY

In March 2024, with Board approval, the Agency entered into a Professional Services Agreement with INTERA, Incorporated (INTERA) to evaluate the existing groundwater modeling tools and workflows and develop recommendations to enhance the use of these tools and models for water resource decision making and management in support of the Resiliency Water Master Plan. Staff is requesting authorization to enter into a Task Order 2 (TO2) contract with INTERA to enhance modeling of the local groundwater system by implementing the recommendations made in Task Order 1 (TO1).

DISCUSSION

In December 2023, SCV Water solicited bids from two of nine pre-qualified consultants (impaneled bench) under the Water Resiliency Master Plan to review the hydrogeologic conceptual model and provide recommendations for future enhancements to improve the efficiency and quality of modeling workflow inputs, outputs, and visualizations and communications to support effective stakeholder engagement and timely decision making. In March 2024, with Board approval, TO1 was issued to INTERA, to evaluate existing groundwater modeling tools and workflows and develop recommendations to enhance the use of these tools and models, work which is partially funded under the USBR FY2024 Applied Science Grant. In March 2025, INTERA submitted three technical memos summarizing their review and making recommendations that can be broadly categorized into the following key areas:

- **Data collection:** Additional data should be collected and processed to support specific decision (and modelling) objectives.
- **Model enhancements:** This includes the redevelopment of SCV Recharge Compiler, an update of the hydrogeological conceptual model using available data, automated history-matching/calibration and an update of modelling code to utilize the latest advances in standard modelling codes.
- **Model workflow improvements:** Using computer programming to develop scripts to automate model development to increase flexibility, transparency and interoperability with other model systems and tools (i.e., ecological system models). This can also reduce the potential for manual processing errors and provide broader options for visualization and analysis.

- **Prediction and uncertainty analysis:** A structured, decision-centered approach should include consideration of predictive uncertainty to allow the Agency to assess the risks associated with its investments in the groundwater system.
- **Groundwater Decision Support Tool:** Recommend the construction of a groundwater emulator to run multiple scenarios quickly and efficiently and help update our operating plans.
- **Visualization and engagement:** Visualization features and tools should be developed that target specific audiences and decisions of interest. Where possible, these should include interactive elements that allow a range of locations, times and adaptations (and associated uncertainty) to be evaluated and understood.
- **Training and Documentation:** Ensure that Agency staff is adequately trained to run the new tools in-house.

Because INTERA's work on TO1 has been outstanding, and any new consultant would have to backtrack and duplicate work that has already been completed, for fiscal efficiency the prudent path forward is to continue with the same vendor for follow-on work. Staff checked with the USBR to ensure compliance with the terms of the funding agreement and received written confirmation in an email dated March 10, 2025, that the sole source of this contract is acceptable if it is consistent with the Agency's own internal policies and consistent with 2 CFR 200.318.

Staff negotiated a scope and budget for TO2 with INTERA. Included in the scope are two optional tasks for performing additional aquifer tests and for construction support of a potential monitoring well, that would be scoped out if necessary. Staff is requesting authorization to enter into a Professional Services Agreement with INTERA for to implement the recommended enhancements. The budget assumes that \$406,883 will be for the desktop study and aquifer testing and field data collection task and \$676,615 will be for modeling tasks, of which approximately \$408,981 is funded under the USBR grant.

ALIGNMENT WITH THE SANTA CLARIA VALLEY GROUNDWATER SUSTAINABILITY AGENCY (SCV-GSA) GROUNDWATER SUSTAINABILITY PLAN (GSP) IMPLEMENTATION

The groundwater flow model used to develop the GSP in 2022 is a regional model that was peer reviewed and deemed suitable for this use over the approximately 100 square mile groundwater basin. Since the approval of the GSP by the SCV-GSA, new data has been incorporated into the flow model, and its calibration updated. The Department of Water Resources (DWR) approved the adopted GSP in January 2024.

DWR's approval required some corrective actions to the GSP, including improvements to the 3-D conceptual geologic model of the basin (not the groundwater flow model), to refine geological stratigraphy and other components. DWR has requested this GSP 5-Year Update be provided by January 2027. These refinements are currently underway utilizing prior reports and recent geological investigations. Refinements to the 3-D conceptual geologic model will fill known key data gaps with geology. These data, together with aquifer testing recommended in this scope of work, would be used to update the groundwater flow model.

The schedule for the WRI flow model update with model completion in April 2026, allows the model to be also used for the GSP 5-Year Update and future work of the SCV-GSA. This allows the SCV-GSA to benefit from the more refined groundwater flow model developed for the Resiliency Water

Master Plan. Since the new model would employ more efficient workflows, it affords cost savings for both the SCV Water and the SCV GSA.

On April 9, 2025, the Water Resources and Watershed Committee reached a consensus to recommend the Board of Directors approve and authorize the General Manager to enter into a contract with INTERA to enhance the modeling of the local groundwater system. This item has been deemed suitable for inclusion in the Consent Calendar.

STRATEGIC PLAN NEXUS

The scope of work under this Task Order will help meet the Agency's Strategic Plan Goal C. Water Supply and Resource Sustainability: Implement programs to ensure the service area has reliable and sustainable supplies of water.

Strategy C.1 Conduct planning to ensure long-term water demands are met.

- C.1.2 Identify projects and initiate planning for projects to enhance long-term water supply reliability consistent with the updated Water Supply Reliability Report.
- C.1.5 Monitor climate change science and public policy. Incorporate climate change impacts on water demand and supplies into long-term plans and programs to maintain reliable and sustainable water supplies.

Strategy C.3 Advance the integrated management of water resources.

- C.3.5 Coordinate and analyze performance of water banking and exchange programs, local groundwater production and water conservation measures.

FINANCIAL CONSIDERATIONS

Funding for this work is included in the FY2025/2026 and FY2026/2027 Capital Budget. In addition, approximately \$409,000 of the work is grant funded under the BOR FY2024 Applied Science Grant and will be reimbursed at ~50% of eligible costs.

RECOMMENDATION

The Water Resources and Watershed Committee recommends that the Board of Directors approve and authorize the General Manager to enter into a contract, not to exceed \$1,083,498 with INTERA to enhance the modeling of the local groundwater system.

MGS