

Staff Report

TO: Board of Directors

FROM: Doug Roderick, P.E., Director of Engineering

DATE: August 23, 2023

SUBJECT: Plan for Water – Consulting Contract Amendment

ENGINEERING DEPT

RECOMMENDATION:

Approve Task Order No. 3 in the amount of \$273,469 with WEST Consulting Inc. for continued support and development for the Plan for Water, and authorize the General Manager to execute the appropriate documents.

BACKGROUND:

The Plan for Water (PFW) is a long-range decision tool to guide NID's water management. The PFW is an open and comprehensive look by NID and the community at the potential limitations of its available water resources and the impacts of new regulations, changes in land use, climate change and community visions. Part of the PFW process will be to develop a range of potential scenarios for the Board to consider when determining the best ways to meet the community's demand for water for the next 50 years while weighing the impact on NID, the community and the environment. When complete, the PFW will show how a variety of future water supply and demand scenarios could be integrated to ensure our community enjoys the same high-quality, reliable water system that NID has now.

As part of the technical portion of the PFW process, the Board awarded a consulting contract with WEST Consulting Inc (WEST) in the amount of \$1,024,291 during the May 11, 2022, board meeting.

On September 14, 2022, the Board awarded Task Order No. 2 to WEST for development of a HEC-HMS model to support the hydrology development of the Plan for Water. The primary advantage of using HEC-HMS is that it integrates a physically based model. A physically based model is important because statistically based models may not perform well outside of the analyzed range.

Extreme droughts and floods may be outside the hydrological range for the statistical approach, a consequence of climate change. The HEC-HMS model would be utilized for planning purposes and can serve as a consistent decision-making tool that enhances understanding of basin hydrology including runoff, inflows, and snow conditions. NID would be able to physically simulate hydrology and physically analyze water supply and irrigation strategies, potential environmental impacts, and regulatory compliance options. Another advantage of developing an HEC-HMS model is that in the future, when additional changes/improvements in the CMIP (phase 7, 8, etc) occur, that information can be integrated into the model.

As the District gets closer to completing the Plan for Water process, the costs associated with the development and completion of the project have increased due to several factors. These include:

- To fulfill stakeholder requests for additional calibration years, the calibration effort more than doubled. The effort required looking at various years to ensure the parameters were validated with more than one climate condition (wet, median, and dry).
- To ensure the bookends considered a reasonable range of climate scenarios, an ensemble approach was implemented that required an extended number of modeling scenarios.
- Additional efforts were implemented to ensure no bias existed with the HMS and climate change models at the NID basin. This added scope was deemed necessary to increase confidence in the data and the models.
- The demand (IDC) and operations (ResSim) simulation scenarios were also increased to provide technical assurance that we are simulating a reasonable range of bookends. The increase in cost is primarily due to the increase in the number of simulations, but also partly due to the additional development of code and post-processing tools.
- The final report will also increase in content because of the expanded simulations resulting in additional costs.

When completed, the tools that the WEST team has developed and are finalizing are going to be a great asset to the District in better understanding and planning as climate change and demands continue to impact the District's future.

The Engineering Department Operating Budget currently has enough funds in its consulting budget to cover the increased costs associated with Task Order No. 3, so a budget amendment is not necessary. It is anticipated that the Plan for Water project will be completed within the 2023 budget year.

It is recommended that the Board approve Task Order No. 3 in the amount of \$273,469.

BUDGETARY IMPACT: The overall contract including Task Order No. 3 will be \$1,526,070. As stated above, there are sufficient funds available in Engineering's consulting budget to cover the increased costs associated with Task Order No. 3.

DR

ATTACHMENTS: None