

ATTACHMENT 1

Attachment A-2

Amendment #2

Scope of Work

1. OVERALL PROGRAM MANAGEMENT ASSISTANCE

Consultant will continue overall program management assistance as needed, subject to available task funds. Anticipated activities include:

- Assisting with planning and coordination of work among consultants including those for environmental studies, conveyance and storage.
- Assisting with procuring additional consultant assistance as required. Potential areas of activity include assistance with scoping and negotiation of amendments with existing consultants, and development of needed materials for procuring new consultants such as a Technical Review Board.

Deliverables: as directed, for example draft Board briefing materials, review comments on work of technical consultants, strategic advice, draft procurement documents (RFQ, RFP) for consultant services.

2. OTHER SERVICES

Consultant will support the program as requested subject to available task funds. Example activities include assistance with grant funding proposals and associated documents.

Deliverables: as appropriate, for example grant application materials

3. WATER SUPPLY MODELING

Consultant will continue to support the program by enhancing and applying the existing MarinSim water system model. Anticipated areas of activity include analyzing a range of options not originally identified, including combinations of storage and conveyance projects (spillway modifications, dam enlargement/construction, and conveyance), all with various sizes.

Consultant will also assist Marin Water in their work with other entities (SCWA, NMWD) as needed to identify likely water supply or conveyance constraints.

An Excel tool for use by operators, to assist them in operating the system in response to dynamic criteria, will also be provided.

Deliverables: working model files; model results; Excel tool; training

4. IN-DISTRICT BOTTLENECK RESOLUTION (NEW TASK)

Consultant will analyze bottlenecks within the District's existing system, building upon preliminary work done in 2021. The work will take advantage of updates to the District's distribution system InfoWater Pro model made since that time. The overall goal is to maximize the District's ability to use Ignacio Pump Station (IPS) in the winter.

Subtasks include:

4.1 Develop Project Goals, Criteria, and Constraints

Define goals and criteria, including scenarios to be modeled.

4.2 Hydraulic Model update

While the hydraulic model was recently updated, it's anticipated that certain controls may need updating to optimize IPS rates. The task includes discussing system operation with the District, updating model controls to reflect the desired approach consistent with maximizing winter-time use of IPS, and preparing figures the distribution approach.

4.3 Develop Projects

Prepare a set of potential in-District projects aimed at improving in-system transmission, particularly during the winter. The projects are anticipated to be built on the projects identified in the 2022 Water Conveyance Bottleneck Investigation Technical Memorandum. Projects identified in that study will be incorporated as alternative scenarios in the recently updated version of the District's model. Up to 5 additional projects will also be developed based on discussions with District Staff.

4.4 Project Cost Estimates

Cost estimates for projects identified in the 2022 Water Conveyance Bottleneck Investigation will be updated to reflect the current ENRSF CCI, and new cost estimates will be prepared for any projects developed under subtask 4.3. Cost estimates will be prepared to a AACE Class 4 accuracy level.

4.5 Develop Project Portfolios for Further Investigation

In collaboration with the District, assemble a top ten list of portfolios (a portfolio is defined as a combination of two or more projects) based on judgement and/or cost ceiling, capacity/cost ranking, compatibility with other planned work, etc.

4.6 Model and Rank Alternative Portfolios

Woodard & Curran will work with the District to define up to 4 scenarios (including supply and demand conditions) appropriate for evaluating the performance of each portfolio. Water treatment plant turndown constraints are a key part of each scenario. W&C will model the performance of each portfolio in the top ten against the supply/demand scenarios. A key performance parameter is IPS utilization.

4.7 Refine Alternative Portfolios Scope and Costs

Refine estimates of project scopes and costs for each top-ten portfolio. This exercise could generate important variants to a portfolio, and a need to model performance of those variants by revisiting the portfolio modeling as needed, if "inflection points" are identified as the project scope is explored.

Revisit and revise hydraulic modeling underpinning the relevant capacity estimates as needed.

4.8 Facilitate Selection of Preferred Portfolio

Prepare tables and visualizations showing the cost and performance of the top ten portfolios as refined, along with qualitative data consistent with evaluation criteria.

Facilitate one or more workshops with District staff to converge on a preferred portfolio.

4.9 Technical Memorandum

The results of this task will be summarized in a Draft and Final Technical Memorandum (TM). The TM will include the selected components listed above as agreed upon by the District.

TM will provide a ranked list of the selected project portfolios based on modeling results, constructability, cost, and other selected criteria.

Deliverables:

- Technical memorandum summarizing the portfolios selection process, a ranked list of the selected project portfolios, tables and visualizations of each of the portfolios in the top ten list, and the selected portfolio.
- Workshop presentation materials for up to 2 workshops (one workshop to identify scenarios and criteria, and a second workshop to discuss portfolio findings and rankings).