

**Metropolitan Domestic Water Improvement District
Board of Directors Meeting**

November 8, 2021

**Authorizing the General Manager to Execute Amendment No. 2 to the
Contract for Final Design Services for Shared Portions of the
Northwest Recharge, Recovery and Delivery System**

Synopsis

The Board of Directors is requested to authorize the General Manager to execute Amendment No. 2 to the contract for final design of shared portions of the Northwest Recharge, Recovery and Delivery System (NWRRDS).

Background

At the February 10, 2020 meeting, the Board of Directors authorized the General Manager to negotiate and enter into a contract with Carollo Engineers, Inc., (Carollo) for final design services for the transmission main and forebay facility.

On November 9, 2020, the Board of Directors authorized contract Amendment No. 1 to include design and bid phase services for recovery well equipping, collector pipelines, and forebay chemical storage and feed system. That amendment also included revisions to the transmission main design to reduce the pipeline diameter from 30-inch to 24-inch, survey services to collect data from potholing efforts related to the transmission main, plans for additional conduits and related vaults to provide electric service to the forebay facility, plans for grubbing, clearing, and grading existing easements necessary for access to the forebay facility, and bid phase services for both the transmission main and forebay, as well as the recovery well equipping and collector pipelines.

Work associated with the transmission main and forebay is included in Packages 3 and 5. Work associated with the wells and collector pipelines is in Package 6.

Issues

Packages 3 and 5: Transmission Main and Forebay

In May 2020, an independent cost validation was completed resulting in an estimated construction cost of \$25,330,000 for the transmission main and forebay (this does not include design or engineering support during construction). In November 2020, the Partners authorized Memorandum of Agreement (MOA) 20007-00, which included among other things the addition of a bulk sodium hydroxide chemical storage and feed system for pH adjustment of recovered water at the NWRRDS forebay site and revisions to the transmission main and forebay facility design to reduce the transmission main diameter from 30 inches to 24 inches. For budgeting

purposes, the chemical storage and feed system was estimated at \$560,000 and the reduction in the transmission main diameter was estimated at \$3,300,000, resulting in an estimated construction budget for Packages 3 and 5 of \$23,132,222 (excluding engineering support during construction). After more detailed design, the consultant updated the cost estimate. The current estimate, based on the 95% level of design, is \$23,726,991. That estimate has a 10% contingency, but does not include a new requirement to jack and bore at two CalPortland crossings or riparian mitigation. The resulting anticipated budgetary construction cost for Packages 3 and 5, including the jack and bore and riparian mitigation (excluding engineering support during construction), is \$24,073,000, which is nearly \$941,000 over budget.

In order to bring the costs in line with the previous budget estimates, the consultant explored potential options with the Partners. The most notable cost savings would occur from eliminating one of the forebay reservoirs. In order to provide the full base flow for 10,400 acre feet per year, the size of the single reservoir would be increased. The impact from eliminating one reservoir includes instances when the NWRRDS system will be out of service for maintenance of the single reservoir.

Based on discussions with the design consultant, the reduction in construction cost for a single reservoir is approximately \$1,710,000. The consultant fee to accommodate the redesign is \$70,720.00, which would be split proportionally among the Partners. In October 2021, Partners authorized the District to proceed with the design to modify the forebay reservoir at an estimated design fee of \$66,100. That MOA was updated via MOA 21005-01 to reflect the consultant's fee of \$70,720.

Package 6: Wells and Collector Pipelines

In 2019, a Class III conceptual cost estimate was developed for Package 6 at the 30% design stage, which reflected an anticipated construction cost between \$5,637,844 (low) and \$8,622,647 (high). In May 2020, an independent cost validation was completed resulting in an estimated cost of \$7,840,000. In July 2021, after the 60% design was submitted, an opinion of probable cost was received from the consultant in the amount of \$10,990,000, considerably higher than the conceptual estimate. The more significant reasons noted for the cost increase were due to electrical infrastructure, process piping, and pump equipment.

Due to the water quality concerns that will limit the pumping from AVRW-01, as well as the increase in costs associated with Package 6, the Partners explored potential options. The most notable cost savings would occur from deferring equipping of AVRW-01. With both AVRW-02 and AVRW-03 wells operating at full capacity, up to 8,000 acre feet per year (AF/y) can be delivered to the forebay without AVRW-01, but would require 100% duty cycle. The District and the Town of Oro Valley anticipate taking less than the full 8,000 AF/y in the initial years of operation. The site design will be in place should the Partners determine to equip AVRW-01 in the future.

Based on discussions with the design consultant, the associated reduction in construction cost could be in the order of \$2,420,000. The consultant fee to accommodate the redesign is \$22,660, which would be split between the District and Oro Valley as it pertains to the well infrastructure. In October 2021, the District and Oro Valley executed MOA 21004-00 authorizing the District to proceed with the associated redesign to defer equipping well AVRW-01. The Town of Marana acknowledged the change as a non-funding Partner.

Design Fee and Schedule

The total for Amendment No. 2 with the associated Partner breakdown is as follows:

Design Element	Package	Design Fee	Metro Water	Marana	Oro Valley
Revise Forebay Design	3 & 5	\$70,720.00	\$27,200.00	\$16,320.00	\$27,200.00
Defer Equipping Well AVRW-01	6	\$22,660.00	\$11,330.00	\$0.00	\$11,330.00
Total Amendment No. 2		\$93,380.00	\$38,530.00	\$16,320.00	\$38,530.00

The revised final design would be anticipated by January 2022. Construction is still anticipated to be complete by the fall of 2023.

Recommendation

It is recommended the Board of Directors authorize the General Manager to execute Amendment No. 2 with Carollo Engineers, Inc., for shared components of NWRDSDS in an amount-not-to exceed \$93,380.00.

Suggested Motion

I move to authorize the General Manager to execute Amendment No. 2 with Carollo Engineers, Inc., for shared components of the Northwest Recharge, Recovery, and Delivery System in an amount-not-to exceed \$93,380.00.

Respectfully submitted,

Sheila M. Bowen, P.E.
District Engineer

I concur with the above-noted recommendation.

Respectfully submitted,

Board of Directors Meeting

November 9, 2020

Authorizing the General Manager to Execute Amendment No. 2 for Final Design Services for Shared Portions of
NWRDSD

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Joseph Olsen, P.E.
General Manager