COUNCIL ACTION SHEET

To:	The Mayor and Members of City Council
From:	Mouhamad Zaher, Public Works Director
Date:	August 16, 2023
Subject:	Progressive Design Build Services for Replacement of 2.0 MG Reservoir

Background: The existing 2.0 Million Gallon Reservoir at 35259 Pittsburg Road is the oldest of five reservoirs that serve St. Helens. The reservoir is a partially buried, concrete tank with a panelized domed metal roof. The concrete wall and floor structure is over 94 years old and has experienced localized spalling and cracking to be expected with the age of the structure. Over the past several years, the reservoir has also experienced an increase leaking.

In 2008 the reservoir was inspected, and the floor joints and several locations of the wall were identified for repair. In 2009 the caulking in the expansion joints was replaced and the portions of the wall where leaks had been identified were removed and replaced.

While the repairs made in 2009 made some improvements in the leakage, the reservoir continued to experience a leakage rate of over 16,000 gallons per day. Because of the reservoir's hydraulic connection to the adjacent 2.5 Million Gallon Reservoir, it was advantageous to the City preserve the life of the 2.0 MG Reservoir for as long as possible. Applying a waterproof coating to the interior of the reservoir was selected as the most cost-effective solution to address the leakage and extend the life of the structure.

In 2017, the reservoir's entire interior surface was rehabilitated with a coating system which began with a 20-mil application of Reactamine 760 coating which was overlaid with a non-woven geotextile fabric which was then fastened to the reservoir's concrete surface with stainless steel threaded bolts. A final coating of 60 mils of Reactamine 760 was applied directly to the fabric and over the bolts to form a monolithic leak-proof barrier inside the reservoir. However, immediately after installation of the membrane system, the reservoir exhibited severe leakage at a rate of approximately 74,000 gallons per day. After multiple repairs and testing, the leakage rate of the reservoir has remained at a steady 44,000 gallons per day, so the reservoir was taken offline. The City's updated Water Master Plan has identified a water storage deficit for St. Helens with this reservoir offline.

In 2021 the City hired a forensic engineering consultant to analyze the conditions that promoted the failure of the coating system, formulate an expert opinion as to the cause of failure, and make recommendations for repair. The recommendations received from the forensic engineer was,

(1) remove the liner system completely, enhance integrity of concrete surface with an epoxy coat or parge coat and apply a waterproofing membrane, or

(2) abandon the existing structure and construct a new structure within the existing.

COUNCIL ACTION SHEET

After consultation and review, it was decided that the best course of action would be to abandon the existing structure and construct a new structure within the existing structure's footprint. The objective of the replacement of the reservoir is to design and build a new reservoir facility to replace the existing reservoir that will meet the current water storage and operational needs at the best possible value to the City of St. Helens.

On June 7, 2023, the City began the solicitation process to request proposals from experienced Design-Build (DB) teams with demonstrated experience in the design and construction of water storage reservoirs for the replacement of the 2.0 MG Reservoir. The DB team will be required to analyze existing site infrastructure, make recommendations for replacement, and perform the design and construction of a new water storage reservoir to replace the existing 2MG concrete reservoir at the same site location.

The Work under the progressive design-build contract will be divided into two phases:

- Phase 1 – Design and Preconstruction Phase
- Phase 2 – Construction Phase

During the Phase 1, the Design-Builder will be required to perform preliminary engineering; develop and advance the design in accordance with City requirements; progress the permit drawings/specifications for the project to construction documents; participate in on-going community engagement process, as necessary; and develop a GMP (Guaranteed Maximum Price) for the project, including obtaining quotes from trade subcontractors based on the approved design documents. Construction and construction administration services for early authorized work (e.g., abatement, demolition, and grading) may also occur during this phase.

Phase 2 will advance the project to construction and the Design-Builder will be required to provide construction and construction administration services to demolish or partially demolish the existing reservoir, construct a new water storage reservoir at the site, and perform all work necessary to successfully execute the Work, including grading, the disassembly and disposal of all or portions of the existing reservoir, protection of existing systems and the of the adjacent reservoir; the installation of level sensors, piping, fittings, and other appurtenances to connect the new reservoir to the water system.

On July 11, 2023, The City received a total of three (3) proposals in response to the RFP for Progressive Design Build Services for the Replacement of the City's 2MG Reservoir. Proposals were received from the following firms:

- Emery and Sons Construction Group, LLC
- The Saunders Company
- Tapani Inc.

After reviewing the proposals, interviewing the design-build teams, and contacting references on past projects, Emery and Sons Construction Group, LLC was determined to have the experience and resources needed to provide the successful replacement of the City's 2.0 MG Reservoir.

COUNCIL ACTION SHEET

The 2.0 MG Reservoir project is identified in the City's Water Master Plan. The project funding will come local funds budgeted for the project and from DEQ Safe Drinking Water Loan funds. The project is estimated at $4.5M.

Recommendation: Award the project for progressive design build services for the replacement of the City's 2.0 Million Gallon Reservoir at 35259 Pittsburg Road to Emery and Sons Construction and authorize the Public Works Director to negotiate a final Scope of Work and cost based on the Contractor's design-build proposal.