

**POST PROJECT EVALUATION  
FOR A  
CM/GC PROJECT**

**Project Name:** Geren Island Water Treatment Facility Improvements Project  
**Exemption Approval:** Council Meeting, June 24, 2019  
**Contractor:** Slayden Constructors Inc. (SCI)

**PROJECT DESCRIPTION**

The project constructed improvements to the existing Geren Island Water Treatment Facility (GIWTF). Improvements included constructing a new ozone treatment facility; expanding the groundwater collection system, including a Ranney collector well; and integrating operational control systems for new and existing facilities and equipment.

**INTRODUCTION AND BACKGROUND**

The GIWTF, located near Stayton, Oregon, has been providing the City of Salem (City) with a clean, safe, and reliable potable water supply since 1937. Salem provides drinking water to more than 195,000 residents in the cities of Salem and Turner, and portions of unincorporated Marion and Polk counties. Salem also provides backup/emergency water supplies to another 45,000 residents in the cities of Keizer and Stayton.

In 2018, raw water quality changes in the North Santiam Watershed created challenges in the treatment process. Those water quality challenges have been addressed by the GIWTF Improvements Project and a separate project for the reconstruction of Filter No. 2 at the facility. The GIWTF Improvements Project added an ozone treatment facility to treat algal toxins and expanded groundwater capacity through the construction of a new Southeast Collector Well (SECW).

Due to the complexities of the project and the relatively short timeline to deliver, City staff recommended delivering the project using a form of alternative contracting known as Construction Manager/General Contractor (CM/GC). The CM/GC method allows for contractor involvement at the beginning of the design phase to develop the most cost-effective solution that can be delivered in a shorter overall construction duration, compared to traditional design-bid-build contracting methods.

On June 24, 2019, City Council acting in its capacity as the local contact review board, approved staff's recommendation by adopting findings in support of an exemption from

the typical competitive bidding process and authorized the use of a CM/GC contracting method for design and construction of this project.

Oregon Revised Statute (ORS) 279C.355 and Public Contracting Rules (PCR) 9.7 require a final evaluation of the public improvement project upon its completion. The evaluation must include the following:

1. Financial information consisting of cost estimates, the Guaranteed Maximum Price (GMP), contract changes, and the actual cost.
2. A narrative description of successes and failures during the design, engineering, and construction of the project.
3. An objective assessment of the use of the alternative contacting process as compared to the findings required by ORS 279C.355.

## FINANCIAL INFORMATION

The GIWTF Improvements Project was funded with revenue bonds, water utility rates and water system development charges. These funds were allocated in the City budget as follows: Ozone Treatment Facility at Geren Island; Various Operational Improvements at Geren Island; Groundwater Wells at Geren Island; and Groundwater Wells at Geren Island (Companion Funding). The total project budget was \$60,424,000.

<b>Geran Island Water Treatment Facility Improvements Project</b>		
<b>Project</b>	<b>Funding Source</b>	<b>Amount</b>
Ozone Treatment Facility at Geren Island	Revenue Bonds	\$39,087,000
	Water Utility Rates	\$5,050,000
Various Operational Improvements at Geren Island	Water Utility Rates	\$2,000,000
Groundwater Wells at Geren Island	Revenue Bonds	\$14,094,500
Groundwater Wells at Geren Island (Companion Funding)	System Development Charges - Water	\$192,500
<b>Total</b>		<b>\$60,424,000</b>

In October 2019, the City awarded the CM/GC contract to Slayden Constructors Inc. (SCI). The original CM/GC Guaranteed Maximum Price (GMP) was \$38,775,902. This GMP was for the construction of the ozone treatment facility and included the preconstruction services phase of the project. Prior to the establishment of this GMP, the City initiated eight early work amendments to establish pricing for materials and labor. The City initiated a second GMP of \$10,868,596 for the construction of the SECW bringing the total project GMP to \$49,644,698. Three additional early work amendments

were issued during the development of the SECW GMP. The early work amendments were possible due to good fiscal management and close coordination between SCI, the project designer Carollo Engineers (Carollo), and the City throughout design and construction. The early work amendments were approved at key points in the contract to maximize efficiency of the work. Upon completion, the final GMP reconciliation resulted in a reduction of \$1,253,047 for a reconciled GMP amount of \$48,391,451. Other project costs not included in the GMP make up the difference between the total budget (less savings) and the reconciled GMP. Those costs include project management, consultant engineering, inspection, testing, archeology, and permit fees to name a few.

## **PROJECT SUCCESSES AND FAILURES**

Overall construction of GIWTF Improvements Project was a success. The final project met the objectives of implementing a new ozone treatment facility and expanding groundwater capacity to provide treatment of algal toxins and enhance water treatment capabilities. Some specific examples of benefit added to the project by the CM/GC method are as follows:

- Early contractor/designer/City collaboration to consider design elements and weigh costs against the criticality of the improvement. This allowed the project team to begin procurement of long lead items and commence construction through early work amendments well before the final design and GMP were complete and established. The team also worked together to optimize project design and construction means and methods, saving both time and cost through the schedule and improved constructability. The project team worked together to create accurate and concise cost estimates early and throughout the project duration. This provided the ability to complete multiple value engineering efforts and ensure the project was delivered with the best value.
- Project construction started at the outset of the Covid-19 pandemic in April of 2020. This was a time of great uncertainty concerning the continuation of construction and potential cost escalation. Through the CM/GC process the contractor, designer, and City were able to foster a relationship that allowed the ability to adapt and continue the project uninterrupted.
- The contractor, designer, and City's working relationship allowed for early work amendments, including procurement of long lead and critical equipment prior to the Projects GMP. This allowed for cost certainty and allow the project schedule to stay on track.
- Similarly, during project construction, the contractor, designer, and City's relationship was highlighted in overcoming severe wildfire smoke in the fall of 2020 and a historic ice storm in the winter of 2020/21. During the ice storm the contractor delivered diesel fuel to the GIWTF to allow for continued operation

during an extended power outage. This aid was critical for continued operations during the extreme weather.

- Open and transparent financial management between the contractor, designer, and City allowed the project team to identify cost savings within the contingency included in the GMP. This allowed for incorporation of additional improvements necessary to maintain and operate the water treatment facility. Examples include the installation of new flow meters within the City's transmission mains and the replacement of hyperchlorination generators.
- Open communication within the project team allowed for the continued operation of an active water treatment facility during the project. This allowed the contractor and City to work in coordination, minimizing construction impacts on the City's operation to provide clean, safe, and reliable drinking water.
- Coordination and collaboration between the contractor, designer, and City allowed the team to overcome difficult subsurface conditions for the construction of the SECW without increasing the overall GMP.
- Other than City-initiated early work amendments, there were no change orders on the project. Communication within the CM/GC team between the contractor, designer, and City during design and construction allowed for issues to be resolved early and within the contractor's and owner's contingency. This allowed for \$1,253,047 to be returned to the City from the project GMP.

## **OBJECTIVE ASSESSMENT OF ALTERNATIVE CONTRACTING PROCESS**

*ORS 279C.355* requires contracting agencies to submit evaluations for public contracts that have been exempted from the typical competitive bidding process. In June 2019, Council adopted findings in support of an exemption from the typical competitive bidding process and authorized the use of CM/GC contracting for construction of the Geren Island Water Treatment Facility Improvements Project.

Alternate contracting processes provide agencies with another tool to respond to the challenging demands of delivering complex projects. In particular, the CM/GC contracting method can provide for overall project cost and time savings. The following is provided to meet the requirements of the ORS.

One of the key distinctions of the CM/GC method is the early involvement of the contractor on the project; this allows for collaboration and relationships to be built among the project team which directly leads to cost and time savings on the project. An essential part of each construction project is the value engineering evaluation. Value engineering is the means used to determine the best project design that meets the needs and priorities of the City, within the City's budget. Value engineering is done most effectively by a team consisting of the City, consultant, and the contractor. When the contractor participates, the team can render the most comprehensive evaluation of

all factors that affect the cost, quality, and schedule of the project. The CM/GC method has the benefit of the ability to set the schedule; the ability to sequence work; and commitment from the contractor to implement the design within the schedule and budget. Through integrated participation, a project's scope and design evolve to bring greater value for the City in a way that is very difficult to achieve by the design-bid-build method.

Additionally, contracts with CM/GC are designed to create a better working relationship with the contractor. Consequently, contractors indicate that overhead and profit fees are slightly lower than what would be anticipated on similar design-bid-build contracts.

This method also results in fewer change orders during construction. As a result, the project is more likely to be completed on time and within budget. Fewer change orders reduce the administrative costs of project management for both the City and the contractor.

In summary, the CM/GC contracting method provided for the successful delivery of the required improvements and is an effective and efficient tool for public agencies to deliver projects. The GIWTF Improvements Project was able to realize the benefits of cost control, better information for decision making, improved teamwork, and less risk for contract disputes. The CM/GC delivery method proved to be a complete success for this project.