

# City of Oak Harbor Clean Water Facility Project



## **Clean Water Facility 60% Construction Estimate**

Sept. 23, 2015

### **WHERE WE HAVE BEEN**

In August 2013, the facilities plan was finalized by Carollo Engineering with a Wastewater Treatment Plant (WWTP) construction cost totaling \$60 Million. The facilities plan estimate is considered a conceptual level estimate and per the American Association of Cost Engineers (AACE), the actual cost can range from -50% to +100%. In early 2015 both Carollo Engineering and Hoffman Construction Company prepared a cost estimate for the construction of the WWTP based on 30% level of design (below). Per the AACE, the 30% estimate is considered a budget level estimate and actual cost can range from -20% to +30%.

#### **30% Cost Estimate for WWTP Construction Costs:**

Carollo Cost Estimate:	\$98.1 Million
Hoffman Cost Estimate:	\$113.3 Million

### **WHERE WE ARE**

As design proceeded from 30% to 60% several scope changes took place including additions to the community center and scope refinement of the electrical systems. The updated 60% cost estimate incorporates these changes and progress in design. Per the AACE, Carollo's 60% estimate is considered a control level estimate and actual cost can range from -5% to +15%. Hoffman performed a bottoms-up estimate and their 60% estimate reflects a maximum not-to-exceed cost which, unless the scope is modified, will not go up.

#### **60% Cost Estimate for WWTP Construction Costs:**

Carollo Cost Estimate:	\$91.3 Million
Hoffman Cost Estimate:	\$110.2 Million

The above estimates should be considered "bookends" for the range of potential construction costs. The GC/CM process provides for additional cost estimating using differing methods. While it may appear conflicting, providing a "most probable" and "Guaranteed Maximum" estimate allows for best decision making during the process.

Additional value engineering efforts are currently underway to further reduce the costs. These include evaluating alternative pipe materials, bringing the pipe out of the ground where feasible and moving the community center to a different location.

### **THE ROAD FORWARD**

The contract delivery methodology of heavy civil GC/CM allows the City to receive both the Contractor's and Engineer's estimates of cost. The process of reconciling the two estimates helps to increase the

confidence level of project cost, and also informs decision making for design, and refinements will be incorporated in the 90% design.

The current strategy is Continue with the heavy civil GC/CM contract, which the procurement process is very transparent and maintains the current schedule. It also allows the City to separate the project into smaller packages and competitively bid each package or negotiate each package with the General Contractor. If a self-perform package is negotiated, state law third party reviews and evaluations of all cost estimates.

At any point the process, the city retains the ability to terminate the GC/CM contract and move forward as a design-bid-build project. The design-bid-build process could add up to 6 months to the baseline schedule.

### OBSERVATIONS ON THE HOFFMAN ESTIMATE

This review focuses on Hoffman’s estimate dated August 21, 2015 that shows a **total project cost of \$110 Million**. Several areas of work have been highlighted as cost drivers and areas that made up the discrepancy between Hoffman’s and Carollo’s estimate. The areas identified are mechanical, concrete, and landscape/architecture. Those items became topics for follow up focus meetings to reconcile the difference between the two estimates and investigate if there were areas for further potential cost savings.

Area	Observation
Mechanical	<p>The first and most significant area of cost difference and overall cost is mechanical. Through scope clarification and a comparison of material quotes Carollo’s cost estimate reduced from <b>\$30.6 Million</b> to <b>\$26.2 Million</b>. At present, Hoffman has not provided a detailed breakdown for mechanical, which is needed for detailed review. Hoffman’s roll up shows <b>\$648,000 in permits/fees/Building Information Modeling (BIM)</b> for just mechanical. A detailed breakdown of Hoffman’s costs showing the permits/fees that the contractor is responsible for and an actual estimate of the BIM costs needs to be shown. As found in other areas the City may take responsibility for permits/fees and this number could be potentially reduced.</p> <p>The mechanical portion division accounts for a large portion of the overall cost and a deeper review of the labor and productivity rates could realize large savings.</p>
Concrete	<p>Through revisions in scope and a lower unit cost the concrete division went from 13.8 Million to \$13.2 Million for a <b>cost savings of \$600,000</b>. Additionally, during the reconciliation meetings it was found that there was a difference of about 2,000 cubic yards (cy) in concrete volumes between Carollo’s and Hoffman’s estimate. Further coordination has taken place and the current difference is now 832 cy and at \$1,000/cy this could realize an <b>additional \$832,000 in cost reduction</b>. Recent trends in concrete have also shown costs going down. This is one area that the escalation carried could be significantly reduced or removed.</p>
Landscape Architecture	<p>The costs of this discussion were spread across multiple divisions but primarily located in landscaping and the administrative and maintenance buildings. Through scope clarification and some cost revisions Hoffman’s costs were lowered but are still about</p>

	twice as much as Carollo's. However, <b>these two areas combined totals represent less than 10% of the overall project costs.</b>
Construction Administration	<p>Hoffman's estimate is showing a GC/CM Fee for \$4.1 Million and a GC/CM general condition cost for another \$2 Million. The GC/CM fees of \$6.1 Million combined with \$6 Million for support services total of \$12.1 Million. As mentioned in the initial review, this is 11% of the total construction cost which is higher than what is typically seen for similar services.</p> <p>The escalation and market condition allowances (which essentially count as a direct cost) also seem high and should be revisited. On the mechanical system alone they are carrying a 5%/year escalation and an additional 1% for increased market condition. <b>These allowances account for an additional \$5.2 Million in direct costs which when multiplied by the contingencies equates to more than a \$6 Million in total project costs</b> on Hoffman's estimate. If the City were willing to transfer some of the money from these allowances and carry those as Multiple Award Construction Contract (MACC) Contingency would be another way to reduce the overall project costs.</p>

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