



DATE: October 16, 2018
TO: Mayor and City Council
FROM: Director of Utilities & Environmental Services
SUBJECT: Authorization to Execute an Amendment to the AMI System Material Supply Contract to Purchase and Install Additional Water Meter Materials

RECOMMENDATION

That Council adopts the attached resolutions:

1. Authorizing the City Manager to amend the contract with Delta Engineering Sales, LLC, to increase the contract amount by \$210,000 to a not to exceed amount of \$10,458,182, to purchase and install additional water meter materials for the Advanced Metering Infrastructure Project; and
2. Appropriating additional funds from the Water Replacement Fund for the Advanced Metering Infrastructure Project.

SUMMARY

In April 2016, the City Council authorized execution of a contract with Delta Engineering Sales, LLC (Delta Engineering) to purchase water meters and related equipment for the Advanced Metering Infrastructure (AMI) Project. The purpose of the AMI Project is to replace the City's aging water meters with new AMI or smart meters, which eliminate the need for manual meter reading and provide customers with information to better manage their water use. Replacement of all City meters has been completed. However, given the age and condition of some of the City's existing water meter boxes, some of the new lighter weight plastic box lids may not sit as tightly on the existing meter box frame, and be more susceptible to movement under certain conditions. Staff is working to replace a portion of the new plastic polymer meter box lids with heavier concrete lids to provide a more secure fit. Because this is an unanticipated expense, staff is requesting Council approval to increase the contract amount with Delta Engineering by \$210,000 to a not to exceed amount of \$10,458,182, to purchase and install additional water meter box lids and related materials.

BACKGROUND

The City has over 36,000 water meters. In 2013, staff began to study the feasibility of implementing Advanced Metering Infrastructure (AMI) in Hayward. AMI enables two-way communication over a fixed network between the utility system and metering endpoints (customers). This allows meters to be read, monitored, and managed from a remote, central location rather than relying on the physical read of a meter in the field by an employee. Given the significant investment of resources, staff pilot tested three different AMI systems. Based on the results of the pilot test, the City selected Aclara Technologies LLC (Aclara) to implement the City-wide AMI program.

On April 5, 2016, Council approved execution of an installation contract with Aclara in an amount not to exceed \$3,113,000 and a material purchasing contract with Delta Engineering in an amount not to exceed \$9,500,000, to implement the AMI Project. Contracts with Aclara and Delta Engineering were executed by the City on June 28, 2016 and June 15, 2016, respectively. On July 24, 2018, Council approved an amendment to the Delta Engineering contract to increase the budget to \$10,248,182 for the purchase of additional water meters and related equipment. The following link to the July 24 Council report provides additional background and discussion.¹

In August 2018, the City completed replacement of all manual water meters with new AMI meters. One of the project challenges has been the ordering and installation of new meter box lids. The 2013 AMI feasibility study recommended replacing all existing concrete meter box lids with new plastic lids. In 2013, few agencies had installed AMI systems and the industry was recommending changing to plastic lids to ensure system performance and maximum battery life. Based on recommendations from consultants and vendors, the City proceeded with changing all concrete meter box lids to plastic lids.

The 2013 feasibility study identified that the City had approximately twenty-four different styles of meter box lids. Because many of the City's meter boxes are no longer manufactured, staff anticipated that many of the lids would need to be specially ordered and manufactured to meet the City's specifications. Staff worked with Delta Engineering to reduce the number of lid styles from twenty-four to twelve.

DISCUSSION

The City's meter box inventory includes 11,000 oval-shaped, 16-inch long by 10-inch wide, meter boxes. These oval meter boxes were installed in the early 1960s and are no longer manufactured. The City's pilot test included replacing water meters and lids for at least fifteen oval meter boxes. No issues were observed with the new, plastic oval-shaped lids during the pilot test.

¹ July 24, 2018 City Council Agenda Packet:
<https://hayward.legistar.com/LegislationDetail.aspx?ID=3582260&GUID=005FA2A0-A35A-4FBD-BC00-452AF8847A63&Options=&Search=>

The vast majority of the City's oval meter boxes are in good condition with the new oval lids fitting securely. Recently, staff has become aware that some of the new, plastic oval lids may not sit securely on an existing concrete meter box if the meter box is cracked or damaged. This specific issue was not identified during the pilot test or during installation of the AMI meters. When notified of this specific issue, staff immediately either replaces the entire meter box or replaces only the plastic lid with a concrete lid, which is heavier and less prone to movement. As further described below, changing back to concrete lids has not affected the performance of the City's AMI system.

Since 2013, several cities and agencies in the United States have implemented AMI projects without switching to plastic meter box lids. Although these systems have only been in place for a few years, early indication is that AMI system performance is similar for concrete and plastic lids. Staff will continue to work with the AMI project team and monitor the performance of the City's AMI system to see if future adjustments are needed.

Staff is currently working with Delta Engineering and Aclara to perform a photo review of the City's meter boxes and conduct field checks to identify the location and condition of oval meter boxes. To be conservative and avoid any potential issues, any broken meter box will be replaced, and oval-shaped plastic lids in walk areas will be changed back to concrete lids. When a plastic lid is replaced with a concrete lid, the contractor also installs the meter transmitting unit on a bracket (supplied by the City) inside the meter box.

Staff is requesting that Council authorize increasing Delta Engineering's contract by \$210,000 to a not to exceed amount of \$10,458,182. Staff anticipates that up to \$160,000 may be used to order and install new concrete meter box lids and related materials. The remaining \$50,000 would be for unanticipated materials or services that are needed to complete the AMI Project. Utilities staff will work closely with Delta Engineering to coordinate the ordering of materials and will only authorize additional budget when needed.

ECONOMIC IMPACT

The economic benefits of AMI to customers include greater control over water consumption, given increased interval data and a future customer portal and smartphone application, including prompt water leak notification. Most customers will also benefit from having more accurate meters because they will not be subsidizing a small percentage of customers with water meters which may be reading low due to malfunction, and these customers will more equitably share their proportional cost of water. The system should also aid the community in achieving greater water conservation results over time.

Over the next few years, there will be moderate increases in water service costs for the wholesale replacement of all water meters in the City. The cost of replacing the meter boxes may help to prevent future claims against the City and is worth the additional expenditures at this time.

FISCAL IMPACT

As shown in the following table, the total estimated project cost for the AMI Project is \$13,833,923, which includes the increase in the Delta Engineering contract amount of \$210,000 for purchase and installation of additional water meter materials to a not to exceed total amount of \$10,458,182.

Project Administration/City-supplied materials (estimate)	\$	100,000
Pilot Study (actual)	\$	62,741
Purchase and Installation of AMI System (Aclara contract)	\$	3,113,000
Purchase of Project Materials (Delta Engineering contract)	\$	10,458,182
Customer Web Portal Development (estimate)	\$	<u>100,000</u>
Total:	\$	\$13,833,923

The adopted FY 2019 Capital Improvement Program (CIP) includes \$13,500,000 in the Water Replacement Fund for implementation of the AMI Project. The CIP budget was based on the quantities, types, and models of meters and lids in the 2013 AMI feasibility study, which needed to be adjusted to match actual field conditions. The current total estimated capital cost exceeds the budgeted amount by \$333,923.

Staff is requesting that additional funds be appropriated from the Water Capital Improvement Fund balance in an amount of \$333,923 to cover the increased project costs. Sufficient funds are available in the Water Capital Improvement Fund for this appropriation. There will be no impact to the General Fund.

STRATEGIC INITIATIVES

This agenda item supports the Complete Communities Strategic Initiative. The purpose of the Complete Communities initiative is to create and support structures, services, and amenities to provide inclusive and equitable access with the goal of becoming a thriving and promising place to live, work and play for all. This item supports the following goal and objective:

Goal 1: Improve quality of life for residents, business owners, and community members in all Hayward neighborhoods.

Objective 4: Create resilient and sustainable neighborhoods

The AMI Project will replace the City's aging water meter infrastructure and provide customers with the ability to better manage their water use, further supporting the goals of the City Council.

SUSTAINABILITY FEATURES

The AMI system promotes efficient water use and water conservation. The more frequent water consumption data will provide detailed information to help measure the overall effectiveness of targeted conservation initiatives. This information can be used to inform customers about potential leaks or overly high consumption. Analyzing data by frequent time intervals could also enable the City to look at consumption profile data for education and awareness related to conservation. Customers will also be able to be notified of unusual, increased, or continuous water usage, which could be the result of a leak. Remote notification of leaks allows for the ability to alert customers to an issue before substantial water waste or excessive charges occur.

The AMI Project also eliminates the need for manual meter reading, which reduces the number of vehicle miles traveled by City staff, furthering the City's Climate Action Plan goals of reducing greenhouse gas emissions.

PUBLIC CONTACT

The AMI project is arguably one of the most visible and customer-centric projects that the Utilities and Environmental Services Department has implemented in many years. The project affects every customer of the Hayward water system, and therefore customer outreach is a key component to a successful implementation. Information about the project can be found on the City's webpage.²

A few customers have used social media and other means to express their concerns regarding potential "high reads" related to AMI. In each case, staff reviews the specific concerns. In almost all cases, staff has been able to show that the "high reads" are related to actual high consumptions and not a water meter or AMI malfunction. On occasion when the reason for the high read may be related to a leak or field installation issues, staff assists the customer to apply for a rebate.

A key component of the AMI Project is the development of a customer engagement web portal. The interval consumption data generated from this project will be used to populate a customer engagement web portal, which would allow customers to see detailed water usage information and better understand and manage their water use. These portals, which can be accessed on a computer or smart phone, are becoming an increasingly popular tool to help customers monitor their consumption and allow the utility to communicate directly and in a timely manner with their customers. Staff had anticipated releasing a Request for Proposals (RFP) to select the customer engagement web portal vendor last year, but staffing challenges within the department, along with the desire to obtain input from Hayward water customers on the features they would most like to see included in the portal, have pushed back the release of the RFP. Staff currently anticipates releasing the RFP for the customer engagement web portal by the end of 2018.

² Advanced metering webpage:
<https://www.hayward-ca.gov/advanced-metering-infrastructure>

NEXT STEPS

If Council approves the recommendation, staff will increase the contract amount with Delta Engineering by \$210,000 to a not to exceed amount of \$10,458,182, to purchase and install additional water meter materials for the AMI Project.

Staff plans to work with Delta Engineering to complete the replacement of oval meter box lids and related materials before the end of 2018. Aclara will also perform system acceptance testing to ensure the functionality and accuracy of the system. Final acceptance of the project is anticipated by end of 2018 or early 2019.

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Approved by:



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