



## **Internal Audit Report for December 2017**

### **Summary**

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Two reports were issued during the month:

- 1. Colorado River Aqueduct Sand Trap Equipment Replacement**
- 2. Etiwanda Pipeline Lining Repair Project**

### **Discussion Section**

This report highlights the significant activities of the Internal Audit Department during December 2017. In addition to presenting background information and the opinion expressed in the audit report, a discussion of findings noted during the examination is also provided.

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## **Colorado River Aqueduct Sand Trap Equipment Replacement**

### **Background**

The Audit Department has completed a review of the accounting and administrative controls over the Colorado River Aqueduct Sand Trap Equipment Replacement Project (Sand Trap Equipment Replacement Project) as of September 30, 2017. Specifically, we reviewed Metropolitan's construction contract with Myers and Sons Construction LP.

Our review consisted of evaluating the internal controls over contractor selection, contract administration, and compliance with contract terms and conditions. In addition, we evaluated the validity and propriety of invoice payments for assurance that amounts billed were properly calculated and adequately supported.

In October 2015, the Board awarded \$9,777,000 to Myers and Sons to rehabilitate three sand trap facilities located upstream of the Iron Mountain, Eagle Mountain, and Hinds Pumping Plants along the Colorado River Aqueduct (CRA). The sand traps have been in continuous operation since the aqueduct was constructed in the 1930's. These facilities remove water-borne sand to protect internal surfaces of the main CRA pumps from abrasion. That is, the equipment removes sand from the basins to prevent it from accumulating and being transported downstream to the pumping plants where it could damage pump bearings, impellers, and erode piping systems. After operating and maintaining these sand traps for 75 years, the existing sand removal equipment has deteriorated and components are beginning to fail.

The scope of work consisted of demolition and replacement of three sand trap traveling bridges, construction of concrete slabs, structural steel supports, a new traveling bridge control system, and appurtenant work. As of September 2017, Metropolitan paid Myers and Sons \$9,256,300, including \$109,300 in extra work orders; the work was 99% complete.

## **Opinion**

In our opinion, the accounting and administrative procedures over the Sand Trap Equipment Replacement Project include those practices usually necessary to provide for a satisfactory internal control structure. The degree of compliance with such policies and procedures provided effective control for the period July 1, 2014 through September 30, 2017.

## **Comments and Recommendations**

None.

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## **Etiwanda Pipeline Lining Repair Project**

### **Background**

The Audit Department has completed a review of the accounting and administrative controls over the Etiwanda Pipeline Lining Repair Project (“Etiwanda Project”) as of July 31, 2017. Specifically, we reviewed Metropolitan’s agreements with Arcadis U.S., Inc. (Arcadis), Helix Environmental Planning, Inc. (Helix), Mladen Buntich Construction Co., Inc. (Mladen Buntich), and Kiewit Infrastructure West Co. (Kiewit).

Our review consisted of evaluating the internal controls over agreement administration and reporting practices. Specifically, we reviewed the consultant selection process, tested compliance with the terms and conditions of the agreements, and evaluated the validity and propriety of invoice payments for assurance that the amounts billed were properly calculated and adequately supported.

The Etiwanda Pipeline was constructed in 1993 and placed into service in June 1994. The north portion of the pipeline is 5.4 miles long and conveys State Water Project supply from the Department of Water Resources’ Devil Canyon facility to Metropolitan’s Etiwanda Hydroelectric Plant via the Rialto Pipeline. The south portion of the pipeline continues for one mile to an interconnection with the Upper Feeder to the Weymouth Treatment Plant.

The Etiwanda Pipeline was designed in accordance with the American Water Works Association Standards. However, fluctuating pressures, continuous operations in peak mode, and long periods of dry pipe due to unavailable supply were not foreseen. During a December 2008 shutdown, Metropolitan discovered cracks in the mortar lining and determined that 37% had fallen off or delaminated from the welded steel pipe at 245 locations. Over time these conditions would result in accelerated levels of corrosion and eventual leakage.

Accordingly, on October 13, 2009, the Board authorized \$1.19 million for preliminary design to repair the damaged mortar lining. Additionally, on May 8, 2012, the Board authorized a \$1

million professional services agreement with Arcadis to provide on-call engineering and design services from September 1, 2012 through August 31, 2015. Of the \$1.768 million paid to Arcadis, \$29,000 was related to the Etiwanda Project.

The Etiwanda Project was planned to be completed in three phases. For the first phase, the Board appropriated \$1.85 million on December 11, 2012 to authorize final design of a pilot repair project, replacing approximately 2,900 feet of lining. At the same time, they approved a professional services agreement with Helix for environmental documentation in an amount not to exceed \$400,000. Subsequently, on February 9, 2016, the Board authorized an increase to the Helix agreement in an amount not to exceed \$520,000. As of August 2017, Metropolitan has paid Helix \$282,694. The agreement is effective until December 2017. Finally, on December 10, 2013, the Board awarded a \$3.725 million construction contract to Mladen Buntich to reinforce approximately 2,856 feet of mortar lining with polyurethane and epoxy. The work was completed in November 2014, concluding the first phase of the Etiwanda Project.

For the second phase, the Board appropriated \$1.9 million on June 9, 2015 authorizing design to complete repairs on approximately five miles of pipeline. Subsequently, on February 9, 2016, the Board awarded \$11.6 million construction contract to Kiewit to reinforce the interior mortar lining on approximately 13,200 feet of pipeline. Repairs were completed on March 23, 2017 and Metropolitan paid Kiewit \$11.7 million.

As of July 31, 2017, the total amount spent for the Etiwanda Project was \$22.2 million. As of April 30, 2017, final design of the third phase was 98% complete. Due to elevated water supplies, the Etiwanda Pipeline is in operation. Consequently, work on the third stage is not estimated to begin until 2018.

### **Opinion**

In our opinion, the accounting and administrative procedures over the Etiwanda Project include those practices usually necessary to provide for a satisfactory internal control structure. The degree of compliance with such policies and procedures provided effective control for the period July 1, 2013 through July 31, 2017.

### **Comments and Recommendations**

None.