

## **FOLLOW-UP REVIEW**

**CITY AUDITOR**

<b>Report Date:</b>	<b>December 20, 2017</b>
<b>Department:</b>	<b>Water Resources</b>
<b>Subject:</b>	<b>Asset Management</b>
<b>Lead Auditor:</b>	<b>Kate Witek</b>

### **OBJECTIVE**

The objective of this follow-up review was to determine whether the Water Resources department has effectively implemented the action plans presented in their response to our December 2016 audit of Water Resources Asset Management Program.

### **SCOPE & METHODOLOGY**

To accomplish our objective, we reviewed revised and new departmental procedures; interviewed staff; toured Water Resources facilities; and analyzed system data.

### **BACKGROUND**

On December 1, 2016, we issued an audit report on Water Resources Asset Management Program. The objective of the audit was to determine whether internal controls and processes related to Water Resources asset management were adequate to provide reasonable assurance that:

- Asset lifecycle, condition, and maintenance data are actively maintained and used to inform capital improvement planning.
- Asset information is complete and accurate.
- Critical risks related to asset management are minimized.

The report included several recommendations, summarized as follows:

1. Formally adopt an asset life-cycle management program policy.
2. Require periodic assessment of the physical condition and remaining useful life of critical capital assets, and use the information in a structured capital planning and maintenance process.
3. Develop a risk-based assessment procedure for critical assets to help evaluate the probability of failure, and use the information to help prioritize Capital Improvement Program (CIP) projects.
4. Assign plant staff to the Asset Management Project Advisory Committee.

Water Resources management agreed with all recommendations and submitted corrective action

plans. Several revisions to original corrective action plans for CAP#2 and 3, including adjusted completion dates, were submitted in May 2017.

**CONCLUSION**

All corrective action plans associated with the audit have been successfully implemented or are on track to finish by revised estimated completion dates. Additional details are presented in the attached Appendix.

**APPENDIX**

✓ = Implemented      ◆ = In Progress      X = Not Implemented

<b><u>Corrective Action</u></b>		<b><u>Implementation Status</u></b>	
<b>CAP#1: Asset Management Program Policy</b>			
<p><b>Recommendation:</b> Water Resources management should develop and implement a policy, and related procedures, to establish a comprehensive asset management program as an operational activity.</p> <p><b>Management Response:</b> The Department agrees with the need to have a comprehensive policy. After developing a Vision Statement laying out the strategic objectives and a high-level Implementation Plan, the Department worked with users to obtain their feedback prior to releasing a policy. The Vision Statement was completed in September 2015, followed by the Implementation Plan in December 2015. After these activities were completed, the Department developed a short concise policy which aligns with the Strategic Plan.</p> <p><b>Estimated Completion Date:</b> Done</p>		<p><b>Implemented</b></p> <p>✓</p>	
<b>CAP#2: Incomplete Data in Asset Management Systems</b>			
<p><b>Recommendation:</b> Water Resources asset management procedures should require a periodic assessment of the physical condition and remaining useful life of critical capital assets, where the benefits of undertaking the assessment outweigh the costs. This data should be recorded in asset management systems and used to prioritize repair/replace decisions in a structured capital planning and maintenance process.</p> <p><b>Management Response:</b> The Department is in the process of developing a program to support the condition testing program for critical assets. The following general steps will be followed:</p> <ul style="list-style-type: none"> <li>• Define condition assessment objectives and drivers, condition rating system and desired outcomes.</li> <li>• Define performance measures and failure modes.</li> <li>• Identify potential test procedures, monitoring modes, performance evaluations, and inspection procedures.</li> <li>• Develop a draft condition assessment plan.</li> </ul>		<p><b>Implemented</b></p> <p>✓</p>	

**APPENDIX**

✓ = Implemented      ◆ = In Progress      X = Not Implemented

<u>Corrective Action</u>	<u>Implementation Status</u>	
--------------------------	------------------------------	--

- Define pilot program for testing of condition assessment program for two selected asset types (future goal)

The Water Resources Department will complete the condition assessment procedures by the completion date below.

**Original Estimated Completion Date:** 11/30/2017

**Revised Estimated Completion Dates:**

List of critical assets in the program	June 30, 2018
Performance measures and failure modes for all asset types	June 30, 2018
Identify test procedures, monitoring modes, performance evaluations and specific inspection procedures	December 30, 2018
DRAFT Condition Assessment Plan for each asset type (A draft plan for 2 asset types will be developed by November 30, 2017)	June 30, 2019

On track to finish by revised estimated completion dates.

**CAP#3: No Comprehensive Predictive Risk Assessment Process**

**Recommendation:** Water Resources management and engineering staff should develop a risk based assessment procedure for critical assets. Depending on the type of asset, this procedure could include targeted monitoring, condition testing, inspections, and maintenance history to evaluate the probability of failure. This information should be used to help prioritize CIP projects.

**Management Response:** The objective is to develop risk assessment and management procedures. This will include the following steps:

- Define a policy statement that states clear objectives and purposes to guide the management of risk.
- Identify the risks that will be managed focusing on physical failure risks and operational risks.
- Develop rating system with associated weights tied to

**Implemented**



**APPENDIX**

 = Implemented       = In Progress       = Not Implemented

<b><u>Corrective Action</u></b>	<b><u>Implementation Status</u></b>					
<p>condition rating, maintenance/failure history, consequences of failure, probability of failure, etc.</p> <ul style="list-style-type: none"> <li>Define how the output from the risk management procedures will be used to help prioritize CIP projects.</li> </ul> <p><b>Original Estimated Completion Date:</b> 11/30/2017</p> <p><b>Revised Estimated Completion Dates:</b></p> <table border="1" data-bbox="186 756 1063 955"> <tr> <td>Training staff on use of risk assessment and management procedures for CIP project prioritization</td> <td>June 30, 2018</td> </tr> <tr> <td>Interviews of staff to confirm process is used/next CIP cycle after training is completed</td> <td>June 30, 2019</td> </tr> </table>	Training staff on use of risk assessment and management procedures for CIP project prioritization	June 30, 2018	Interviews of staff to confirm process is used/next CIP cycle after training is completed	June 30, 2019	<p>On track to finish by revised estimated completion dates.</p>	
Training staff on use of risk assessment and management procedures for CIP project prioritization	June 30, 2018					
Interviews of staff to confirm process is used/next CIP cycle after training is completed	June 30, 2019					
<b>CAP#4: Project Advisory Committee</b>						
<p><b>Recommendation:</b> Management should assign plant staff to the Asset Management Project Advisory Committee work group.</p> <p><b>Management Response:</b> The Department is now embarking on <del>revising</del> the asset management systems at the plants so it makes sense now to include plant staff in the internal committee referenced above. Up to this point the Department has been reviewing the water distribution and wastewater collection assets (non-plant assets).</p> <p><b>Estimated Completion Date:</b> Done</p>	<p><b>Implemented</b></p>	<p></p>				