

## **FOLLOW-UP REVIEW**

**CITY AUDITOR**

<b>Report Date:</b>	<b>January 30, 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.

## **CONCLUSION**

Most of the corrective action plans associated with the audit have been successfully implemented or are on track to finish by revised estimated completion dates. CAPs #2 and #3 have been modified since the original audit report was issued, with the most significant changes being in the implementation timeframe. Additional details are presented in the attached Appendix.

## APPENDIX

✓ = Implemented

◆ = In Progress

✗ = Not Implemented


<u>Corrective Action</u>	<u>Implementation Status</u>
<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> </ul>	<p><b>In Progress</b></p> <p>Water Resources has revised their original response to specify that test procedures, monitoring modes, performance evaluations, specific inspection procedures, and draft condition assessment plans will be developed for 4 critical asset types.</p> <p>◆</p>

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<ul style="list-style-type: none"><li>Develop a draft condition assessment plan.</li><li>Define pilot program for testing of condition assessment program for two selected asset types (future goal)</li></ul> <p>The Water Resources Department will complete the condition assessment procedures by the completion date below.</p> <p><b>Original Estimated Completion Date:</b> 11/30/2017</p> <p><b>Revised Estimated Completion Dates:</b></p> <table><tr><td>List of critical assets in the program</td><td>12/31/2018</td></tr><tr><td>Performance measures and failure modes for critical asset types</td><td>6/30/2019</td></tr><tr><td>Identify test procedures, monitoring modes, performance evaluations and specific inspection procedures for 4 critical asset types</td><td>6/30/2019</td></tr><tr><td>DRAFT Condition Assessment Plan for 4 critical asset types</td><td>6/30/2019</td></tr></table>		List of critical assets in the program	12/31/2018	Performance measures and failure modes for critical asset types	6/30/2019	Identify test procedures, monitoring modes, performance evaluations and specific inspection procedures for 4 critical asset types	6/30/2019	DRAFT Condition Assessment Plan for 4 critical asset types	6/30/2019	<p>They have also significantly extended (&gt;1.5 years) the estimated time needed for completion of these tasks.</p> <p>However, we acknowledge that meeting the original estimates would have required additional/dedicated resources.</p> <p>They have made progress and have demonstrated a commitment to continuing to do so.</p>	
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CAP#3: No Comprehensive Predictive Risk Assessment Process											
<p><b>Recommendation:</b> 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.</p> <p><b>Management Response:</b> The objective is to develop risk assessment and management procedures. This will include the following steps:</p> <ul style="list-style-type: none"><li>Define a policy statement that states clear objectives and purposes to guide the management of risk.</li><li>Identify the risks that will be managed focusing on physical failure risks and operational risks.</li><li>Develop rating system with associated weights tied to</li></ul>		<p><b>Implemented</b></p> <p>Although Water Resources has significantly extended (&gt;2 years) its estimated completion dates for the last couple of steps, the majority of this action plan has been completed.</p>									

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<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> <tr> <td>Training staff on use of risk assessment and management procedures for CIP project prioritization</td> <td>12/30/2019</td> </tr> <tr> <td>Interviews of staff to confirm process is used/next CIP cycle after training is completed</td> <td>12/30/2019</td> </tr> </table>	Training staff on use of risk assessment and management procedures for CIP project prioritization	12/30/2019	Interviews of staff to confirm process is used/next CIP cycle after training is completed	12/30/2019		
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CAP#4: Project Advisory Committee						
<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>	Implemented					