

Office of the City Manager

INFORMATION CALENDAR

November 12, 2013

To: Honorable Mayor and Members of the City Council

From:  Christine Daniel, City Manager

Submitted by: Andrew Clough, Director, Public Works

Subject: Status Report: Utilization of Public Works Sewer Staff Can Be Improved

SUMMARY

In October 2009 the City Auditor issued its [Audit: Utilization of Public Works Sewer Staff Can Be Improved](#).<sup>1</sup> The objective of this audit was to “determine if City sewer crew work was adequately planned, efficiently performed, and properly recorded,” and the Auditor concluded “that improvements in planning and performance are needed.”

The Audit Report included 15 findings and 35 recommendations to improve utilization of the City’s sewer staff. Most of the recommendations are for Public Works, and several also involve Information Technology. Previous status reports were provided to Council in [April 2010](#)<sup>2</sup> at which time 20 recommendations were implemented, in [November 2010](#)<sup>3</sup> when another 10 recommendations had been implemented, in [February 2012](#)<sup>4</sup>, when 3 other recommendations were implemented, and in [January 2013](#)<sup>5</sup>, with 2 outstanding recommendations partially implemented pending final testing and implementation.

This report covers the status of the 2 open recommendations and closes this Audit.

**Accomplishments and Changes in the Sewer Cleaning and Inspection Program**

Approximately 27% of the system was cleaned, inspected, or underwent root control measures in CY 2012, which exceeded requirements. Within the last 3 years, 92% of routine maintenance segments have been cleaned or inspected. This exceeded

<sup>1</sup> Audit: Utilization of Public Works Sewer Staff Can Be Improved: [www.cityofberkeley.info/uploadedFiles/Auditor/Level\\_3\\_-\\_General/2009-10-13\\_Item\\_15\\_Audit\\_Utilization\\_of\\_Public\\_Works\\_Sewer\\_Staff\\_Can\\_Be\\_Improved.pdf](http://www.cityofberkeley.info/uploadedFiles/Auditor/Level_3_-_General/2009-10-13_Item_15_Audit_Utilization_of_Public_Works_Sewer_Staff_Can_Be_Improved.pdf)

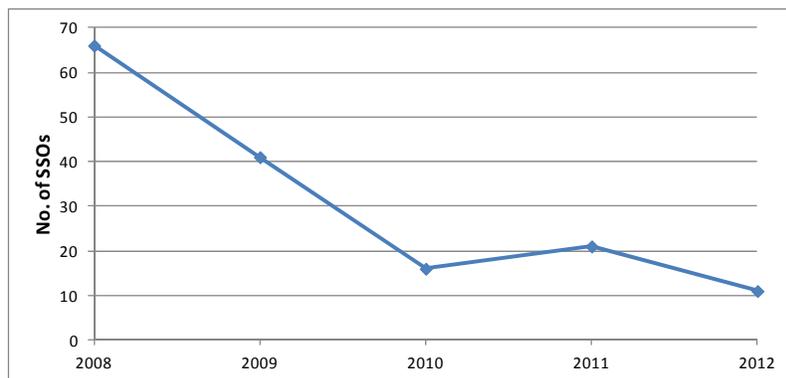
<sup>2</sup> April 2010 report: [www.cityofberkeley.info/uploadedFiles/2010-04-27\\_Item\\_23\\_Status\\_Report\\_Utilization\\_of\\_Public\\_Works\\_Sewer\\_Staff\\_Can\\_Be\\_Improved.pdf](http://www.cityofberkeley.info/uploadedFiles/2010-04-27_Item_23_Status_Report_Utilization_of_Public_Works_Sewer_Staff_Can_Be_Improved.pdf)

<sup>3</sup> November 2010 report: [www.cityofberkeley.info/uploadedFiles/Clerk/Level\\_3\\_-\\_City\\_Council/2010/11Nov/2010-11-16\\_Item\\_20\\_Status\\_Report\\_Utilization\\_of\\_Public\\_Works\\_Sewer\\_Staff\\_Can\\_Be\\_Improved.pdf](http://www.cityofberkeley.info/uploadedFiles/Clerk/Level_3_-_City_Council/2010/11Nov/2010-11-16_Item_20_Status_Report_Utilization_of_Public_Works_Sewer_Staff_Can_Be_Improved.pdf)

<sup>4</sup> February 2012 report: [www.ci.berkeley.ca.us/uploadedFiles/Clerk/Level\\_3\\_-\\_City\\_Council/2012/02Feb/2012-02-14\\_Item\\_18\\_Status\\_Report\\_Utilization.pdf](http://www.ci.berkeley.ca.us/uploadedFiles/Clerk/Level_3_-_City_Council/2012/02Feb/2012-02-14_Item_18_Status_Report_Utilization.pdf)

<sup>5</sup> January 2013 report: [www.cityofberkeley.info/Clerk/City\\_Council/2013/01Jan/Documents/2013-01-29\\_Item\\_18\\_Status\\_Report\\_Utilization.aspx](http://www.cityofberkeley.info/Clerk/City_Council/2013/01Jan/Documents/2013-01-29_Item_18_Status_Report_Utilization.aspx)

requirements and resulted in completion in just over 3 years, rather than the 5 years that was expected. These operational improvements are affirmed by the dramatic reduction in Sanitary Sewer Overflows (SSOs) in the City's system, which have decreased by over 80% from 66 SSOs in 2008 to 11 in 2012, as shown here:



In addition, the new Computerized Maintenance Management System (CMMS) now links with the City's GIS and interfaces with closed circuit video (CCTV) software. This provides information on sewer segment condition, maintenance history, improves the accuracy of documenting sewer maintenance activities, and provides a platform to make updated maintenance and rehabilitation decisions based upon segment condition and observation.

### CURRENT SITUATION AND ITS EFFECTS

The remaining recommendations are for Public Works and Information Technology.

### **Finding 2: Public Works could not identify the sewer locations that have significant root, grease or debris problems, the cause of almost all spills**

#### **Recommendation for Public Works and Information Technology**

Recommendation 2.0: Modify the forms and modify / develop a system to accumulate needed data, such as sewer blockages, spills and line condition. The database should be able to identify the locations most in need of root, grease, or debris maintenance, or line repair. The lines with the greatest spill risk should be maintained first.

**Status:** Implemented. The City "went live" with a new Computerized Maintenance Management System (CMMS) in September 2013, which replaces the FUND\$ module that was used to manage work orders. Public Works and Information Technology staff have worked together since March 2013 to configure and test this new system, which includes expanded data collection, such as information related to sewer blockages, spills, and line condition. In addition to using the CMMS to capture sewer line conditions during routine crew maintenance, Public Works will also use specialized videos (CCTV) that record conditions for grease, roots, debris or structural defects within individual sewer segments. Together, these systems will enable staff to prioritize those locations most in need of maintenance and repair.

**Finding 10: Work order database software and Public Works office procedures provide little assurance that work order data will be accurately and consistently input into the Work Order Database (WF Module)****Recommendations for Public Works and Information Technology**

Recommendation 10.2: If cost effective, develop exception reports that identify errors and inconsistencies so they can be researched and corrected. Errors and inconsistencies identified in these reports should be corrected within an established timeline. Alternatively, if exception reports are not developed, Public Works should assign someone independent of the data entry to review input for obvious errors.

**Status:** Implemented. As reported in February 2012, the Superintendent conducted a review of data input in July 2011 to look for errors, at which time no errors were found. Bi-monthly reviews have been ongoing since January 2012, and to date no errors have been found. Additionally, as already mentioned, the City selected a CMMS that includes work order and asset management software, and implementation for sewers, which went live in September 2013. The CMMS system is configured to capture specific Work Order information required to ensure accuracy and consistent data entry.

**BACKGROUND**

The Sewer Program was identified as the Department's area most in need of modernized systems. The Superintendent and Streets and Utilities Division staff have undertaken a comprehensive approach to improvements. PW – Engineering and IT are also involved, and the use of Geographic Information Systems (GIS) maps and CCTV are improving the efficiency and effectiveness of maintenance crews. The City's system of public sanitary sewer mains and public sewer laterals is maintained by a crew of about 20 City employees.

In addition, the City is under a U.S. Environmental Protection Agency (EPA) Stipulated Order, and many of these Audit recommendations are consistent with improvements in response to the EPA.

**POSSIBLE FUTURE ACTION**

There are no other future actions planned at this time, other than implementation of the Computerized Maintenance Management System (CMMS). As reported above, the CMMS implementation for sewers was fully implemented in September 2013.

**FISCAL IMPACTS OF POSSIBLE FUTURE ACTION**

All fiscal impacts have been previously reported.

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