



## • Internal Audit Report for February 2010

### Summary

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Two reports were issued during the month:

- **Infrastructure Reliability – Weymouth Plant Improvements Program Audit Report**
- **Infrastructure Reliability – Conveyance and Distribution System Rehabilitation Program Audit Report**

### Discussion Section

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This report highlights the significant activities of the Internal Audit Department during February 2010. In addition to presenting background information and the opinion expressed in the audit reports, a discussion of findings noted during the examination is also provided.

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## Infrastructure Reliability – Weymouth Plant Improvements Program Audit Report

### Background

The F.E. Weymouth Filtration Plant (Plant) was placed into service in 1941 to treat water received from the Colorado River. The plant currently treats a blend of Colorado River and State project water and delivers it to the Central Pool portion of the distribution system. Originally sized at a capacity of 100 million gallons per day (mgd), the Plant was expanded to its current capacity of 520 mgd in order to meet the increased demands from member agencies. In addition to these expansions, the Plant has also had facility upgrades and improvements made throughout the years.

In August 2001, the Weymouth Plant Improvements Program (Program) was established to improve Plant reliability and ensure ongoing regulatory compliance. The Program consisted of 35 projects and is expected to be completed in 2016. As of October 2009, 10 projects were completed and 25 were on going, with cumulative costs of \$83.7 million. Descriptions of each project and related costs are:

COMPLETED PROJECTS			
Item	Project No.	Description	Amount
1	103631	Operations and Maintenance Building	\$12,585,434
2	103163	Basins 3 & 4 Rehabilitation	4,624,612
3	103270	Replace Surface Wash Header Pipelines in Filter Building 1	3,725,893
4	103271	Recoat Finished Water Reservoir	2,050,760
5	103160	Recoat/Reline West and East Washwater Tanks 1&2	958,217
6	103300	Structural Integrity Project	726,954
7	103248	Buildings 22 and 30 Roof Replacements	361,124
8	103161	Turbidity Meters Replacement	167,080
9	103452	Reliability Study	164,984
10	103644	Rapid Seismic Evaluation of Water Quality Lab	18,495
	Total		\$25,383,553

<b>ONGOING PROJECTS</b>			
<b>Item</b>	<b>Project No.</b>	<b>Description</b>	<b>Amount</b>
1	103207	Solids Handling Facility	\$19,484,059
2	103635	Chemical Tank Farm Modifications	9,175,502
3	103487	Power Systems Upgrade	7,747,336
4	103898	Incoming Electrical Service	5,849,548
5	104038	Rapid Mix & Fire/Domestic Water System	4,126,650
6	103846	Perimeter Improvements - Construction	3,238,896
7	103353	Convert Washwater Pumps in Filter Building 2 to VFD Operation	1,200,276
8	103744	Junction Structure Seismic Upgrade	1,104,036
9	103164	Gate and Gate Guides	969,215
10	103634	Perimeter Landscape Improvements	896,273
11	103206	Replace and Refurbish Solids Handling Equipment	740,262
12	103736	Microturbines - Design & Installation	675,059
13	103940	Perimeter Improvements, Phase II - Construction	607,189
14	103162	Building 2, Filter Valve Actuator Replacement	584,893
15	103630	Fire / Domestic Water Systems Upgrades	480,922
16	103950	Basin No.1 Flocculators Refurbishment	423,073
17	104077	Facilities Conceptual Design	244,414
18	103746	Washwater Reclamation Reliability Improvements	216,739
19	103298	Replace Basin Cleaning Water Supply Lines	178,409
20	103486	Basin 1 & 2 Rehab – Study	93,848
21	103352	Rehabilitate WWRP1	92,330
22	103745	Washwater Tanks Seismic Upgrade	61,839
23	104007	Basin Influent Conduit	50,231
24	103629	Sample Pump Automation	21,153
25	103324	Remaining Budget Management	6,346
	Total		\$58,268,498

Our review consisted of evaluating administration and reporting practices and reviewing the project authorization and close-out processes. Further, we evaluated the validity and accuracy of invoice payments for assurance that the amounts billed were properly calculated, and adequately documented. Finally, we reviewed actual vs. budgeted costs on a project-by-project basis and the Program's appropriated amounts.

### **Opinion**

In our opinion, the accounting and administrative procedures over the Weymouth Plant Improvements Program include those practices usually necessary to provide for a generally satisfactory internal control structure. The degree of compliance with such policies and procedures provided effective control for the period July 2006 through October 2009.

### **Comments and Recommendations**

#### **PROJECT COST OVERRUN AND REPORTING**

Management reports are designed to provide meaningful information so Management can assess performance and develop effective strategic plans. Management reports allow for analysis and tracking to take place without daily involvement, and provide Management with timely feedback on Weymouth Plant Improvements Program (Program) activities. In addition, Metropolitan Management periodically

reports the Program activities and significant events to the Board via the General Manager's Activity Report and Engineering's Key Activities Report. Our review of project costs revealed:

1. Actual costs, as reported in the October 2009 Oracle General Ledger for 8 of 35 projects exceeded their budgets by \$2.6. These differences varied from \$73 to \$1.5 million. Further review revealed, however, that these cost overages were either the result of the failure to reflect recent Board actions in the Project Accounting Grant Management (PAGM) system or to apply the contingency reserve to the projects promptly. It is important to note that the overall Program expenditures were less than the Board appropriated amount at all times.
2. Incomplete Management reporting of financial activity. We noted that although the Program consists of 35 projects with cumulative costs of \$83.7 million as of October 2009, monthly financial reporting by project is not formally prepared. This reporting should include financial data for each active and completed project such as current budget, cumulative costs, cost estimate at completion, variance between budget and cumulative costs, and prior month cost estimate at completion.
3. Incomplete project status reporting. Specifically, we noted that project status and financial reporting were limited to projects that had activity during the period under review. For example, the October 2009 report included status reporting on 12 of the 35 projects established under the Program. Further review revealed that although Project Managers are required to prepare project updates on active projects every six weeks, the detailed status report does not include projects on hold or with no activity.

We recommend that Project Management develop procedures to ensure accurate and complete Project Management and status reporting. Further, we recommend that Management conduct tests to ensure compliance.

#### PROJECT COMPLETION AND CLOSEOUT

Project Management entails planning, organizing, and managing resources to bring about the successful completion of specific project goals and objectives. It involves monitoring and controlling activities from project initiation to project closeout. Projects should be closed after all contractual requirements have been met, all invoices have been accrued and/or paid, and Metropolitan has discharged all obligations. Our review of project status revealed:

1. Six projects (103207, 103353, 103631, 103846, 103950, and 104007) were estimated to have been completed in 2005, 2007 or 2008; however, they remained incomplete or not closed as reported in the October 2009 Project Management's Status Summary. Our review revealed that the Change Order Requests (Form 540) were not submitted by the Project Managers to update the project's estimated completion date. We understand that all six projects are now substantially complete, with only the preparation of record drawings or work on warranty items remaining.
2. Five projects (103161, 103248, 103271, 103160, and 103452) remained open from 39 to 393 days, after all work was completed and all expenses were paid. Further, our review revealed that these projects remained open after all tasks were completed due to pending warranties or other financial obligations.

3. Discrepancies on the status of projects were noted between the PAGM system and Status Summary Report. Specifically, five projects (103163, 103270, 103300, 103631, and 103644) were shown as incomplete projects in PAGM; however, were reported as completed projects in the October 2009 Status Summary.
4. Three projects (103162, 103206, and 103486) were shown as completed and/or closed projects in the PAGM system; however, they were reported in the October 2009 Status Summary as incomplete (85 percent to 99 percent complete).

We recommend that Program Management resolve the noted discrepancies. In addition, we recommend that Program Management develop procedures to ensure the timely closeout of projects or the update to the new estimated completion date. We also recommend that Program Management review the projects' status and ensure that projects are closed on a timely basis.

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## **Infrastructure Reliability – Conveyance and Distribution System Rehabilitation Program Audit Report**

### **Background**

Metropolitan's conveyance and distribution system consists of hundreds of miles of pipelines, tunnels, canals, as well as reservoirs, pressure control structures, and hydroelectric power plants. The conveyance system conveys State Project and Colorado River water from various portals to Metropolitan's five treatment plants. The distribution system, on the other hand, delivers potable water from the treatment plants to member agencies' service connections. Major portions of the conveyance and distribution system were initially constructed in the 1940s and have been in continuous service ever since; however, portions of the system are exhibiting signs of normal wear and tear.

In July 2000, Metropolitan initiated the Infrastructure Reliability and Protection Plan (Plan) to evaluate risks and vulnerabilities of Metropolitan facilities and to identify cost-effective options to address those risks through rehabilitation, repair or replacement. As part of this Plan, staff conducted assessments of Metropolitan's conveyance and distribution system. These assessments have identified several system components that need repairs, refurbishment, or replacement.

In October 2001, the Conveyance and Distribution System Rehabilitation Program (Program) was established to plan and implement multiple projects throughout the conveyance and distribution system. The purpose of the Program was to maintain the reliability of the system through specific repair and rehabilitation projects on pipelines, tunnels, canals, reservoirs, and control structures. As of October 2009, the Program consisted of 52 projects (26 completed and 26 ongoing projects), with project costs totaling \$51.7 million. The Program is expected to be completed in Fiscal Year 2018/19.

Below is the list of completed and ongoing projects, with their corresponding cumulative costs as of October 2009.

<b>COMPLETED PROJECTS</b>			
<b>Item</b>	<b>Proj. No.</b>	<b>Description</b>	<b>Amount</b>
1	103602	Foothill Feeder Pipeline Replacement	\$ 4,019,288
2	103600	Sepulveda Feeder-Carbon Fiber Liner Repairs	2,044,083
3	103231	Foothill Feeder Hydroelec Runner Replacement	1,949,927
4	103579	SD Pipeline 5 and LS Outlet Conduit Repairs	1,908,138
5	103601	Foothill Feeder, Carbon Fiber Repairs	1,729,349
6	103484	Rialto Feeder, Repairs at Select Locations	1,653,164
7	103417	Distribution System Reliability	1,273,851
8	103496	Calabasas Feeder Repair, Study	1,102,246
9	103500	Box Springs Feeder-Phase I	942,991
10	103209	SJ Pressure Relief Struc for the East OC Feeder 2	907,593
11	103233	Santiago Lateral, Replace Motor Operated Valve	644,733
12	103402	SD Pipeline 4 & AV Pipeline Carbon Fiber Repairs	560,016
13	103497	Rialto Pipeline Repair at Thompson Creek	520,860
14	103050	Eagle Rock Tower, Slide Gates Rehabilitation	406,511
15	103443	Eagle Rock Lateral Interconnection Repair	403,515
16	103252	Etiwanda Hydroelec Plt, Repl of Needle Operators	364,335
17	103377	Upgrade Cathodic Protection Rectifiers	363,619
18	103236	Covina Pressure Control Facility	357,969
19	103535	Coastal Junction Bypass	304,930
20	103753	SF Pipeline Blowoff Structure-Station 287+70	269,580
21	103143	Anode Well Replacements	249,893
22	103077	San Diego Canal Seepage Study	218,853
23	103700	Lakeview Pipeline Cathodic Protect System Rehab	197,216
24	103376	Cathodic Protection for the Foothill Feeder	146,698
25	103379	Cathodic Protect Sys Upgr for the Middle Cross Fdr	111,273
26	103375	Upper Feeder Air Entrainment	52,511
		Total	\$22,703,142

<b>ONGOING PROJECTS</b>			
<b>Item</b>	<b>Proj. No.</b>	<b>Description</b>	<b>Amount</b>
1	103100	West Valley Fdr 1, Structure Modifications	\$ 6,574,623
2	103373	Lake Skinner East Bypass Screening Struc Rehab	6,346,133
3	103372	San Diego Canal Liner Repair	3,738,229
4	103266	Sepulveda Canyon Tanks Exterior and Int Recoating	3,160,424
5	103265	Greg Avenue Control Structure Valve Replacement	1,854,714
6	103737	St. John's Canyon Channel Repair and Modifications	1,156,420
7	103994	Box Springs Feeder Repairs-Phase 2	989,801
8	103639	San Diego Pipeline Nos. 1 and 3-Valve Replacement	822,511
9	103557	Hydroelectric Plants Fire Suppression System Mod	602,155
10	103413	Power Plt Discharge Elimination-Coyote Creek HEP	548,313
11	103374	San Diego Canal Bisulfite Tank Replacement	346,483
12	103181	West Valley Fdr 1, Access Roads and Struct Impr	337,974
13	103378	Electric Current Drain Station Installations	301,737
14	103498	Middle Feeder North Cathodic Protection	300,076
15	103531	Orange County Feeder Extension Lining Repair	287,521
16	103149	Yorba Linda Portal Struc Access/Tel Creek Bridge	242,624
17	103996	Lake Skinner West Bypass Screening Struc Rehab	240,451
18	103232	Flow Meter Mod at LS Inlet, Etiwanda Effluent	235,007
19	103808	San Diego Pipeline #4 Valve Replacement	232,350
20	103144	OC Fdr, Blow-Off Structure and Access Rd Repair	214,235

21	103166	Garvey Reservoir Hypochlorite Feed System	191,256
22	103810	Wadsworth Pump Plant Conduit Protection	162,475
23	103235	Replacement of Com Line at San Gabriel Tower	104,544
24	103779	Lake Skinner Aerator Air Compressor Repl	9,498
25	104195	Box Springs Feeder Repairs Phase 3 and Phase 4	-
26	103364	Conv & Distrib Sys Rehab Program-Rem Budget	-
			\$28,999,554

Our review consisted of evaluating administration and reporting practices and reviewing the project authorization and closeout processes. Further, we evaluated the validity and accuracy of invoice payments for assurance that the amounts billed were properly calculated and adequately documented. Finally, we reviewed actual vs. budgeted costs on a project-by-project basis.

### **Opinion**

In our opinion, the accounting and administrative procedures over the Infrastructure Reliability – Conveyance and Distribution System Rehabilitation Program include those practices usually necessary to provide for a generally satisfactory internal control structure. The degree of compliance with such policies and procedures provided effective control for the period July 2006 through October 2009.

### **Comments and Recommendations**

#### PROJECT COST OVERRUN AND REPORTING

Management reports are designed to provide meaningful information so Management can assess performance and develop effective strategic plans. Management reports allow for analysis and tracking to take place without daily involvement, and provide Management with timely feedback on Program activities. In addition, Metropolitan Management periodically reports the Program activities and significant events to the Board via the General Manager's Monthly Activity Report and Engineering's Key Activities Report. Our review of project costs revealed:

1. Actual costs as reported in the October 2009 Oracle General Ledger for 7 of 52 projects have exceeded the total budgets (\$3.1 million) by \$500,000. These differences varied from \$79 to \$372,155. Further review revealed, however, that these cost overages were either the result of the failure to reflect recent Board actions in the PAGM system or to apply the contingency reserve to the projects on a promptly basis. It is important to note that the overall Program expenditures were less than the Board appropriated amount at all times.
2. Incomplete Management reporting of financial activity. Specifically, we noted that although the Program consists of 52 projects with cumulative costs totaling \$51.7 million as of October 2009, monthly financial reporting by project is not formally prepared. This reporting should include financial data for each active and completed project such as current budget, cumulative costs, cost estimate at completion, variance between budget and cumulative costs, and prior month cost estimate at completion. Further, we noted that the project costs (\$59.5 million) reported in the Budget Summary prepared by Program Management were overstated by approximately \$7.8 million compared to the actual costs.

3. Incomplete project status reporting. Specifically, we noted that project status reporting was limited to projects that had activity during the period under review. For example, the October 2009 Engineering Key Activities report included status reporting on 5 of the 52 projects established under the Program. Further review revealed the lack of monthly detailed status reporting for all these projects.

We recommend that Project Management develop procedures to ensure accurate and complete project management and status reporting. Further, we recommend that Management conduct tests to ensure compliance.

### PROJECT COMPLETION AND CLOSEOUT

Project Management entails planning, organizing, and managing resources to bring about the successful completion of specific project goals and objectives. It involves monitoring and controlling activities from project initiation to project closeout. Projects should be closed after all contractual requirements have been met, all invoices have been accrued, and/or paid, and Metropolitan has discharged all obligations. Our review of project status revealed:

1. Four projects (103144, 103265, 103266, and 103500) that were completed from June 2006 through May 2009 have not been closed in Project Accounting and Grants Management System (PAGM) as of October 2009.
2. Three projects (103100, 103372, and 103531) were estimated to have been completed in 2005, 2006, or 2007 but remained incomplete as reported in October 2009 PAGM system. Further review revealed that the change order requests (Form 540) were not submitted by the Project Managers to update the project's estimated completion date.
3. Twenty-two projects remained open from 31 to 845 days after all work was completed and all expenses were paid. Further, our review revealed that these projects remained open after all tasks were completed due to pending warranties or other financial obligations.
4. Discrepancies on the status of projects were noted between the PAGM system and the supporting Notice for Project Completion (Form 542). Specifically, ten projects were shown with different completion dates as of October 2009.
5. Lastly, discrepancies on the status of projects were noted between the PAGM system and the Budget Summary Report prepared by Program Management. Specifically, two projects (103233 and 103375) were shown as closed projects in PAGM system; however, were reported as incomplete projects in the Budget Summary as of October 2009.

We recommend that Program Management resolve the noted discrepancies. In addition, we recommend that Program Management develop procedures to ensure the timely closeout of projects or the update to the new estimated completion date. We also recommend that Program Management review the status of projects and ensure that projects are closed on a timely basis.