

2. Implementing the Asset Management Program

- **The Public Utilities Commission has been slow in implementing an asset management program to better manage its capital assets, including developing an inventory and condition assessment of all capital assets, identifying which assets are at greatest risk of failure and would incur the most significant costs, and determining the most cost-effective approach to maintaining, repairing or replacing capital assets. The Public Utilities Commission responded to a November of 2003 California Department of Finance audit report that found inadequate Public Utilities Commission procedures and resources for identifying, planning and budgeting for, and recording completion of needed maintenance of the regional water system, stating that such an asset management program was in progress.**
- **However, the Public Utilities Commission has never developed a formal, coordinated work plan to implement its asset management program. The multiple components required for the program have not been fully addressed by executive management and fragmented efforts by the operating divisions to address provisions of the California Department of Finance audit have not been consistently overseen by executive management.**
- **The Public Utilities Commission has still not fully developed system-wide procedures to collect and enter asset data into its maintenance management system, MAXIMO, despite establishing an operating and maintenance work group and hiring a consultant to do so.**
- **Although the Public Utilities Commission engaged a consultant, Olivia Chen Consultants, to address the California Department of Finance audit recommendations to (a) develop and document system-wide policies and procedures regarding which asset information should be included in the MAXIMO maintenance management system, and (b) develop standard documented procedures for the system-wide maintenance and inspection of pipelines, dams, watersheds, tunnels and bridges, the Public Utilities Commission has not ensured that the consultant completed the work. The consultant contract expired in April of 2005 and the Financial Services Section intends to present a proposed contract extension to complete the tasks to the Public Utilities Commission. \$53,632 of the original contract budget of \$99,676 remains unspent.**

- **The Public Utilities Commission requested approximately \$1.3 million in the proposed FY 2005-2006 budget to fund new positions and consultant services to develop the asset management program, but due to the lack of a formal asset management program work plan, the budget request was poorly substantiated. The Board of Supervisors approved approximately \$920,000 in the FY 2005-2006 budget to develop the asset management program, based upon the Budget Analyst's recommendation, which is \$380,000, or 29.2 percent, less than the requested amount.**
- **The Public Utilities Commission lacks criteria for planning and budgeting capital repair and replacement projects. As a result, the Public Utilities Commission appropriates but does not spend monies for specific capital repair and replacement projects, thus tying up funds that could be better spent on other uses.**
- **For example, the Hetch Hetchy Enterprise's unexpended capital repair and replacement appropriation balance increased in FY 2004-2005 by \$13.5 million, resulting from the Hetch Hetchy Enterprise spending only \$24.5 million of the FY 2004-2005 \$38.0 million capital repair and replacement appropriation. The increase in the unexpended appropriation balance indicates that the Hetch Hetchy Enterprise appropriated a higher level of funding in FY 2004-2005 than the Hetch Hetchy Enterprise is able to expend for identified capital repair and replacement projects.**
- **Although 52 Water Enterprise capital repair and replacement projects had an appropriation totaling \$1.4 million, the Water Enterprise spent no money on these projects in FY 2004-2005. The Water Enterprise also appropriated (a) \$5.0 million for the Sunol/Niles Dam Removal Project in FY 2004-2005 but spent only \$750,000, and (b) \$2.8 million for the Facilities Security Project but spent only \$942,000.**
- **Funding of capital projects should correspond to capital project expenditures so that monies not needed for specific capital appropriations are available for other uses. Because the ratepayers bear the cost of capital project spending, the Public Utilities Commission needs to more efficiently align capital appropriations with capital project expenditures to reduce the costs to the ratepayers.**

The Public Utilities Commission's Need for an Asset Management Program

The Public Utilities Commission has been slow in developing a program to better manage the capital assets of the clean water, water, and power systems. The Public Utilities Commission had promised to develop such an asset management program in response to a November of 2003 California Department of Finance audit report of the regional water system, but has not fully addressed the California Department of Finance audit recommendations. According to the Public Utilities Commission, the asset management program is intended to better identify the condition of the Clean Water, Water, and Hetch Hetchy Enterprises' capital assets, identify which assets are at greatest risk of failure and would incur the most significant costs, and determine the most cost-effective approach to maintaining, repairing or replacing capital assets.

In 2003, the California Department of Finance audited the Public Utilities Commission's regional water system in accordance with State Assembly Bill 1823, which required an audit of the Public Utilities Commission's maintenance program of the regional water system. The audit included a review of the adequacy of the Public Utilities Commission's procedures and resources for identifying needed maintenance of the regional water system; planning, budgeting, scheduling, and completing maintenance; and record keeping of maintenance activities.

The California Department of Finance presented a report in November of 2003 with the following findings:

- Critical asset information is not recorded in the MAXIMO maintenance management system.
- Maintenance inspection procedures are not documented.
- Repair and replacement duties and procedures could be improved.
- Repair and replacement information is inconsistently collected and recorded.
- Development of maintenance budget procedures could be improved.

In the June 14, 2004 written response to the California Department of Finance audit, the Public Utilities Commission stated that they were planning to develop an asset management program. In the summer of 2004, the Public Utilities Commission created an asset manager position in the Business Services Division Financial Services section, contracted with an outside consultant to provide workshops on developing an asset management program, and established an organization-wide workgroup, consisting of operating, maintenance, and information systems staff, to discuss and plan the implementation of an asset management program.

Despite the steps described above, the Public Utilities Commission has still not developed a formal, coordinated work plan to implement the asset management program. The multiple components of the program have not been fully addressed by executive management and efforts by the operating divisions to address provisions of the California Department of Finance audit have not been consistently overseen by executive management.

The Public Utilities Commission's Efforts to Address the California Department of Finance Findings on Recording Asset Information in MAXIMO and Documenting Inspection Procedures

In August of 2004, the Public Utilities Commission hired a consultant to address two of the California Department of Finance audit findings. The consultant's scope of work included:

- Assisting the Public Utilities Commission in developing and documenting system-wide policies and procedures regarding which asset information should be included in the MAXIMO maintenance management system.
- Developing standard, documented procedures for the system-wide maintenance and inspection of pipelines, dams, watersheds, tunnels and bridges.

The operating and maintenance workgroup noted above identified the development of inspection procedures as a priority. The consultant completed the draft dam and pipeline inspection procedures, and the Public Utilities Commission has approved the final form. The consultant also completed draft tunnel and bridge inspection procedures, but the Public Utilities Commission has not yet approved the final form.

Delays in Developing System-Wide Policies and Procedures for Entering Asset Information into MAXIMO

The consultant contract also included tasks to:

- (a) Develop standards for the types of asset data to be collected,
- (b) Inventory existing asset information,
- (c) Collect and enter missing asset information into MAXIMO, and
- (d) Develop system-wide procedures to collect and enter data for all new assets into MAXIMO. Developing system-wide procedures to collect and enter data for all new assets into MAXIMO was intended to address the California Department of Finance audit finding.

According to the Public Utilities Commission, although the consultant has addressed each of these four tasks, none of the four tasks has been completed and the three work products have not been delivered, including (a) an inventory of existing capital asset

information, (b) an electronic file of the Public Utilities Commission's capital assets and critical asset information, and (c) a procedure for capital asset data collection and maintenance. The consultant contract expired in April of 2005 and the Financial Services Section intends to present a proposed contract extension to complete the tasks to the Public Utilities Commission. \$53,632 of the original contract budget of \$99,676 remains unspent.

The Public Utilities Commission has still not fully developed system-wide procedures to collect and enter asset data into MAXIMO, despite establishing a work group and hiring a consultant to do so. The Public Utilities Commission told the California Department of Finance, in the June 14, 2004 written response, that the Public Utilities Commission had established a task force to examine the Public Utilities Commission's operating divisions' existing applications of MAXIMO and to develop system-wide policies and procedures regarding the information to be recorded in MAXIMO. The task force evolved into the operating and maintenance work group, made up of representatives from the Hetch Hetchy, Clean Water, and Water Enterprises' maintenance units and from Information Technology Services.

The operating and maintenance work group has developed a draft procedure to collect asset information as part of the contracting process for capital projects. The draft procedure would require the contractor to complete specified asset and equipment information in an electronic format, to be entered into MAXIMO. The operating and maintenance work group also developed MAXIMO screen modifications to standardize entering asset data into MAXIMO.

The operating and maintenance work group has functioned informally in FY 2004-2005 because of the Public Utilities Commission's management changes and reorganization. The last operating and maintenance work group meeting was in March of 2005. According to Water Enterprise and Information Technology Services managers, the Public Utilities Commission's operating and maintenance staff need significant support in understanding and using MAXIMO efficiently. However, the Public Utilities Commission has not yet developed a process to ensure that MAXIMO is used efficiently across all three enterprises.

Currently, the Clean Water Enterprise Water Pollution Control Division has the most comprehensive asset data entry into MAXIMO. During FY 2004-2005, the Water Pollution Control Division completed the condition assessment and data entry into MAXIMO and is currently working on the risk assessment of assets. According to Water Pollution Control Division staff, the risk assessment should be completed during the summer of 2005.

The Water Enterprise Water Supply and Treatment Division has developed a draft timeline for conducting a condition assessment of assets and entering the data into MAXIMO. Over the past several years, the Public Utilities Commission has conducted three water system asset reliability studies with the assistance of outside consultants. The asset reliability data does not correspond with asset information recorded in MAXIMO and therefore, will have to be reconciled with the MAXIMO identification numbers.

The Public Utilities Commission's other operating divisions, including the City Distribution Division and the Hetch Hetchy Enterprise are at varying points in the process of developing an inventory and recording assets in MAXIMO.

The Public Utilities Commission's FY 2005-2006 Plan to Develop the Asset Management Program

The Public Utilities Commission requested approximately \$1.3 million in the proposed FY 2005-2006 budget to fund new positions and consultant services to develop the asset management program. Due to the lack of a formal asset management program work plan, the budget request was not well substantiated. Based upon the Budget Analyst's analysis and recommendation, the Board of Supervisors approved a portion of the requested new funds, including:

- \$500,000 to fund consultant services to (a) assess and value the Public Utilities Commission's assets and (b) develop and implement a comprehensive asset management program; and
- \$420,000 to pay for four new positions to support development of the asset management program.

The Public Utilities Commission should develop a formal work plan for the asset management program, including timelines, work goals, and executive management oversight. Up to this point, the work goals and timelines have been uncertain and several key issues have not been addressed. As discussed above, the Public Utilities Commission has been slow in standardizing procedures for using MAXIMO system-wide and entering asset data into MAXIMO.

The Public Utilities Commission has also not fully addressed the California Department of Finance findings regarding the capital repair and replacement program and subsequent California Department of Health Services findings regarding the management of repair and replacement work orders.

Managing the Capital Repair and Replacement Program as Part of the Asset Management Program

The California Department of Finance audit found that the Public Utilities Commission should:

- Improve repair and replacement duties and procedures, and
- Collect and record repair and replacement information more consistently.

Although the Public Utilities Commission did not agree with all the California Department of Finance audit recommendations, the Public Utilities Commission did agree to (a) develop a central information system for all capital repair and replacement

project information; and, (b) establish standards for recording specific repair and replacement project information.

A second audit, conducted by the California Department of Health Services and received by the Public Utilities Commission in April of 2005 found that the Public Utilities Commission did not maintain complete work order information for maintenance and repair and replacement projects. The auditors found that a large number of open work orders were closed without any work being completed and without documentation of specific reasons for not completing the work. Also, the work orders did not contain verification of work completed by crafts that were outside the facility manager's or superintendent's sphere of work.

According to the Assistant General Manager, Water, maintenance and operating staff would open work orders for maintenance or capital repair and replacement projects but not charge work against the work order. To address the California Department of Health Services audit report, the Water Division is planning to draft a flow chart and policy governing the process of setting-up, charging, and closing work orders for maintenance and capital repair and replacement projects. The policy will require that a senior manager sign off on the work order. According to the Assistant General Manager, in establishing the new policies and procedures, Water Division managers will need to define routine maintenance work orders and capital repair and replacement work orders that will be set up as a project.

As discussed in Section 3 of this report, the Public Utilities Commission has not defined what constitutes capital repair and replacement projects or how to segregate and record capital repair and replacement expenditures in the financial system. The Public Utilities Commission lacks clear criteria to determine in practice what is a routine maintenance expenditure to be funded from revenue and what is a repair and replacement expenditure, which can be funded from revenue or from bond proceeds.

As an initial step in developing the asset management program work plan, the Public Utilities Commission should develop criteria for defining routine maintenance and capital repair and replacement projects. The General Manager should direct the Assistant General Managers, Clean Water, Water, and Infrastructure to develop procedures for determining routine maintenance work orders and capital repair and replacement work orders to be set up as projects. These procedures should be developed in coordination with the Director of Financial Services to ensure consistency in maintenance and operations practices and input into the financial system.

The Revenue-Funded Capital Repair and Replacement Budget

The Clean Water, Water, and Hetch Hetchy Enterprises' annual operating budgets include revenue-funded capital repair and replacement projects. In FY 2004-2005, the Clean Water Enterprise included \$15.2 million for capital repair and replacement projects, the Water Enterprise included \$25.8 million for capital repair and replacement projects, and the Hetch Hetchy Enterprise included \$38.0 million.

The California State Department of Finance report recommended that:

- The Public Utilities Commission should formalize, document, and communicate capital repair and replacement program's funding criteria.
- The Public Utilities Commission managers should develop appropriate maintenance budgets based on the stated criteria.

Currently, the Public Utilities Commission does not have consistent practices for the Clean Water, Water, and Hetch Hetchy Enterprises to appropriate revenues for capital repair and replacement projects in the annual budget.

The Clean Water Enterprise allocates annual repair and replacement funds to ten revenue-funded repair and replacement projects, which are carried forward from year to year. The Water Enterprises allocates annual repair and replacement funding to continuing projects that are funded solely by revenues and to projects that combine bond and revenue funding sources. Both the Clean Water and the Water Enterprises spent more for capital repair and replacement projects in FY 2004-2005 than appropriated in FY 2004-2005, resulting in drawing down the unexpended appropriations from prior years.

However, the Hetch Hetchy Enterprise's unexpended appropriation balance increased in FY 2004-2005, resulting from the Hetch Hetchy Enterprise spending \$13.5 million less in FY 2004-2005 than the \$38.0 million appropriation. The increase in the unexpended appropriation balance indicates that the Hetch Hetchy Enterprise appropriates a higher level of funding each year than the Hetch Hetchy Enterprise is able to expend for identified capital repair and replacement projects.

Although the Water Enterprise spent down its unexpended capital repair and replacement appropriation in FY 2004-2005, several specific revenue-funded capital projects were significantly under-expended in FY 2004-2005.

- 52 revenue-funded capital repair and replacement projects had no expenditures posted against the project in FY 2004-2005, with a year-end unexpended appropriation of \$1.4 million.
- The Sunol/Niles Dam Removal Project (CUW 248) spent approximately \$750,000 of the FY 2004-2005 appropriation of \$5,065,000, resulting in an unexpended FY 2004-2005 appropriation of \$4.3 million.
- The Facilities Security Project (CUW 253) spent approximately \$942,000 of the FY 2004-2005 appropriation of \$2,800,000, resulting in an unexpended FY 2004-2005 appropriation of \$1.86 million.

Funding of capital projects should correspond to capital project expenditures so that monies will not be unnecessarily restricted for specific capital appropriations and therefore, not available for other uses. Because the ratepayers bear the cost of capital project spending, the Public Utilities Commission needs to more efficiently align capital appropriations with capital project expenditures to reduce the costs to the ratepayers.

The Public Utilities Commission needs to develop standard procedures for (a) defining capital repair and replacement projects, and (b) determining annual funding criteria. For example, existing revenue-funded capital repair and replacement projects with unexpended appropriations and no current year expenditures should be de-funded and the monies re-allocated to projects with over-expenditures. Also, capital repair and replacement project managers should develop annual spending plans for repair and replacement projects and annual project appropriations should correspond to the spending plan, which are reviewed and approved by the respective Assistant General Managers.

Further, the General Manager should direct the Financial Services Director to establish procedures for setting up capital repair and replacement projects and recording expenditures against the projects in the financial system. These procedures should be developed in conjunction with the development of criteria to differentiate routine maintenance work orders from capital repair and replacement projects. Currently, several finance and accounting management positions are vacant. The Public Utilities Commission should fill existing Financial Services Section vacancies and allocate staff to develop procedures to consistently account for capital repair and replacement procedures in the financial system.

Conclusions

The Public Utilities Commission has been slow in developing an asset management program to manage its capital assets, despite responding to the California Department of Finance audit that development of an asset management program was in progress over two years ago. The Public Utilities Commission has failed to move forward in developing the asset management program, due largely to lack of oversight by the executive management team and failure to develop a coordinated work plan, with clearly identified goals, work product and timelines.

Further, the Public Utilities Commission has failed to develop sound policies and criteria for appropriating and expending funds for capital repair and replacement projects. By failing to align capital appropriations with capital spending, the Public Utilities Commission ties up unexpended appropriations for capital projects that could be allocated for other uses. Because the ratepayers bear the cost of capital project spending, the Public Utilities Commission needs to more efficiently align capital appropriations with capital project expenditures to reduce the costs to the ratepayers.

Recommendations

The Public Utilities Commission General Manager should:

- 2.1 Direct the Assistant General Managers, Infrastructure, Water, and Clean Water to prepare and implement an asset management program work plan, that:
 - (a) includes goals, work product and timelines, and
 - (b) identifies executive management oversight responsibilities.
- 2.2 Direct the Assistant General Managers, Infrastructure, Water, and Clean Water to develop criteria and prepare formal, written procedures for determining routine maintenance work orders and capital repair and replacement work orders to be set up as projects.
- 2.3 Direct the Assistant General Managers, Infrastructure, Water, and Clean Water in conjunction with the Director of Financial Services to:
 - (a) Develop standard procedures for defining capital repair and replacement projects,
 - (b) Determine capital repair and replacement program funding criteria, and
 - (c) Include such criteria in the proposed FY 2006-2007 budget.
- 2.4 Implement the State Department of Finance audit recommendation to provide the Public Utilities Commission and the Board of Supervisors detailed capital repair and replacement program information as recommended in Phase III of this management audit, including:
 - (a) providing water system capital repair and replacement program information as part of the monthly Water System Capital Improvement Program status reports to the Public Utilities Commission; and
 - (b) providing water system capital repair and replacement program information to the Board of Supervisors as part of the quarterly Water System Capital Improvement Program status reports.
- 2.5 Direct the Assistant General Manager, Water to draft a flowchart and policy governing the process of setting-up, charging, and closing work orders for maintenance and capital repair and replacement projects, and to present the draft flowchart and policy to the General Manager and the Public Utilities Commission no later than December 31, 2005. The policy should include:
 - (a) requirements that a senior manager sign off on the work order,

- (b) criteria to define routine maintenance work orders and capital repair and replacement work orders that will be set up as a project.
- 2.6 Direct the Director of Financial Services to:
- (a) review all of the Clean Water, Water, and Hetch Hetchy Enterprises' existing revenue-funded capital repair and replacement projects with unexpended appropriations and no current year expenditures, and
 - (b) recommend de-funding and re-allocating unexpended appropriations to active repair and replacement projects.
- 2.7 Direct the Assistant General Manager, Infrastructure, to require all project managers to develop annual spending plans for repair and replacement projects which correspond to the annual project appropriations should correspond to the spending plan.
- 2.8 Direct the Assistant General Managers, Infrastructure, Water, and Clean Water to develop procedures to review and approve capital repair and replacement project spending plans.

Costs and Benefits

The Public Utilities Commission requested approximately \$1.3 million in the proposed FY 2005-2006 budget to fund new positions and consultant services to develop the asset management program, but due to the lack of a formal asset management program work plan, the budget request was poorly substantiated. The Board of Supervisors approved approximately \$920,000 in the FY 2005-2006 budget to develop the asset management program, based upon the Budget Analyst's recommendation, which is \$380,000, or 29.2 percent, less than the requested amount. Without a coordinated work plan and executive management oversight, the Public Utilities Commission cannot ensure cost-effective implementation of the asset management program. By implementing the Budget Analyst's recommendations, the Public Utilities Commission should be better able to utilize existing resources to develop and implement a system-wide asset management program.