

# Agenda Report

March 28, 2005

**TO:** CITY COUNCIL

**THROUGH:** MUNICIPAL SERVICES COMMITTEE

**FROM:** CITY MANAGER

**SUBJECT:** ADOPTION OF THE POWER DISTRIBUTION SYSTEM MASTER PLAN AND AMEND THE FY2005 WATER AND POWER OPERATING BUDGET TO PROVIDE FOR 20.0 NEW FTE'S IN THE POWER FUND

## **RECOMMENDATION**

It is recommended that City Council:

1. Adopt the Power Distribution System Master Plan (Executive Summary shown in Attachment 1);
2. Authorize the creation of 20.0 FTE's in the Power Fund, in the classifications shown on Attachment 2.

## **BACKGROUND**

Over the past year, Pasadena Water and Power Department (PWP) has been developing an Electric Distribution System Master Plan (Master Plan) to broadly address the many critical infrastructure and operational issues facing PWP. The focus of the Master Plan was to provide an analysis of the existing system; a review of projected demands on the system; and recommendations for new, replacement and upgraded infrastructure to maintain service reliability and safely and efficiently operate the system.

PWP contracted with R. W. Beck (RWB) to provide consulting services and prepare the Master Plan report. The RWB report identifies three broad categories of challenges: 1) the replacement of aging infrastructure, 2) the need for additional reliable power distribution capacity and 3) the lack of organizational preparedness to address the next 20 years of providing safe, reliable and cost-effective service.

The infrastructure issues that need the most attention consist of equipment installed in the 1950's and 1960's that should have highest priority for replacement. Other equipment installed in the 1970's and 1980's will have to be replaced in 10 years. The need for replacement is characterized by increased operating cost due to electrical inefficiency,

increased maintenance costs due to more frequent and more expensive repairs, decreased reliability as aging equipment fails more frequently and reduced safety as older equipment becomes more hazardous to operate. The Master Plan points out that the quality of the power system as it was originally designed and installed has provided an operating cushion that is eroding with time. However, without replacement, the oldest equipment will fail at an increasing rate that will be more noticeable to PWP customers and create increased safety issues for staff and the public.

PWP installs electrical equipment of a certain size and capability in order to serve customer demands for electricity. The report indicates that the gap between the capacity of the existing electrical system and customer demands is narrowing. Such reductions affect the level of system reliability. At this point in time, the report indicates that while reliability is still acceptable, it is nevertheless declining. This needs to be addressed by providing additional equipment. Also, more resources must be invested in regular periodic analysis and planning for the distribution system.

The report notes that the onset of electric industry deregulation resulted in a strong focus by PWP on controlling costs, responding to customer needs and maintaining competitive rates, while also maintaining service reliability at an acceptable level. While the utility has enjoyed considerable success, the report identifies as organizational and preparedness issues facing the power delivery operation: 1) insufficient engineering and operating resources to accomplish all the work, especially infrastructure replacement and maintenance, that needs to be completed now and over the next 10 years; 2) little or no additional improvements to be gained from process improvement efforts without more staff and technology improvements; and 3) the potential loss of institutional knowledge and management succession issues resulting from expected retirement in the next five years.

The Master Plan report provides a range of solutions to address each of the challenges identified. Some approaches to specific problems are more costly than others, depending on the level of redundancy deemed appropriate, the tolerance for risk and uncertainty, the availability of technology and the trade-off between up-front costs and long-term operating costs. The report provides a decision making guide intended to capture the boundaries and extremes of the decisions PWP needs to begin making now. The report emphasizes the need for a renewed emphasis on planning, with three crucial first steps being 1) additional permanent staff both to manage and perform more work, and prepare for retirements which will occur over the next three to five years; 2) implementation of an enterprise asset and work management system; and 3) increased use, on a temporary as-needed basis, of contract resources in engineering, management and construction to provide support to permanent staff during peak workload periods.

RWB employed a stakeholder approach to developing the Master Plan by incorporating an "internal" stakeholder group consisting of PWP staff and an "external" stakeholder group made up of representatives from the Municipal Services Committee, the Utility Advisory Commission, Public Works, Planning and Development, and representatives from labor including the International Brotherhood of Electrical Workers, and the Pasadena Management Association.

PWP provided all necessary technical documents, current system condition, operations and maintenance practices, along with “corporate” knowledge of the distribution system. A cross section of PWP was included in this group in order to capture not only their system knowledge, but also their knowledge of customer and growth trends in particular areas of PWP’s service territory.

The external stakeholder group was asked to provide input on customer reliability expectations, development and growth trends within the city, planned and approved projects, and General Plans. A thorough review of inspection results, observations, and recommendations for immediate action was presented to this group.

The Master Plan is a planning tool, and will be used as follows:

- An assessment of the condition of the existing system as a baseline measurement;
- Setting the criteria for energy supply adequacy and distribution system reliability by which planning can be done;
- Establish a set of priorities for system upgrades;
- Provide a range of capital expenditures by which actual plans and budgets may be evaluated;
- A framework for addressing the resource needs of PWP;
- A framework for work practice improvements;
- Setting priorities for inspections, and scheduled maintenance; and,
- Setting standards for business and construction practices, along with equipment specifications.

In June 2005, PWP plans to present detailed five-year capital project implementation and spending plans with associated revenue requirements and rate impacts. However, a number of priority capital infrastructure and resource needs should be pursued without delay, including the immediate repair or replacement of certain vaults, cable and electrical switches. PWP staff is currently working on some of these high priority items to the extent possible and planning to address the immediate needs in all three areas in the fiscal year 2006 capital improvement budget (CIP).

Additional resources are required to complete priority projects that address the immediate needs and to support the on going increased workload to implement the Master Plan. As a first phase, Staff will bring a separate report recommending contracts for general engineering services to supplement PWP resources. Additionally, PWP is recommending that City Council approve an amendment to the fiscal year 2005 Operating Budget that adds 20 new FTE’s to the Power Fund in the Power Delivery Business Unit (PDBU) in accordance with Master Plan recommendations. Five engineers have been recommended for planning, substation engineering, distribution system engineering (2), and civil engineering; along with 5 engineering aides. Additionally, 10 new construction staff positions have been recommended including cable splicers, powerline mechanics, electrical mechanics, test mechanics, and one crew supervisor. In total, these additional

staff will increase expenses by approximately \$1.8 million starting in FY 2006 as part of an overall capital improvement spending increase of about \$11 million associated with Master Plan related project.

The requested additional FTE's, along with pending contracts for engineering resources and the current support contracts for overhead and underground construction, meter test, and substation are essential to ensuring that PWP can implement the necessary system improvements required to ensure a safe, reliable and cost-effective distribution system.

Over the next several months, PWP anticipates that additional resources will be requested to further develop and implement the Master Plan, including:

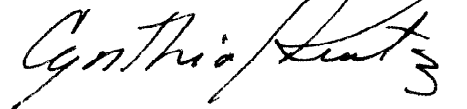
- Technical assistance in developing the detailed five year capital project budget and implementation plan noted above, along with spending plans, borrowing, and rate impacts;
- Office space and new equipment necessary to accommodate new FTEs; and,
- Contract for purchase and implementation of a Work Management System to effectively manage the increased workload and resources.

The positions requested now, and in the future, will increase the department's total headcount. As of today, authorized positions total 363 FTE's (not including the requested additional 20 FTE's), compared to a level of 308 in 2000 as competition threatened the electrical utility industry. What is different today, however, is the need to address the critical infrastructure challenges described in the master plan report. The requested positions and the contract resources are essential to supporting the higher levels of capital investment needed to maintain a safe and reliable system.

**FISCAL IMPACT**

The new staff positions will have no impact on the Fiscal Year 2005 budget, however, future year capital (and to lesser extent operating) budgets and expenses will be increased as more resources are available to accomplish a higher level of capital improvements. Sufficient funds are available in the unappropriated Light and Power Fund to fund the additional positions in the FY 2006 budget.

Respectfully submitted,



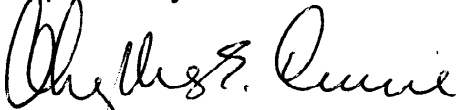
CYNTHIA J. KURTZ  
City Manager

Prepared by:



ERIC R. KLINKNER  
Assistant General Manager  
Water and Power Department

Approved by:



PHYLLIS E. CURRIE  
General Manager  
Water and Power Department

Attachments (2)