

# Agenda Report

November 4, 2002

**To:** City Council  
**Through:** Municipal Services Committee  
**From:** City Manager  
**Subject:** Adoption of the Water System Master Plan

## RECOMMENDATION

It is recommended that City Council adopt the findings of the Water System Master Plan (Master Plan) prepared by Montgomery Watson Harza (MWH) as a framework for water system capital improvements through the year 2020.

## BACKGROUND

The issue of replacement and refurbishment of the City's aging water system was brought before City Council in the fall of 2000. It was recommended that a Water System Master Plan be prepared to assist in determining the extent and cost of future capital improvements. On July 31, 2002 MWH completed the Master Plan. This plan contains recommendations for a capital improvement program (CIP) through the year 2020.

Work in the Master Plan included modeling and analyzing the water system, reviewing the planned development needs, recommending new, replacement, and upgraded infrastructure to meet existing and planned development, recommending ways to meet regulatory requirements and efficiently operate the water system, and generating a prioritized list of required improvements.

## Capital Expenditures

The Master Plan recommended capital expenditures of \$234.6 million through the year 2020 (Attachment A) to address existing deficiencies and future needs of the water system. Of this amount, the Master Plan calls for Pasadena Water and Power (PWP) to fund \$204.0 million of the CIP and for others to fund \$30.6 million for perchlorate treatment. \$6.1 million or 3% of the CIP funded by PWP is needed to meet future growth and new water demands on the water system. The CIP expenditures are listed in the following table:

Description	Millions of Dollars
Replace or cement line aging water main pipes	\$101.6
Replace water pipes to increase fire flows or water pressures	\$36.7
Replace or rehabilitate existing groundwater wells	\$4.9
Upgrade existing booster pump stations	\$11.1
Replace or rehabilitate reservoir and install one new reservoir	\$30.3
Other water system improvements	\$19.4
Perchlorate treatment funded by others	\$30.6

To determine the initial funding needs for the CIP, staff has prepared a five year CIP cash flow budget that incorporates current CIP projects and the recommended CIP projects from the Master Plan. Attachment B details the recommended Water Fund FY 2003 through 2007 CIP cash flow. An adjustment from the recommended Master Plan schedule prepared by MWH was made for FY 2003 and 2004 to allow time to complete many of the projects that are currently in progress and to allow time to acquire the resources and staffing to manage this increase level of CIP. FY 2005 through 2007 fully incorporates the Master Plan schedule. Attachment C is the five year Master Plan schedule prepared by MWH. Upon adoption of the Master Plan, staff will prepare a resource plan to manage the CIP projects and present it to City Council at a later date.

The analysis may identify additional projects to be added to the Master Plan. The Master Plan did not include any seismic improvements in its cost estimates. All reservoirs installed before 1972 will have a seismic analysis conducted to determine their compliance with current earthquake design codes. Coupon and flow testing at various pipelines throughout the distribution system will be conducted to determine the actual condition of the pipelines. A coupon test consists of cutting out a small section of pipe and conducting laboratory analysis to determine the actual condition of the pipe material. The coupon and flow testing will assist PWP in establishing priority for pipe

replacement. It is possible that some pipes, while old, have a few more years of useful life. The coupon and flow testing will be conducted during FY 2003 and FY 2004. These tests should not affect FY 2003 and 2004 CIP expenditures, but may impact future CIP expenditures.

The CIP schedule is also dependent on the proposed changes to the Water Rate Ordinance, which is being presented in a separate agenda item. The adoption of the Master Plan as a framework for water system capital improvements through year 2020 does not mean the Water System CIP projects are set permanently for the next 18 years. There will be periodic updates and revisions to the Master Plan in the future as the need arises.

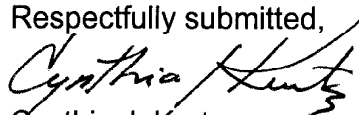
### Water System Recommendations

The following table outlines the recommended water system capital improvements through the year 2020.


Description	Quantity	Units
Replace or cement line aging water pipes	230	miles
Replace water pipes to increase fire flows or water pressures	46	miles
Replace or rehabilitate existing groundwater wells	6	wells
Upgrade existing booster pump stations	12	stations
Replace or rehabilitate reservoirs and install a new reservoir	14	reservoirs
Other water system improvements		
SCADA telemetry expansion	47	meters
Chloramination Facilities	2	facilities
Seismic Analysis	14	reservoirs
Meter replacement	36,200	meters/15yrs
Eastside well collector pipeline	5.7	miles
Coupon and flow testing	TBD	locations
Perchlorate treatment funded by others	1	treatment plant

**FISCAL IMPACT**

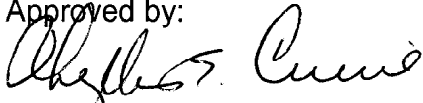
Funding of the Master Plan CIP recommendations will be provided by Water Fund Revenues.

Respectfully submitted,  
  
Cynthia J. Kurtz  
City Manager

Prepared by:

  
Brad Boman  
Engineering Manager  
Water and Power Department

Approved by:

  
Phyllis E. Currie  
General Manager  
Water and Power Department

Attachment A — 18-year Summary of CIP Cost Allocation  
Attachment B — Five-Year Capital Improvement Program Cash Flow  
Attachment C — Five-Year Capital Improvement Program and Schedule