TO: HONORABLE CITY COUNCIL  
FROM: CITY MANAGER  
DEPARTMENT: UTILITIES  
DATE: OCTOBER 25, 2004  
CMR:449:04  
TITLE: WATER PURCHASE PROJECTIONS IN SUPPORT OF THE ENVIRONMENTAL REVIEW PHASE OF THE REGIONAL WATER SYSTEM’S CAPITAL IMPROVEMENT PROGRAM

This report on the volume of water Palo Alto estimates it will purchase in 2030 from San Francisco is for the Council’s information only. No action is required.

BACKGROUND  
In May 2002, the San Francisco Public Utilities Commission (SFPUC) adopted a long-term capital improvement program (CIP) to repair, replace and seismically upgrade the regional water system’s pipelines and tunnels, reservoirs and dams. Palo Alto and the other member agencies of the Bay Area Water Supply and Conservation Agency (BAWSCA) are on record in support of the SFPUC’s CIP program for the regional water system. The $3 billion CIP is a large undertaking that includes building new pipelines to meet existing and projected loads and increasing operational flexibility to enhance emergency responsiveness.

The environmental review process is a major step in implementation of the CIP. In order for it to plan, size, permit and design the projects in its CIP, the SFPUC must have estimates of how much water the regional system will need to provide in the future. The project planning and permitting process must also consider alternative means for addressing future water needs, including other sources of supply and conservation. For the past year, a consultant to the SFPUC has been preparing projections of how much water each BAWSCA agency will need in the future. The consultant is working with the staff of each individual agency to ensure that the basis for the purchase projections, and the results, are consistent with local land use plans and other characteristics of the community.
The first step in that process was to develop long-term water demand projections for San Francisco and each BAWSCA agency. This step has been completed and an information report to the Council [CMR:106:04] on May 15, 2004 showed that the long-term water forecast developed for Palo Alto was consistent with City policies and the adopted land-use plans.

The next step in the process was to evaluate the potential for implementation of water conservation measures in San Francisco and each BAWSCA agency. The consultant used the end-use model developed for the long-term projections to analyze the potential for and the cost-effectiveness of thirty-two water conservation measures. In this analysis, a group of conservation measures was determined to be cost-effective if implemented in Palo Alto. These measures were grouped into three potential conservation programs, Portfolio A, Portfolio B, and Portfolio C. Portfolio A consists of a group of measures that were expected to save 1.6% of the long-term demand. Portfolio B contains all of Program A’s measures and additional measures that are expected to save 3.2% of the long-term demand. Portfolio C, the most aggressive portfolio, contains all of Program B’s measures and all additional cost-effective measures expected to save 4% of the long-term demand. On September 13, 2004, the Council received an information report [CMR:395:04] on this evaluation concluding that the long-term conservation savings potential for Palo Alto is between 1.6% and 4% of the water demands in 2030.

**DISCUSSION**

**Water Purchase Projections**

The final step in the process is to determine how much water Palo Alto plans to purchase from San Francisco by 2030. The key components of this determination include the anticipated implementation of water efficiency programs and the expected development of recycled water. The water demand projection for 2030 is about 16,500 acre-feet per year (AFY). Palo Alto currently uses about 1,300 AFY of recycled water and has no plans in place to expand its usage of recycled water. The range of conservation savings was estimated to be between 260 AFY (1.6% of long-term demand) and 660 AFY (4% of long-term demand). The table below shows these calculations for the range of conservation savings.

<table>
<thead>
<tr>
<th>Water Use in Acre-Feet/Year</th>
<th>Water Conservation Portfolio A</th>
<th>Water Conservation Portfolio B</th>
<th>Water Conservation Portfolio C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand Projection for 2030</td>
<td>16,500</td>
<td>16,500</td>
<td>16,500</td>
</tr>
<tr>
<td>Current Recycled Water Use</td>
<td>1,300</td>
<td>1,300</td>
<td>1,300</td>
</tr>
<tr>
<td>Future Recycled Water Use</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Water Conservation Estimate</td>
<td>260</td>
<td>525</td>
<td>660</td>
</tr>
<tr>
<td>Water Purchase Estimate</td>
<td>14,940</td>
<td>14,675</td>
<td>14,540</td>
</tr>
</tbody>
</table>
As the table shows, if the high end of the range is used as a good estimate of long-term permanent water savings due to conservation measure implementation, then the resulting estimate of purchase requirements from San Francisco is about 14,540 AFY. This is the estimate provided to the SFPUC for Palo Alto’s future water purchase volume for purposes of completing the environmental documentation for the regional system’s capital improvement program.

**Action by the Director of Utilities**

In May 2004, each BAWSCA agency was asked to confirm that the long-term forecast that the SFPUC developed is consistent with its adopted land-use plans and all other assumptions used in the model. According to Palo Alto’s Municipal Code (Section 2.08.200 (a)), the Director of Utilities has the duty: “to coordinate the forecasting of the city’s long-range utility needs” and “to forecast and plan the acquisition and disposition of sufficient least-cost resource supplies to meet existing and future supply requirements in an environmentally acceptable manner.” Therefore, the Director of Utilities concurred that the long-term water demand forecast presented by the SFPUC reflects anticipated future water demands and that the data used to develop the forecast is accurate.

In August 2004, the Director of Utilities reported to the SFPUC that 1.4% to 4% of long-term demand was a reasonable range of potential water conservation savings for long-range planning purposes. This estimate was based on the determination of the cost-effective water conservation measures of the thirty-two measures evaluated.

At this time, the Director of Utilities will report to the SFPUC that the City of Palo Alto estimates it will purchase 14,540 AFY from the SFPUC in 2030. This estimate will be used by the SFPUC for purposes of planning and environmental review and conforms to the previously reported long-range demand projection and the conservation savings range. It was noted that the estimate is subject to change based on changed conditions, such as the future cost of water, new pricing structures, and other modified contract arrangements.

**POLICY IMPLICATIONS**

Projecting resource needs is consistent with City policies and directives, including the Utilities Strategic Plan (USP) Objective 2: Invest in utility infrastructure to deliver reliable service. An in-depth examination of water efficiency measures is consistent with City’s sustainability efforts to conserve water and to increase market penetration of water efficiency programs in Palo Alto and with USP Key Strategy 7: Implement programs that improve the quality of the environment.

The long-term water purchase forecast is consistent with the City of Palo Alto’s Comprehensive Plan assumptions pertaining to local land use and growth management.
policy limiting future urban development to currently developed lands within the urban service area.

**RESOURCE IMPACT**
There is no resource impact from making this declaration to SFPUC. It does not commit to a particular amount of water or obligate the City to any payment stream.

**ATTACHMENT**
CMR:106:04 – Water Long-Term Demand Projection
CMR:395:04 – Water Conservation Savings Potential

**PREPARED BY:**
JANE RATCHYE
Senior Resource Planner

**DEPARTMENT HEAD:**
JOHN ULRICH
Director of Utilities

**CITY MANAGER APPROVAL:**
EMILY HARRISON
Assistant City Manager