

## 2. Water Supply

### *Overview*

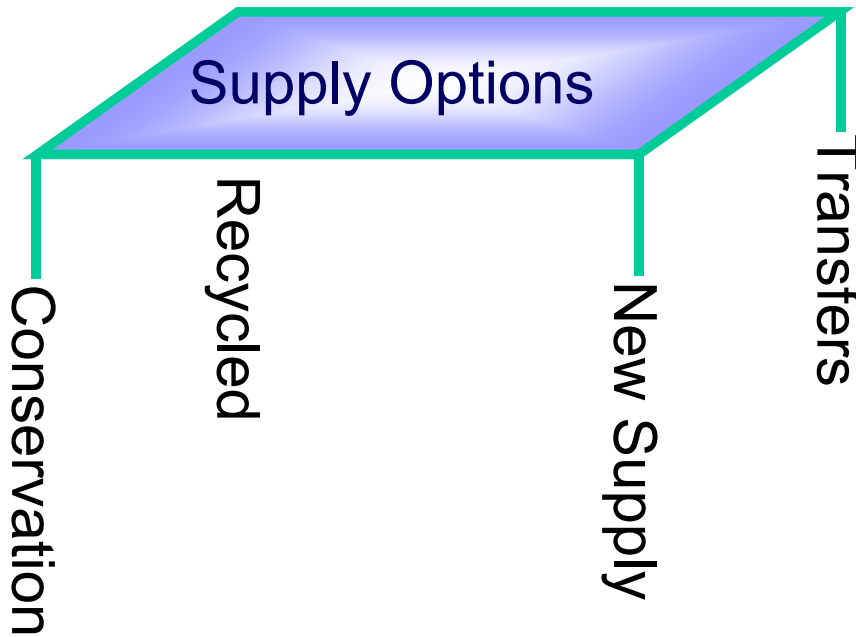
This chapter describes the City's existing and planned sources of water supply. Currently, the City receives 100% of its potable water supply from the Hetch Hetchy regional water system operated for the City and County of San Francisco by the San Francisco Public Utilities Commission (SFPUC). The Master Water Sales Contract with the City and County of San Francisco for Hetch Hetchy water is scheduled to expire July 1, 2009. Redwood City's interest is to maximize the reliability of water supplies received from this source (discussed in Chapter 3) while minimizing its costs (discussed in Chapter 5).

In the future, the City has no specified water supply projects it has committed to. It is exploring, however, ways it might augment Hetch Hetchy supplies by the other sources shown in Figure 2-1.<sup>9</sup> One option is water conservation as described in Chapter 1. Another option is recycling wastewater for outdoor irrigation. Other options including transfers of waters within the Hetch Hetchy system, or from other external new supplies transported (wheeled) through the SFPUC system. However, there are institutional, legal, water quality, and engineering impediments to this course. The newly formed Bay Area Water Supply and Conservation Agency may facilitate procurement of new supplies in the future.

---

<sup>9</sup> The City does not use groundwater and no plans exist to use groundwater in the future.

Figure 2.1 Water Supply Options



## 2.1 San Francisco PUC Surface Water

Redwood City currently purchases all of its potable water from the SFPUC. There are 13 metered connections to four SFPUC pipelines located in Redwood City. The SFPUC normally supplies all of its water deliveries from a combination of local Bay Area supplies and diversions from the Tuolumne River through the Hetch Hetchy Water and Power Project shown in Figure 2.2.

On the San Francisco Peninsula, the SFPUC utilizes Crystal Springs Reservoirs, San Andreas Reservoir, and Pilarcitos Reservoir to capture local watershed runoff. In the Alameda Creek watershed, the SFPUC has constructed the Calaveras Reservoir and San Antonio Reservoir. In addition to using these facilities to capture runoff, they also provide storage for Hetch Hetchy diversions, and serve as an emergency water supply in the event of an interruption to Hetch Hetchy diversions.

Water developed by Hetch Hetchy represents the majority of the water supply available to San Francisco. The water travels more than 160 miles, through a complex system of tunnels and pipelines that protects the water enroute to customers in the Bay Area. During drought, the water received from Hetch Hetchy can amount to over 93 percent of the total water delivered. On average, Hetch Hetchy provides about 85 percent of the water delivered by the SFPUC.

The City's existing water supply entitlements, rights and/or water service contracts relevant to this water supply are:

- ❑ 1984 Settlement Agreement and Master Water Sales Contract between Suburban Purchasers and the City and County of San Francisco
- ❑ Water Supply Contract between City and County of San Francisco and the City of Redwood City (August 1984)

**Figure 2.2 SFPUC Water System**



## 2.2 Recycled Water

The City Council has embarked on a policy of implementing a water recycling project, and has completed feasibility studies for a recycled water treatment, storage, pumping and distribution system that would serve recycled water to existing and future water users for landscape irrigation and various industrial uses. This system would provide a means of meeting water demands that would otherwise have to be met from potable water sources.

The City Council has not determined if it wishes to proceed with an expanded recycled water project, but has committed to the community that it will consider additional technical information and public comment in the context of the CEQA process. Also, on February 3, 2003 the City Council passed the following motion: "Redwood City will not make the use of recycled water mandatory to existing residences or homeowners' associations." Finally, the cost analysis for a recycled water project is not complete at this time and the Council will consider cost/benefit and rate impacts as it moves toward a decision on the proposed project.

### **2.2.1 Existing Wastewater Collection and Treatment Systems**

The City operates and maintains the wastewater collection system serving approximately 24,000 residential and 1,125 commercial sewer connections. The system includes 280 miles of sewer main lines and 29 pump stations.

According to the South Bayside System Authority (“SBSA”) Flow and Loading Summary Report for 2001, the City's collection system delivers an average daily flow of 9.09 MGD to the SBSA treatment plant. SBSA is a joint powers authority, of which the City is a member that provides service to the City, Belmont, San Carlos and the West Bay Sanitary District. The SBSA is responsible for operation of four pump stations, one force main and a sub-regional tertiary wastewater treatment facility, located at the eastern end of the Redwood Shores peninsula in Redwood City. The SBSA is permitted by the Regional Water Quality Control Board (“RWQCB”) to discharge wastewater into San Francisco Bay.

### **2.2.2 Current Use of Recycled Water**

The RWQCB, when approving permits for SBSA’s expansion project in 1997, required SBSA to participate in developing a pilot water recycling project. Working with SBSA, the City initiated a “First Step” recycled water project in 2000. This project, which has been in operation since May, 2000 initially provided recycled water from the SBSA plant to irrigate eight landscape sites (median strips, parking strips, greenbelts and parks) owned by the City plus a 20-acre landscape impoundment owned by SBSA. In 2001 the project was expanded to extend service to private sector customers at the eastern end of the Peninsula, taking advantage of the dual water piping facilities that were installed in the streets as part of residential and other development since the mid 1980s. These customers include one planned residential apartment development and one commercial development. All use of recycled water is for landscape irrigation and landscape impoundment. During the 2002 irrigation season, the City distributed nearly 24 million gallons to these customers. Currently the First Step Project is permitted by the State of California Department of Health Services (DOHS) for operation through 2003.

### **2.2.3 Potential Use of Recycled Water**

The City commissioned two engineering feasibility studies of expanded use of recycled water, both of which were completed in 2002:

- *Water Recycling Feasibility Study for the Redwood Shores Area*, by Kennedy/Jenks Consultants, January 22, 2002.
- *Water Recycling Feasibility Study for Redwood City*, by Kennedy/Jenks Consultants, August 7, 2002.

The second report addresses alternative projects ranging from one limited to certain customers in Redwood Shores only (1,100 AF/Y) to a city-wide project serving a broad class of customers (3,172 AF/Y). The report identifies a project involving two areas east of Highway 101 (Redwood Shores and Greater Bayfront) with an estimated demand of 1,955 AF/Y as the most cost effective alternative. A copy of the Executive Summary of this report, together with a map of the recommended alternative, is attached as Appendix F. The great majority of forecast use of recycled water is for landscape irrigation, with some potential for industrial users identified in the Greater Bayfront area.

#### **2.2.4 Actions to Encourage Use of Recycled Water**

To encourage customers to convert to recycled water, the City of Redwood City will consider the following incentives:

- The City could pay for the design of customer retrofits.
- The City could establish a grant program to pay for the retrofit, based on the size of the facility and the volume of recycled water to be used.
- The customer could pay for on-site retrofits, and the City could pay for the distribution main, service connection, water meters, signage, and the labels at the controllers.
- The City could consider offering new users discounted rates for three years.
- The City could consider providing on-going technical assistance to recycled water customers for no charge.
- The City could “guarantee” recycled water supply reliability even during shortages (excluding disaster conditions).
- The City and SBSA could continue to be proactive in public education regarding the safety and reliability of recycled water.

#### **2.2.5 Projected Use of Recycled Water**

Currently, the City is delivering 74 AF/Y of recycled water. If the City were to implement the recommended alternative described above, this volume could increase to approximately 2,000 AF/Y by 2010.

### **2.3 Water Transfers and Exchanges**

Securing water from willing sellers inside and outside of the Hetch Hetchy water system is theoretically possible.

- Within the SFPUC system, it is possible to transfers water entitlements and/or banked water from among agencies. The Interim Water Shortage Allocation Plan (IWSAP) adopted by all BAWUA agencies and SFPUC provides for voluntary transfers of water among BAWUA agencies during periods when mandatory rationing is in effect on the San Francisco regional water system. Some BAWUA agencies have the capacity to draw more heavily on local groundwater during dry years and thus may be willing to agree to transfer some portion of their San Francisco entitlement to other BAWUA agencies willing to pay for this back up supply. This is a possible source of relief from rationing at levels more severe than those required in neighboring communities. Initial inquiries by the City of other agencies have not produced any affirmative responses. It is not possible to rely on this potential source unless and until contracts are signed with one or more other BAWUA agencies.
  
- Securing water from willing sellers outside the BAWUA service area is theoretically possible. State laws enacted in the 1980s allow for “wheeling” of water from willing sellers to willing buyers through transmission systems owned by third parties – such as the SFPUC’s San Joaquin pipelines. This is a more complex process and one that would require not only a contract with a water supplier (such as an irrigation agency), but also approval by the SFPUC.

The newly formed Bay Area Water Supply and Conservation Agency<sup>10</sup> will enable the 29 wholesale customers of the San Francisco Hetch Hetchy regional water system to plan for and acquire supplemental water supplies, to encourage water conservation and use of recycled water on a regional basis, and to assist in the financing of essential public works in a coordinated and cost-effective manner. As this agency is formed and developed, transfer opportunities may become easier to initiate.

---

<sup>10</sup> Enabled by Assembly Bill 2058 as passed by Legislature on August 30, 2002.