



Memorandum

TO: TRANSPORTATION AND ENVIRONMENT COMMITTEE

FROM: John Stufflebean

SUBJECT: SEE BELOW

DATE: 05-08-07

Approved

Date

5/9/07

SUBJECT: REPORT ON WATER SUPPLY ISSUES FOR THE MUNICIPAL WATER SYSTEM

RECOMMENDATION

Accept this report on water supply issues for the Municipal Water System, including water shortage.

OUTCOME

Accepting this report will provide the Committee with information concerning current water supply issues for the Municipal Water System.

BACKGROUND

The Municipal Water System (Muni Water) currently provides water service to approximately 26,500 metered connections within the City of San Jose. Muni Water services four different areas in the City: North San Jose/Alviso, Evergreen, Edenvale, and Coyote Valley (see Attachment 1). While these service areas represent approximately 20% of the City's total land area, they contain approximately 58% of the City's developable land. The City's General Plan anticipates significant development within these areas. Population within Muni Water service areas is projected to double from the current estimate of approximately 109,000 to 218,000 by 2030.

MUNICIPAL WATER SYSTEM SERVICE AREAS

NORTH SAN JOSE/ALVISO

The North San Jose/Alviso service area extends generally from Trimble Road on the south to the Alviso Slough on the north. The area is bordered on the west by the Guadalupe River and on the east by the Coyote Creek. The area is served by one completely connected system, consisting of over 60 miles of water mains, two reservoirs and two pump stations. Four standby wells are also available as a backup supply. The customer base in the North San Jose/Alviso area primarily consists of commercial and industrial customers, with an increasing number of multi-family residential customers.

In this service area, Muni Water purchases wholesale potable water from San Francisco Water Department/Public Utilities Commission (SFPUC) under an Agreement and Master Water Sales Contract, signed in 1984. The Master Contract primarily addresses the rate-making methodology used by San Francisco in setting wholesale water rates for its wholesale customers, in addition to addressing water supply and water shortages for the regional water system. An individual water supply contract between San Francisco and San Jose addresses the water supply relative to the amount of water San Jose can purchase directly from San Francisco. San Jose’s current contract provides for a temporary, interruptible supply. The Master Agreement, along with the individual water supply contract between San Francisco and San Jose, will expire in June 2009. A new contract is being negotiated.

Currently, 100% of the potable water demand in North San Jose/Alviso is supplied by SFPUC. The amount of water that San Jose is able to purchase under the current contract is 2.68 million gallons per day (MGD); however, because additional SFPUC supply has been available, San Jose has been able to purchase water supplies above the contractual amount.

In addition, recycled water has been supplied to the North San Jose area via the South Bay Water Recycling System (SBWR) since 1998, and currently accounts for approximately 10% of total water supply in the area. Recycled water uses include irrigation, industrial cooling towers, and dual plumbing. In 2006, the total amount of potable water supplied to the North San Jose/Alviso area was 1.6 billion gallons (BG), or 4.4 MGD. Recycled water supply in North San Jose totaled 0.2 BG in 2006, for a total of 1.8 BG, or 4.9 MGD, of water served to area customers.

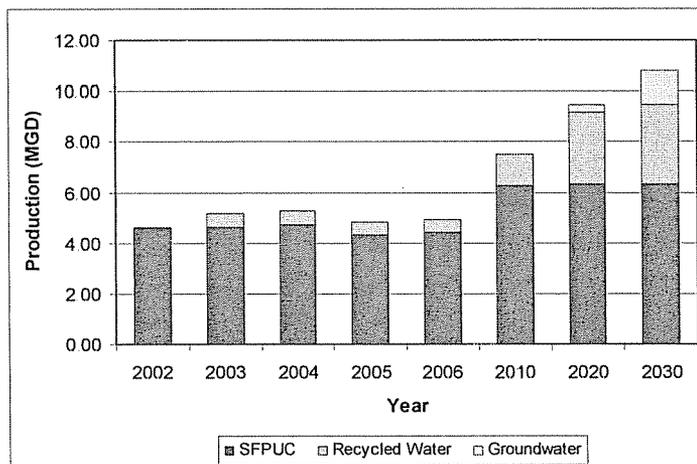


Table 1. North San Jose/Alviso Water Supply

Water demands are expected to increase in the area through 2030, with much of the growth attributable to the Vision North San Jose project (see Table 1). In June 2005, pursuant to Senate Bill 610, a Water Supply Assessment (WSA) was adopted for the North San Jose Development Policies Update, which included supply and demand assessments for the Vision North San Jose project. The WSA addresses all current and potential water supply sources for the project area, including SFPUC supply, District supply, groundwater wells, and recycled water. At the estimated build out in 2030, population is projected to increase from the current estimate of 13,200 to 53,300, resulting in projected water demands in the area increasing to 10.8 MGD.

Groundwater and recycled water supplies are expected to increase to account for the increase in demand. There are several factors that may affect the specific ratio of future supply sources, including but not limited to energy cost, wholesale water cost, availability, distribution system development, and enhancement of recycled water quality. At build out, groundwater use is estimated to account for between 3% and 22% of the total demand, with recycled water use estimated to account for another 19% to 38%.

SFPUC's Hetch Hetchy System

The regional Hetch Hetchy system provides water to approximately 2.4 million people in San Francisco, Santa Clara, Alameda and San Mateo counties (Figure 1). Approximately 85% of the water supply comes from the Hetch Hetchy Reservoir, located in Yosemite National Park, and 15% comes from surface water runoff in Alameda and Peninsula watersheds. The Alameda watershed, located in the East Bay, consists of the Calaveras and San Antonio Reservoirs. The Peninsula watershed captures runoff in Crystal Springs and San Andreas Reservoirs, as well as two smaller reservoirs, Pilarcitos and Stone Dam. These local sources are treated and filtered at Sunol Valley Water Treatment Plant. SFPUC's regional system consists of over 280 miles of

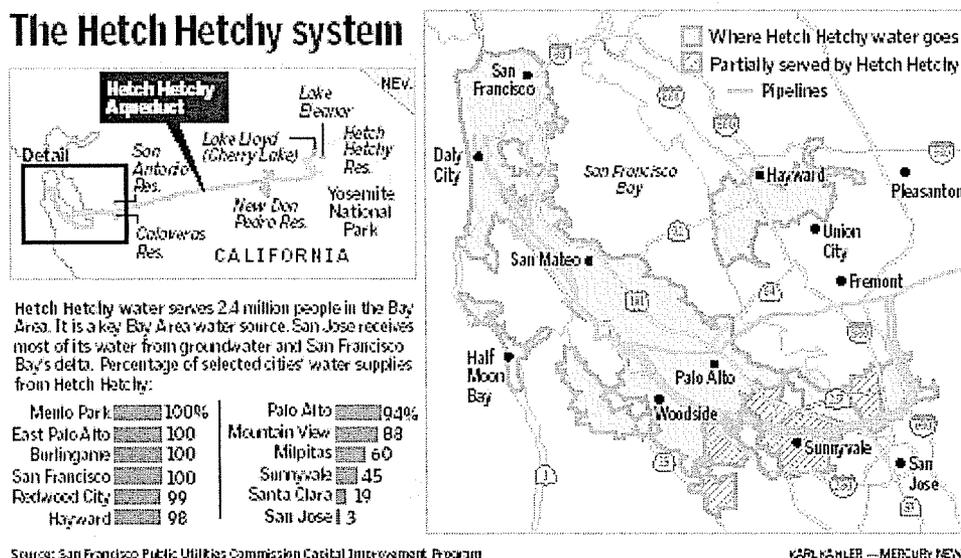


Figure 1. Hetch Hetchy System

pipelines, over 60 miles of tunnels, 11 reservoirs, five pump stations and two water treatment plants.

The Bay Area Water Supply and Conservation Agency (BAWSCA), created on May 27, 2003, represents the interests of 26 cities and water districts, and two private utilities, in Alameda, Santa Clara and San Mateo counties that purchase water on a wholesale basis from the San Francisco Regional Water System. In 2003, Mayor Reed was appointed by Council to serve on the BAWSCA board of directors.

Seismic Reliability

In order to enhance the ability of the SFPUC water supply system to meet identified service goals for water quality, seismic reliability, delivery reliability, and water supply, the SFPUC is undertaking a \$4.3 billion Water System Improvement Program (WSIP). The WSIP will deliver capital improvements aimed at enhancing the SFPUC's ability to meet its water service mission of providing high quality water to its customers in a reliable, affordable and environmentally sustainable manner. Planning efforts for the WSIP gained momentum in 2002 with the passage of San Francisco ballot measures Propositions A and E, which approved the financing for the regional water system improvements. Also in 2002, Governor Davis approved Assembly Bill No. 1823, the Wholesale Regional Water System Security and Reliability Act. The WSIP is expected to be completed in 2016.

The California Seismic Safety Commission (CSSC) reviews and comments on whether schedule or other changes the SFPUC makes to the WSIP have potential consequences to public health and safety. In May 2006, the CSSC issued a report containing recommendations related San Francisco's WSIP. That report also recommended that San Francisco and each of the BAWSCA agencies, including San Jose, ensure that measures are taken to seismically upgrade local water distribution systems and protect public health and safety. The Muni Water system has a history of investments to protect against a disruption of services due to a seismic event. Within the past 5-10 years, several Capital projects have been designed and constructed to replace aging infrastructure and install more seismically-secure facilities. Improvements have been made to both the distribution system (including replacement of old mains made from brittle materials, and installation of restrained pipe connections) as well as storage facilities (such as installation of backup energy sources and flexible joints to and from the reservoirs). Ongoing efforts to budget and design additional reliability enhancements will ensure that the health and safety of Muni Water customers is protected.

EVERGREEN

The Evergreen service area extends from Highway 101 on the west to the foothills of the Mount Diablo Range on the east. The area is generally bounded on the north by Tully Road and on the south by the City limits. The water supply to the Evergreen area consists of treated water purchased from the Santa Clara Valley Water District (District). The distribution system consists of over 260 miles of water mains, 13 reservoirs, and 14 pump stations. Four standby wells are

available as a backup supply. The current land use in Evergreen is predominantly residential and commercial.

The District has contracts with the State of California Department of Water Resources and the United States Bureau of Reclamation to purchase and import water to the Santa Clara Valley. In 1972, the District entered into the first contract to supply the City of San Jose with imported water. Another contract initiated in 1981 remains in effect until 2051.

Currently, 100% of the potable water demand in Evergreen is supplied by District treated water. The amount of water that San Jose is able to purchase under the contract is variable year-to-year depending on available quantities and subject to peaking limitations.

Recycled water has been supplied to the Evergreen area for irrigation uses since 1998, and currently accounts for approximately 9% of the total water supply in the area. In 2006, the total amount of potable water supplied to the Evergreen area was 5.1 BG, or 14.1 MGD. Recycled water supply in Evergreen totaled 0.4 BG in 2006, for a total of 5.5 BG, or 15.2 MGD, of water served to area customers.

Water demands are expected to increase in the area through 2030, with much of the growth attributable to the proposed Evergreen East Hills Vision Strategy project (see Table 2). The Water Supply Assessment (WSA) for Evergreen East Hills Vision Strategy was adopted in December 2005. The WSA addresses all current and potential water supply sources for the project area, including District treated water supply, groundwater, and recycled water. At the estimated project build out, population is projected to increase from the current estimate of 96,700 to 100,700, resulting in projected water demands in the area increasing to 17.4 MGD. District treated water and recycled water supplies are expected to increase to meet the increase in demand, with groundwater to be used as required during peak times. At build out, District treated water is expected to provide approximately 87% of the supply, with the remaining 13% met with recycled water.

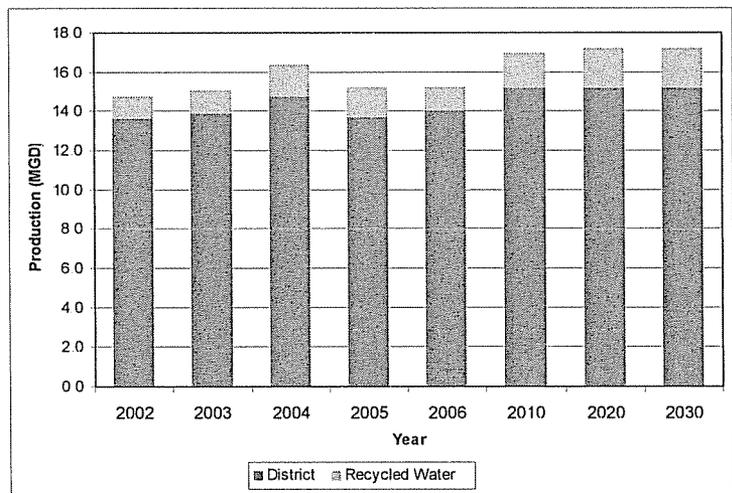


Table 2. Evergreen Water Supply

Santa Clara Valley Water District

The District delivers imported water to the County from the Sierra Nevada Mountains via the Sacramento/San Joaquin Delta. This water is delivered by the State Water Project (SWP) and the federal Central Valley Project (CVP). Imported water is conveyed to Santa Clara County through

three main pipelines: the South Bay Aqueduct, which carries water from the SWP, and the Santa Clara Conduit and Pacheco Conduit, which bring water from the CVP. The District has a contract for approximately 32,580 MG per year from the SWP, and approximately 49,690 MG per year from the CVP.

EDENVALE AND COYOTE VALLEY

Muni Water's Edenvale service area covers about 700 acres of industrial and commercial land, located east of Coyote Creek, south of Hellyer Avenue, and north of Tennant Avenue. The distribution system consists of three groundwater wells, approximately seven miles of water mains, and one reservoir. Several sites in the Edenvale area are currently plumbed and able to receive recycled water for irrigation purposes; however, pursuant to an agreement between the City and District, recycled water is currently not served in this area. In 2006, the total amount of potable water supplied to the Edenvale area was 132 MG, or 0.4 MGD. The area is approximately 64% developed. Water use is projected to increase proportionally as the area develops, to an estimated 210 MG, or 0.6 MGD, at build out.

Muni Water's Coyote Valley service area is located west of Highway 101, south of Tulare Hill, and north of Palm Avenue. Muni Water's current service base in the service area consists of commercial, industrial, and irrigation customers. The distribution system consists of three groundwater wells, approximately four miles of water mains, and one reservoir. Muni Water has supplied recycled water to Coyote Valley for industrial cooling tower use since 2005, which currently accounts for approximately 79% of the water supply in the service area. In 2006, the total amount of potable water supplied by Muni Water to the Coyote Valley area was 131 MG, or 0.4 MGD. Recycled water supply in Coyote Valley totaled 480 MG in 2006, for a total of 610 MG, or 1.7 MGD, of water served to service area customers. Great Oaks Water Company also currently supplies potable water within Coyote Valley.

At the estimated project build out for the Coyote Valley Specific Plan, population in Coyote Valley is projected to increase to 84,500, resulting in projected water demands in the area increasing to 5.4 BG, or 14.7 MGD. In addition to the Muni Water system, two private water retailers, Great Oaks Water Company and San Jose Water Company have expressed an interest in supplying water for implementation of the Specific Plan by providing Water Supply Assessments (WSAs) for the CVSP. The WSA for CVSP for the Municipal Water System was approved by Council in June 2006.

The greater Edenvale and Coyote Valley areas' potable demands are currently met entirely with groundwater from the Santa Clara Valley groundwater basin, which is managed by the District. Recycled water is used in Coyote Valley for industrial purposes, but is not currently used for irrigation in either area due to District concerns regarding the use of tertiary-treated recycled water in direct ground application.

CURRENT RETAIL WATER RATES

All Muni Water bills include a charge based on actual water consumption, a service charge, and a 5% utility tax. If the customer lives in a higher elevation, the additional cost of pumping is also added. In addition, to encourage conservation, Muni Water has an inverted block rate structure for residential customers meaning that the less water you use, the less you pay. Non-residential customers pay a flat rate based on their water consumption.

Muni Water rates have historically been among the lowest in the region. Alameda County Water District prepared a comparison of many of the regional water retailers' 2006 water rates, as shown in Table 3.

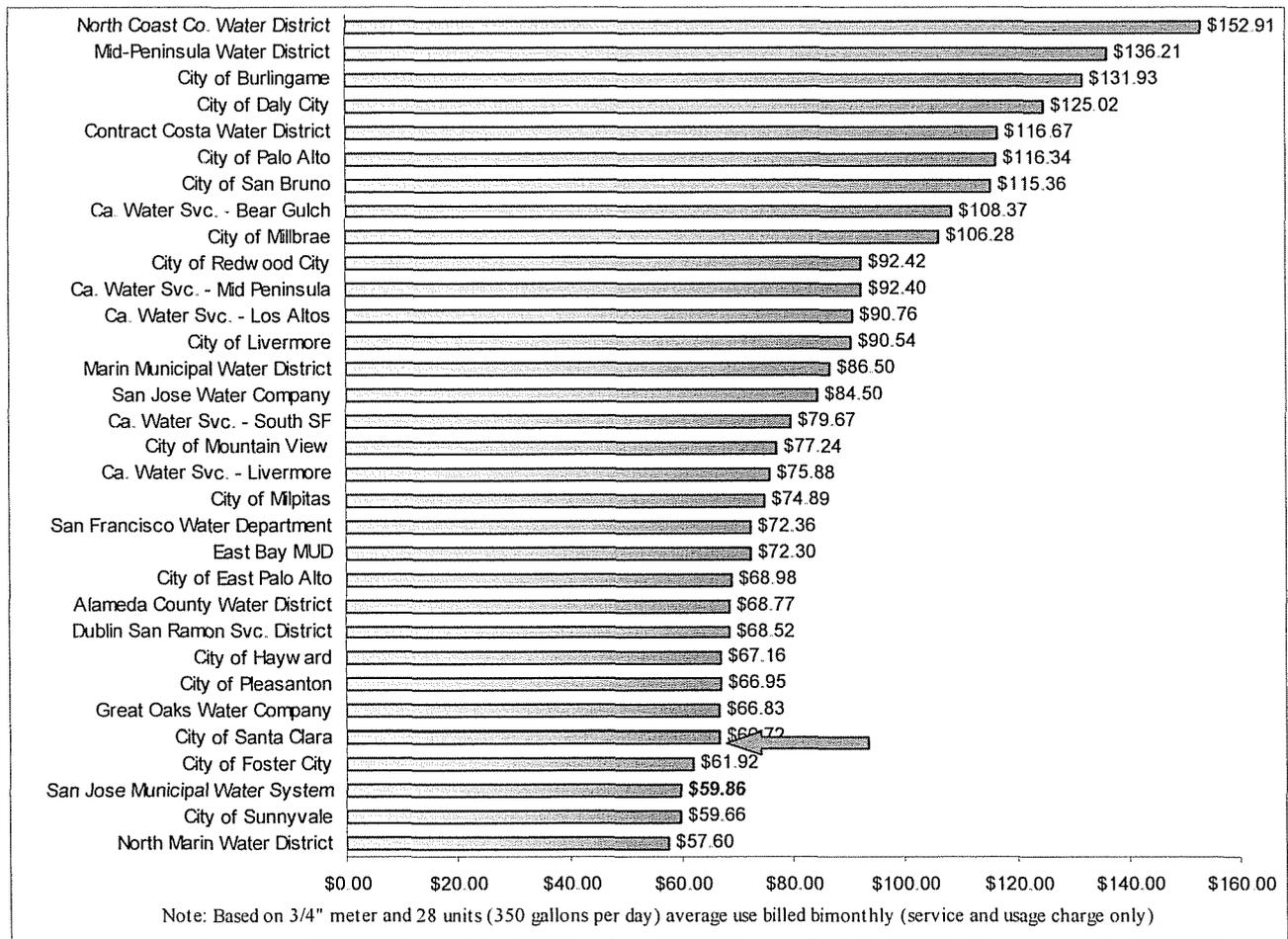


Table 3. Retailer Water Rate Comparison

WATER SUPPLY ISSUES

POTENTIAL WATER SHORTAGE

SFPUC recently reported that the past winter was the fourth driest winter on record, and urged customers to increase water conservation efforts to help avert possible mandatory rationing and deeper water consumption limits later in the year. March precipitation at the Hetch Hetchy reservoir was just 27% of normal and the Sierra snow pack is also far below normal for the season. National climate experts recently confirmed that for the first time in 15 years, the Bay Area may be on the verge of a drought. Initial public response to conservation requests, as well as the actual precipitation that occurs over the remaining duration of the current water year will determine whether any mandatory conservation efforts will be required. The District has not yet officially recommended any additional water conservation efforts related to a potential drought.

In the event of a supply shortage, the amount of imported water that will be available for purchase by Muni Water will depend on the amount deemed available by the wholesaler water supplier, subject to agreements such as SFPUC's Interim Water Shortage Allocation Plan (document available upon request). The supply of recycled water available to customers would not be affected.

Ongoing Conservation Efforts

Water use efficiency is an integral part of environmental sustainability, and can significantly impact water demands. The City of San Jose has several water efficiency and water waste prevention ordinances in place, and participates with wholesale water suppliers in programs designed to educate the public on ways to decrease consumption. The City currently implements programs to support water conservation, such as requiring installation of Ultra Low Flow toilets, and providing rebates for high-efficiency washing machines. If the City takes a more aggressive approach to water conservation by building on existing programs, the rate of growth in water demand can be significantly decreased.

Since 1995, Muni Water has been a signatory of the California Urban Water Conservation Council (CUWCC). Fulfillment of the CUWCC's Best Management Practice (BMP) measures for urban water conservation is required of all signatories, and Muni Water submits biennial reports describing conformance to the BMPs. Water conservation activities for Muni Water are implemented by the City's Water Efficiency Program (WEP) and the Santa Clara Valley Water District.

Additional Conservation Measures

In the event of a water supply shortage, additional mandatory conservation requirements may be set in place according to the Water Shortage Contingency Plan (Plan, Attachment 2), which is included within the City's Municipal Code. This Plan outlines various stages of conservation

needed to respond to the respective severity of the supply shortage. Each stage represents a different demand reduction program to be enforced during a supply shortage, beginning with Stage 1 (corresponding to a supply shortage of 10 percent), and proceeding with Stages 2, 3, and 4, which entail mandatory reductions applicable to potable water use. The demand reduction programs are summarized in Table 4 below. A state of water shortage can be declared upon resolution by the Council, at which point the Plan would be implemented and enforced.

Stage	Program	Demand Reduction	Shortage	Summary of Demand Reductions
1	Mandatory	Up to 19 %	10-19%	<ul style="list-style-type: none"> Irrigation of outdoor landscaping is prohibited during designated daylight hours
2	Mandatory	Up to 29 %	20-29%	<ul style="list-style-type: none"> Continue and intensify all Stage 1 activities Businesses are required to display “notice of water shortage” information No potable water may be used to clean any exterior surfaces The operation of decorative fountains using potable water is restricted
3	Mandatory	Up to 39 %	30-39%	<ul style="list-style-type: none"> Continue and intensify all activities from Stages 1-2 Irrigation of outdoor landscaping is limited No new outdoor landscaping or plantings shall be installed during the months of May through October Public use of water from hydrants is prohibited
4	Mandatory	≥ 40%	≥ 40%	<ul style="list-style-type: none"> Continue and intensify all Stages 1-3 activities All irrigation of outdoor landscaping is prohibited Filling of any swimming pool, fountain or spa is prohibited

Table 4. Water Shortage Contingency Plan Demand Reduction Program

WHOLESALE WATER COST

The cost of wholesale water can fluctuate on an annual basis and is subject to several factors, such as the wholesaler’s system rehabilitation and capital improvement costs and the current water supply outlook. Based on the District’s estimated projections, their wholesale water costs are expected to increase as much as 100% over the next 10 years. Similarly, SFPUC estimates a potential 200% increase in costs over the next 10 years.

RETAIL WATER RATES

Nearly 60% of Muni Water’s annual expenditures are for wholesale water and energy costs. Cost increases in these areas are beyond the control of Muni Water, and must be passed on to customers in the form of higher retail rates. Other factors are also considered in determining the magnitude of water rate increases, including system rehabilitation and replacement needs, increases in reserve requirements, etc. Water rate increases incrementally increase the amount of operating revenue collected.

The Rate Stabilization Reserve Fund is currently mandated at five percent of operating revenue, and the Capital reserve fund is mandated at seven percent of operating revenue. To maintain

these reserves at the mandated levels, additional revenue must be collected. Therefore, either water sales must increase or rates must increase proportionately as operating revenues rise. Consequently, if water sales volume remains constant, Muni Water must pass increasing costs on to its customers, including increases in the Rate Stabilization and Capital Reserve Funds, in the form of higher rates.

For Fiscal Year 2007-2008, the District and SFPUC are proposing maximum wholesale rate increases of 16% and 10.7%, respectively. Due to the proposed wholesale rate increases, as well as increased costs related to staffing needs for the Integrated Billing System, Muni Water rates are proposed to increase by a maximum of 12% as of July 1, 2007. Notifications of the proposed rate increase were sent to customers in early May. The final Muni Water rate proposal will be adjusted based on the actual costs adopted by the wholesalers, and will be reviewed by Council at its June 19 meeting. Wholesale water cost increases affect all retailers. Staff does not anticipate that the proposed rate increase will significantly change the ranking of Muni Water rates relative to other local retailers' rates, as shown in Table 3 above.

STATE WATER PROJECT PUMP SHUTDOWN

The California Department of Water Resources' (DWR) State Water Project sends water to cities, farms and industries in the Bay Area, San Joaquin Valley, Central Coast, and Southern California via a pumping plant located in the Delta. The water moved through the pumping plant supports irrigation of 750,000 acres of farmland and the needs of 25 million Californians. A major portion of the District's imported water supply is comprised of water pumped from the State Water Project.

On April 18, a court order was issued in Alameda County, requiring that within 60 days from the issuance of the order, DWR either obtain State "incidental take permits" under the California Endangered Species Act, or shut down the Delta Plant. Temporary use of stored water resources could be used by DWR to supplement the total State Water Project supply, but a prolonged shutdown of the pumping facilities could potentially create a state-wide water shortage. DWR intends to appeal the decision, while simultaneously working toward a solution that will both protect Delta species and keep water moving through the state. However, should the ruling be upheld, the District could lose a major source of supply at a time when District reservoirs are already lower than normal. While not an immediate threat, loss of the Delta supplies would require increased use of groundwater reserves.

THREAT TO HETCH HETCHY RESERVOIR WATER STORAGE

In response to a 2004 legislative request, Governor Schwarzenegger directed the State's Department of Water Resources and Department of Parks and Recreation to review existing studies on draining the Hetch Hetchy Reservoir and removing the O'Shaughnessy Dam in an effort to restore the Hetch Hetchy Valley. The resulting report is a comprehensive analysis of the many Hetch Hetchy Valley restoration research studies produced over the past 20 years, and details major information gaps in such areas as dam removal, benefits of restoring the valley,

replacing water and power benefits of the existing system, and public involvement. Initial estimates indicate that the costs for the restoration could range from \$3 to \$10 billion. President Bush's 2008 budget submission includes additional funding for the Interior Department to further study the idea of permanently draining the Hetch Hetchy Reservoir.

SFPUC MASTER WATER SALES CONTRACT

The current Master Contract is expiring at a time of change and uncertainty. San Francisco is currently facing numerous challenges related to ensuring a reliable water supply, including the rebuilding and improvement of the regional system, as well as securing additional diversions from the Tuolumne River. San Francisco has indicated that it may seek changes to the financial provisions of the Master Contract, and that negotiations may be used to seek commitments from retail agencies to implement even more aggressive conservation and recycling measures. San Francisco has not yet made any firm commitments to meeting increased needs for water in the wholesale service area, which is projected to occur by 2030 even after cost-effective conservation measures and recycling projects are implemented. On October 17, 2006, Council adopted Resolution No. 73465, which formally appointed BAWSCA as the authorized representative of San Jose in Master Contract discussions and negotiations with San Francisco. Pursuant to previous Council direction, Muni Water staff has advised BAWSCA that the City wishes to negotiate for a permanent, non-interruptible supply, and BAWSCA has agreed to incorporate this direction into the contract negotiations. The general goal of the negotiation process can be summarized as the obtainment of an agreement that provides for a reliable supply of high-quality water at a fair price. BAWSCA's negotiating team has developed a draft schedule for the negotiations that would result in formal adoption of a new agreement prior to the expiration of the existing agreement in June 2009. BAWSCA has recently released the first quarterly report on the status of negotiations (document available upon request).



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